



Current Status and Future Prospects of the Trans-GTR Corridors (Segments in Russia)

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1 Introduction

GTI in its current format was established at the 8th meeting of CC in 2005 (Changchun, September 2005) where the member countries agreed to set up the GTI Common Fund, extend intergovernmental agreements, expand geographic coverage and transform TRADP into the Greater Tumen Initiative. The GTI Strategic Action Plan 2006-2015 was adopted for priority sectors (tourism, transport, energy, ecology, investments). This date has been considered as the starting point of GTI constructive activities.

The transport sector is deemed as one of the five priority areas under the GTI. In 2010, to enhance the cooperation in transport sector the GTI Transport Board, established in 2009, adopted the GTI Transport Cooperation Program 2010-2012. The top priority among the projects and activities under the Program was placed to the "Integrated Transport Infrastructure and Cross-Border Facilitation Study for the Trans-GTR Transport Corridors" ("GTI Transport Corridor Study") project.

The purpose of the GTI Transport Corridor Study is to promote development of a reliable, cost-effective and efficient integrated transport network in the GTR through planning of and support to actions to launch and develop international transport corridors in the region, and so on. All goals and objectives of this work have been stated in the Terms of Reference, but the paramount goal of GTI in this area of focus is creation of an atmosphere of real cooperation. The core idea is that all GTI member countries need GTR corridors but this idea was not explicitly highlighted and properly illustrated before.

That's why the principal task of our work was to give a broad overview of the potential for Trans-GTR corridor development that can be used in part or wholly. We have tried to show this potential for corridor development in such a way that everybody might see what they lose in the absence of these corridors. We have tried to make GTI member countries realize and feel that they really need transport corridors, that development of such corridors is beneficial for them, and that, given the potential and prospects of such corridors, any investments in their development will pay back. Only after such common understanding is in place, we may step over to the first cautious step in real cooperation.

2 Due Diligence Review of GTR Corridors

2.1 GTR Transport Corridors with Russian Segments, border crossing points and seaports under consideration (Corridor alignment)

The following zones of Russian territory with corridors segments have been considered (Figure 1-3).

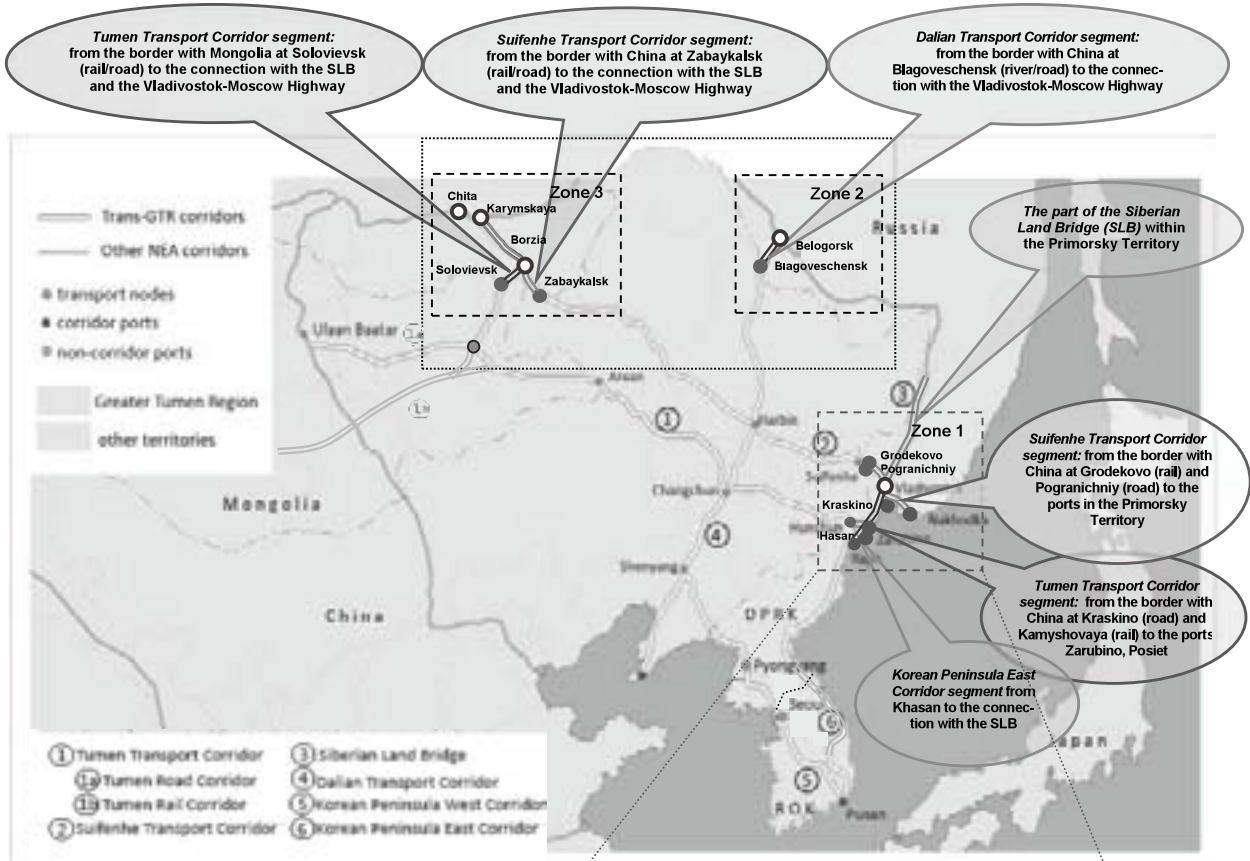
Zone 1 occupies the southern part of Primorsky Territory where the borders of Russia, China and DPRK borders meet. The Zone includes routes to the seaports on Primorsky Territory, namely:

- *Suifenhe Transport Corridor* segment: from the border with China at Grodekovo and Pogranichny (road) to the ports Vostochny, Nakhodka, Vladivostok. In Russia, this section is known as part of the International Transport Corridor (ITC) "Primorye-1" (Harbin - Mudanjiang - Suifenhe - Pogranichny (Dunin - Poltavka) - Ussuriysk - Vladivostok/Vostochny/ Nakhodka and farther sea routes);
- *Tumen Transport Corridor* segment: from the border with China at Kraskino and Kamyshovaya (rail) to the ports Zarubino and Posiet. In Russia, this section is known as part of International Transport Corridor (ITC) "Primorye-2" (Changchun - Jilin - Hunchun - Zarubino - and farther sea routes);
- The part of *the Siberian Land Bridge* within Primorsky Territory.
- *Korean Peninsula East Corridor* segment: from Khasan to the connection with the SLB.

Zone 2 is the southern part of Amursky Territory, from its administrative center, Blagoveschensk, to the connection with the Moscow-Vladivostok Highway and with the SLB (is the segment of the Dalian Transport Corridor). **Zone 3** is the southern part of Zabaykalsky Territory, from the border with China at Zabaykalsk (rail/road on Suifenhe Transport Corridor) and from the border with Mongolia at Solovievsk (rail/road on Tumen Transport Corridor) to the connection with the SLB and the Vladivostok-Moscow Highway.

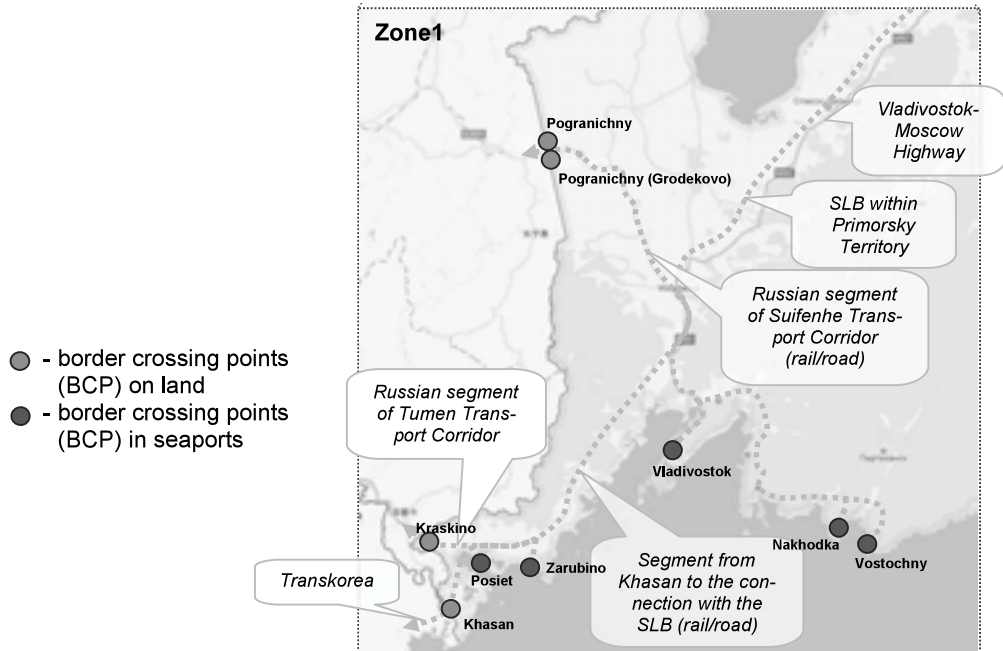
All specified transport network zones have the particular features. So Zone 1 is located close to the junction of three borders and has many crossing roads. There is one segment of the route in Zone 2 (rail and road), but border crossing point is adapted for vehicles and river ships (ferries). Zone 3 also is located close to the junction

Figure 1 Zones of Russian territory with Trans-GTR corridors segments



Source: FEMRI on the basis of GTI and other open sources

Figure 2 Zone 1 (BCP in southern part of Primorsky Territory)



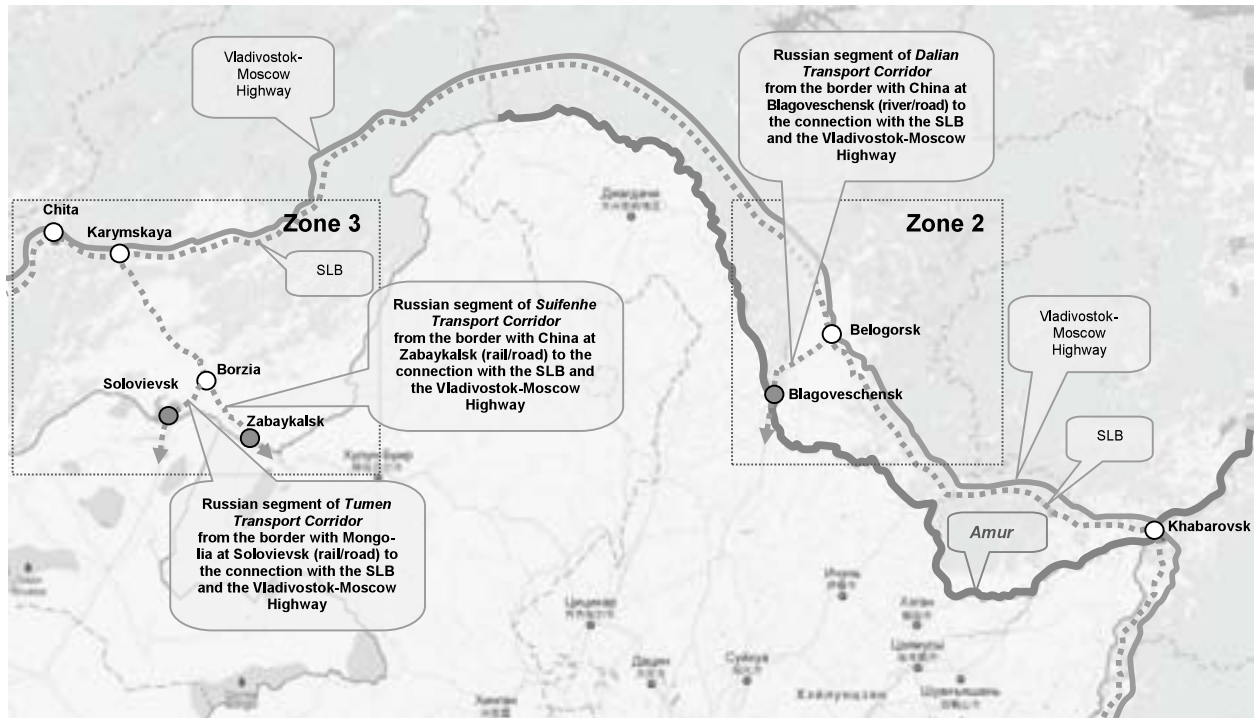
Source: FEMRI on the basis of GTI and other open sources

of three borders, but has the common main part of the route (rail and road). This paper focuses on the Zone 1.

Note. There are 5 road BCP (Markovo, Turiy Rog, Pogranichny, Poltavka, Kraskino) and 1 rail BCP

(Pogranichny in Grodekovo) on the Russian-Chinese border within Primorsky Territory in accordance with Agreement between the Government of the Russian Federation and the Government of the People's Republic of China about border

Figure 3 Zone 2 (southern part of Amursky Territory) and Zone 3 (southern part of Zabaykalsky Territory)



Source: FEMRI on the basis of GTI and other open sources

crossing points on the Russian-Chinese border (Beijing, 27 January 1994). Rail BCP Makhalino established by the Order of the Russian Federation's Government No. of 1041-R of 05 July 1994 is out of operation now.

2.2 Traffic Review

2.2.1 Traffic at Land BCP

Current data on freight and passenger flows through Land BCP (rail, road) being considered are shown below (Table 1-4).

2.2.2 Cargo Turnovers in Seaports

Current data on cargo flows through seaports being considered are shown below (Figure 4-19, Table 5).

Table 1 Road BCP freight turnovers: 2007-2011 thousand tons

| BCP | 2007 | | | 2008 | | | 2009 | | | 2010 | | | 2011 | | | | | | | | |
|----------------|---------|--------|--------|---------|---------|--------|--------|---------|---------|--------|--------|---------|---------|--------|--------|---------|-------|-------|-------|------|-----|
| | Overall | Export | Import | Transit | Overall | Export | Import | Transit | Overall | Export | Import | Transit | Overall | Export | Import | Transit | | | | | |
| Kraskino | 73.1 | 14.6 | 19.5 | 39.0 | 72.3 | 17.9 | 28.7 | 25.7 | 83.7 | 93.1 | 67.6 | 8.5 | 17.0 | 76.8 | 56.9 | 19.9 | 0.0 | | | | |
| Pogranichny | 287.8 | 29.1 | 258.7 | 0.0 | 364.9 | 29.6 | 335.3 | 0.0 | 353.5 | 69.4 | 284.1 | 0.0 | 514.9 | 144.4 | 370.5 | 0.0 | 610.4 | 259.9 | 350.5 | 0.0 | |
| Blagoveschensk | 396.9 | 139.7 | 257.2 | 0.0 | 342.2 | 67.2 | 275.0 | 0.0 | 191.5 | 44.8 | 146.7 | 0.0 | 177.6 | 25.6 | 152.0 | 0.0 | 231.4 | 10.7 | 220.7 | 0.0 | |
| Zabaykalsk | 616.6 | 143.3 | 473.3 | 0.0 | 664.3 | 200.3 | 464.0 | 0.0 | 379.7 | 46.1 | 333.6 | 0.0 | 402.2 | 37.7 | 364.5 | 0.0 | 603.8 | 37.3 | 566.5 | 0.0 | |
| Solovievsk | 0.04 | 0.01 | 0.03 | 0.0 | 0.01 | 0.0 | 0.01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.001 | 0.0 | 0.001 | 0.0 | 0.09 | 0.07 | 0.02 | 0.0 |

Source: Estimated by FEMRI on the basis of official sources <http://www.rosgranitsa.ru>; <http://www.customs.ru>; <http://www.gks.ru>; <http://www.mintrans.ru>, etc.

Table 2 Road BCP passenger turnovers: 2007-2011 thousand passengers

| BCP | 2007 | | | 2008 | | | 2009 | | | 2010 | | | 2011 | | | | | | | |
|----------------|---------|-----------|-----------|---------|---------|-----------|-----------|---------|---------|-----------|-----------|---------|---------|-----------|-----------|---------|--------|-------|-------|---|
| | Overall | Out-going | In-coming | Transit | Overall | Out-going | In-coming | Transit | Overall | Out-going | In-coming | Transit | Overall | Out-going | In-coming | Transit | | | | |
| Kraskino | 170.4 | 87.8 | 82.6 | - | 170.6 | 93.4 | 77.2 | - | 170.7 | 89.3 | 81.4 | - | 212.5 | 106.0 | 98.2 | 8.3 | 260.7 | 131.4 | 129.3 | - |
| Pogranichny | 618.4 | 370.9 | 247.5 | - | 836.4 | 452.9 | 383.5 | - | 436.3 | 242.4 | 193.9 | - | 571.3 | 294.5 | 276.8 | - | 609.5 | 311.7 | 297.8 | - |
| Blagoveschensk | 1263.5 | 630.3 | 633.2 | - | 1413.3 | 704.8 | 708.5 | - | 867.1 | 432.9 | 434.2 | - | 1055.7 | 529.3 | 526.4 | - | 1129.5 | 563.5 | 566.0 | - |
| Zabaykalsk | 2002.9 | 1012.8 | 990.1 | - | 1839.8 | 933.0 | 906.8 | - | 1184.7 | 599.6 | 585.1 | - | 1360.2 | 689.4 | 670.8 | - | 1337.6 | 667.8 | 669.8 | - |
| Solovievsk | 3.93 | 2.04 | 1.89 | - | 4.03 | 1.97 | 2.06 | - | 9.65 | 4.81 | 4.84 | - | 10.52 | 4.68 | 5.84 | - | 10.27 | 5.17 | 5.10 | - |

Source: Estimated by FEMRI on the basis of official sources <http://www.rosgranitsa.ru>; <http://www.customs.ru>; <http://www.gks.ru>; <http://www.mintrans.ru>, etc.

Table 3 Rail BCP freight turnovers: 2007-2011 thousand tons

| BCP | 2007 | | | 2008 | | | 2009 | | | 2010 | | | 2011 | | | | | | | |
|-------------|---------|---------|--------|---------|---------|---------|--------|---------|---------|---------|--------|---------|---------|---------|--------|---------|---------|---------|--------|-----|
| | Overall | Export | Import | Transit | Overall | Export | Import | Transit | Overall | Export | Import | Transit | Overall | Export | Import | Transit | | | | |
| Khasan | 66.5 | 66.4 | 0.1 | 0.0 | 43.5 | 42.5 | 0.3 | 0.7 | 87.4 | 87.0 | 0.1 | 0.3 | 67.5 | 67.4 | 0.02 | 0.02 | 131.5 | 131.2 | 0.3 | 0.0 |
| Pogranichny | 9300.0 | 8820.0 | 479.9 | 0.1 | 8434.2 | 8104.3 | 322.9 | 7.0 | 6712.3 | 6561.6 | 150.7 | 0.0 | 6955.7 | 6730.2 | 223.0 | 2.5* | 6337.5 | 5977.5 | 360.0 | 0.0 |
| Zabaykalsk | 24085.1 | 22221.3 | 1863.8 | 0.0 | 15447.3 | 13845.6 | 1601.7 | 0.0 | 20982.8 | 20164.6 | 818.2 | 0.0 | 21355.9 | 20245.7 | 1110.2 | 0.0 | 18390.3 | 16168.7 | 2221.6 | 0.0 |
| Solovievsk | 73.9 | 29.2 | 44.7 | 0.0 | 48.5 | 17.2 | 31.3 | 0.0 | 46.1 | 24.7 | 21.4 | 0.0 | 37.0 | 28.0 | 9.0 | 0.0 | 63.9 | 29.9 | 34.0 | 0.0 |

*Note: 2.0 thousand ton - transit via SLB, 0.5 thousand ton - transit via Primorye-1

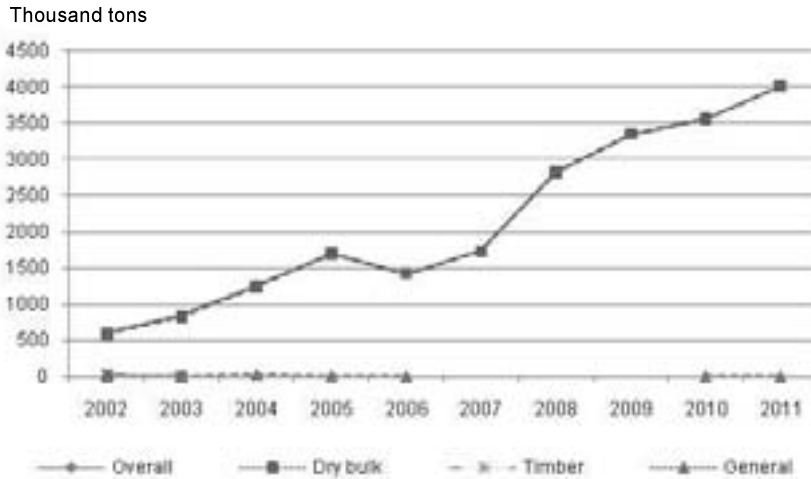
Source: Estimated by FEMRI on the basis of official sources <http://www.rosgranitsa.ru>; <http://www.customs.ru>; <http://www.gks.ru>; <http://www.mintrans.ru>, etc.

Table 4 Rail BCP passenger turnovers: 2007-2011 thousand passengers

| BCP | 2007 | | | 2008 | | | 2009 | | | 2010 | | | 2011 | | | | | | | |
|-------------|---------|-----------|-----------|---------|---------|-----------|-----------|---------|---------|-----------|-----------|---------|---------|-----------|-----------|---------|-------|-------|-------|---|
| | Overall | Out-going | In-coming | Transit | Overall | Out-going | In-coming | Transit | Overall | Out-going | In-coming | Transit | Overall | Out-going | In-coming | Transit | | | | |
| Khasan | 15.0 | 6.9 | 8.1 | - | 15.5 | 7.3 | 8.2 | - | 14.0 | 6.6 | 7.4 | - | 15.0 | 6.7 | 8.3 | - | 15.2 | 8.0 | 7.2 | - |
| Pogranichny | 578.3 | 210.3 | 368.0 | - | 699.6 | 254.5 | 445.1 | - | 117.9 | 46.5 | 71.4 | - | 162.4 | 70.0 | 92.4 | - | 263.9 | 119.3 | 144.6 | - |
| Zabaykalsk | 93.0 | 44.9 | 48.1 | - | 85.4 | 39.8 | 45.6 | - | 52.7 | 24.3 | 28.4 | - | 55.4 | 25.6 | 29.8 | - | 47.6 | 24.4 | 23.2 | - |
| Solovievsk | 1.37 | 0.68 | 0.69 | - | 0.82 | 0.41 | 0.41 | - | 1.10 | 0.55 | 0.55 | - | 0.79 | 0.39 | 0.40 | - | 0.92 | 0.46 | 0.46 | - |

Source: Estimated by FEMRI on the basis of official sources <http://www.rosgranitsa.ru>; <http://www.customs.ru>; <http://www.gks.ru>; <http://www.mintrans.ru>, etc.

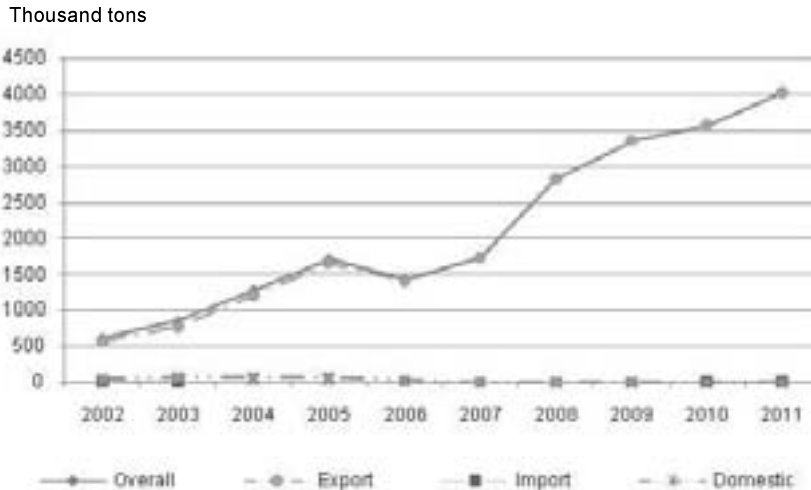
Figure 4 Seaport Posiet turnover (nomenclature)



Posiet: main cargo is coal. Growth is supported by development of port capacities. Annual average growth rates in 9 years – 23.2% in 5 years – 23.0% Timber and general cargo handling volume fell to zero (according to owner’s plan).

Source: FEMRI

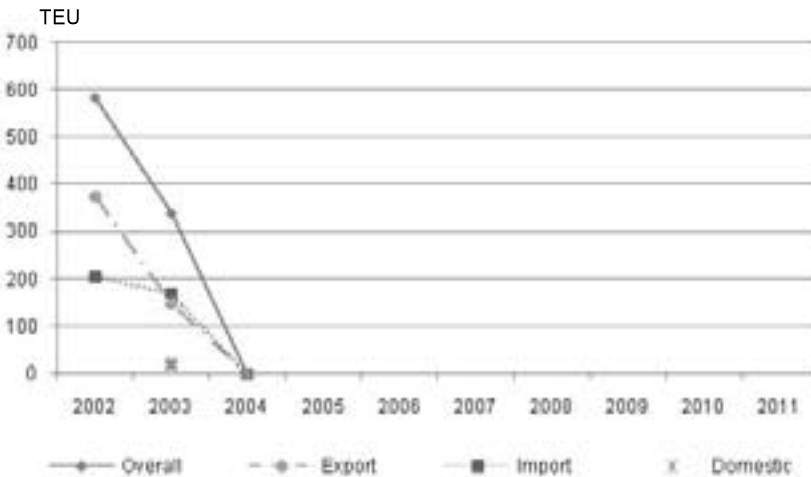
Figure 5 Seaport Posiet turnover (cargo flow directions)



Posiet: main cargo flow is export.

Source: FEMRI

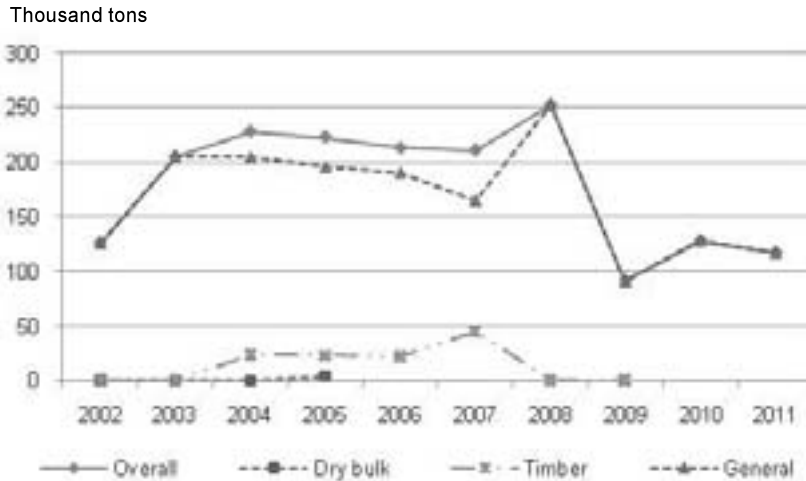
Figure 6 Seaport Posiet container turnover



Posiet: container handling volume fell to zero.

Source: FEMRI

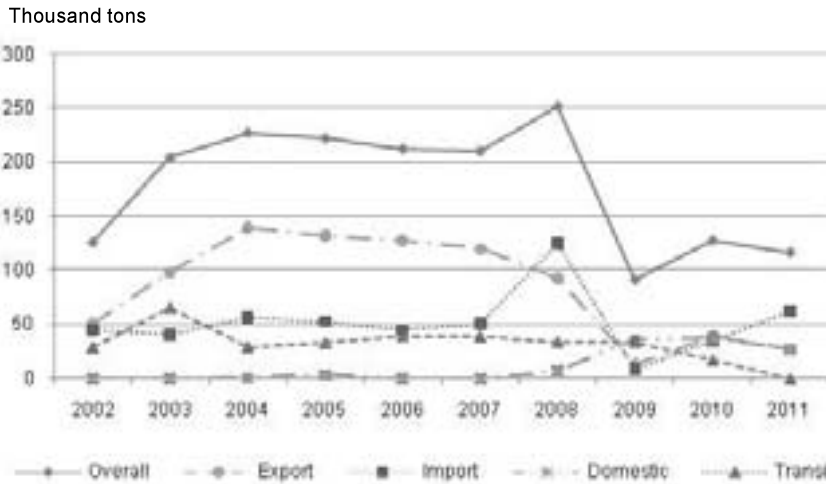
Figure 7 Seaport Zarubino turnover (nomenclature)



Zarubino: main cargo is general cargoes (metals, machinery and equipment, containers). Timber and dry bulk handling volume fell to zero. Port development is in unstable situation. Growth rates are closely to zero.

Source: FEMRI

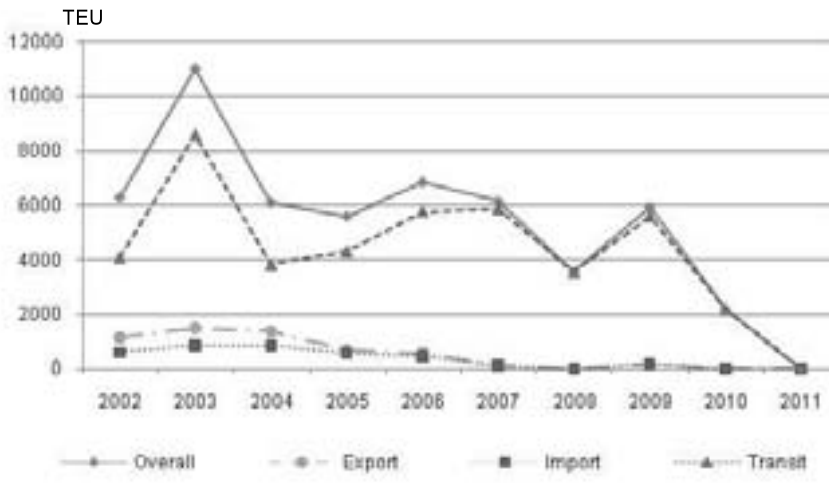
Figure 8 Seaport Zarubino turnover (cargo flow directions)



Zarubino: port handles cargo flows moving in all directions with chaotic trends - the port is looking for its own niche. Growth rates are close to zero. This port reacted to world financial crisis (downturn in 2009) more then other ports in Primorye.

Source: FEMRI

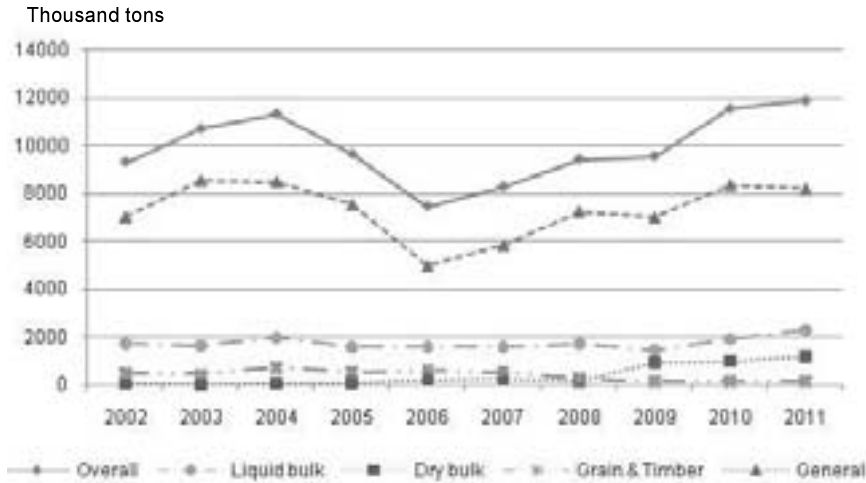
Figure 9 Seaport Zarubino container turnover



Zarubino: having no modern container equipment, port is more adapted for Ro-Ro technologies. Its main cargo base segment is transit. Growth rates are negative, but it will change after port modernization and development of its land and sea infrastructure (including sea lines).

Source: FEMRI

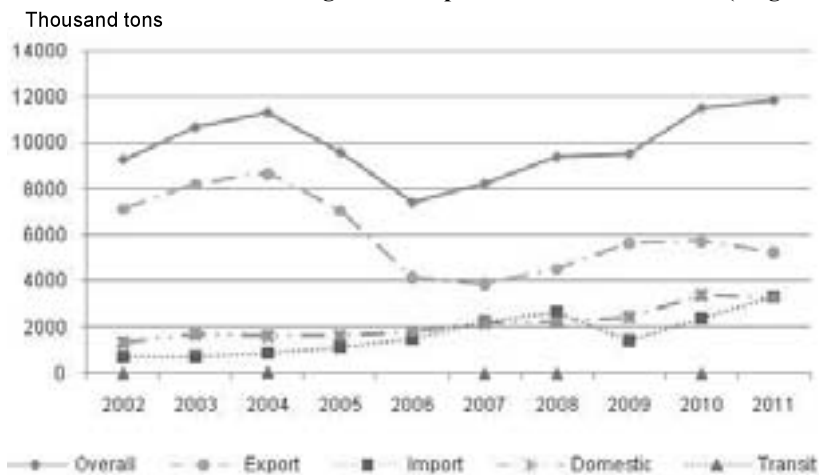
Figure 10 Seaport Vladivostok turnover (nomenclature)



Vladivostok: main cargo - the general cargoes (one half is containers). Turnovers decrease in 2005-2006 occurred with market change and rail tariffs growth that led decreasing of metals export.
Annual average growth rates
in 9 years – 2.7%
in 5 years – 9.6%

Source: FEMRI

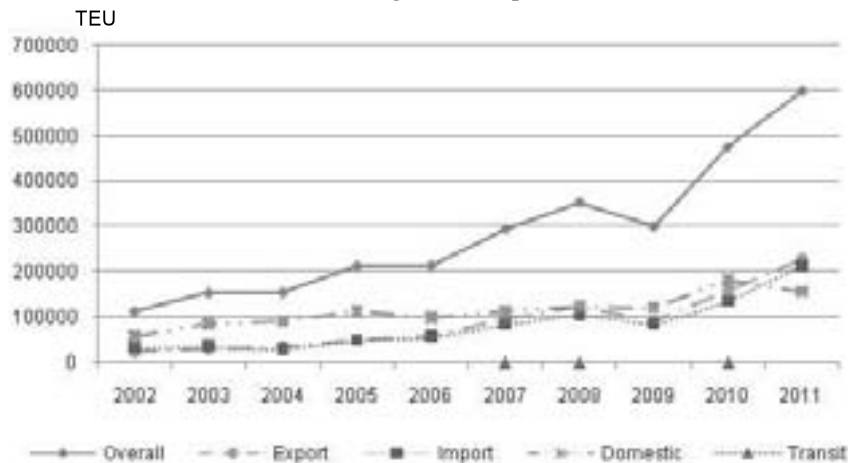
Figure 11 Seaport Vladivostok turnover (cargo flow directions)



Vladivostok: main direction is export (growth is closely to a zero), but import and domestic are increasing with high rates.

Source: FEMRI

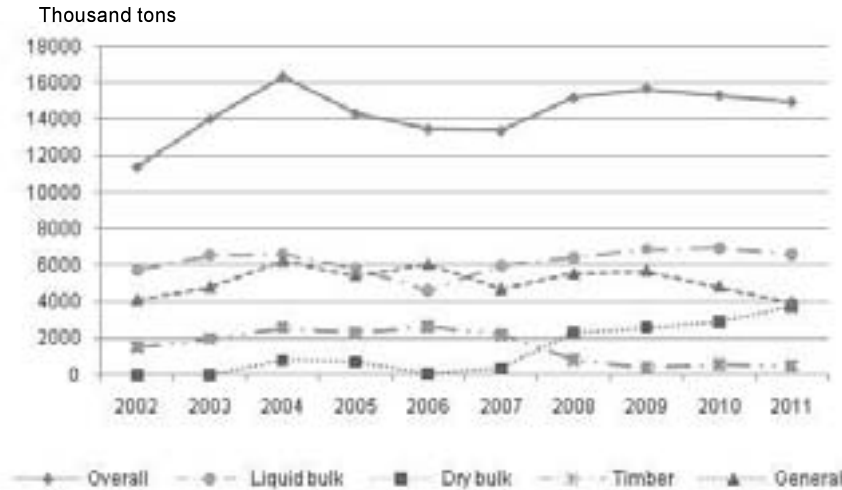
Figure 12 Seaport Vladivostok container turnover



Vladivostok: container turnover growth rates are high in all directions, including import. Fall in 2009 occurred owing to world crisis. Annual average growth rates
in 9 years – 20.3%
in 5 years – 22.8%

Source: FEMRI

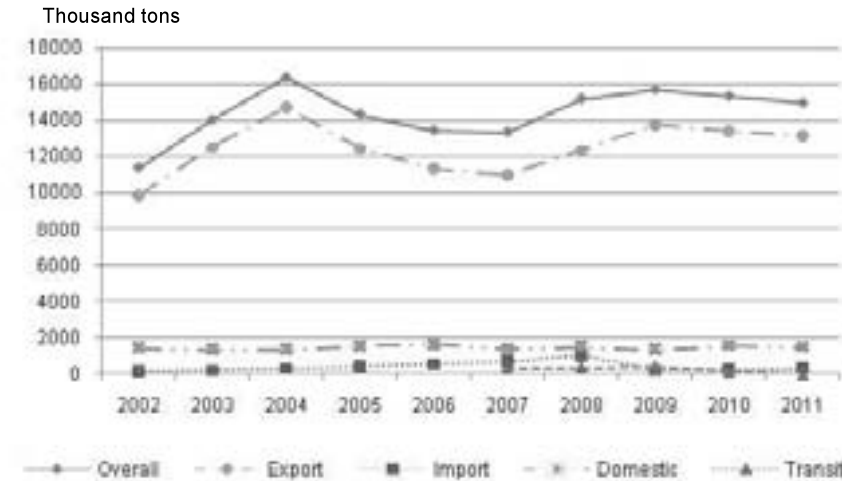
Figure 13 Seaport Nakhodka turnover (nomenclature)



Nakhodka: main cargoes - liquid bulk (oil products) and general (metals). Timber decreases occurred with the customs duties growth. Dry bulk (coal) grows according to market condition. Annual average growth rates in 9 years – 3.1% in 5 years – 2.1%

Source: FEMRI

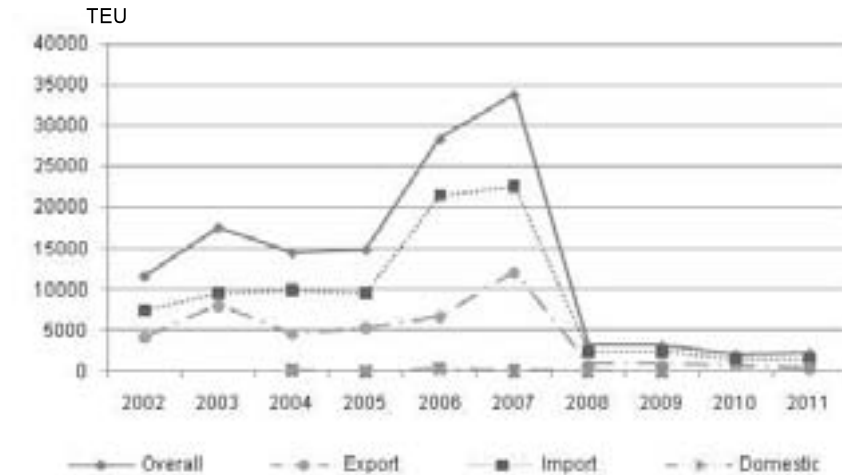
Figure 14 Seaport Nakhodka turnover (cargo flow directions)



Nakhodka: main cargo flow direction is export. Decrease in 2005-2006-2007 is connected with change in domestic transport market, world commodity markets and export policy (customs duty).

Source: FEMRI

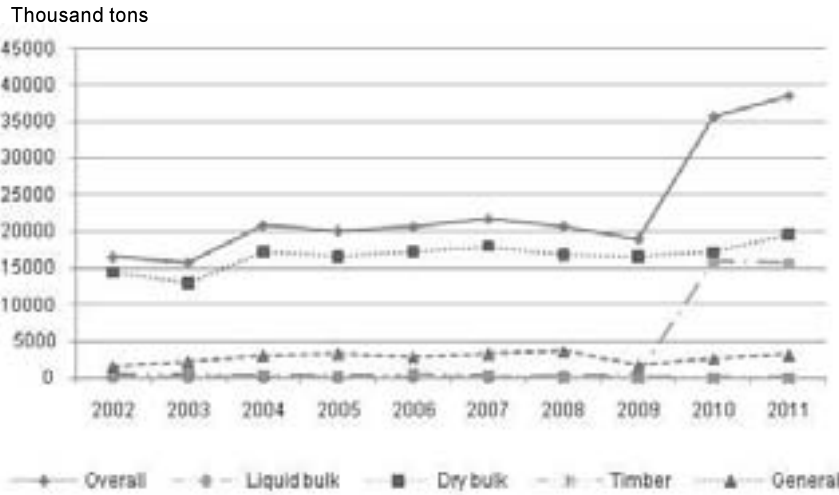
Figure 15 Seaport Nakhodka container turnover



Nakhodka: port loses competitiveness in the container market, container lines (to Vietnam etc) cease operations, and container volumes (to Japan etc) are decreasing. Port needs modernization and development of its transport infrastructure.

Source: FEMRI

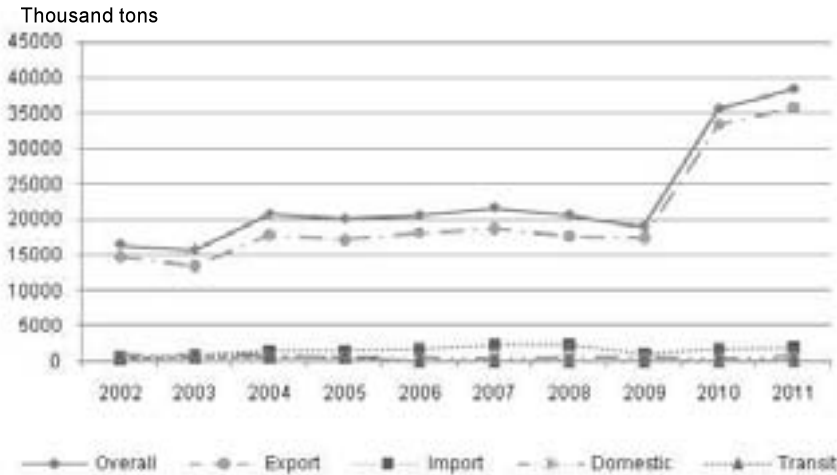
Figure 16 Seaport Vostochny turnover (nomenclature)



Vostochny: main cargoes – dry bulk (coal), liquid bulk (oil) and general (containers). Timber decreases occurred with the customs duties growth. Oil grows with start of work of new oil terminal in 2010. Coal grows according to market condition. Annual average growth rates in 9 years – 9.9%, in 5 years – 13.3%.

Source: FEMRI

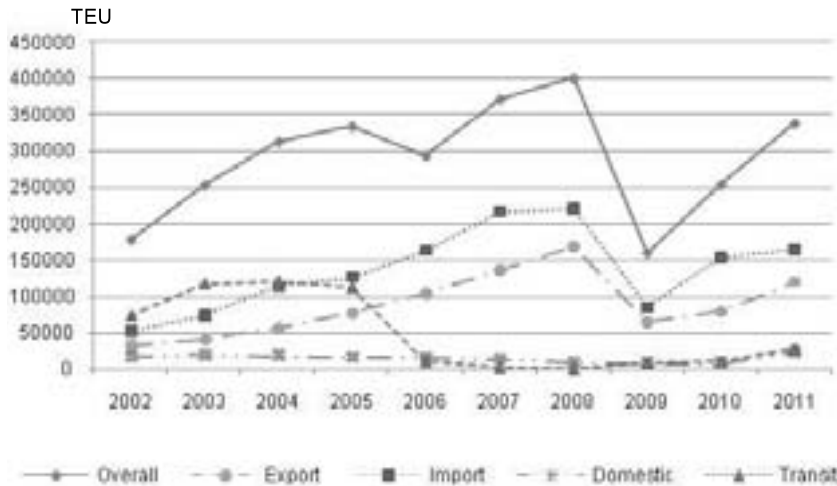
Figure 17 Seaport Vostochny turnover (cargo flow directions)



Vostochny: main cargo flow direction is export.

Source: FEMRI

Figure 18 Seaport Vostochny container turnover



Vostochny: fall in 2006 due to transit reduction and in 2009 due to world crisis. In last 2 years container growth rates are high in all directions, including transit. Annual average growth rates in 9 years – 7.4% in 2 years – 16.2%

Source: FEMRI

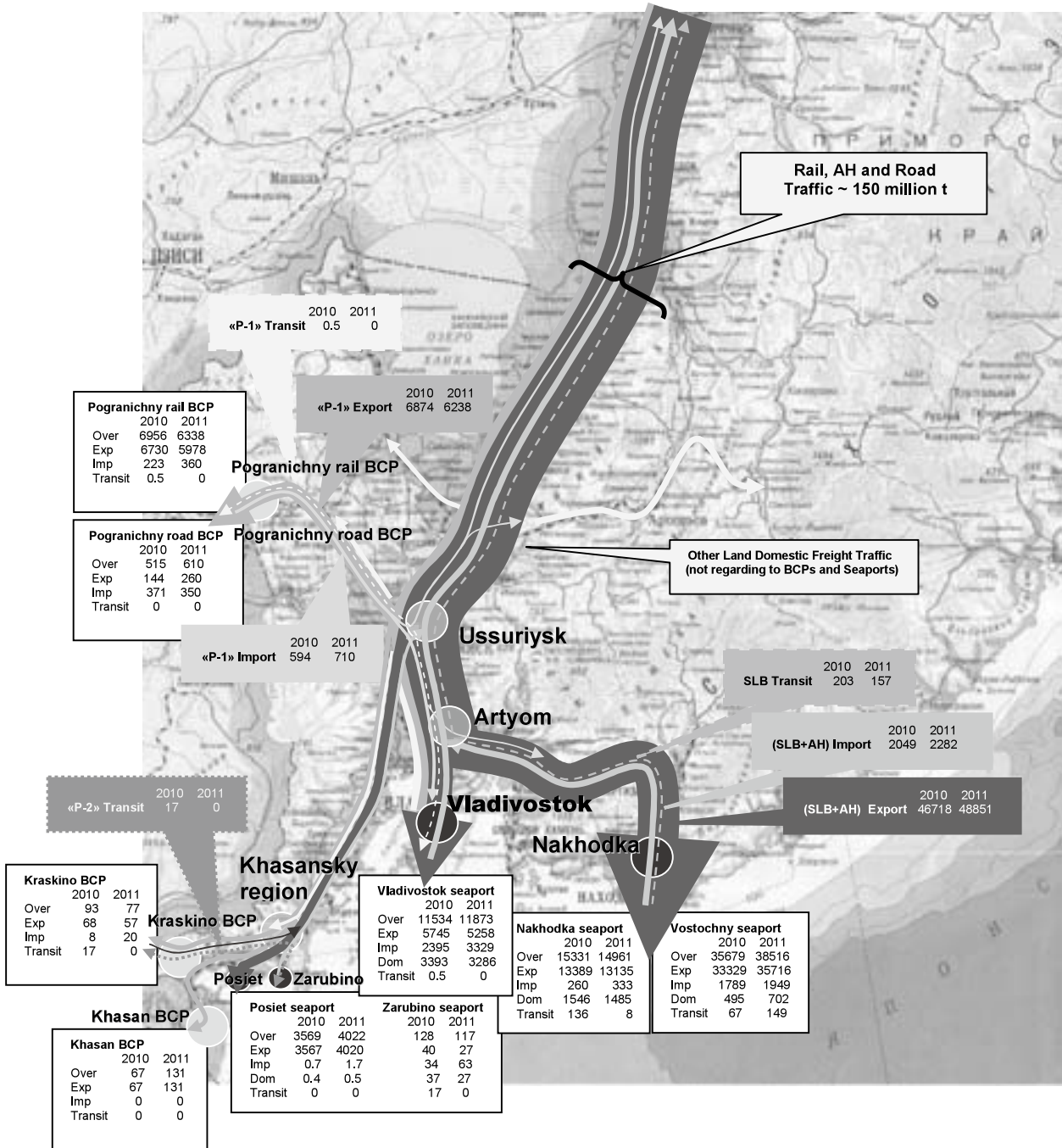
Table 5 Seaports Container turnover (structure): 2010-2011

Thousand ton (TT)/year or TEU/year or Units/year

| Seaport | 2010 | | | | | 2011 | | | | |
|--------------------------------|---------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|---------------|--------------|
| | Overall | Export | Import | Domestic | Transit | Overall | Export | Import | Domestic | Transit |
| Zarubino, TT | 17.1 | - | - | - | 17.1 | - | - | - | - | - |
| Zarubino, TEU | 2178 | - | - | - | 2178 | - | - | - | - | - |
| Loaded dry container, TT | 16.4 | - | - | - | 16.4 | - | - | - | - | - |
| TEU | 1856 | - | - | - | 1856 | - | - | - | - | - |
| 20' (units) | 1696 | - | - | - | 1696 | - | - | - | - | - |
| 40' (units) | 80 | - | - | - | 80 | - | - | - | - | - |
| Empty containers, overall, TT | 0.7 | - | - | - | 0.7 | - | - | - | - | - |
| TEU | 322 | - | - | - | 322 | - | - | - | - | - |
| Empty dry containers, TT | 0.7 | - | - | - | 0.7 | - | - | - | - | - |
| TEU | 322 | - | - | - | 322 | - | - | - | - | - |
| 20' (units) | 306 | - | - | - | 306 | - | - | - | - | - |
| 40' (units) | 8 | - | - | - | 8 | - | - | - | - | - |
| Vladivostok, TT | 3674.8 | 575.6 | 1457.9 | 1640.8 | 0.5 | 4448.0 | 811.4 | 2148.0 | 1488.6 | - |
| Vladivostok, TEU | 477401 | 159108 | 135786 | 182467 | 40 | 600417 | 228723 | 215856 | 155838 | - |
| Loaded containers, overall, TT | 3205.9 | 279.4 | 1455.7 | 1470.3 | 0.5 | 3875.9 | 386.9 | 2145.6 | 1343.4 | - |
| TEU | 258054 | 18797 | 135249 | 103968 | 40 | 332831 | 26737 | 214746 | 91348 | - |
| Loaded dry container, TT | 2747.3 | 269.4 | 1245.5 | 1231.9 | 0.5 | 3371.4 | 379.5 | 1887.0 | 1104.9 | - |
| TEU | 225443 | 18190 | 117829 | 89384 | 40 | 296631 | 26195 | 193785 | 76651 | - |
| 20' (units) | 85411 | 3424 | 41503 | 40444 | 40 | 102629 | 2893 | 62475 | 37261 | - |
| 40' (units) | 70016 | 7383 | 38163 | 24470 | - | 97001 | 11651 | 65655 | 19695 | - |
| Ref containers, TT | 458.6 | 10.0 | 210.2 | 238.4 | - | 504.5 | 7.4 | 258.6 | 238.5 | - |
| TEU | 32611 | 607 | 17420 | 14584 | - | 36200 | 542 | 20961 | 14697 | - |
| 20' (units) | 4611 | 175 | 724 | 3712 | - | 4270 | 136 | 423 | 3711 | - |
| 40' (units) | 14000 | 216 | 8348 | 5436 | - | 15965 | 203 | 10269 | 5493 | - |
| Empty containers, overall, TT | 468.9 | 296.2 | 2.2 | 170.5 | - | 572.1 | 424.5 | 2.4 | 145.2 | - |
| TEU | 219347 | 140311 | 537 | 78499 | - | 267586 | 201986 | 1110 | 64490 | - |
| Empty dry containers, TT | 419.8 | 261.7 | 0.8 | 157.3 | - | 512.8 | 378.5 | 1.4 | 132.9 | - |
| TEU | 198745 | 124521 | 350 | 73874 | - | 241637 | 181153 | 612 | 59872 | - |
| 20' (units) | 74705 | 42913 | 222 | 31570 | - | 86967 | 60579 | 512 | 25876 | - |
| 40' (units) | 62020 | 40804 | 64 | 21152 | - | 77335 | 60287 | 50 | 16998 | - |
| Empty ref containers, TT | 49.1 | 34.5 | 1.4 | 13.2 | - | 59.3 | 46.0 | 1.0 | 12.3 | - |
| TEU | 20602 | 15790 | 187 | 4625 | - | 25949 | 20833 | 498 | 4618 | - |
| 20' (units) | 1550 | 306 | 71 | 1173 | - | 1433 | 359 | 58 | 1016 | - |
| 40' (units) | 9526 | 7742 | 58 | 1726 | - | 12258 | 10237 | 220 | 1801 | - |
| Nakhodka, TT | 9.9 | 1.3 | 8.6 | - | - | 14.4 | 0.5 | 7.9 | 6.0 | - |
| Nakhodka, TEU | 1998 | 581 | 1417 | - | - | 2140 | 253 | 1418 | 469 | - |
| Loaded containers, overall, TT | 7.8 | 0.0 | 7.8 | - | - | 12.8 | - | 7.3 | 5.5 | - |
| TEU | 1092 | 1 | 1091 | - | - | 1430 | - | 1190 | 240 | - |
| Loaded dry container, TT | 7.8 | - | 7.8 | - | - | 12.8 | - | 7.3 | 5.5 | - |
| TEU | 1092 | 1 | 1091 | - | - | 1430 | - | 1190 | 240 | - |
| 20' (units) | 480 | 1 | 479 | - | - | 396 | - | 270 | 126 | - |
| 40' (units) | 306 | - | 306 | - | - | 517 | - | 460 | 57 | - |
| Empty containers, overall, TT | 2.1 | 1.3 | 0.8 | - | - | 1.6 | 0.5 | 0.6 | 0.5 | - |
| TEU | 906 | 580 | 326 | - | - | 710 | 253 | 228 | 229 | - |
| Empty dry containers, TT | 2.1 | 1.3 | 0.8 | - | - | 1.6 | 0.5 | 0.6 | 0.5 | - |
| TEU | 906 | 580 | 326 | - | - | 710 | 253 | 228 | 229 | - |
| 20' (units) | 28 | 28 | - | - | - | 140 | 21 | - | 119 | - |
| 40' (units) | 439 | 276 | 163 | - | - | 285 | 116 | 114 | 55 | - |
| Vostochny, TT | 2634.7 | 702.2 | 1788.4 | 77.5 | 66.6 | 3140.6 | 847.0 | 1944.1 | 200.7 | 148.8 |
| Vostochny, TEU | 254344 | 80465 | 153785 | 8836 | 11258 | 338752 | 120818 | 164918 | 24069 | 28947 |
| Loaded containers, overall, TT | 2524.5 | 611.6 | 1788.1 | 68.2 | 56.6 | 2929.2 | 683.5 | 1943.8 | 175.4 | 126.5 |
| TEU | 200824 | 36418 | 153698 | 4549 | 6159 | 235430 | 41290 | 164777 | 11866 | 17497 |
| Loaded dry container, TT | 2512.4 | 610.7 | 1783.3 | 61.8 | 56.6 | 2916.6 | 681.9 | 1937.6 | 170.6 | 126.5 |
| TEU | 200014 | 36357 | 153369 | 4129 | 6159 | 234569 | 41178 | 164360 | 11534 | 17497 |
| 20' (units) | 62872 | 11575 | 48129 | 2791 | 377 | 71895 | 10694 | 54196 | 6474 | 531 |
| 40' (units) | 68571 | 12391 | 52620 | 669 | 2891 | 81337 | 15242 | 55082 | 2530 | 8483 |
| Ref containers, TT | 12.1 | 0.9 | 4.8 | 6.4 | - | 12.6 | 1.6 | 6.2 | 4.8 | - |
| TEU | 810 | 61 | 329 | 420 | - | 861 | 112 | 417 | 332 | - |
| 20' (units) | 80 | 1 | 31 | 48 | - | 57 | - | 45 | 12 | - |
| 40' (units) | 365 | 30 | 149 | 186 | - | 402 | 56 | 186 | 160 | - |
| Empty containers, overall, TT | 110.2 | 90.6 | 0.3 | 9.3 | 10.0 | 211.3 | 163.4 | 0.3 | 25.3 | 22.3 |
| TEU | 53520 | 44047 | 87 | 4287 | 5099 | 103286 | 79528 | 141 | 12167 | 11450 |
| Empty dry containers, TT | 109.3 | 89.7 | 0.3 | 9.3 | 10.0 | 210.1 | 162.2 | 0.3 | 25.3 | 22.3 |
| TEU | 53145 | 43672 | 87 | 4287 | 5099 | 102790 | 79040 | 141 | 12159 | 11450 |
| 20' (units) | 18167 | 15906 | 87 | 2173 | 1 | 33404 | 27280 | 49 | 6057 | 18 |
| 40' (units) | 17489 | 13883 | - | 1057 | 2549 | 34693 | 25880 | 46 | 3051 | 5716 |
| Empty ref containers, TT | 0.9 | 0.9 | - | - | - | 1.2 | 1.2 | - | - | - |
| TEU | 375 | 375 | - | - | - | 496 | 488 | - | 8 | - |
| 20' (units) | 15 | 15 | - | - | - | 44 | 36 | - | 8 | - |
| 40' (units) | 180 | 180 | - | - | - | 226 | 226 | - | - | - |

Source: FEMRI

Figure 19 Freight Traffic (rail + AH and road, thousand ton in 2010, 2011) along corridor stretches in Primorye (Zone 1)



Source: FEMRI

2.2.3 Traffic along corridor stretches (domestic and international)

Cargo flows (rounded traffic volumes by rail and road/highway in thousand tons, 2010-2011) along corridor stretches being considered are shown on the figure below.

Container trains. Regular express block trains connecting ports of Primorye Region with the western part of Russia depart from three near-port stations - Vladivostok (Vladivostok port), Nakhodka-Vostochnaya (Vostochny port), Rybniki, Nakhodka (Nakhodka port). In most cases, these trains are operated on routes delivering export-import

cargoes arriving in Primorsky Region ports from Japan, ROK and China. Of land BCPs, such trains pass only via Zabaykalsk (Table 6).

Table 6 Block trains routes

| Departure station | Destination station | Company | Note |
|--|----------------------------|-----------------|--------------------------------|
| Departure or destination is port railway station | | | |
| Nakhodka-Vostochnaya | Abyk (Uzbekistan) | TransContainer | Transit |
| Nakhodka-Vostochnaya | Brest (Belorussia) | TransContainer | Transit |
| Nakhodka-Vostochnaya | Buslovskaya | TransContainer | Transit |
| Nakhodka-Vostochnaya | Lokot | TransContainer | Transit |
| Ust-Ilimsk | Vladivostok | TransContainer | Export |
| Kamyshta | Nakhodka-Vostochnaya | TransContainer | Export |
| Bratsk | Vladivostok | TransContainer | Export |
| Nakhodka-Vostochnaya | Moscow* | TransContainer | Import |
| Nakhodka-Vostochnaya | Martsevo | TransContainer | Import |
| Nakhodka-Vostochnaya | Vojoi | TransContainer | Import |
| Nakhodka-Vostochnaya | Krugloe Pole, Tikhonovo | TransContainer | Import |
| Nakhodka-Vostochnaya | Nizhnekamsk | TransContainer | Import |
| Nakhodka-Vostochnaya | Sverdlovsk (Yekaterinburg) | TransContainer | Import |
| Nakhodka-Vostochnaya | | TransContainer | Import |
| Nakhodka-Vostochnaya | Cherkessk | TransContainer | Import |
| Nakhodka-Vostochnaya | Silikatnaya | Russkaya Troyka | Import |
| Moscow | Vladivostok | Russkaya Troyka | Export-import |
| Moscow | Vladivostok | FESCO | Export-import |
| Moscow | Kleshchikha (Novosibirsk) | FESCO | Export-import |
| Rybniki (Nakhodka) | Moscow | DVTG | Export-import |
| Departure or destination is railway station | | | |
| Beijing | Moscow | TransContainer | Import, via Zabaykalsk |
| Zabaykalsk | Brest (Belorussia) | TransContainer | Transit |
| Zabaykalsk | Buslovskaya | TransContainer | Transit |
| Zabaykalsk | Chop (Ukraine) | TransContainer | Via Zernovo, Export -import |
| Zabaykalsk | Martsevo | TransContainer | Export-import |
| Zabaykalsk | Moscow* | TransContainer | Export-import |

Note: *Kuntsevo 2, Silikatnaya, Tuchkovo stations

Sources: www.trcont.ru, www.rus-troyka.com, www.fesco.ru, www.dvtg.ru.

Cargo and passenger shipping lines in seaports: Posiet, Zarubino, Vladivostok, Nakhodka, Vostochny. Line and tramp shipping is developed in GTI region. Tramp shipping handles a significant portion of traffic volume. Line shipping operating via Primorsky Region ports is represented by freight (container, ro-ro), freight and passenger (ferryboat) and passenger (cruising) lines (Table 7-8, Figure 20-21).

Container lines operating via Far Eastern ports are represented both by Russian and foreign carrier companies, with a number of joint services. Main lines are connected

with Asia-Pacific countries.

International cruise lines¹. Vladivostok is included in rotation ports of the following cruise lines by Princess Cruise Line, Ltd.:

- 23 day Alaska & Far East Grand Adventure from Vancouver to Beijing;
- 19 night Alaska & Far East: Tianjin to Vancouver;
- 16 day Alaska & Far East From Whittier to Beijing;
- 32 day Alaska, Far East & China Grand Adventure from Whittier to Bangkok.

¹ Source: www.princess.co

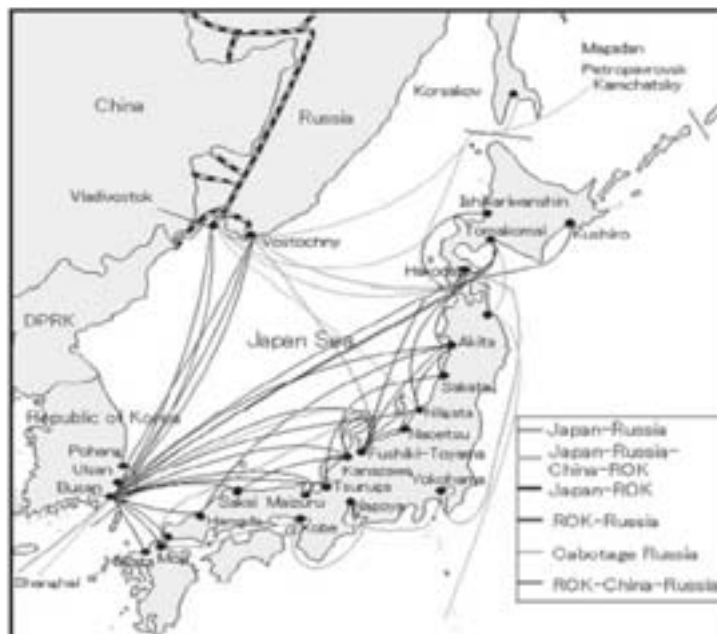
Table 7 Container shipping lines via Vladivostok, Vostochny, Nakhodka, Zarubino ports

| Direction | Name | Line (ports of destination) | Company |
|----------------------------------|---|--|---|
| Domestic | FPKL* | Vladivostok - Petropavlovsk-Kamchatsky | FESCO, SASCO |
| | FML* | Vladivostok - Magadan | FESCO, SASCO |
| | No name | Vladivostok/Vostochny - Petropavlovsk-Kamchatsky | Kamchatka Lines |
| | No name | Vladivostok/Vostochny - Korsakov | Kamchatka Lines |
| | FKDL* | Vladivostok - Korsakov | FESCO, SASCO |
| | FADL* | Vladivostok - ports of Chukotka | FESCO |
| | No name | Vostochny - ports of Chukotka, Petropavlovsk-Kamchatsky | Transportnaya Expeditsiya Plus |
| Republic of Korea | KSDL* | Vladivostok/Vostochny - Masan - Pusan | FESCO |
| | No name | Nakhodka - Pusan (Container and Ro-Ro) | SASCO |
| | APL ERX: Eastern Russia Express | Vladivostok/ Vostochny - Pusan | APL |
| | Maersk line | | Maersk Sealand |
| | KMTC line | | Korea Marine Transport |
| | No name | Vladivostok/Vostochny - Donghae - Pusan | Sinokor Merchant Marine Co. |
| | No name | Vostochny - Pusan | Rusam Shipping Co. |
| No name | Vostochny - Pohang - Pusan | CK Line Co., Pan Continental Shipping Co., Korea Marine Transport | |
| Japan | JSTL | Vostochny - ports of Japan (Kobe, Nagoya, Yokohama, Moji, Toyama) | FESCO (with O.S.K Lines and Transsib rail line) |
| | No name | Zarubino - Niigata - the part of transit container service Niigata - Zarubino - Hunchun | Primoravtotrans (Primortrans Japan) |
| | Japan Nakhodka Line | Nakhodka - Yokohama - Nagoya - Osaka - Moji | Interasia Maritime |
| China | FCDL | Vladivostok/Vostochny - Hong Kong - Ningbo - Shanghai | FESCO |
| | FCDL-North | Vladivostok/Vostochny - Xingang - Qingdao - Xiamen | FESCO |
| | No name | Vladivostok/Vostochny - Shanghai | SASCO |
| | No name | Vladivostok/Vostochny - Pusan - ports of China (Dalian, Shanghai, Hong Kong, Qingdao etc.) | APL |
| | | | CMA CGM |
| | | | Sinokor Merchant Marine Co. |
| No name | Vostochny - Pusan - Shanghai - Ningbo - Xiamen - Cniwan | Maersk Sealand | |
| Another (Vietnam, North America) | Zim container service | Vostochny - Pusan - ports of Asia | Zim |
| | FVDL | Vladivostok - Shanghai - Ho Chi Minh | FESCO |
| | Taiwan | Vladivostok/ Vostochny - Pusan - Taiwan | FESCO |
| | USWC | ports of North America (West coast) - Pusan - Vladivostok/ Vostochny - Korsakov/Kholmsk - Magadan - Petropavlovsk-Kamchatsky | Joint line of FESCO and American companies (with rail line to Kazakhstan) |
| | USEC/USGC | ports of North America (East coast) - Pusan - Vladivostok/ Vostochny - Korsakov/Kholmsk - Magadan - Petropavlovsk-Kamchatsky | Joint line of FESCO and American companies (with rail line to Kazakhstan) |
| | FPL - Fesco Pacific Line | Everett/Seattle - Magadan - Korsakov - Vladivostok - Petropavlovsk-Kamchatsky | Joint line of FESCO and American companies |

Notes:* Name only for FESCO lines, SASCO lines without names;

Sources: www.fesco.ru, www.vntp.ru, www.sasco.ru, www.kamlines.ru, www.maersk.com, www.cma-cgm.com, www.apl.com, www.vscport.ru, www.ncsp.ru, www.fishport.ru, www.seaport-troitsa.ru.

Figure 20 Regular container lines between Japan, ROK and Russia



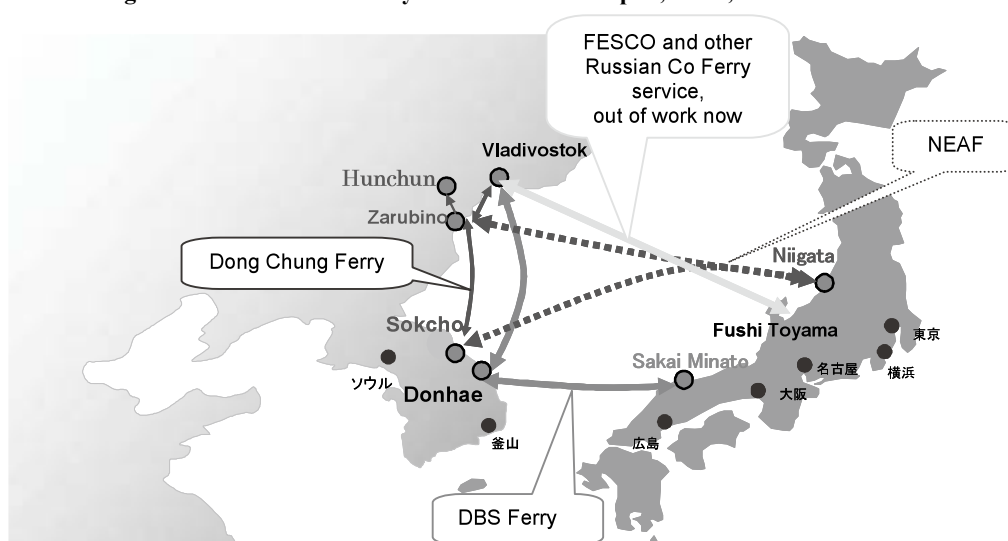
Source: ROTOBO, Japan, 2011

Table 8 Other shipping lines via Vladivostok, Zarubino ports

| Direction | Name | Line (ports of destination) | Company |
|---------------------------|---|--|--|
| Republic of Korea (Japan) | Dong Chung Ferry (2 versions of cargo-passenger ferry line are out of operation) | Vladivostok - Zarubino - Sokcho (reserve direction to Niigata) | Dong Chung Ferry Co.Ltd |
| | | Sokcho, Niigata, Zarubino (and Hunchun) | Northeast Asia Ferry Ltd (NEAF) |
| Japan | Fesco Ro-Ro Line | Vladivostok - port of Japan | FESCO |
| Another Countries | DBS Cruise Ferry Line (cargo-passenger ferry line) | Vladivostok - Donghae - Sakaiminato | DBS Cruise Ferry |
| | No name (Ro-Ro Service) | Vladivostok - Ulsan / Pyongyang - Xingang / Shanghai - Mizushima / Toyohashi / Yokohama - Port Hueneme - SanDiego - Lazaro Cardenas - Grays Harbor | Siem Car Carries A.S. |
| | FPLR - FESCO Pacific Line RORO | Tacoma / Everett / Seattle - Magadan - Korsakov - Vladivostok - Petropavlovsk-Kamchatsky | Eukor Car Carries, Wallenius Wilhelmsen, FESCO |

Sources: www.seaport-troitsa.ru, www.fesco.ru, www.vntp.ru, www.vscport.ru, www.siemshipping.com, www.dbsferry.com.

Figure 21 International Ferry Service between Japan, ROK, Russia and China



Source: ERINA, NEAF, Mr. Ikuo MITSUHASHI. Presentation "Current situation and issues on the joint company called NEAF", Dec. 2010

International road transport operators in Russia are companies having appropriate permission by the Transport Ministry, transit cargoes are carried by companies having a customs carrier status (assigned by the Federal Customs Service²). International carriers may voluntarily join the Association of International Road Carriers. For instance, international transport operators in Primorsky Territory are JSC Favorite-Service, JSC Primoravtotrans, Berkut LLC, JSC Khabarovsk Road Cargo Enterprise (JSC KhGAK), Ussuriyskstroytrans LLC, Avtokolonna 1269 LLC, JSC Firma Mezhtorgtrans and others. There is same situation in other regions.

Land passenger transport in Primorye.

Passenger traffic with China is constituted by three main components: tourist routes (bus travels of tourist groups under cross-border exchange arrangements), regular bus lines and railway transport. The bulk of passenger flows is tourists carried by buses under orders by travel agencies - this traffic has no direct relation to corridor operation, although is partly handled by routes being considered.

Passenger bus lines between cities of China and Primorsky Territory operate the following routes in the Table 9.

Passenger railway communication with China is represented by two operational routes.

Vladivostok - Harbin route is operated by train No. 351/352 Vladivostok - Harbin two times a week. Travel time is up to one and a half days. The route is organized as follows: one wagon from Vladivostok and one wagon from Khabarovsk arrive with different trains in Ussuriysk, get connected and proceed to Chinese border. There they exchange bogies for narrow gauge and proceed to Harbin. The train itself and services are antiquated. RZhD plans to replace this route by Ussuriysk - Harbin route (travel time 26 hours, sleeping cars only).

Grodekovo - Suifenhe route is operated by two trains: Russian train No. 309/310 on Russian gauge tracks (1,520 mm) and Chinese train No. 401/402 on narrow

gauge tracks (1,435 mm). Trains operate every day.

There were plans to launch a new train between Vladivostok and Suifenhe in 2012. The train was to operate every day, under a convenient schedule: departure from Vladivostok at 5:00 a.m., arrival in Suifenhe at 11:00 a.m. (Chinese time), departure from China at 13:10 (Chinese time), arrival in Vladivostok at midnight local time. According to plans, customs procedures will be handled en route without stopover on the border. The train will have a capacity of about 900 people and include ten wagons of which two wagons with post delivery and luggage compartments. The idea of this train was to avoid bogie exchange for narrow gauge tracks. Fare was dependent on wagon class (international, sleeping or seating). The train was tested in December 2011. The parties have not reached necessary agreements yet, and the route is not in use as of this writing.

Passenger railway communication with DPRK is represented by train No. 652/651 Ussuriysk - Tumangan - Pyongyang operated twice a week.

2.3 Infrastructure capacity review

2.3.1 General

At the present time, ideas and strategies on development of the east of Russia are actively updated, with various transport projects being implemented in practice. In this connection, current condition of infrastructure continuously improves. This section contains general information about transport development in areas being considered.

Current condition of the transport infrastructure in the southern part of Primorsky Territory is characterized by its dynamic development toward growth of passenger and cargo flows.

Major transport projects are implemented in accordance with the sub-program "Development of Vladivostok as a center for international cooperation in APR" of the federal target program "Economic and social development of Far East and Trans-Baikal through 2013."

**Table 9 International bus route schedule
(Primorsky Territory)**

| Route No. | Description of route | Frequency, on which days |
|---|---|--------------------------------|
| 805 | Vladivostok - Ussuriysk - Mudanjiang | 1 trip every day |
| 805 | Ussuriysk - Mudanjiang | 1 trip every day |
| 807 | Ussuriysk - Suifenhe | 2 trips every day |
| 808 | Ussuriysk - Dunin | 2 trips every day |
| 810 | Ussuriysk - Hunchun - Yanji | 1 trip every day except Sunday |
| 814 | Ussuriysk - Mishan - Jixi | 1 trip every day except Sunday |
| 812 | Vladivostok - Ussuriysk - Sosnovka - Harbin | 1 trip every day except Sunday |
| 813 | Vladivostok - Ussuriysk - Poltavka - Harbin | 1 trip every day except Sunday |
| Other cross-border routes: Pogranichny - Suifenhe, Kraskino - Hunchun, Markovo - Hulin, Turiy Rog - Mishan | | |

Source: collected by FEMRI on the base of official sources and websites <http://www.airagency.ru/>; <http://www.zolotou.com/>; <http://vladivostok09.ru/>

² Source: www.customs.ru

The following transport projects are in process (being completed):

- Reconstruction of Vladivostok airport;
- Construction of helipad in Russky Island;
- Construction of bridge to Russky Island over Bosfor Vostochny Strait in Vladivostok;
- Construction of bridge to over Golden Horn Bay in Vladivostok;
- Construction of highway "Novyi - De-Friz Peninsula - Sedanka - Patrocl Bay" with trestle bridge "De-Friz - Sedanka";
- Construction of highway "Patrocl Bay - bridge over Golden Hord Bay";
- Reconstruction of motor road Knevichi airport (Vladivostok) - M-60 "Ussuri" federal highway Khabarovsk - Vladivostok;
- Construction of access road to international passenger terminal in airport Knevichi;
- Reconstruction of motor road Knevichi airport - Sanatornaya station in segments of M-60 "Ussuri" highway Khabarovsk - Vladivostok;
- Reconstruction of motor road Knevichi airport - Sanatornaya station in segment of M-60 "Ussuri" highway Khabarovsk - Vladivostok;
- Reconstruction of city thoroughfare with controlled traffic in segment Sanatornaya station - bridge over Golden Horn Bay;
- "Vladivostok Seafront Façade" including port facilities and port infrastructure in Vladivostok and Russky Island, construction and reconstruction of port terminals;
- Organization of intermodal passenger traffic between Vladivostok and Knevichi airport;
- and others;

Other transport projects being implemented or discussed:

- reconstruction of ITC Primorye-1 and Primorye-2 infrastructure including road BCP, segments of roads Ussuriysk - Pogranichny, Razdolnoye - Khasan, Vladivostok - Nakhodka, detour roads around Ussuriysk and Artem;
- planning and organization of through railway route Vladivostok - Ussuriysk - Grodekovo - Suifenhe and further extension to Harbin.

2.3.2 Road network

Road classification in Russia. In accordance with the "Law on Motor Roads..."³, motor road are grouped as follows in terms of importance and ownership:

- Federal motor roads (highways owned by Russian Federation).
- Regional and inter-municipal roads (highways owned by Russian Federation administrative regions).
- Local motor roads (municipality, city district, owned by communities).
- Private motor roads.

Motor roads are divided into public use and non-public

use roads. Federal public use motor roads are:

1) roads (highways) connecting Moscow with capital cities of neighboring countries, with administrative centers (capitals) of Russian Federation regions;

2) roads (highways) included in the list of international motor roads (highways) according to Russian Federation's international agreements.

Toll roads. The "Law on Motor Roads..." envisions use of motor roads, wholly or partially, for payment. The following roads may be toll roads:

(a) roads built by private investors under concession agreements;

(b) federal, regional and local roads built at the cost of respective budgets.

The law makes no limitation for duration of a toll road status period.

When a motor road is announced a toll road, vehicle owners shall be alternatively provided free passage by a public use road whose length shall not exceed that of the toll road by more than three times.

Current condition of roads in Primorsky Territory.

Total length of Primorsky Territory roads exceeds 12,320 km, of which about 60% is public roads (federal - about 5%, regional and local - about 55%) and about 40% is corporate-owned.

Mean weighted traffic intensity rate in Primorsky Territory roads is about 2000 vehicles/day. Highest intensity is observed in federal roads at approaches to Ussuriysk, Artem and Vladivostok. Transport flows reach in these areas 5-8,000 to 20-30,000 and more vehicles/day.

There are 5 automobile border crossings operating in Primorsky Territory: Pogranichny, Poltavka, Kraskino, Turiy Rog, Markovo. 85% of road cargo flows is handled by Pogranichny and Poltavka crossings. Main international transport routes are: Pogranichny - Ussuriysk (113 km), Poltavka - Ussuriysk (76 km). These routes are handled by regional roads (category IV, with only separate segments upgraded to category II) inadequate for prospective cargo traffic volumes.

About three-fourths of regional roads had been built according to out-of-date standards. They had been designed for axle loads of up to 6 tons. Actual loads are 10-12 tons per axle in 13 tons in further prospect. Newly built and upgraded roads comply with current standards having an improved road paving of category II and above, at least 4 lanes (up to 8 lanes in segments with intensive traffic), permissible axle load of 10-13 tons, etc.

Motor road route of ITC Primorye-2 in Primorsky Territory consists of motor roads of regional and local importance (Figure 22). The road from Chinese-Russian border to Kraskino town (30 km) is a two-lane paved highway. It was not upgraded. This road extends to Slavyanka - Kraskino (55 km) road, partly upgraded before and after Slavyanka to its intersection with M-60 Ussuri road (2 to 4 lanes). The 8.3-km-long road from Posiet port to its intersection with Slavyanka - Kraskino road is a two-

³ Federal Law No. 257-FZ of 08.11.2007 "On Motor Roads and Road Activities in Russian Federation."

lane paved highway. It is not used for cargo delivery from/ to Posiet port because this port handles coal. The 12.6-km-long road from Zarubino port to its intersection with Slavyanka - Kraskino road is a two-lane paved highway. It has several overpass railway crossings. The length of existing road from the border to Zarubino is 71 km.

The above roads are capable of accommodating moderate development of international road transport. In the event of intensive development of transit freight and passenger flows (with cargo turnovers growing by an order of magnitude), they will need to be upgraded or a new road will have to be constructed in compliance with modern requirements and prospective loads. Further harmonization of roads and road use procedures is needed for integration of Russian and Chinese roads into a single transport network handling effective, fast, safe and convenient freight and passenger traffic. In addition to harmonization of trans-border procedures, issues of traffic routing and control, traffic rules, design standards, permissible axle loads, overall dimensions, etc., should also be addressed.

Motor road route of ITC Primorye-1 in Primorsky Territory consists of motor roads of federal, regional and local importance (Figure 23).

ITC Primorye-1 is considered as one of NEA prospective routes. It can be integrated into NEA transport

system and is asked-for on the international transport market. ITC Primorye-1 is:

- part of Suifenhe corridor - Route No. 3 (Primorye ports - Harbin - TSR according to Corridor Vision of the NEA Economic Conference);
- part of AH6 road route (Pusan - Belarus border) according to intergovernmental agreement on Asian road network (under UN ESCAP auspices).

At the national level, ITC Primorye-1 is registered in the federal target program "Development of Russian Federation Transport System in 2010-2015" and in "Transport Strategy of Russian Federation through 2030." At the bilateral level, ITC Primorye-1 is included in the Program of Cross-Border Cooperation with China approved in 2009.

Motor road route of ITC Primorye-1 in Primorsky Territory consists of the following motor roads:

- 1) Ussuriysk - Pogranichny - state border;
- 2) Segment of M-60 "Ussuri" highway (Khabarovsk - Vladivostok), from Ussuriysk to turn to Artem, Airport;
- 3) Vladivostok - Nakhodka - Vostochny port.

Total length of this route passing on existing roads of Primorsky Territory is 354 km.

Ussuriysk - Pogranichny - state border is a public motor road of regional importance owned by Primorsky Territory. Its length is 113 km. The road performs the

Figure 22 Master Plan on Khasansky Region: zone with Tumen Transport Corridor segment from the border with China to the ports Zarubino and Posiet (ITC "Primorye-2")

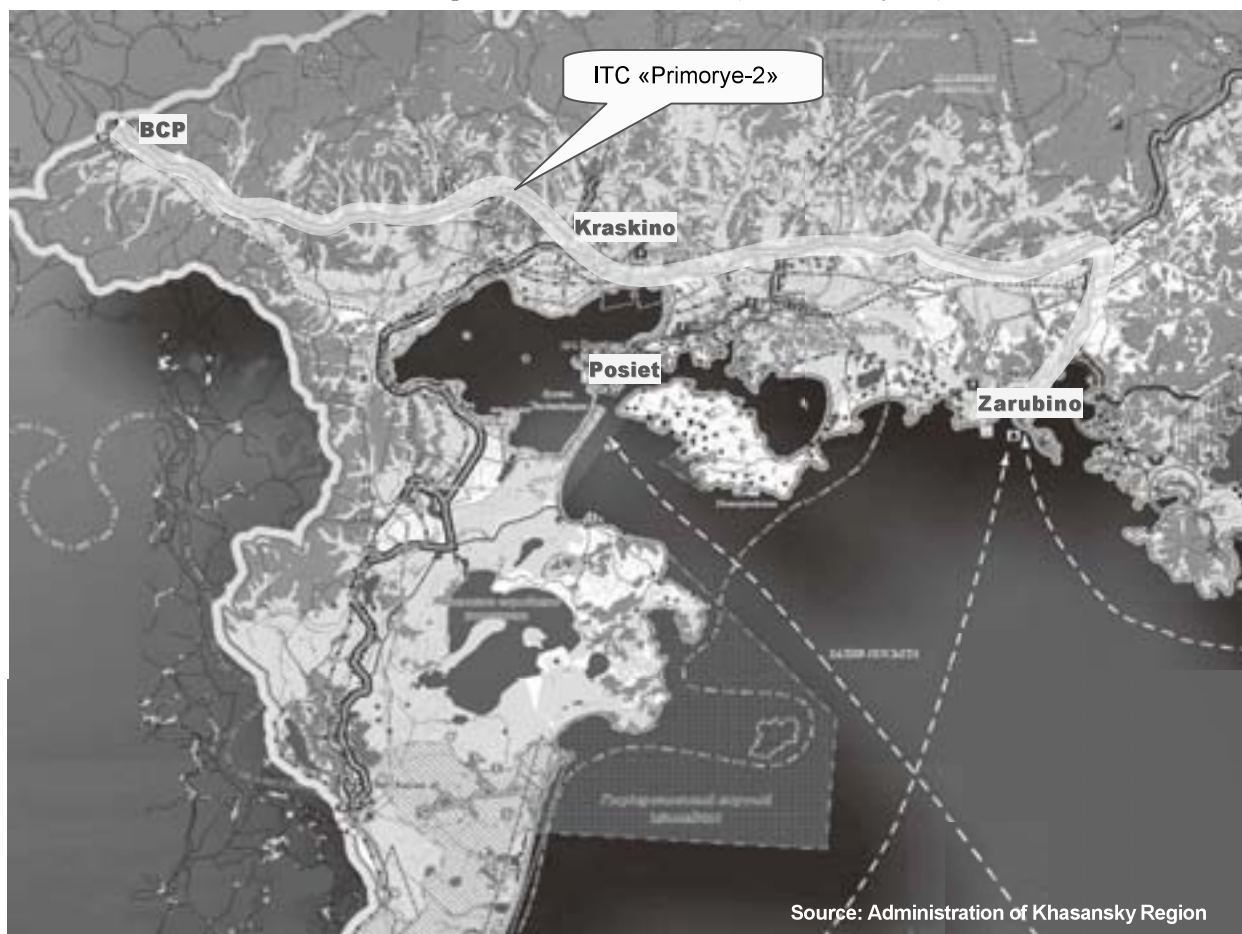


Figure 23 Map of Primorsky Territory with Suifenhe Transport Corridor segment from the border with China to the ports Vladivostok, Nakhodka and Vostochny (ITC "Primorye-1")



Source: Administration of Primorsky Territory, Khabarovsk branch of JSC "GIPRODORNII"

following functions:

- services for international road transport via Pogranichny and Poltavka automobile border crossings;
- support to transport links between near-border areas of Primorsky Territory and federal highway "Ussuri" Khabarovsk - Vladivostok;
- services for transport links of communities in Pogranichny and Oktyabrsky districts with Ussuriysk.

The road is connected with Ussuriysk - Pogranichny - state border railroad and SLB.

Traffic intensity varies from 1,000 to 12,000 vehicles per day depending on location. The greater portion of traffic is cars (up to 70%). Its disadvantage is that the road passes across communities with a total length of such segments being 16.0 km. The whole road is paved with asphalt concrete; some segments are in poor condition. In general, road condition may be characterized as subject to improvement (reconstruction) for road safety (upgrade projects are handled on a segment by segment basis). As stipulated by the Strategy of Primorsky Territory social and economic development through 2025 (approved on 20 October 2008, No. 324-KZ) this road will be completely upgraded to categories I and II by 2015.

Segment of federal highway Khabarovsk -

Vladivostok (M-60 "Ussuri"). Total length of this segment is 93.5 km. "Ussuri" highway handles Primorsky Territory's road transport links with neighboring regions. "Ussuri" highway is part of AH30 route Ussuriysk - Khabarovsk - Belogorsk - Chita). In accordance with RSFSR governmental decree No. 62 of 24.12.1991 "On Approval of List of Federal Roads in RSFSR" and SNiP 2.05.-85* classification, Khabarovsk - Vladivostok road belongs to trunk federal highways intended for public use. This segment of "Ussuri" highway passes in territory of four municipalities - Mikhailovsky, Ussuriysky, Nadezhdinsky districts and Artem City. "Ussuri" highway is categorized as IV to I depending on segment, with 2 to 4 (upgraded) lanes respectively. Its technical condition needs to be improved; part of the road has been upgraded (including a new detour road around Ussuriysk, etc.).

Vladivostok - Nakhodka - Vostochny port. This road is 168.5 km long (of which 140 km is A-188 road from M-60 (Uglovoye) to Nakhodka). Different segments are categorized as IV to II, with 2 to 4 lanes respectively. The road passes across Uglovoye, Artem, Artemovsky, Shtykovo, Shkotovo, Smolyaninovo, Romanovka, Fokino, Domashlino, Dushkino, Volchanets, Novo-Litovsk communities, Nakhodka City. Total length within communities is 48 km. Vladivostok - Nakhodka road handles freight and passenger traffic. There are passenger bus stations in Artem, Shkotovo,

Fokino and Nakhodka, 62 bus stops along the road, 4 rest sites and 17 parking areas. There are filling stations, service stations, roadside catering facilities in communities and 7 highway police posts on the road.

The road is dangerous in some places: it passes across communities and has difficult meandering segments, inadequate roadway width in some places, numerous junctions. Plans on development of this road are included in the federal target program "Economic and social development of Far East and Trans-Baikal through 2013" and regional road program. It is planned that the road should be laid in bypass of communities and ensure smooth traffic at permanent high speed for shortening travel time and improvement of environmental situation in the area. To handle large-tonnage traffic, the road needs to be upgraded and paved with cement concrete material.

There are coal mining, fishing, building materials, woodworking, food processing, forestry, shipbuilding and machine manufacturing enterprises in the zone of influence. This road's zone of influence has shaped itself as a major industrial and transport center. Current traffic intensity rate is 7,000 to 20-30,000 vehicles per day.

The following problems were identified upon analysis of the current condition of ITC Primorye-1 motor roads:

1) The current condition of roads, bridges and roadside infrastructure has been improved (in some segments) but generally is not fully compliant with international traffic

standards. There is demand for through routes by roads of category I-II with state-of-the-art roadside infrastructure.

2) One of main problems is road paving strength and bridge bearing capacity. Another problem is road segments and civil engineering structures not compliant with relevant requirements to public roads. Some road segments pass across communities with speed and throughput capacity limits and obstructions to traffic. Road upgrade works are in process to eliminate these problems but not completed in all route segments.

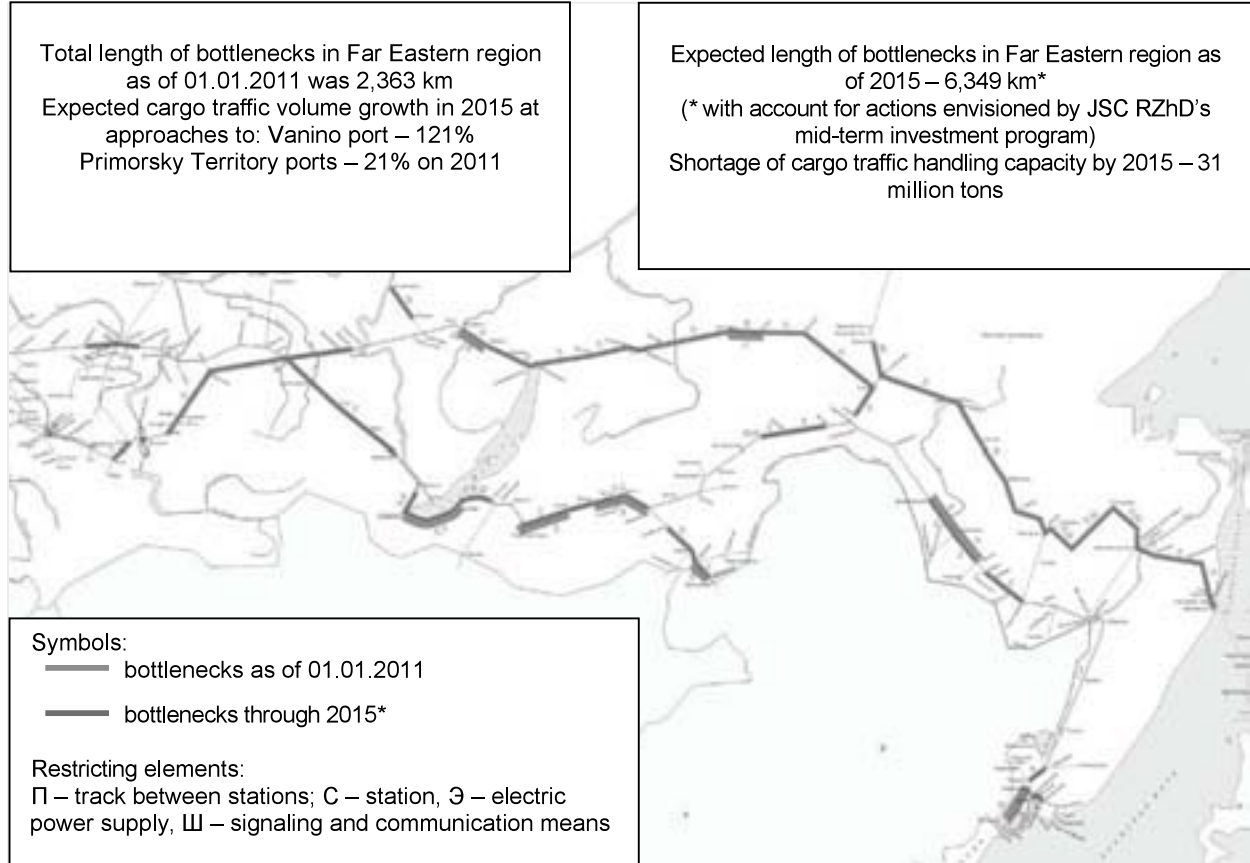
2.3.3 Rail network

Total feature of the east of Russia is bottlenecks in throughput capacity of the Far Eastern region's railway infrastructure (Figure 24).

Current condition of railway network in Primorsky Territory. The main rail line servicing Primorsky Territory is the 519-km-long segment of Trans-Siberian Railroad. Its branch lines are Uglovaya - Nakhodka, Baranovsky - Khasan, Sibirtsevo - Turiy Rog, Ussuriysk - Pogranichny accounting for 65% of total railway network length in Primorsky Territory (Figure 25). With the exception of Moscow-Vladivostok and Ussuriysk - Nakhodka railroad segments, all rail lines are single-track.

As development of foreign economic relations proceeds, railway network of Primorsky Territory becomes increasingly prospective and rapidly developing land transport mode. The main rail lines of Primorsky Territory are:

Figure 24 Bottlenecks in throughput capacity of railway infrastructure in Far Eastern region



Source: presentation by JSC RZhD "On development of railway infrastructure necessary for implementation of territorial and industrial development projects", Senior Vice President V.V. Mikhailov, 02 February 2012

- Trans-Siberian Railroad (TSR or SLB);
- Harbin - Suifenhe - Pogranichny - Ussuriysk line gathering cargo flows from Heilongjiang Province to ports of Vladivostok, Nakhodka, Vostochny or conveying them to TSR;
- Uglovaya - Nakhodka line (with access to Vostochny port);
- Baranovsky - Khasan line leading to DPRK;
- Hunchun - Kamyshovaya line, currently out of use, connecting railway networks of China and southern part of Primorsky Territory and carrying cargo flows from Jilin Province to Zarubino and Posiet ports.

Railway BCP Suifenhe - Pogranichny (Grodekovo) and Tumangan - Khasan handle cross-border goods turnover of Primorsky Territory and Khabarovsk Territory with northeastern provinces of China and DPRK.

JSC RZhD currently investigates opportunities for buildup of railway capacity in the east of Russia including Primorsky Territory (in addition to existing investment programs by RZhD).

Brief characteristic of Pogranichny (Grodekovo) - Ussuriysk - Nakhodka, Vostochny (382 km) route. This route consists of several segments described below.

Ussuriysk - Grodekovo single-track line is 97 km long, not electrified. Grodekovo station is a near-border station handling border and customs cargo inspection

procedures, bogie exchange or transfer of cargoes from 1435 mm gauge to 1520 mm gauge. There are 8 stations on this line including marshalling, intermediate and cargo handling stations. Standardized length for transit freight trains is set at 53 reference wagons.

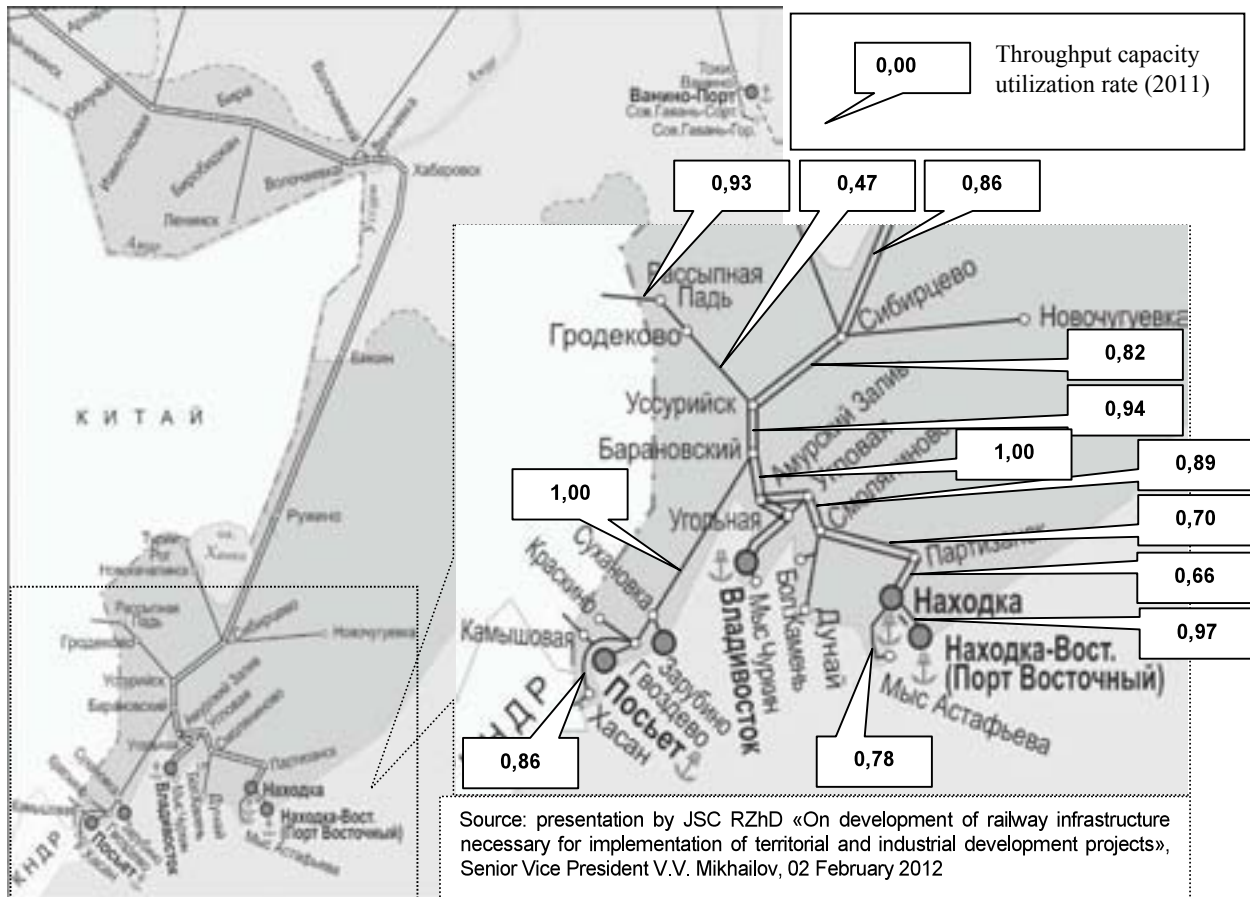
Ussuriysk - Nakhodka double-track line is 244 km long, electrified, is part of main railway route: Kuzbass - Mariyinsk - Krasnoyarsk - Taishet - Irkutsk - Karymskaya - Khabarovsk - Ugolnaya - Far Eastern transport node. There are 25 stations on this line including marshalling, intermediate and cargo handling stations. Standardized length for transit freight trains is set at 71 reference wagons.

Nakhodka - Vostochny Port line is single-track, 22 km long, except Khmylovsky - Nakhodka-Vostochnaya segment (11 km) with double tracks. This line has AC electric traction and equipped with an automatic block signal system. There are 4 stations on this line, with standardized length for transit freight trains set at 71 reference wagons.

Nakhodka - Mys Astafieva line is single-track, 19 km long, electrified, with 6 stations. Standardized length for transit freight trains is set at 71 reference wagons.

Brief characteristic of Hunchun - Zarubino route. A decision on construction of Kamyshovaya - Hunchun railway border crossing between Russia and China was initiated by the administration of Primorsky Territory and Far Eastern Railways Co. in 1992. Currently, this railway

Figure 25 Railway network of Primorsky Territory, its southern part and utilization factor



border crossing is out of operation.

As far as Posiet port is concerned, it should be taken into account that this port is currently specialized in coal handling. Potential for its development is available but limited, and its owners intend to load port capacity with their own cargoes. In this connection, Posiet port gave up priority to Zarubino in development of transit traffic via ITC Primorye-2.

Zarubino port has access to national railway network via Baranovsky - Khasan line. Sukhanovka station on 161 km of this railroad is the junction of a single-track line leading to Zarubino port (Figure 26).

Total length of rail tracks in Zarubino port is 15.5 km, of which 11.0 km is access line from Sukhanovka station and 4.5 km is dockside tracks. This line is not electrified. Permitted outgoing and incoming train weight is 1,000 tons.

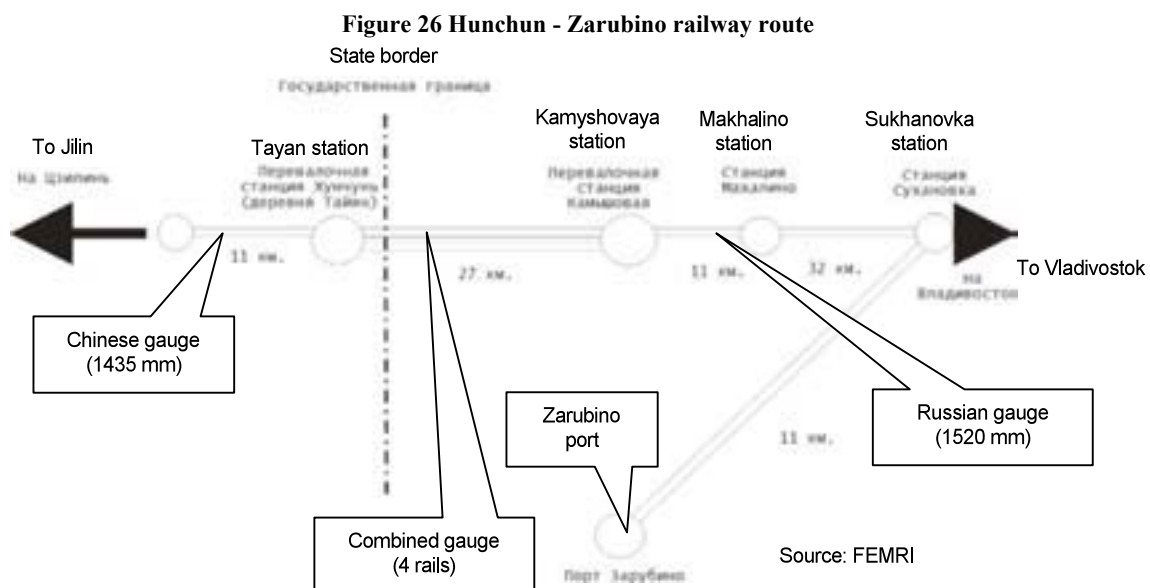
Port capacity development will involve development of access rail lines, dockside station and dockside tracks. Dalgiprotrans Institute worked earlier on construction of a combined gauge line from Hunchun (China) reloading station via Kamyshovaya station, Sukhanovka station directly to Zarubino port. This work was not completed, with a combined gauge line laid only to Kamyshovaya station.

The combined gauge track consists of 4 rails which ensures handling of Chinese gauge trains (1,435 mm) and Russian gauge trains (1,520 mm) without wagon to wagon reloading or bogie exchange. This alternative (combined gauge track) is the most cost effective one for rail transportation along this route (according to estimations by transport experts from Russian and Japanese institutes).

In further prospects, all line segments and stations on Hunchun - Makhhalino route will need to be developed including tracks leading to Zarubino port and dockside tracks.

Brief characteristic of route from Khasan to junction with TSR (Baranovsky - Khasan line)⁴. Khasan railway station providing access to Korean peninsula was built in 1951-1952. Baranovsky - Khasan line is 237 km long. Work is currently in process to electrify this line and build up its throughput capacity to 17 million tons/year (previous capacity was 10 million tons/year). To build up its throughput capacity, train weight should be increased to 5,200 tons. Ussuriysk - Baranovsky - Khasan line needs to be upgraded to handle prospective cargo flows after reconstruction of Tumangan - Rajin line in DPRK.

Note on Trans-Korea Railroad (East Korean Corridor). The project on reconstruction of Trans-Korea railroad and its integration with Trans-Siberian Railroad came to the fore when ROK and DPRK leaders decided at their summit held in Pyongyang in June 2000 to resume railway communication between two parts of the peninsula halted in 1953. Russian President and DPRK leader, in turn, agreed in Moscow in August 2001 to establish a new railway corridor connecting Korean Peninsula with Russia and European countries. An agreement was also signed then on cooperation between Russian Railways Co. and DPRK Railways Ministry in reconstruction of the north segment of Trans-Korea - so-called Eastern Section passing along the Eastern Sea coast and connecting with Russian railway network via Tumangan (DPRK) - Khasan (Russia) border crossing. It was decided at the trilateral meeting of railway officials from Russia, ROK and DPRK held in Vladivostok in March 2006 to start Trans-Korea reconstruction with a 54-km-long segment from Russian border station Khasan to DPRK port Rajin and construction in Rajin of a new port terminal. One year later, in May 2007, an official ceremony of Trans-Korea re-connection was held and trial traffic began across the demilitarized zone between north and south in two directions, western and eastern. In April 2008,



⁴ Sources: <http://www.gudok.ru/>, <http://www.lexim.ru/news/9969/>, <http://www.intertrans.ru/news/oao-rzhd-nachalo-rekonstruktsiyu-transkoreyskoy-zheleznoy-dorogi.html>, <http://www.rosgrantsa.ru/>

JSC RZhD signed an agreement with DPRK partners on establishment in Rason Special Economic Zone of a joint venture on Khasan - Rajin pilot project. This joint venture was set up under the name of RasonConTrans for 49 years. Russia's investment share is 70% and DPRK's contribution to charter capital was rights for 20 hectares of port territory (30%). Also, this JV will operate Tumangan - Rajin line on a leasehold basis.

By the end of 2011, a new 32-km-long combined gauge line (1520 mm and 1435 mm) has been laid in DPRK from Tumangan (Russian border) to Rajin, major repair of 20 km of tracks completed, number of stations reconstructed, works in tunnels continued, communication and centralized signaling trunk lines installed, drainage systems rehabilitated, etc. It is expected that in 2012 construction works will be completed and freight train traffic will open on the combine gauge line.

Russian side of the Regional Cooperation Sub-commission of the intergovernmental commission on trade, economic, scientific and technical cooperation between Russia and DPRK had its session on 6 July 2011. It was stated at the meeting that the existing multilateral freight and passenger railway border crossing Khasan (Russian Federation) - Tumangan (DPRK) is sufficient for current needs for freight and passenger transportation between Russia and DPRK. Its actual load is currently lower than its design throughput capacity.

2.3.4 Land BCP

Data on specialization (status) of BCP and cargo nomenclature (main type of cargo in the trade flows) are shown below (Table 10).

Kraskino BCP (road freight and passenger BCP, Kraskino, Khasansky District, Primorsky Territory, Russia) and neighboring Hunchun crossing point (Hunchun, Jilin Province, China) are open for international freight and passenger road transport. Kraskino crossing point is classified as multilateral, freight and passenger, permanent, road transport.

Its design throughput capacity (before 2012): freight vehicles - 48 vehicles/day (about 15,000 per year); buses - 40/day (about 12,500 per year); people - 1,440 persons/day (about 451,000 per year).

Its actual load exceeded design throughput capacity:

freight vehicles - 52 vehicles/day (about 16,300 per year); buses - 48/day (about 15,000 per year); people - 1,700 persons/day (about 335,000 per year).

Being the only road BCP between Russia and Jilin Province of China, Kraskino is an important link in trade and economic cooperation between Primorsky Territory and Jilin Province and the only automobile border crossing point in ITC Primorye-2. The crossing point is located in 42 km from Russian port Posiet, in 71 km from Zarubino port, in 170 km from Vladivostok port.

Being built in early 1990s, Kraskino was incapable of effective handling of transit traffic, its buildings and facilities were non-compliant with current requirements. Its throughput capacity was a serious barrier to developing dynamic of international freight and passenger transport. There were no permanent transit clearance procedures which resulted in interruptions of regular passenger traffic, etc. To eliminate these deficiencies, Kraskino crossing point is currently under reconstruction.

Construction of a modern complex of buildings and facilities is currently being completed at Kraskino BCP. The BCP being reconstructed is located in 100 meters from Russia-China border. Its design throughput capacity will be 250 vehicles per day:

- 150 freight vehicles / day;
- 50 buses / day;

Photograph 1 Baranovsky - Khasan (left line to DPRK - to Khasan), right line - to China (to Kamyshovaya, out of operation)



Source: FEMRI, 17 Mar 2012

Table 10 General Data on Specialization (status) of Land BCP and cargoes being handled

| Land BCP, position, type | Cargoes nomenclature | BCP Status* |
|---|---|--------------|
| Kraskino BCP (road freight and passenger BCP) | Textiles, home appliances, mopeds, bicycles, refrigerated goods, including goods in containers | Multilateral |
| Khasan BCP (rail freight and passenger BCP) | Coal, fertilizers, wood, metals, foods, building cargoes, including goods in containers | Multilateral |
| Pogranichny BCP (road freight and passenger BCP) | Textiles, home appliances, refrigerated goods, vegetables and fruit, including goods in containers | Multilateral |
| Pogranichny BCP (rail freight and passenger BCP) | Metals, ore, chemical cargoes, fertilizers, grain, foods, refrigerated goods, including goods in containers | Multilateral |

*Notes: **Multilateral BCP** is adapted for admission of persons, goods and vehicles of the Parties and other states (BCP is adapted for the transit). **Bilateral BCP** is adapted for admission of persons, goods and vehicles of the Parties states only (BCP isn't adapted for transit, only for import and export between two states).

Source: Collected by FEMRI on the basis of official sources <http://www.rosgranitsa.ru>; <http://www.customs.ru>.

- 50 cars / day.

Photograph 2 Kraskino BCP (under construction)



Source: FEMRI, 03 Feb 2012

Khasan BCP (rail freight and passenger BCP, Khasan Railway Station of Far Eastern Railroad, Khasan Railway Passenger Terminal of Regional Railway Passenger Terminals Directorate, Russia) and neighboring Tumangan (DPRK) are open for international freight and passenger transport. Khasan border crossing point is classified as railway, freight and passenger, permanent, multilateral. It operates 24 hours a day, 7 days a week.

Design throughput capacity:

Freight (out + in) - 28 trains / day (about 17 million tons / year)

Passenger (out + in) - 4 trains /day (about 120,000 passengers / year)

Pogranichny road BCP (road freight and passenger BCP, Pogranichny, Pogranichny District, Primorsky Territory, Russia) and neighboring Suifenhe border crossing point (Suifenhe, Heilongjiang Province, China) are open for international freight and passenger road transport. This border crossing point is classified as multilateral, freight and passenger, permanent, road transport.

Its design throughput capacity (before 2012): freight vehicles - 130 vehicles/day (about 41,000 per year); buses - 44/day (about 13,800 per year); people - 2,880 persons/day (about 783,000 per year).

Its actual load differs from design throughput capacity: freight vehicles - 100 vehicles/day (about 31,000 per year); buses - 60/day (about 19,000 per year); people - 3,200 persons/day (about 1 million per year).

Pogranichny is a priority BCP between Primorsky Territory and Heilongjiang Province and generally between Far East of Russia and Northeast China. It handles about half all road transport volume with China.

The condition of Pogranichny BCP was incompliant with current requirements to equipment and furnishings of a border crossing point. Its existing infrastructure was inadequate for handling clearance of vehicles and cargoes without serious delay. Waiting time was reaching 3 days. To eliminate these deficiencies, the crossing point is currently under reconstruction.

Construction of a modern complex of buildings and facilities is currently in process in immediate vicinity of the state border. This project will increase its throughput capacity to 1,300 vehicles and 4,000 passengers per day:

- 500 freight vehicles / day;
- 200 buses / day;
- 600 cars / day.

Pogranichny rail BCP (rail freight and passenger BCP, Grodekovo station, Pogranichny, Pogranichny District, Primorsky Territory, Russia) and neighboring Suifenhe border crossing point (Suifenhe, Heilongjiang Province, China) are open for international freight and passenger railway transport. This border crossing point is classified as multilateral, freight and passenger, permanent, railway transport.

Design throughput capacity:

Freight (out + in) - 32 trains / day (about 13.5 million tons at existing traffic structure and up to 33 million tons in case of full two-way load);

Passenger (out + in) - 4 trains / day (about 1,200 passengers / day or 438,000 passengers / year).

The technical condition of Pogranichny BCP is not fully compliant with requirements by governmental regulatory bodies and passengers proceeding via it. Actual traffic volumes are lower than design throughput capacity.

During freeze-up season: freight vehicles - 120 vehicles/day, passenger traffic - 300 buses/day, 7020 passengers/day.

2.3.5 Ports

General. The following port nodes in the south of Primorsky Territory are addressed in this report:

- **Khasansky transport node** which comprises Posiet port, Trinity Bay port (Zarubino) and berths in Slavyanka. Current cargo turnover is 5-10 million tons;
- **Vladivostok transport node** which comprises Vladivostok commercial sea port, Vladivostok fishing port, Vladivostok oil loading base, other berths belonging to various businesses. Current cargo turnover varies in the range of 10-12 million tons;
- **Vostochny-Nakhodka transport node** which comprises stevedoring companies in Vostochny port including Kozmino oil loading port and in Nakhodka: Nakhodka commercial sea port, Nakhodka oil loading port, Nakhodka fishing port, other berths belonging to various businesses. Current cargo turnover varies in the range of 50-54 million tons.

All ports being considered are open to international shipping and have BCPs. Data on specialization (status) of BCP and cargo nomenclature (main type of cargo in the trade flows) are shown below (Table 11).

Posiet port is located in Port-Posiet Inlet intruding into the northern shore of Novgorodskaya Inlet of Peter the Great Bay. The ice free harbor is capable of receiving ship year-round. The port is specialized in coal handling and operates cargo berths integrated into a single loading

complex. Water depth is 9.45 m in front of quayside and 9.0 m in approach channel. All berths are equipped with a universal mechanized system. A port development project is currently being completed. Its purpose is introduction of a new high productive technology for cargo handling. The project comprises two components: revamping of Posiet port and construction of an approach channel to the coal loading complex. Coal terminal turnover will grow up to 5-7 million tons a year.

Posiet port is currently developing as a specialized

coal port. There are possibilities for its development but limited ones, and port owners intend to load it with in-company cargoes. Therefore, Posiet port gave up initiative in development of transit traffic via ITC Primorye-2 to Zarubino port.

Zarubino port is found near Posiet port in Trinity Bay of Posiet Bay which is, in turn, part of Peter the Great Bay. Its coastline, offshore depths, water temperature and favorable geographic position all this is optimal for

Table 11 General data on specialization (status) of Sea BCP and cargoes being handled

| Sea BCP, position, type | Cargoes nomenclature | BCP Status* |
|---|--|--------------|
| Seaports (Primorsky Territory) | | |
| Posiet port (sea freight BCP) | Coal | Multilateral |
| Zarubino port (sea freight and passenger BCP in the Trinity Bay Sea Port) | Machinery and equipment, metal scrap, goods in containers | Multilateral |
| Vladivostok port (sea freight and passenger BCP) | Oil products, metals, machinery and equipment, coal, metal scrap, wood, grain, goods in containers | Multilateral |
| Nakhodka port (sea freight and passenger BCP) | Oil products, metals, machinery and equipment, coal, metal scrap, wood, goods in containers | Multilateral |
| Vostochny port (sea freight BCP) | Coal, fertilizers, metal scrap, wood, oil, oil products, goods in containers | Multilateral |

*Notes: Multilateral BCP is adapted for admission of persons, goods and vehicles of the Parties and other states (BCP is adapted for the transit).

Source: Collected by FEMRI on the basis of official sources <http://www.rosgranitsa.ru/>; <http://www.customs.ru>

Photograph 3 Zarubino seaport (containers and cars, passenger terminal)

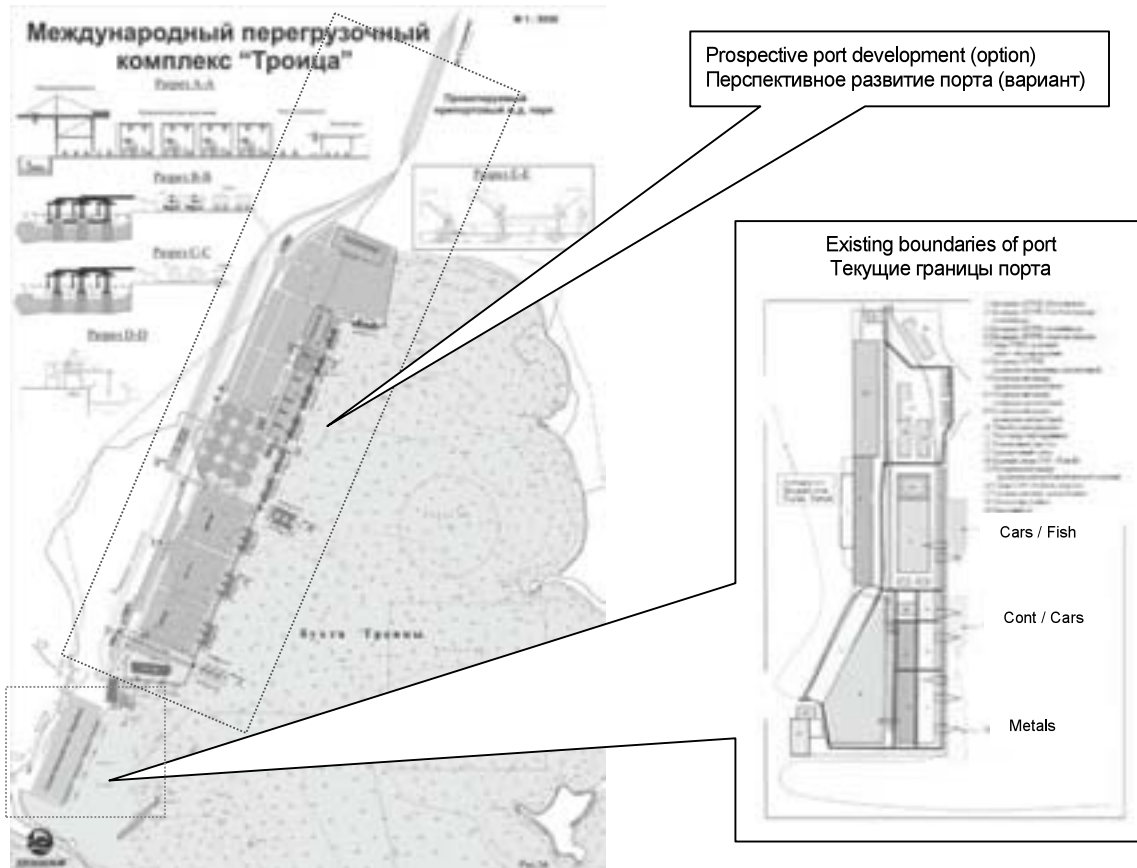


Source: <http://seaport-troitsa.ru/>



Source: FEMRI, 28 Feb 2012

Figure 27 Zarubino development projects (option)



Source: FEMRI

construction of a major ice free port. Water depths at approaches to the port are 12 to 15 meters.

Port activities are currently represented by stevedoring company JSC Trinity Bay Port and Russian-Chinese joint venture Zarubino International Port LLC. The port comprises 4 berths with a total length of 650.0 m and design cargo turnover of 1.2 million tons, with port upgrade projects being in process (for instance, a new container terminal).

There are dual prospects for Zarubino port development:

- 1) "small-scale" - plans and ideas by current owners in existing boundaries of Zarubino port;
- 2) "large-scale" - various port development alternatives within possibilities of Trinity Bay; such projects envision cargo turnover buildup to 90-100 million tons per annum, increase of container handling capacity from 2-3 to 7 million TEU/year and more (Figure 27).

Large-scale development of the port in Trinity Bay and its logistic infrastructure may become an effective pilot project aimed at promotion of international cooperation in the region. One particular feature of Zarubino port differing it from other ports of Primorsky Territory and Russian Far East should be stressed in this connection. Such ports as Nakhodka, Vostochny, Vladivostok are currently oriented at transport operations within domestic demand by Russian economy (export, import, coastal). Zarubino port is ideally suitable for development of transit transport in NEA,

formation of integrated transport space and improvement of through technologies. Development of this port may support establishment of a communication site in the south of Primorsky Territory based on trade and logistics.

Vladivostok port is located in the Golden Horn Bay of Peter the Great Bay. Its ice free harbor is well sheltered against winds and waves from all directions. Due to its convenient geographic position and favorable climate, the port is navigable year-round. Limitations in its development are relevant to its location within city precincts. For instance, no development of rail tracks, near-port stations and trunk railway segment is possible due to close neighborhood of densely built-up urban areas. Furthermore, express passenger railway traffic will be introduced according to city plans which will even more restrict possibilities for port development. Its further development calls for technical modernization, relief of load on the city transport system, development of logistics and distribution terminals outside city precincts. It is not unlikely that the port will be relocated from the city in future prospect. Mean depths at approaches to port are 20-30 meters. There are more than 25 companies operating in the port. Major stevedoring companies are shown on Figure 28, and two of them are described below.

Vladivostok Commercial Sea Port (VCSP). The port comprises container terminals, car storage areas, covered

and open-air storages for other cargoes. Depths at quay are 9.75 to 15.0 m. JSC VCSP (member of FESCO Transport Group) provides services on handling of general, bulk solid, container cargoes. Its equipment is capable of lifting up to 200 tons using shore cranes at any one time.

According to JSC VCSP development strategy for 2015, projects will be handled to build up its cargo handling volume to 11.4 million tons with increased percentages of containers, motor vehicles, extra heavy and project cargoes. JSC VCSP plans include:

- buildup of container handling volume to 600,000 TEU annually due to berth re-specialization and increase of the throughput capacity of the existing container terminal;
- construction of a transport & logistics center outside city precincts;
- development of a specialized terminal for handling of motor vehicles and special equipment;
- reconstruction of bunkering oil depot;
- buildup of throughput capacity of access rail tracks and motor roads.

Vladivostok Fishing Port is a multi-purpose cargo handling complex capable of handling in addition to fish cargoes such cargoes as containers, timber, metals, fertilizer, wood pulp, fuel and lubricants, etc. Depths at quay are 9.8 to 12.4 meters.

Division of these two ports into commercial port and fishing port has lost any sense to date but still remains in names of relevant stevedoring companies.

There is a **sea passenger terminal** operating in Vladivostok which comprises a passenger border crossing point. This terminal is located downtown near the railway passenger terminal. The coastal passenger terminal is under reconstruction. Vladivostok sea passenger terminal is one of the largest in the Far East of Russia and over entire Pacific coast of Russia. It comprises a complex of facilities including a terminal building, quayside and overpass connecting it with the railway station square.

Figure 28 Vladivostok seaport (main stevedoring companies)



Source: FEMRI

Photograph 4 Vladivostok seaport: Commercial Port (upper) and Fishing Port (lower)



Source: FEMRI

Nakhodka port. Main berthing facilities of Nakhodka port are found in Nakhodka Bay (other berths in some other bays) (Figure 29). The port being ice free, navigation is year-round. Water depths at quay are 8 to 12 meters. There are many stevedoring companies operating in the port. Main ones are shown on the respective figure, and three of them are described below.

Division of ports into commercial port and fishing port has lost any sense to date but still remains in names of relevant stevedoring companies.

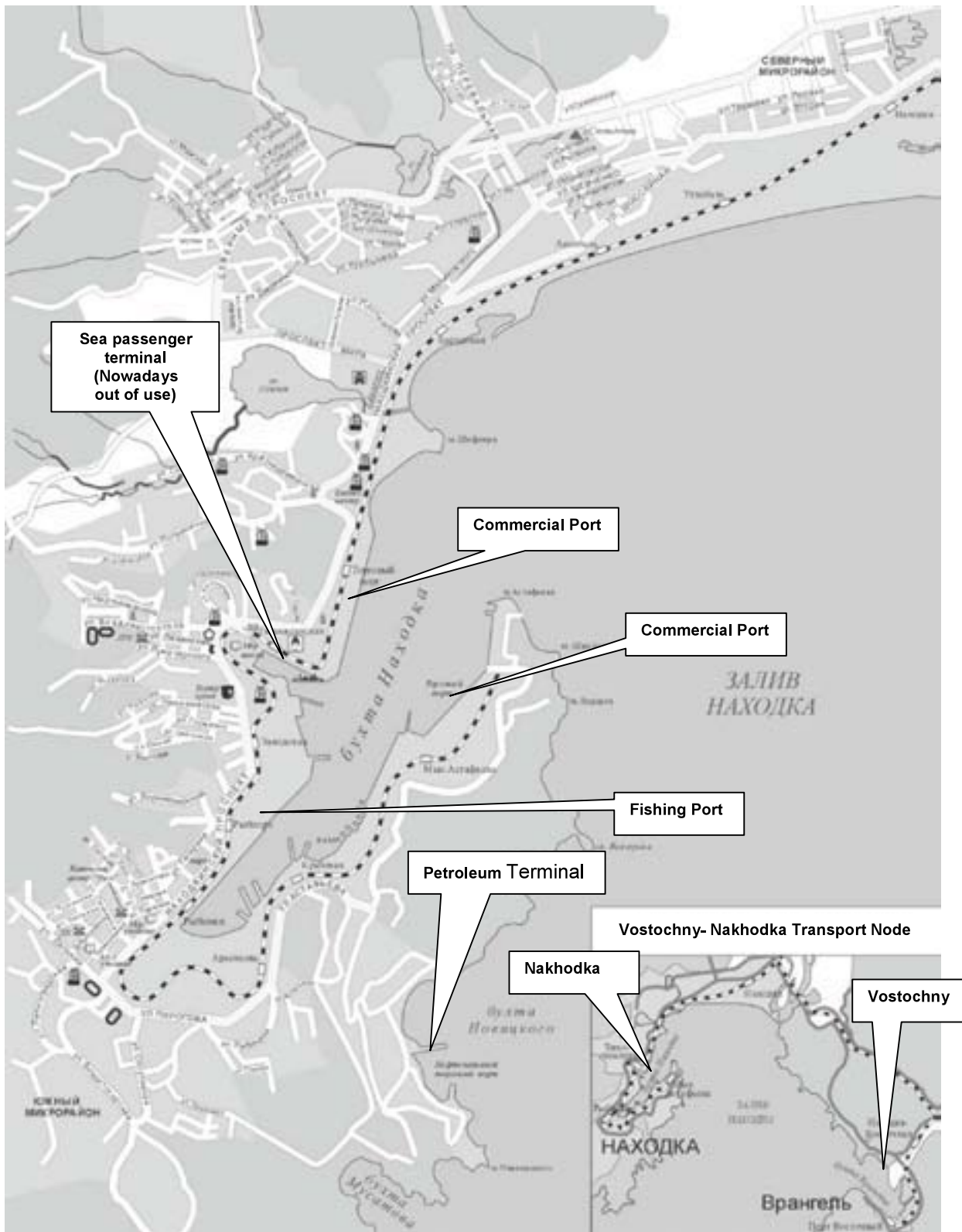
Nakhodka Commercial Sea Port (NCSP). The port is located in the northern part of Nakhodka Bay on its both shores and plays one of leading roles on the Pacific coast of Russia. It is specialized in handling of general, solid bulk, timber and metal cargoes.

Spatially, the port is divided into two areas. It comprises 22 berths with a total length of 3,560 m. Water depths at quay are 9.75-10.5 m.

Use of operating capacity: the port has a vacant throughput capacity of about 1-1.5 million tons at its current cargo turnover structure and mechanized equipment layout. Its development is possible if obsolete technologies are replaced and access rail spurs and roads are upgraded.

Nakhodka Fishing Sea Port (NFSP) is located on the shore of Nakhodka Bay west of Cape Basnina. To date, it

Figure 29 Nakhodka seaport (main stevedoring companies)



Source: FEMRI, <http://www.infokart.ru/>

Photograph 5 Nakhodka seaport

Source: FEMRI, 08 Mar 2012

has lost the status of a specifically dedicated fishing port and operates as a general-purpose port. It comprises 9 berths. Water depths at quay are sufficient to handle ships with displacements of up to 22,000 tons and loaded draft 9.0 m.

Use of operating capacity: the port has lost its turnover of fish and refrigerated cargoes. It works on reconstruction of its cargo handling complexes for handling cargoes typical of general-purpose ports. There is a project on container terminal development. After reconstruction, the port will be capable of handling about 400,000 TEU of large-tonnage containers and up to 750,000 tons of various general and refrigerated cargoes.

Nakhodka Oil Loading Port. It is located in ice free Novitskogo Inlet on the western shore of Nakhodka Bay and operates on a year-round basis. It is specialized in oil product loading. It comprises six berths, of which five ones are accommodated on both sides of a pier, water depths are 8-13.4 m.

Sea passenger terminal and berths for passenger ships in Nakhodka are currently out of use.

Vostochny port is a leading port in the Far East of Russia. It is specialized in handling of general, solid bulk, timber cargoes and large-tonnage containers. The port comprises all-purpose berths and specialized complexes for handling of coal, large-tonnage containers, mineral fertilizer, petrochemical products.

The port includes the following terminals:

- container terminal: four berths with a total length of about 1,300 m, water depths 11.5-13.0 m;
- coal terminal: includes a pier 380 m long with two berths and water depth 16.5 m which allows handling ships with carrying capacity of up to 150,000 tons. Throughput capacity of the terminal is 12 million tons of black and coking coal annually;
- timber terminal comprising two berths with water depth 11.5 m;
- mineral fertilizer terminal 215 m long, water depth 11.4 m.

In addition to specialized terminals, there are all-purpose berths in the port suitable for handling of general and solid bulk cargoes. The berthing line consists of 17 berths with a total length of about 4 km and water depths varying from 6.5 to 16.5 m. The port has capacity for development.

Special Sea Oil Port "Kozmino" was built in 2009. Design capacity: first stage - loading of 15 million tons of petroleum per year, second stage - 30 million tons of petroleum per year (planned by 2015).

2.4 Performance Review of Corridors

2.4.1 Supporting legal environment of transport movements (international treaties and agreements, domestic regulations, institutional impact)

Existing Transport Facilitation Measures and Frameworks (bilateral/ trilateral/ multilateral transport development and operation agreements and MOU). There are following intergovernmental agreements on transport in NEA with Russian Federation participation in place:

Multilateral agreements

Agreements under the UN ESCAP:

- Intergovernmental Agreement on the Asian Highway Network (was discussed and adopted in Bangkok on 18 November 2003, a signing ceremony was held in Shanghai, China, on 26 April 2004);
- Intergovernmental Agreement on the Trans-Asian Railway Network (entered into force on 11 June 2009, in Russia approved by Russian Federation Government resolution No. 1536-r of 8 November 2006);

Agreements under the Organization for Cooperation of Railways (OSJD):

- Agreement on the international cargo railway transportation (in force since 1 November 1951, as amended on 1 July 2008);
- Agreement on the international passenger railway transportation (in force since 1 November 1951,

as amended on 30 May 1999);

Agreements under the Eurasian Economic Community (EAEC):

- Customs Union agreements: since 6th July 2010 the Customs Code of the Customs Union is applied in the unified customs territory of Republic of Belarus, Republic of Kazakhstan and the Russian Federation. Later, the Kirghiz Republic has decided to join the Union.
- etc.

Bilateral agreements and programs:

- Agreement between the Government of the Russian Federation and the Government of Mongolia about border crossing points and the simplified transportation through Russian-Mongolian border (UlaanBaatar, August 10, 1994) as amended on March 5, 2007;
- Agreement between the Government of the Russian Federation and the Government of the People's Republic of China about international automobile transportation (Beijing, 18 December 1992);
- Agreement between the Government of the Russian Federation and the Government of the People's Republic of China about border crossing points on the Russian-Chinese border (Beijing, 27 January 1994);
- Agreement between the Government of the Russian Federation and the Government of the People's Republic of China about a Merchant Shipping routine on the boundary rivers and adjacent rivers and lake (Moscow, 21 December 1957);
- Agreement between Administration of Primorsky Territory of the Russian Federation and the National Government of the Heilongjiang province of the People's Republic of China about trade and economic cooperation (Hutou, 30 August, 2000);
- Agreement between Administration of Primorsky Territory of the Russian Federation and the National Government of the Jilin province of the People's Republic of China about trade and economic cooperation (Moscow, 25 February 1999);
- Program of cooperation between Far East and Eastern Siberia regions of the Russian Federation and the Northeast of the People's Republic of China (2009-2018), approved on 23 September 2009 by heads of Russia and China;
- Program of deepening of trade and economic cooperation between the Russian Federation and Japan (adopted in Tokyo on 05 September 2000);
- etc.

Joint declarations:

- The Russian-ROK joint statements (Seoul, 27

February 2001, 17 October 2006)

- The Moscow Declaration on an establishment of creative partnership between the Russian Federation and Japan of 13 November 1998.

New initiatives (under discussion):

- Draft "Agreement on Sea-land Intermodal Transportation using highways and ports and other transport infrastructures between the Government of the Russian Federation and the Government of the People's Republic of China" (being discussed since 2010 - no effective results as yet);
- Idea of the organization of Northeast Asia sea-land Intermodal Transport Cooperation between the Governments of the People's Republic of China, Japan, The Republic of Korea and Russian Federation (discussed on 20-22 December 2011 - there is a constructive Agreed Minutes of Consultation in Harbin, China).

Minutes of meetings on freight and passenger cross-border transportation

- Minutes of meetings of region transport delegations from neighboring countries on freight and passenger cross-border transportation.

Note: as part of their international transport cooperation, Russia and China hold regular meetings of Russian Minister of Transport and China Minister of Transport. Topical issues of cooperation are addressed at these meetings. For instance, the issue of permitted inland travel distance for freight vehicles in the neighboring country has been resolved by the parties on a mutually balanced basis. The particular permitted inland travel distance and requirements for cargo reloading from one party's trucks to the other party's trucks have been fixed in relevant bilateral intergovernmental agreements and in Minutes of meetings between regional-level transport authorities of neighboring countries. As of today, inland travel distance for mutual freight traffic is limited to near-border routes (between near-border cities). Reloading may be required for cargo delivery to port depending on route. Bus routes are operated at considerably longer distances. For instance, Chinese buses with Chinese drivers travel to Vladivostok and Russian buses travel to Mudanjiang or Harbin.

There are various forms of practical cooperation in NEA. On the level of economic zones and programs of transborder cooperation these forms may include establishing of joint ventures, activities of intergovernmental commissions, etc. It means that regional transport cooperation and its coordination are based on very broad international legal framework and information exchanges, on continuously strengthening trade, economic and transport relations.

Note: a Strategic Review on GTI activity and GTI project was carried out in 2011⁵. The following issues

⁵ Strategic Review on Greater Tumen Initiative. GTI, Final Report, 19 September 2011

concerning transport were noted:

- GTI activity is inconspicuous among a significant number of international organizations in the region (it is necessary to develop cooperation with organizations pursuing similar goals (UN ESCAP etc) and to form GTI's own image);
- The current level of representation (Vice-Ministerial) is not enough for solving all GTI transport problems having an interministerial dimension;
- It will be better for GTI to consider changing its name (replace "Tumen" for "Northeast Asia");
- Guarantees and decrease in risks are necessary for business, for this purpose it is necessary to create conditions. Business investors will appreciate deeper involvement of federal and local government;
- Successful project is needed for demonstration to federal and local governments to gain stronger support;
- It is reasonable to start GTI sea transport activities (for example, regular shipping lines initiation, support to ferry lines etc) but discussion needed;
- In context with line ""Ideology" - "Hard" - "Soft" Projects" support to a wide range of projects should be provided. All three levels should be interconnected. For example, first level (ideology and strategy) projects attract federal government attention and encourage communication among member states, soft project level provides governments with detailed planning and implementation measures, hard project level implements particular business projects with full government support.

Russian domestic regulations and institutional impact⁶

Main regulatory documents. Operational procedures of Russian border crossing points are based on the following documents:

- Russian Federation Law "On State Border of Russian Federation" No. 4730-1 of 1 April 1993;
- Federal Law "On Procedure for Exit from Russian Federation and Entry to Russian Federation" No. 114-FZ of 15.08.1996;
- Number of executive orders by Russian Federation Government relevant to control regulations, control types, methods and application of control means at border crossings (No. 50 of 2 February 2005, No. 94 of 16 February 2008, No. 872 of 20 November 2008), "On Approval of Regulations in Establishment, Opening, Functioning (Operation), Reconstruction and Closure of Russian Federation State Border Crossing Points" No. 482 of 26.06.2008, and others;
- Directives by Russian Federation Ministry of Transport on approval of generic border crossing

- procedures: No. 247 of 22 December 2009 - for marine and river (lake) crossing points; No. 31 of 09 February 2010 - for railway crossing points; No. 177 of 09 October 2009 - for automobile crossing points (as amended including Directive No. 239 of 3 November 2010 on modifications in operational procedures of crossing points);
- Directive by Federal Security Service No. 305 of 17.06.2010 "On Approval of Administrative Regulations on Execution of Governmental Function of Border Control at Russian Federation State Border Crossing Points";
- Federal Law "On Amendments to Relevant Legislative Acts of Russian Federation in Connection with Transfer of Powers on Execution of Some Types of State Control to Customs Authorities of Russian Federation" No. 394-FZ of 28.12.2010;
- Other documents regulating operations of Russian border crossing points.

New Customs Code

The new Customs Code of the Customs Union (CC CU)⁷ applied since 1 July 2010 has become an important factor. The establishment of the new customs union and application of the new Code is aimed at realization of economic development potential of Belarus, Kazakhstan and Russia including more efficient use of their transit potential. Published below are some excerpts relevant to organization of transit traffic via GTR corridors.

Chapter 1. General Provisions

Article 1 - Customs Regulation in Customs Union

1. Customs regulation in the customs union under the Eurasian Economic Community (hereinafter - Customs Union) is legal regulation of relations arising in connection with transfer of goods across the customs border of the Customs Union, transportation thereof via the integrated customs territory under customs control, temporary storage, customs declaration, clearance and use in accordance with customs procedures, execution of customs control, payment of tax duties, and administrative relationships between customs bodies and entities executing their right for ownership, use and disposal of above said goods.

Chapter 32 - Customs Procedures of Customs Transit

Article 215 - General Provisions on Customs Transit

1. Customs transit is a customs procedure according to which goods are transported under customs control through the customs territory of the Customs Union including territory of non-member states, from the customs body of departure to the customs body of destination without any customs duties, taxes involving prohibitions and restrictions with the exception of measures of non-tariff and technical regulation character.

⁶ Sources: <http://www.customs.ru/>; <http://www.mintrans.ru/>; <http://www.fsb.ru/>; <http://www.tamognia.ru/>; <http://www.rosgranitsa.ru/>

⁷ http://kodeks.systems.ru/tk_ts/

2. Customs transit procedures are applied during transportation of:

- 1) foreign goods from the customs body at arrival location to the customs body at departure location;
- ... and so on.

Chapter 216 - Conditions of goods placement under customs transit procedures

Goods shall be placed under customs transit procedures provided that the following conditions are met:

- 1) goods are not prohibited for entry to the customs territory of the Customs Union and exit from this territory;
- 2) documents on goods are presented in confirmation that restrictions are observed in relation of goods transfer across the customs border if such transfer is permitted on show of such documents;
- 3) incoming goods have passed border control and governmental control of other types if goods are subject to such control in arrival location;
- 4) transit declaration is presented;
- 5) measures to secure compliance with customs transit procedures have been taken in relation to goods as per Article 217 herein;
- 6) goods identification is compliant with Article 109 of this Code;
- 7) international transport means is properly equipped in case goods are carried under customs seals.

Chapter 217 - Measures Securing Compliance with Customs Transit Procedures

1. Measures securing compliance with customs transit procedures include:

- 1) securing of payment of customs duties, taxes in relation of foreign goods as per Chapter 12 herein;
- 2) customs support;
- 3) establishment of a route for goods transfer.

2. Customs bodies shall not require any security for payment of customs duties, taxes stipulated in sub-item 1) of item 1 of this Article for customs transit provided that:

- 1) goods are declared by a customs carrier or authorized economic operator;
- 2) goods are transported by rail, pipeline or conveyed by electric lines;
- 3) international agreements require so;
- 4) goods are transported under customs escort;

...Routes shall be established by the customs body of departure based on information contained in transport (shipping) documents. Routes can be altered subject to written permission by the customs body of departure or any customs body en route.

Chapter 15 - General Provisions on Customs Control

Article 109 - Identification of Goods and Transport Vehicles, Rooms and Other Places

1. Goods being under customs control, transport vehicles, rooms, containers and other places where goods subject to customs control are found or may be found may be identified by customs bodies.

Identification will be made by placement of seals, numerical, alphabetic or other marking, identification signs,

stamps, sample and specimen collection, detailed description of goods, production of drawings, scaled representations, photographs, illustrations, use of shipping and other documentation as well as by other methods.

... and so on.

Other improvements

Currently introduced improvements of BCP performance are based on a single-window principle.

The introduction of the 'single-window' principle at the Russian state border began in 29 June 2011. According to new procedures, Russian customs authorities check themselves documents relevant to sanitary, quarantine, veterinary and quarantine phyto-sanitary control and perform transport control at automobile BCPs (for juridical persons except personal cars).

Other improvements of customs authorities performance

are based on the Concept of customs clearance and control in locations in vicinity of Russian Federation state border. This Concept has been approved by a Russian Federation government executive order and applies, first of all, to road BCPs (rail, sea and airport BCPs are treated separately). **This Concept does not apply to transit.**

The Concept follows the main provisions of the International Convention on the simplification and harmonization of Customs procedures of 18 May 1973 as amended by Protocol of 26 June 1999 on preliminary information use and transmission in electronic form as well as the Framework of Standards to Secure and Facilitate Global Trade (adopted by World Customs Organization in June 2005).

Briefly, its main provisions are as follows:

- Customs operations relevant to goods declaration and clearance are not performed directly at BCPs (except as provided in stipulated cases);
- as a rule, customs clearance and customs control will be performed at Customs & Logistic Terminals (CLT) in locations close to Russian Federation state border;
- Customs & Logistic Terminals will be located in customs control zones along the customs border of Russian Federation;

The Concept envisions introduction of new customs clearance technologies including:

- preliminary informing of customs authorities about goods to be imported,
- use of risk management system,
- electronic declaration procedure with an option to use the Internet network.

Improvements of customs authorities performance in sea ports

are based on Russian Federation Ministry of Transport's Directive No. 239 of 3 November 2010. This directive optimizes operational procedures of sea BCPs. According to new procedures, ship inspection by a commission ceased being compulsory. Earlier, this requirement essentially slowed down ship processing in ports. No-commission ship inspection procedures have been in use since early 2011.

Furthermore, discussions are in process on new federal laws "On Transit", "On Russian Federation State Border Crossing Points", "On Multimodal (Combined) Transport, on amendments and alterations to the federal law "On Transport Forwarding Activities".

GTI activity outlook

Bottleneck in the GTR corridors development is absence of any international agreement regulating transit and its development. Such a document may be **Agreement on transit** or other document containing principles and rules on development of free trade, trading and transport infrastructure, on elimination of gaps and bottlenecks in trading and transport infrastructure of the GTI participating countries, etc.

2.4.2 Overall noted Constraints and Challenges of freight and passenger movements

Conceptual level restrictions are:

- wrong understanding of the competitive environment of Eurasian corridors constrains development of GTR regional corridors (in reality, they do not compete with Europe - Asia corridors);
- assessments of demand for GTR corridor development are underestimated because there is no actual dynamic of transit growth (this circumstance misleads many analysts);
- role of ports and possibilities of participating countries in support to sea lines (initiation of new shipping lines, support to passenger and freight & passenger ferry lines, etc.) for transit transport development are underestimated.
- and so on.

Non-physical (legal, procedural) level restrictions are:

- there is no proper coordination and interfacing between GTI member countries as yet (trans-border and through logistics is not developed, no effective mechanism is available for solving current issues, all issues are solved in other formats: bilateral relations or other international cooperation mechanisms);
- procedures for transit management and movement across state borders and via territories are not streamlined in GTR (staff at crossing points is inadequately trained for transit handling, BCPs are capable of handling exports and imports but cannot handle transit in process and procedural terms, issues of through transit via territories of neighboring countries are not fixed documentarily);
- transport & logistic services and transit procedures are still emerging in corridors, there are cases of lengthy delay of cargoes and transport vehicles, market environment is not harmonized everywhere (which affects transport tariffs, logistic services development, etc.), there are differences in trans-border procedures, etc.;
- passenger transport is loss-making in many

countries, with socially important routes being subsidized. Subsidies are normally provided by local budgets and are intended for local residents. Special regulations are required to organize financial support to an international transport line, for instance, intergovernmental agreements. There are no such agreements in the region;

- competitiveness of and demand for passenger transport largely depends rather on associated procedures and expenses, e.g., compliance with visa formalities than transport tariffs and transport services. Visa free tourism exchange procedures have significantly expanded the tourism market of China and Russia. The regulation permitting tourists to stay 3 days without visa in a Russian port of call (for cruising tourist ships) also eliminated some of barriers to tourism market development, for instance in Vladivostok. Furthermore, an "open sky" procedure and visa free transit procedure are used in development of air transport and air hubs. To continue this trend, transit passenger routes (involving virtually no stay of passenger in a country) might be supported by similar visa regulations. The point of difficulty here is lack of practice in initiating and approving such simplified regulations.

Physical level restrictions are:

- different rail track gauge (Russia and Mongolia - 1520 mm, China and Korean peninsula - 1435 mm) reduces transport efficiency (either reloading or bogie exchange is needed because technologies of gauge width changing in motion have not yet reached a proper level of reliability);
- capacity for transit cargo flow handling is missing or insufficient at near-border railway stations (e.g., there are no specialized container handling stations in place, etc.), some railway segments (along corridor routes from border to ports and trunk lines) are poorly developed (lacking backup throughput capacity);
- land BCPs are insufficiently developed in terms of no-downtime criterion, predictable timing of customs clearance completion with accuracy within minutes (if no violations are found) and full satisfaction of demand. For instance, transport business representatives believe that throughput capacity of crossing points and associated transport infrastructure in Primorsky Territory is insufficient for growing freight and passenger flows. This situation may change in the latter half of 2012 when Pogranichny and Kraskino road BCPs currently being upgraded will be commissioned;
- insufficient development of some road segments for mass international transit cargo haulage (including large-tonnage containers). Roads are adapted to domestic transport traffic, pass through cities and communities, roadside services are poorly developed, backup throughout capacity is insufficient for transit traffic development and so on.

We see a situation of existing demand for corridor development but no development takes place or proceeds slowly, with corridor operations currently blocked although all existing barriers can be overcome. As a result, GTR corridors are not through and no so attractive for use. In many respects, this constrains development of ports and international shipping in the Sea of Japan / East Sea.

The main task faced by GTI is to create conditions for unblocking and development of GTR corridors. GTI activities may create conditions for establishment of an international transport network for sea-land transit traffic. That's why it is important to prove good prospects for GTR corridor development but for this purpose volumes of prospective transit and benefits to be gained by member countries through servicing such transit should be demonstrated.

2.4.3 Net Transport Costs and Time factor (including by corridor the cost/time/distance analysis)

Researches of corridors parameters are carried out on an example of some probable routes. Russian Segments of corridors were considered. Segments of corridors are chosen such that if necessary it might be possible to simulate other options of routes. Containers are most suitable cargo for transit, tariffs are given in \$/TEU. Bulk cargoes (coal, ore, tariffs are given in \$/ton) are also considered for cargo flow from Mongolia. The combination of the considered segments of routes and cargoes allows to model other through routes.

The analysis of Transport Costs and Time factors was carried out with the segment of cargo flows being considered not existing in reality (namely, transit which is non-existent; **transit tariffs and practices have not been established and don't exist**). It should be kept in mind that cost and time parameters for export/import and for transit can differ due to different management approaches to these transport segments. That's why tables in report show approximate data based on existing export/import tariffs and time factors. It should be kept in mind that these data are assumptions only rather than real tariffs or transit schedules. Expected tariffs in case of effective management of transit operations should be more attractive. Routes being considered are described below.

1. Route: Harbin - Pogradichny (rail/road) BCP - Vladivostok/Nakhodka/Vostochny - Niigata/Otaru
(Russian land segment and sea route: Pogradichny - Vladivostok/Nakhodka/Vostochny - Niigata/Otaru)
2. Route: Harbin - Pogradichny (rail/road) BCP - Vladivostok/Nakhodka/Vostochny - Osaka/Tokyo
(Russian land segment and sea route: Pogradichny - Vladivostok/Nakhodka/Vostochny - Osaka/Tokyo)
3. Route: Harbin - Pogradichny (rail/road) BCP - Vladivostok/Nakhodka/Vostochny - Seattle/San Francisco
(Russian land segment and sea route: Pogradichny - Vladivostok/Nakhodka/Vostochny - Seattle/San Francisco)
4. Route: Harbin - Pogradichny (rail/road) BCP - Vladivostok/Nakhodka/Vostochny - Pusan
(Russian land segment and sea route: Pogradichny - Vladivostok/Nakhodka/Vostochny - Pusan)
5. Route: Harbin - Pogradichny (rail/road) BCP -

- Vladivostok/Nakhodka/Vostochny - Shanghai/Fuzhou
(Russian land segment and sea route: Pogradichny - Vladivostok/Nakhodka/Vostochny - Shanghai/Fuzhou)
6. Route: Hunchun - Kraskino BCP - Zarubino - Shanghai/Fuzhou
(Russian land segment and sea route: Kraskino BCP - Zarubino - Shanghai/Fuzhou)
7. Route: Hunchun - Kraskino BCP - Zarubino - Osaka/Tokyo
(Russian land segment and sea route: Kraskino BCP - Zarubino - Osaka/Tokyo)
8. Route: Hunchun - Kraskino BCP - Zarubino - Seattle/San Francisco
(Russian land segment and sea route: Kraskino BCP - Zarubino - Seattle/San Francisco)
9. Route: Hunchun - Kraskino BCP - Zarubino - Pusan
(Russian land segment and sea route: Kraskino BCP - Zarubino - Pusan)
10. Route: Route Sainshand - Choibalsan - Solovievsk - Vostochny - Ningbo/Beilun
(Russian land segment and sea route: Option 1: Solovievsk - Vostochny (via SLB) - Ningbo/Beilun
Option 2: Solovievsk - Zabaykalsk + via STC: Pogradichny rail BCP (Grodekovo) - Vostochny - Ningbo/Beilun)
11. Route: Route Sainshand - Choibalsan - Solovievsk - Vostochny - Noshiro/Sakata
(Russian land segment and sea route: Option 1: Solovievsk - Vostochny (via SLB) - Noshiro/Sakata
Option 2: Solovievsk - Zabaykalsk + via STC: Pogradichny rail BCP (Grodekovo) - Vostochny - Noshiro/Sakata)
12. Route: Route Sainshand - Choibalsan - Solovievsk - Vostochny - San Francisco
(Russian land segment and sea route: Option 1: Solovievsk - Vostochny (via SLB) - San Francisco
Option 2: Solovievsk - Zabaykalsk + via STC: Pogradichny rail BCP (Grodekovo) - Vostochny - San Francisco, this route is presented theoretically)

3 Future Development Potential

3.1 Review of on-going/planned economic Development Projects likely to impact future traffic

3.1.1 Freight traffic related projects

At the present time, ideas and strategies on development of the east of Russia are actively updated, with various transport projects being implemented in practice. In this connection, current condition of infrastructure continuously improves. Information regarding development of considered corridors is presented in this section.

Development Guidelines

Development guidelines are represented by federal and regional strategies including the following elements:

- Formation of regional transport & logistic systems.

It includes an integrated model of transport development, integration of transport & logistic systems inside the country and with its international environment. An integrated

approach envisions development of all necessary physical infrastructure facilities (Hard Projects), human resources, procedures, services and effective procurement (Soft Projects). In maritime regions, backbone points for transport & logistic system development are port nodes.

- **Preparation of integrated projects on development of port transport nodes.** Integrated projects facilitate harmonization of development programs on railway, road and maritime infrastructures. Thus, under orders from the Russian Federation Ministry of Transport, a "Project on integrated development of Vostochny-Nakhodka transport node" and "Master Plan on development of Vostochny-Nakhodka transport node and Primorye-1 transport corridor for 2020" have been developed.

- **Integration with NEA and APR transport system** should be performed in all transport areas, in all traffic modes including transit in addition to export and import.

- **Optimal port development.** Optimization of port development, enhancement of port efficiency and competitiveness with account for their opportunity and prospective specialization, e.g.:

- Zarubino port in capacity of a transit port might become a site for international cooperation development, center for technical, technological and human resource training of transport specialists at an international level;
- Vostochny port continues building up its involvement in servicing of Russian and international cargo flows and good movement;
- Vladivostok and Nakhodka port continue search for new development opportunities (both ports are located in downtown areas) and set new reference points in their development;
- both development of existing ports and emergence of absolutely new ports in the near future is possible in Primorsky Territory, and so on.

- **Containerization** is ongoing, with container turnovers through ports growing. They handle growing container numbers and growing percentages of containerized cargoes. This is important because containers can unite the region's transport systems being better suitable for transit than other cargoes;

- **Use of existing legal instruments and search for new ones** to raise efficiency of development. For instance, discussions are in process regarding establishment of a development corporation for East Siberia and Far East (with essentially new governance possibilities). One of options is JSC "Corporation for Siberia and Far East Development"⁸. A new federal law entitled "On Territorial Development zones in Russian Federation" was recently passed (No. 392-FZ of 3 December 2011)⁹. The law "On Special Economic Zones in Russian Federation" (No. 116-FZ of 22 July 2005 as amended)¹⁰ has been amended and taken effect. Establishment of a system of Far Eastern special economic zones might enhance macroeconomic efficiency of

development projects being currently handled.

Projects on development of ports, transport nodes and their infrastructure¹¹

- **Project on integrated development of Vostochny-Nakhodka transport node** comprises optimal development alternatives for Nakhodka and Vostochny ports (including new oil loading port Kozmino) as well as necessary land (motor road and railway) and maritime infrastructure including development of Primorye-1 international transport corridor. Opportunities are considered for establishing a port special economic zone in Vostochny port to handle transit flows, develop services for goods movement and wholesaling. The Master Plan of development assisted in specifying the **concept of transport node and Primorye-1 transport corridor development**. Future activities include designing of transport infrastructure facilities including port and logistics terminals, railway facilities, motor roads, etc. The project takes into account possible container turnover growth to 4 million TEU/year and more. The project is updated and implemented based on available financing from budget sources and investor business plans.

- **Development of Vladivostok transport node.** Decisions on development of Vladivostok as a communicative site and Russian business center in Asia have been made at the governmental level. This enhances the role of Vladivostok a transport node. However, potential development of Vladivostok port is constrained by available land considerations and municipal needs. Effective movement of cargoes has to be ensured within and outside of the city. This can be achieved by construction of a complex of port and logistic terminals on vacant territories located outside city precincts. The greater portion of port capacity is currently owned by FESCO Transport Group actively expanding the geography and raising efficiency of its container lines. FESCO expands its own fleet of fitting flat cars and builds up cargo traffic volumes handled by rail and road, is involved in new prospective transport projects relevant to all transport modes including SLB. One of promising ideas is the **Dry Port Project (multi-modal transport & logistic complex** - extension of "South Primorye Terminal" project). The project has been upgraded to a capacity of about 2 million TEU/year (transit cargoes inclusive) and encompasses appropriate railway, road and warehousing development for performance segregation into two zones (in port and in dry port). Further project development is currently under discussion. Other ideas on Vladivostok port development are involved with its development outside city precincts.

- **Development of Khasansky transport node (Posiet, Zarubino).**

Posiet. A port development project is currently being completed. Coal terminal turnover will grow up to 5-7 million tons a year.

⁸ <http://vz.ru/news/2012/5/2/576988.html>; <http://news.rambler.ru/13236206/>; <http://www.zrpress.ru/zr/2012/17/52970/> и т.д.

⁹ <http://kremlin.ru/acts/13841>

¹⁰ <http://www.consultant.ru/online/base/?req=doc;base=LAW;n=123058>

¹¹ Source: FEMRI on the basis of open sources

Zarubino. A project has been developed on construction of cargo handling complexes comprising a container terminal for up to 1.5 million TEU/year, grain terminal for up to 5 million tons a year, coal terminal for up to 10 million tons a year, automobile terminal for up to 500,000 autos a year, passenger terminal for up to 350,000 passengers a year, rolled steel terminal for 1 million tons a year and sawn wood terminal for up to 350,000 m³ a year. The project takes into account potential for development of ITC Primorye-2, SLB development and connection with Trans-Korea. Further project continuation is being discussed. Other alternatives for port capacity buildup are also possible.

- Development of new port capacity on new sites.

The following ideas on new terminals are under consideration: various alternatives for grain loading (about 3-5 million tons a year), coal loading (about 20-40 million tons a year), other solid bulk cargoes, containers (up to 10 million TEU/year), Ro-Ro cargoes and other terminals including specialized complexes (for production and loading of petrochemical and gas processing products and other cargoes).

Ongoing projects on general development of Far Eastern region and Vladivostok

Far East and south of Primorsky Territory are on the threshold of forthcoming rapid development. The list of ongoing projects (as part of preparations for APEC Summit 2012) managed by FGU «Far Eastern Directorate of Russian Federation Regional Development Ministry»¹² counts 63 items with a total financing volume of more than 662 billion rubles. New production clusters are emerging in the south of Primorsky Territory (petrochemical, sea-related industries, shipbuilding, transport & logistics, etc.).

For instance, the following projects are under way in the cluster¹³ of hydrocarbon resources transportation and high-level processing:

- East Siberia - Pacific Ocean trunk oil pipeline (transportation of 30 to 50 million tons of oil annually, throughput capacity 80 million tons of oil a year).
- Special Sea Oil Port "Kozmino", first stage - loading of 15 million t/year (in operation), second stage - 30 million t/year (planned by 2015).
- Sakhalin - Khabarovsk - Vladivostok trunk gas pipeline (completed). Transportation of 47.2 billion cubic meters of gas annually.
- Oil refinery (project schedule: 2014-2017). Processing of about 5 million tons of oil annually (capacity is on hold).
- Construction of natural gas liquefying plant (to be completed before 2015). Design capacity up to 26 billion cubic meters of gas annually.
- Construction of gas processing plants in Khasansky and Spassky Districts (to be completed before 2020).

Other projects being currently implemented are

"Reconstruction of ITC Primorye-1 and Primorye-2 infrastructure including road BCPs, segments of roads Ussuriysk - Pogranichny, Razdolnoye - Khasan, Vladivostok - Nakhodka, detour roads around Ussuriysk and Artem". These actions will eliminate a significant number of bottlenecks but are unable to make the potential of corridors available in full (not sufficient to build up throughput capacity along the through route).

Other project ideas being discussed¹⁴

Ideas to develop Vladivostok as a scientific, industrial, commercial and transport center are being discussed as part of work on establishing a site in the south of Primorsky Territory for communication between Russia and APR nations. A significant number of previous ideas embodied in various versions of the Greater Vladivostok project are relevant to this area of focus. New ideas are based on new principles of metropolis formation including development of its external transport infrastructure comprising a major international transport node (HUB) based on a mega-port. If this project is implemented, it may bring ports of the south of Primorsky Territory into a system of ports belonging to one metropolis.

Other areas of focus include development of local export-oriented production assets, involvement in development of world trade and international transport space, development of near-border infrastructure, development of transit and foreign trade flows via sea ports, etc. The ideas under discussion include, but are not limited to:

- development of container, ferryboat, freight, freight & passenger and other sea lines;
- development of ports, port-specific land infrastructure, railways, roads, etc.;
- development of corridors, transport environment, logistic services;
- development of trade, bonded warehouses, trade chains;
- and so on, with all ideas relevant to development of transport & logistic space and any of its elements being open for consideration.

For example:

- ideas are considered on consolidation of cargo flows by various investors for optimization of parameters of port complexes being constructed;
- ideas are discussed on road development with account for their transit load (financing sources for upgrade and construction of federal roads used for international transport);
- alternatives are discussed relevant to railway development with account for transit and for use of tracks with different gauge width, etc.

One of examples is the idea to organize traffic between USA and Japan via Primorsky Territory ports (e.g., Vostochny port). At present, Japan handles all its foreign trade traffic to USA via its deepwater ports on the eastern coast. These ports are capable of receiving ocean container

¹² see <http://www.ddmr.ru/>

¹³ Compiled from advertising materials and brochures by Administration of Primorsky Territory (2007-2011), see <http://www.primorsky.ru/projects/>

¹⁴ Briefly described below are various publicly discussed ideas developed or proposed jointly by FEMRI and other Russian and NEA foreign institutions. Thus, the MEGA-City Vladivostok Project was jointly presented by Korea-Russia Association and FEMRI.

carriers. Foreign trade cargoes from Japan's western coast have to be hauled east by road. As a result, ports of Japan's western coast lose potential cargoes and the economy of the western coast develops slower. Road haulage tariffs are high in Japan. The sense of the proposed idea is to use a deepwater port in Primorsky Territory for support to foreign trade of Japan's western coast. For this purpose, feeder lines need to be organized between Japan's western coast and this port and ensure calls by ocean container carriers to this port. Feasibility of this scheme is supported by the following considerations:

- ports of Primorsky Territory (Vladivostok, Vostochny, Zarubino, etc.) are deepwater and capable of handling ocean container carriers;
- cost of ocean transport between USA and Primorsky Territory will be lower than between USA and Japan due to shorter distances: Seattle - Vostochny - 7071 km, Seattle - Kobe - 8374 km;
- cost of feeder transport and transshipment in Primorsky Territory port will be lower than that of haulage from Japan's western coast to eastern coast.

Another example is the proposed scheme of transit traffic via ITC Primorye-1 (this proposal was developed by FEMRI as part of the Project on integrated development of Vostochny-Nakhodka transport node). It is proposed to:

- segregate transit traffic from overall cargo flow (handle transit via a dedicated transit post);
- organize special transit lines at automobile border crossings and provide separate procedures, equipment and specially trained personnel (not working with export/import);
- organize required customs logistics along the corridor route including GLONASS/GPS satellite monitoring system for control of transit container movement and integrity.

Customs procedures should incorporate best world practices including:

- agreed customs control procedures (preliminary informing, electronic declaration, through bill of lading, authorized operators, etc.) including the right for inspection;
- state-of-the-art inspection equipment (inspection and screening complex);
- risk and safety management system;

Implementation of similar proposals might be organized by Rosgranitsa Federal Agency.

3.1.2 Passenger related projects

The following projects are in process (being completed):

- Reconstruction of Vladivostok airport (predicted passenger turnover by 2015 is 2.1 million persons/year) and construction of access road to terminal;
- Organization of intermodal passenger traffic between Vladivostok and Airport;
- Creation of a gambling zone closely to Vladivostok;
- Construction of helipad in Russky Island;
- Creation of Far Eastern Federal University in Vladivostok and so on.

Other projects being implemented or discussed:

- Creation of a special economic zone of tourist type in Russky Island and so on;
- Planning and organization of through railway route Vladivostok - Ussuriysk - Grodekovo - Suifenhe and further extension to Harbin.
- Development of international passenger transport and services (sea passenger lines, passenger railway transport and bus routes, construction of high-speed passenger railways, etc.)

4 Measures and Investment Programme proposed to improve transport movements along the corridors

4.1 Constraints for traffic flows along the trans-GTR corridors

In accordance with 1st Progress Meeting decisions, it was decided to make the reports easier to digest and more straightforward about the constraints and measures to be undertaken. In this connection, it was decided:

- to display flows along the corridors segments (existing situation 2010 and forecasted 2020) (Figure 30-31);
- to add a table of existing constraints for the traffic flows along the trans GTR corridors (Table 12).

4.2 Measures (regulations, international agreements, improved customs procedures...)

Measures intended to develop GTR corridors should be distributed between Russia, other GTI member states and GTI itself.

Relevant measures (programs) in Russia should use public-private partnership mechanisms, involve business circles, integrate different management levels with account for distribution of powers between the federal center (government, ministries and other agencies), Far Eastern Federal District and Administration of Primorsky, Amursky and Zabaykalsky Territories.

Discussions are in process on new federal laws "On Transit", "On Russian Federation State Border Crossing Points", "On Multimodal (Combined) Transport, on amendments and alterations to the federal law "On Transport Forwarding Activities".

Russia may select particular measures and such measures might be:

- issue of a document regulating basic legal provisions inside Russia relevant to transit and supporting procedures (e.g. Law on Transit or some other regulatory document) and documents regulating transport infrastructure development conditions (e.g., target-specific programs or other provisions regulating investments in infrastructure development with account for transit), etc.;
- programs (plans, master plans) on transport & logistic infrastructure development with account for required transit capacity (construction of relevant ports, roads, dry port terminals, stations, etc.);
- measures facilitating trans-border procedures and ensuring efficient performance of corridors

2010

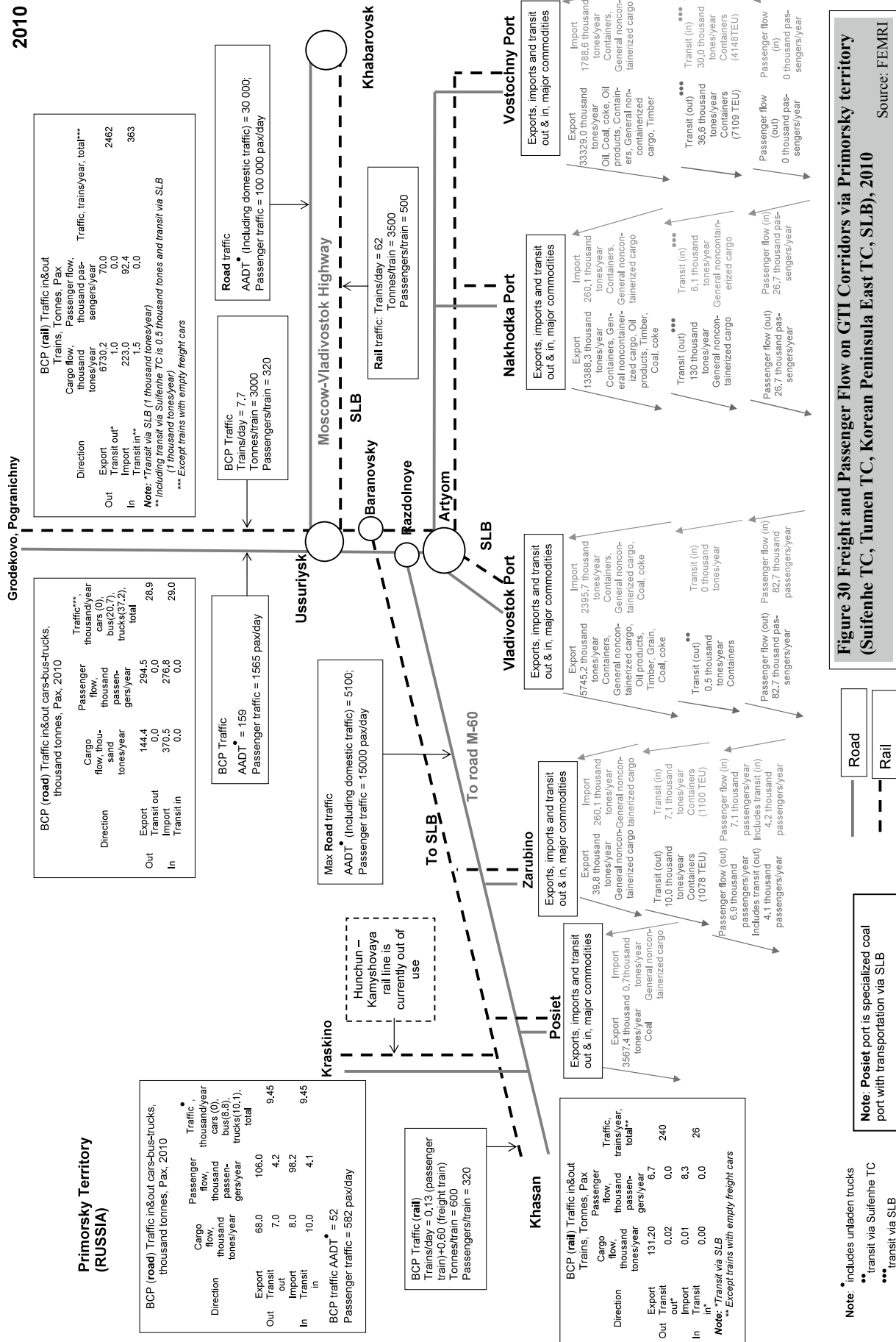


Figure 30 Freight and Passenger Flow on GTI Corridors via Primorsky territory (Suifenne TC, Tumen TC, Korean Peninsula East TC, SLB), 2010

Source: FEMRI

2020

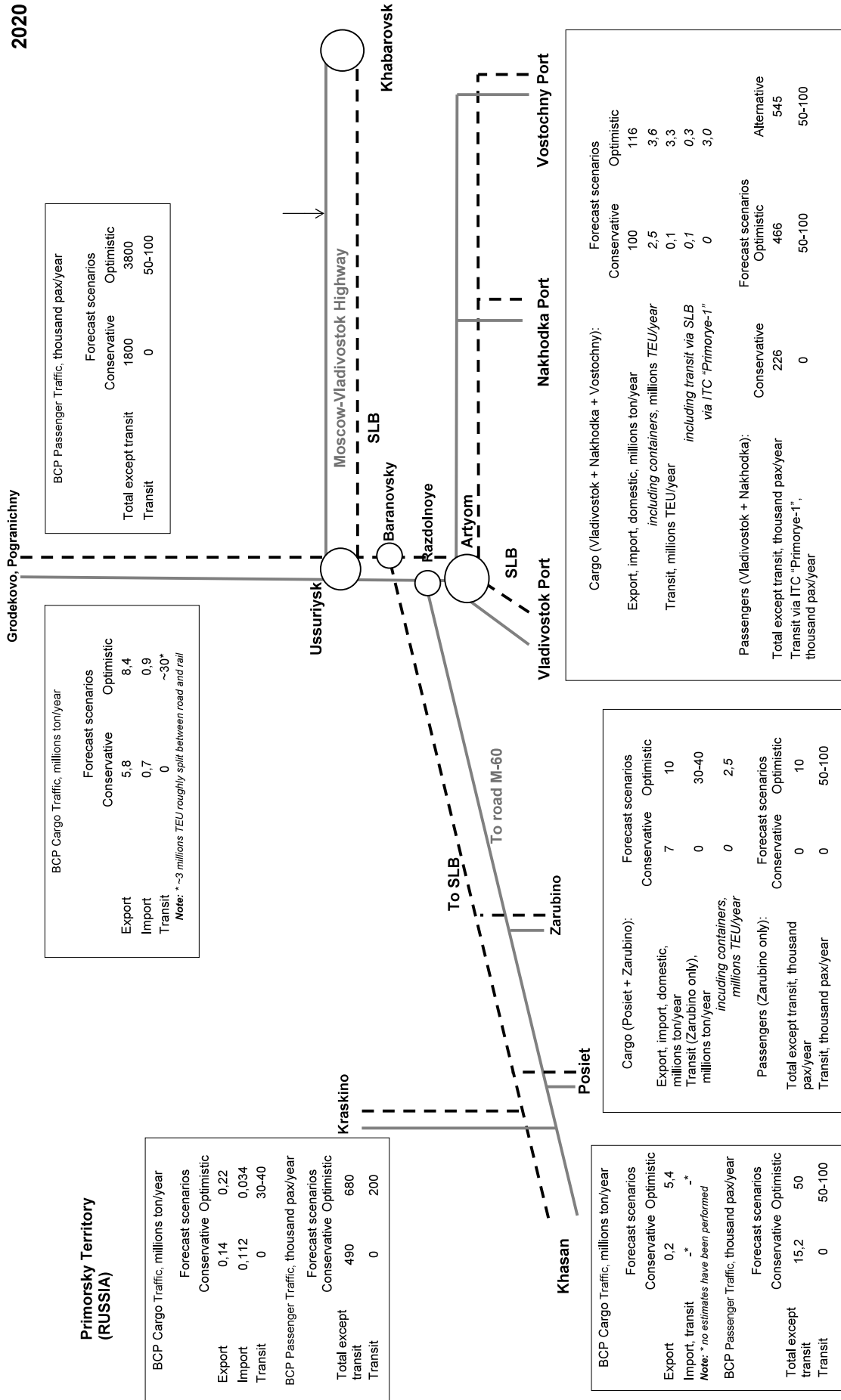


Figure 31 Freight and Passenger Flow on GTI Corridors via Primorsky territory (Suifeihe TC, Tumen TC, Korean Peninsula East TC, SLB), 2020
 Source: FEMRI

Table 12 Existing Constraints for traffic flows along the trans-GTR corridors

| Constraints sphere | Constraints (essence) | Importance (How much it restricts the flow) | Timeframe (Reflects the urgency) | Mitigation measures |
|--|---|--|---|--|
| 1) Tumen Transport Corridor (Russian Segment: Kraskino (road) / Makhhalino (rail) BCPs - ports Posiet / Zarubino) This segment is the most suitable for transit due to proximity of land and sea BCPs. Therefore potential freight and passenger flows in this segment are directly relating to functioning of the trans-GTR corridor. Features: port Posiet is specialized for export coal with transportation via SLB railway. Port of Zarubino may be focused on work in the framework of the Tumen Transport Corridor. | | | | |
| Rail | Hunchun - Makhhalino railway is out of use. Different gauge width in China and in Russia | Significant | Nowadays it is possible to resume railway operations quickly Permanently | 1) Use of the motor road 2) Reconstruction and resumption of railway operations in Hunchun - Makhhalino - Zarubino segment 3) Construction of a rail line with combined gauge from Hunchun to Zarubino port (the segment of this road has a combined gauge) |
| Road | Without constraints for existing traffic flows | Without restrictions for freight flows under 400-500 thousand TEU/year and passenger flows under 2-3 million passengers/year | | The construction of a new toll highway in Russian territory will be required in the future. |
| Ports | Posiet port (sea BCP) is specialized in coal exports. Zarubino port has a low capacity and port is not suitable for containers. | Significant | Long time | Use of Zarubino port Develop the capacity of the port of Zarubino port and construct a container terminal |
| Land BCP | Makhhalino rail BCP is out of use. | Significant | Long time | 1) Use of the motor road 2) Reconstruction and resumption of Makhhalino (rail) BCP as part of Hunchun - Makhhalino segment |
| | The old Kraskino road BCP has a low throughput capacity. The new BCP is still not completed. Without restrictions for existing traffic flows after new BCP commissioning | Old Kraskino road BCP throughput capacity is 30 thousand TEU/year and 450 thousand pax/year. New Kraskino road BCP will be completed this year - without restrictions under 100 thousand TEU/year and 500 thousand pax/year. There is an additional backup throughput capacity for cars (50 cars/day). | | To complete the new road BCP construction The construction of a new BCP (specially for transit) will be required in the future. |
| ICD | There are no ICDs on this route. | The lack of ICDs has no constraining effects at container flows under 50-100 thousand TEU/year. | | Use of the existing terminal sites in Zarubino port Construction of a container and logistic terminals in Zarubino port Development of the Zarubino port capacity will be required in the future. Possibly, ICD will be required on this route. |
| Transport regulation | Without constraints for road in existing situation according to valid intergovernmental agreement (on international road transportation, Beijing, 18.12.1992) | Without constraints under 100 thousand TEU/year and 0.5 million pax/year (BCP throughput capacity), possibly up to 400-500 thousand TEU/year and 2-3 million pax/year (road throughput capacity) | | Possibly, new bilateral Intergovernmental Agreement will be required in the future. Possibly, Intergovernmental Multilateral Agreement for GTI countries will be required in the future. |
| Cross-border regulation | Cross-border procedures are not effective. | Significant | Long time | Intergovernmental Agreements are needed for GTI countries on BCPs operation modes and procedures for transit cargoes (harmonizing BCPs work in the «green window» mode with Fast track lanes). |
| 2) Suifenghe Transport Corridor (Russian segment: Pogranichny (rail and road) BCPs - ports Vostochny, Nakhodka, Vladivostok). This segment is used for bilateral trade in small volumes but due to proximity of land and sea BCPs is the most suitable for transit. Therefore potential freight and passenger flows in this segment are directly relating to functioning of the trans-GTR corridor. | | | | |
| Rail | Different gauge width in China and in Russia There are no container terminals on this railway route. | Minor for existing traffic flows (under 50 thousand TEU/year and 0.5 million pax/year) Significant in case of growth of freight and passenger flows | Permanently Long time | 1) Use of the motor road 2) Construction of a rail container transshipment terminal 3) Optimization of railway logistics and maximization of the segment with combined gauge width 4) Use of new technologies, for example, Automatic Variable Gauge Bogies |
| Road | Constraints of road throughput capacity in some segments from Pogranichny BCP to ports Vladivostok, Nakhodka and Vostochny. | Minor for existing traffic flows (for transit under 50 thousand TEU/year and 0.5 million pax/year) Significant in case of growth of freight and passenger flows | Long time | Reconstruction of the motor road is required and construction of toll segments will be required in the future. |
| Ports | Vladivostok port: - without constraints for existing traffic flows - significant constraints in case of cargo flow growth (resulting from port location within city precincts); - minor restrictions in case of passenger flow growth. | Minor for existing traffic flows (for transit under 50 thousand TEU/year and 2-3 million pax/year) Significant in case of cargo flow growth Minor in case of passenger flow growth | Long time | Port development calls for port technical modernization, relief of load on the city transport system, construction and development of logistics, distribution and new port terminals outside city precincts. |
| | Nakhodka port: - without constraints for existing freight traffic; - constraints in case of cargo flow growth (resulting from limited railway capacity within city precincts); - Sea passenger terminal out of use. | Minor for existing traffic flows (for transit under 50 thousand TEU/year) Significant in case of cargo flow growth Significant for passenger flow | Long time | Port development calls for port technical modernization, development of capacity of railway line and road to port, relief of load on the city transport system, construction and development of container and logistics terminals. |
| | Vostochny port: - without constraints for existing freight traffic; - without constraints in case of cargo flow growth (construction of port terminals will be required); - there is no sea passenger terminal. | There are no restrictions for development of freight terminals of the port. No plans of sea passenger terminal is planned. | Long time | To focus passenger transit traffic on Zarubino, on Vladivostok, and on Nakhodka in the future. To focus freight transit on ports Zarubino, Nakhodka, Vostochny. Vladivostok to be involved when backup port and railway throughput capacity is available. |

| Constraints sphere | Constraints (essence) | Importance (How much it restricts the flow) | Timeframe (Reflects the urgency) | Mitigation measures |
|---|---|---|-------------------------------------|---|
| Land BCP | Pogranichny rail BCP: - different gauge width in China and in Russia - there is no container terminal on rail BCP - without serious restrictions for existing traffic flows - constraints in case of cargo flow growth (throughput capacity is small in segment leading to ports) | Minor for existing traffic flows (until under 50 thousand TEU/year and 0.5 million pax/year) Significant in case of cargo and passenger flow growth | Long time | 1) Joint use of the motor road and railway 2) Construction of railway container transshipment terminal for railway BCP 3) Optimization of railway logistics and maximization of the segment with combined gauge width 4) Use of new technologies, for example, Automatic Variable Gauge Bogies |
| | Pogranichny road BCP: - the old road BCP has a low throughput capacity; - the new BCP is still not completed; - without restrictions for existing traffic flows after new BCP commissioning | Old Pogranichny road BCP throughput capacity is 80 thousand TEU/year and 780 thousand pax/year. New Pogranichny road BCP will be completed this year - without restrictions under 340 thousand TEU/year and 2-3 million pax/year. There is an additional backup capacity for cars (600 cars / day). | | |
| ICD | There are no ICDs for transit on this route. | The lack of ICDs has no constraining effects on small container flows under 50-100 thousand TEU/year. | | Use of existing terminal sites in Suifenhe and in Ussuriysk Construction of a container terminal for rail and road BCPs Development of a dry port will be required in the future. |
| Transport regulation | Without constraints in existing situation (in accordance with valid intergovernmental agreements relevant to road and rail transportation) | Without constraints for existing traffic flows (for transit under 50 thousand TEU/year and 0.5 million pax/year - road throughput capacity) | | Possibly, new bilateral Intergovernmental Agreement will be required in the future. Possibly, Intergovernmental Multilateral Agreement for GTI countries will be required in the future. |
| Cross-border regulation | Cross-border procedures are not effective. | Significant | Long time | Intergovernmental Agreements are needed for GTI countries on BCPs operation modes and procedures for transit cargoes (harmonizing BCPs work in the «green window» mode with Fast track lanes). |
| 3) Korean Peninsula East Corridor (Russian segment: Khasan BCP - connection with the SLB). Existing multilateral freight and passenger railway border crossing Khasan (Russian Federation) - Tumangan (DPRK) is sufficient for current needs for freight and passenger transportation between Russia and DPRK. Its actual load is currently lower than its design throughput capacity. Work is currently in process to electrify this line and build up its throughput capacity to 17 million tons/year (previous capacity was 10 million tons/year). To build up its throughput capacity, train weight should be increased to 5,200 tons. Ussuriysk - Baranovsky - Khasan line needs to be upgraded to handle prospective cargo flows after reconstruction of Tumangan - Rajin line in DPRK. By the end of 2011, a new 32-km-long combined gauge line (1520 mm and 1435 mm) has been laid in DPRK from Tumangan (Russian border) to Rajin, major repair of 20 km of tracks completed, a number of stations reconstructed, works in tunnels continued, communication and centralized signaling trunk lines installed, drainage systems rehabilitated, etc. It is expected that in 2012 construction works will be completed and freight train traffic will open on the combine gauge line. | | | | |
| Rail | Non-physical barriers | Significant Physical barriers are surmountable. | Long time | To continue international cooperation for involvement of DPRK in the processes of constructive development and peaceful coexistence |
| Road | No road transport in place | | | |
| Ports | Different gauge width in DPRK and in Russia | | | |
| BCP | The railway infrastructure is under reconstruction | | | |
| ICD | There are no ICDs on this route | | | |
| Transport regulation | Without constraints for existing traffic flows and current transport situation | Situation with restrictions in future is not fully defined | | Possibly, Intergovernmental Multilateral Agreement for GTI countries (including DPRK) will be required in the future. |
| Cross-border regulation | Cross-border procedures are not effective | Significant | Long time | Intergovernmental Agreements are needed for GTI countries on BCPs operation modes and procedures for transit cargoes (harmonizing BCPs work in the «green window» mode with Fast track lanes). |

(procedures, organizational support, software, technical aspects, equipment, etc.) in the development of the procedures of the new Customs Code of the Customs Union and other applicable legislation.

Similar measures for GTI member countries might include:

- coordination of standardized regulations, procedures and documents relevant to corridor operation (e.g., through bills of loading, transit fast track lanes, etc.), possibly by means of an international agreement or international regulations, etc.;
- coordinated development of transport & logistic infrastructure;
- establishment of an effective facilitation mechanism to solve current issues of corridor development and operation (based on existing international cooperation tools, e.g., GTI), etc.;
- use of mutually beneficial (win-win) cooperation forms in development of transport infrastructure and operating environment.

For GTI:

- initiation of and support to Multilateral Intergovernmental Agreements for GTI countries;
- support to international cooperation in corridor development;
- support to effective positioning of GTR corridors;
- support to win-win cooperation patterns;
- initiation of and support to multilateral investment projects;
- establishment of an effective mechanism to solve current issues of corridor development and operation.

The main task faced by GTI is to create conditions for unblocking and development of GTR corridors.

Comment: one of the most important problems is harmonization of legislative frameworks of Russia and China in part related to transit. Russia is trying to develop, propose and agree documents regulating transit (transit transportation). China's legislation uses the term "Sea-Land Intermodal Transportations". In Russia this term applies to transportation involving different transport modes, while transit is a special kind of transportation relevant to the

following set of terms: domestic, export, import, transit, etc.

For example, joint consultations on Northeast Asia Sea-Land Intermodal Transport Cooperation between transport officials of China, Japan, ROK and Russia were held in Harbin (December 2011). Thus, there is some work under way aimed at creation of an Agreement on Sea-Land Intermodal Freight Vehicle Transportation among the Governments of China, Japan, Republic of Korea and Russia. Perhaps, this work will be successful, but it still does not cover all issues relevant to transit. Other transport modes (railway, etc.) and other concerned parties (BCP, etc) are also involved in transit processes. Possibly, common problems should be addressed as a single set of issues. Possibly, an Intergovernmental Multilateral Agreement for GTI countries (including DPRK) on the BCPs operation modes and procedures for transit (harmonizing BCPs work in the "green window" mode with Fast track lanes) will be required in the future.

4.3 Investment Programme

4.3.1 Missing infrastructure links (BCP facilities, ports, roads, rail network)

At the present time the existing infrastructure is characterized by the following:

- There are BCPs in GTR, but compared to the potential freight base their procedures are not suited for transit, and their capacity is insufficient, which leads to the fact that there are no transit cargo flows through the corridors or they are small;
- There are sea ports in China, Republic of Korea, Russia and DPRK, but cargo and passenger flows via these ports are not fully related to the GTR corridors;
- There are land road and rail networks in place, but development of these networks takes place independently, based on needs of only some segments of the potential cargo base of the region rather than on its overall needs.

4.3.2 Capacity improvements of existing infrastructures (BCP facilities, ports, roads, rail network)

Capacity improvements of existing GTR corridors infrastructures:

1) Tumen Transport Corridor (Russian Segment: Kraskino (road) / Makhhalino (rail) BCPs - ports Posiet /

Zarubino).

- It is planned to reconstruct and resume operations of Hunchun - Makhhalino - Zarubino segment and Makhhalino rail BCP;
- It is planned to develop Zarubino port (with container and other terminals); it is possible to establish a special economic zone in the Zarubino port;
- Ongoing Posiet port development (coal terminal) is not associated with GTR corridors;
- Construction of the new Kraskino road BCP is being completed;
- Construction of a new toll highway on Russian territory will be required in the future (Kraskino road BCP - Zarubino).

2) Suifenhe Transport Corridor (Russian segment: Pogranichny (rail and road) BCPs - ports Vostochny, Nakhodka, Vladivostok).

Construction of the new Pogranichny road BCP is being completed.

The following projects are under discussion:

- Reconstruction of the highway and construction of toll road segments;
- Construction of a rail container transshipment terminal on this segment (station Grodekovo, Pogranichny rail BCP) and railway throughput capacity buildup from Pogranichny rail BCP to the ports Vladivostok, Nakhodka, Vostochny;
- Port Vladivostok development (port technical modernization, relief of load on the city transport system, construction and development of logistics, distribution and new port container and logistics terminals outside city precincts);
- Port Nakhodka development (including development of railway and road throughput capacity within city precincts);
- Port Vostochny development (including construction of new port and logistics terminals, development of railways and roads);
- Ideas of dry ports construction.

3) Korean Peninsula East Corridor (Russian segment: Khasan BCP - connection with the SLB).

- The railway infrastructure is under reconstruction. It was expected that in 2012 construction works would be completed and freight train traffic would open on the combine gauge rail line.