IV. ASIAN HIGHWAY ROUTES

A. Asian Highway route criteria

The following basic principle and route criteria for the Asian Highway network were endorsed by the Commission at its forty-eighth session, as part of the ALTID project.

1. The basic principle should be to minimize the number of roads to be included in the network and make the maximum possible use of the existing infrastructure.

2. In regard to the principles of the ALTID project as far as road, rail and road-cum-rail routes are concerned, existing and potential trade flows should be the main criteria which would include, where appropriate:

(a) Capital-to-capital links (for international transport);

(b) Connections to main industrial and agricultural centres as well as "growth triangles/zones" (links to important origin and destination points);

(c) Connections to major sea and river ports (integration of land and sea transport networks);

(d) Connections to major container terminals and depots (integration of rail and road networks).

B. Proposed Asian Highway routes and assessment

The routes proposed by China, Kazakhstan, Mongolia, the Republic of Korea and the Russian Federation have been reviewed, following the above basic principle and Asian Highway route criteria. In addition, some important national roads that are part of regional and subregional routes in the project participating countries are also proposed to be included in the Asian Highway network.

1. China

Based on the national study on the Asian Highway, China proposed the following 11 routes during the Expert Group Meeting, which would link China to the Democratic People's Republic of Korea, Kazakhstan, the Lao People's Democratic Republic, Mongolia, Myanmar, Nepal, Pakistan, the Russian Federation, Thailand and Viet Nam:

- Kunming-Jinghong-Mohan (to Lao People's Democratic Republic and Thailand)
- Kunming-Hekou (to Viet Nam)
- Kunming-Ruili (to Myanmar)
- Lhasa-Zhangmu (to Kodari, Nepal)
- Urumqi-Hongqilafu (to Pakistan)
- Urumqi-Korgas (to Kazakhstan)
- Kuytun-Alashankou (to Dostyk, Kazakhstan)
- Harbin-Heihe (to the Russian Federation)
- Harbin-Suifenhe (to the Russian Federation)
- Shenyang-Dandong (to the Democratic People's Republic of Korea)
- Shanghai-Xi'an

Considering the existing road and national trunk highway system, an outline of the Ninth Five-year Plan; existing international and subregional Asian Highway routes, the proposal of

neighbouring countries to provide connections to the capital and the main industrial and business centres in China, the following potential Asian Highway routes in China have also been proposed.

The highway routes provide connection to the main industrial centres, sea ports such as Shanghai; Xi'an; Zhengzhou; Nanjing; Lianyungang; Hong Kong, China; Urumqi; Kunming; and Changsha, and important growth centres in north-east China such as Shenyang, Changchun and Harbin, with the capital Beijing. The identified routes extend to the borders, Dandong, Heihe, Saynshand, Korgas, and Hongqilafu, to link to the Democratic People's Republic of Korea, the eastern part of the Russian Federation, Mongolia, Kazakhstan and Jammu and Kashmir. Routes to Central Asia and Jammu and Kashmir had been identified during a previous study.

In consideration of these points, the followings are the Asian Highway routes recommended by the Expert Group Meeting in China.

Route 1: Border of Viet Nam (to Hanoi) – Hongkong, China – Changsha – Zhengzhou - Beijing – Shenyang – Dandong- Border of the Democratic People's Republic of Korea (to Sinuiju)

This route is an extension of the existing Asian Highway route A-1 from Hanoi, the capital of Viet Nam to Beijing, the capital of China, and extends to Pyongyang and Seoul. The stretch between Hong Kong, China to Changsha is the existing Asian Highway route A-82 and the stretch between Changsha, Zhengzhou and Beijing is the existing Asian Highway route A-3.

Route 2: Border of Kazakhstan (Korgas) – Urumqi – Lanzhou –Xi'an - Shanghai

This route had been identified as A-4 in the Asian Highway Study in 1995 and provides a connection to the Central Asian republics from the east coast of China.

Route 3: Border of the Russian Federation (to Chita) – Manzhouli – Harbin – Changchun – Tumen - Border of the Democratic People's Republic of Korea (to Najin)

This route provides a short link to the seaport in the "growth zone" Tumen River area from the Russian Federation and Mongolia. It also connects to the Trans-Siberian Trunk Highway from China.

Route 4: Mong La and Mohan (Ban Bo)- Jinghong – Kunming – Changsha – Zhengzhou – Beijing – Border of Monglia (to Saynshand)

This is part of Asian Highway route A-3, identified previously, providing a link to Ulaanbaatar, capital of Mongolia in the north and connecting the capitals of Myanmar, the Lao People's Democratic Republic and Thailand through Asian Highway route A-2.

Route 5: Border of Jammu and Kashmir (Khunjerab)- Hongqilafu – Kashi – Urumqi

This route provides a connection to the seaport of Karachi in Pakistan for the Central Asian republics and western China. This is part of Asian Highway route A-4 identified in 1995.

Route 6: Hong Kong, China - Shanghai - Liayungang – Shenyang – Changchun - Harbin –Heihe - Border of the Russian Federation (to Blagoveshchensk)

This is a coastal route in south-eastern China connecting major seaports and industrial centres. It also provides a connection to the growth centres Shenyang, Changchun, Harbin and Heihe in eastern China and links to Blagoveshchensk in the Russian Federation.

Route 7: Harbin – Suifenhe

This route provides a link to Ussuriysk and Vladivostok in the Russina Federation.

Route 8: Beijing – Tanggu

This is part of the existing Asian Highway route A-81 connecting the capital Beijing to the seaport Tanggu.

Route 9: Kashi- Turugart (to Kyrgyzstan)

This route is proposed to provide a connection to Kyrgyzstan and to link to existing Asian Highway routes A-61. It further provides a connection to the planned road corridor in Uzbekistan and Krygyzstan.

Route 10: Lhasa- Choksum- Kodari (border of Nepal)

This route is proposed to provide a connection between Lhasa and Kathmandu.

Route 11: Kuitun- Alashankou (Druzhba)

This route is proposed to provide a connection between Kazakhstan and Urumqi through Druzhba and existing route A-72.

Route 12: Urumqi-Eratai-Yarantai (to Mongolia)

This route is proposed to provide a connection between Urumqi and western part of Mongolia.

Route 13: Kunming - Ruili (to Myanmar)

This route is proposed to provide a connection between Kunming and Myanmar.

Route 14: Kunming- Hekou (to Viet Nam)

This route is proposed to provide a connection between Kunming and Viet Nam.

Route 15: Changchun-Baicheng-Ulanhot-Yirshi- border of Mongolia (to Sumber)

This route is proposed to provide a connection between eastern Mongolia and Changchun, Tumen River area and connection to sea ports.

The Asian Highway routes recommended by the expert group meeting are shown in figure 23.

Figure 23. Asian Highway routes in China

2. The Democratic People's Republic of Korea

Bearing in mind the need to provide international links to capital cities in neighbouring countries and to main industrial and business centres, the existing road network in the country and the proposals of neighbouring countries for international routes linkages to the Democratic People's Republic of Korea, potential Asian Highway routes have been identified.

The proposed routes provide connection to the main industrial centres, seaports and important growth centres, such as Wonsan, Sinp'o, Ch'ongjin, Najin, Kaesong and Sonch'on with the capital Pyongyang. The routes have been extended to the borders, to Sinuiju, Kaesong, and Tumengang to link to China, the Republic of Korea, and eastern part of the Russian Federation respectively.

The Asian Highway routes in the Democratic People's Republic of Korea recommended by the expert group meeting are as follows:

Route 1: Border of the Republic of Korea (to Seoul) – Kaesong – Pyongyang –Anju – Sinuiju - Border of China (to Dandong)

This route provides links to the capital of China and the Republic of Korea from Pyongyang, the capital of the Democratic People's Republic of Korea.

Route 2: Border of the Republic of Korea (to Kaesong) – Wonsan - Sinp'o – Ch'ongjin – Rason – Border of China (to Yanji)

This route provides a connection to major seaports, industrial centres and access to seaports for eastern China.

Route 3: Pyongyang - Wonsan

This route provides a link between the above two routes in the Democratic People's Republic of Korea.

Route 4: Rasong- border of the Russian Federation

This route provides connection to Hasan and Vladivostok in the Russian Federation from the Democratic People's Republic of Korea and link to the above route 2.

The Asian Highway routes recommended by the expert group meeting in the Democratic People's Republic of Korea are shown in figure 24.

Figure 24. Asian Highway routes in the Democratic People's Republic of Korea

3. Kazakhstan

The routes proposed for inclusion in the Asian Highway network in Kazakhstan are shown in table 121 and figure 25.

Table 121. Asian Highway routes proposed by Kazakhstan

Number	Road	Length (km)	Note
1.	Korday-Merke	150	Approaches Merke (A-5) and Korday (Georgiyevka).(A- 5)
2.	Merke-Burubaital	275	Approaches Merke (A-5), Burubaital (A-4)
3.	Zhezkazgan-Karaganda-Pavlodar	957	Approaches Zhezkazgan (A- 62), Karaganda (A-74), Pavlodar (A- 60)
4.	Astana-Shiderti-Pavlodar	422	Approaches Astana (A-74), Pavlodar (A-60)
5.	Astana-Petropavlovsk	473	Approaches Petropavlovsk (A-62), Astana (A- 74)
6.	Kokshetau - Ruzayevka	196	Approaches Ruzayevka (A-74)
7.	Georgiyevka-Maykapshagai	416	Approaches Georgiyevka (A-60)
8.	Semipalatinsk - Border of Kazakhstan	113	Approaches Semipalatinsk (A- 60)
9.	border of the Russian Federation - Petropavlovsk-border of the Russian Federation	190	Approaches Petropavlovsk (A- 62)
10.	Almaty-Kokpekti-Koktal-Korgas	360	Section of A- 5

The following paragraphs provide a brief description and assessment of each of the proposed routes.

Route 1: Korday-Merke

This intermediate route connects Almaty and Tashkent, the capital of Uzbekistan.

As this route is very close to the existing international route A-5, following the principle of minimizing the number of routes in the Asian Highway network and avoiding parallel routes, this route may not qualify for inclusion in the network.

Route 2: Merke-Burubaital

This route connects two existing Asian Highway routes A-5 and A-74 and the international significance of the route is not clear.

Route 3: Zhezkazgan-Karaganda-Pavlodar

This route provides connections to the major industrial centres and container terminals of Kazakhstan (Zhezkazgan, Karaganda, and Semipalatinsk) and also provides connections from/to Mongolia with countries in Central Asia, and Asian Highway routes A-60, A- 62 and A-74.

Therefore this route meets Criteria: 1(b) connections to main industrial and agricultural centres and (d) connections to major container terminals and depots.

Route 4: Astana-Shiderti- Pavlodar

This route provides a short link between Ulaanbaatar, the capital of Mongolia, through the Russian Federation via Barnaul with Semipalatinsk, Pavlodar to the capital of Kazakhstan, Astana. The route also links major industrial centres and container terminals in Kazakhstan and the Russian Federation.

Therefore this route meets Criteria: 1(a) capital-to-capital links; (b) connections to main industrial and agricultural centres; and (d) connections to major container terminals and depots.

Route 5: Astana-Petropavlovsk

The route connects to the Trans-Siberian Trunk Highway through Kokshetau, Petropavlovsk from Astana. This route also links major industrial centres and container terminals in Kazakhstan and the Russian Federation.

Therefore this route meets Criteria: 1(a) capital-to-capital links; (b) connections to main industrial and agricultural centres; and (d) connections to major container terminals and depots.

Route 6: Kokshetau-Ruzayevka

This intermediate route provides a link between Route 5 and Asian Highway route A-74 and is a short stretch. The international significance of this route is not clear.

Route 7: Georgiyevka-Maykapshagai

Route 7 is considered a parallel route to the existing Asian Highway route A-72, and there is no connecting route identified in China. The inclusion of this route depends on the identification of a connecting route in China.

Route 8: Semipalatinsk-border of Kazakhstan

This route provides a short link between Ulaanbaatar through the Russian Federation via Barnaul with Semipalatinsk, Pavlodar to the capital of Kazakhstan, Astana, and connects to the Trans-Siberian Trunk Highway through Kokshetau, Petropavlovsk and also links major industrial centres and container terminals in Kazakhstan and the Russian Federation.

Therefore this route meets Criteria: 1(a) capital-to-capital links; (b) connections to main industrial and agricultural centres; and (d) connections to major container terminals and depots.

Route 9: Border of the Russian Federation – Petropavlovsk - border of the Russian Federation

This route is part of the Trans-Siberian Trunk Highway, the main road of the Russian Federation along the southern border that links major industrial centres in Siberia and the far east of the Russian Federation.

Therefore, this route meets Criteria: 1(a) capital-to-capital links; (b) connections to main industrial and agricultural centres; (c) a connection to major sea and river ports; and (d) connections to major container terminals and depots.

Route 10: Almaty-Kokpekti-Koktal-Korgas

The route is parallel to the existing Asian Highway route A-72, and there is no connecting route identified in China. The inclusion of this route depends on the identification of connecting links in China.

The new routes recommended for inclusion in the Asian Highway network in Kazakhstan by the expert group meeting are shown in figure 26 and table 122.

Table 122. New Asian Highway routes in Kazakhstan

Route	Length	Criteria
The Russian Federation border–Semipalatinsk-Pavlodar-Astana-Kokshetau-Petropavlovsk	1,322	1(a) capital-to-capital links; (b) connections to main industrial and agricultural centres; (d) connections to major container terminals and depots
Zhezkazgan-Karaganda-Pavlodar	957	(b) connections to main industrial and agricultural centres; (d) connections to major container terminals and depots
The Russian Federation border-Petropavlovsk-the Russian Federation border	190	1-(a) capital-to-capital links; (b) connections to main industrial and agricultural centres; (d) connections to major container terminals and depots

Figure 25. Proposed Asian Highway routes in Kazakhstan

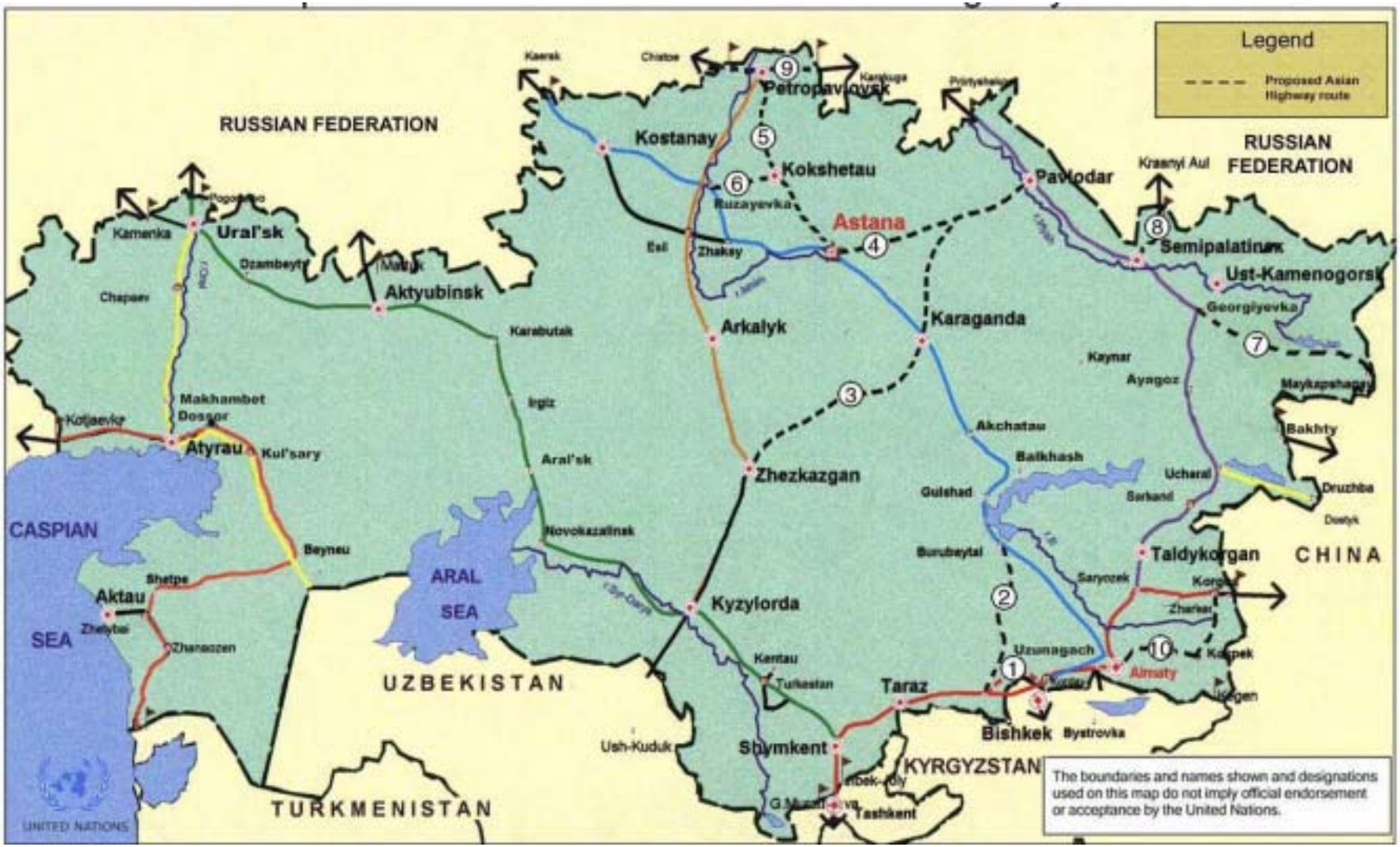


Figure 26. Asian Highway routes in Kazakhstan

4. Mongolia

Mongolia has developed a Millennium road plan in 2001 by resolution of the Parliament of Mongolia, with the purpose of connecting neighbouring and regional countries. The Millennium Road includes one east-west horizontal arterial road and five north-south vertical arterial roads. As a result, Mongolia has proposed the inclusion of the horizontal east-west link of the Millennium Road in the Asian Highway network.

The route proposed for inclusion in the Asian Highway network in Mongolia is shown in table 123 and figure 27.

Table 123. Asian Highway route proposed by Mongolia

Number	Road	Length (km)	Note
1	Border of Mongolia-Tsagaannuur-Olgiy-Tosontsengel- Tsetserleg- Harhorin-Ulaanbaatar-Ondorhaan-Sumber- border of Mongolia	2,619	Connects east and west of Mongolia

The length, number of lanes and classification by category for the proposed route is given in table 124.

Table 124. Conditions of the Asian Highway route proposed by Mongolia

Routes	Major points on the route	Length (paved)	Width, number of lanes
Ulaanbaatar-Harhorin-Tsetserleg-Tosontsengel-Olgiy-Tsagaannuur-border of Mongolia	Ulaanbaatar-Elsentasarhai	280	7m, 2 lanes
	Elsentasarhai-Harhorin	65	
	Harhorin-Tsetserleg	128	
	Tsetserleg-Tosontsengel	372	
	Tosontsengel-Olgiy	662	
	Olgiy-Tsagaannuur	69	
	Tsagaannuur-border of Mongolia	35	
Ulaanbaatar-Ondorhaan-Sumber- border of Mongolia	Ulaanbaatar-Nalayh	27	6m, 2 lanes
	Nalayh-Erdene sum	37	7m, 2 lanes
	Erdene sum- Baganuur	51	
	Baganuur- Ondorhaan	196	
	Ondorhaan-Choybalsan	327	
	Choybalsan- Sumber	338	
	Sumber -border of Mongolia	32	

During the Expert Group Meeting Mongolia proposed an additional route, Ulaanbaishint - Hovd-Bulgan Sum- Yarantai, for inclusion in the Asian Highway network.

A brief description and assessment of the proposed routes are provided in following paragraphs.

Route 1: Ulaanbaishint -Tsagaannuur-Olgiy-Hovd- Tsetserleg- Harhorin-Ulaanbaatar-Ondorhaan-Choybalsan-Sumber- border of Mongolia

The western horizontal link of the Millenium Road from Ulaanbaatar to Olgiy is planned to connect the capitals of Mongolia and the Russian Federation. It provides a short link with Kazakhstan's capital through Barnaul and also connects to the other Central Asian republics. The eastern link of the Millenium Road connects Mongolia with the Korean peninsula through Changchun, China.

As the existing route A-83, Darhan-Borshoo is parallel to the proposed western link of the Millenium Road, the existing A-83 is to be realigned to the proposed route from Ulaanbaishint to Ulaanbaatar and to continue on to Sumber and the border of Mongolia.

Route 2: Ulaanbaishint -Hovd-Bulgan Sum- Yarantai- (to Urumqi, China)

The proposed route is one of the vertical links of the Millenium Road in the western part of Mongolia connecting Urumqi in China and Novosibirsk in the Russian Federation.

The Asian Highway network recommended by the Expert Group Meeting in Mongolia is shown in figure 28.

Figure 27. Proposed Asian Highway routes in Mongolia

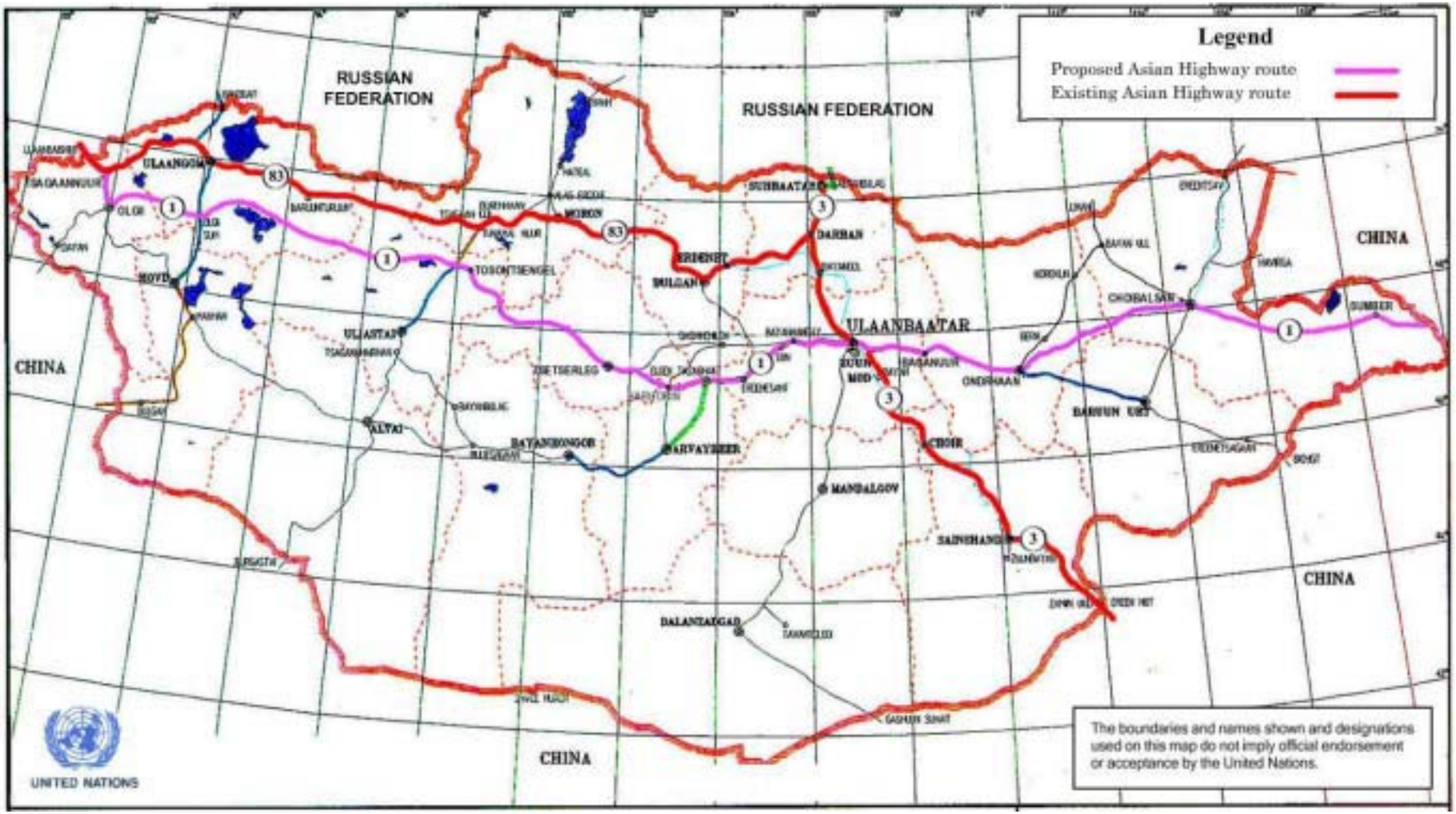
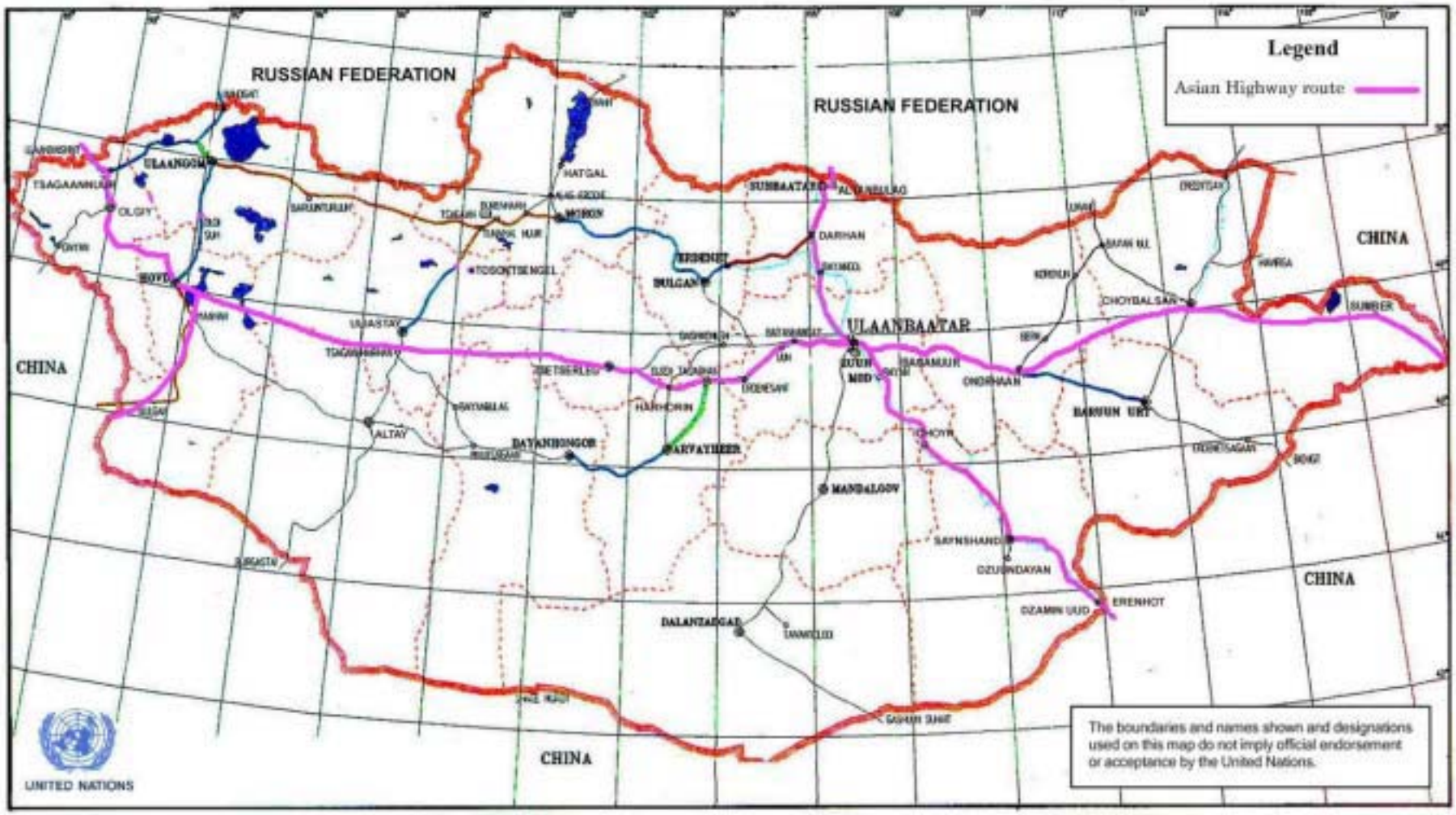


Figure 28. Asian Highway routes in Mongolia



5. The Republic of Korea

The routes proposed for inclusion in the Asian Highway network in the Republic of Korea according to Asian Highway route criteria, are shown in table 125 and figure 29.

Table 125. Asian Highway routes proposed by the Republic of Korea

Route	Sections	Length (km)
1	Pusan-Seoul- Munsan-border of the Republic of Korea	444
2	Pusan-P'ohang-Kosong	456

The length, number of lanes and classification by category for the proposed routes are shown in table 126.

Table 126. Conditions of Asian Highway routes proposed by the Republic of Korea

Routes (Priority)	Major points on the route	Length (Paved)	Number of lanes	Conformity to Asian Highway Standards
1	Pusan-Taejon Taejon-Seoul Seoul-Munsan (border of the Republic of Korea)	286 118 40	4 4 4	Primary
2	Pusan-P'ohang P'ohang-Tonghae Tonghae-Kosong (border of the Republic of Korea)	146 270 40	4 4 4	Class 1

Figure 29. Proposed Asian Highway routes in the Republic of Korea

A brief description and assessment of each of the proposed routes is provided in the following paragraphs.

Priority route 1: Pusan-Seoul- Munsan-border of the Republic of Korea

This route provides links between the capitals of three countries, the Republic of Korea, the Democratic People's Republic of Korea and China, and also provides access to other international routes included in the Asian Highway network in China and Mongolia to connect the major sea ports, industrial, agricultural centres and container terminals.

Therefore, this route meets Criteria: 1(a) capital-to-capital links; (b) connections to main industrial and agricultural centres as well as the "growth zone"; (c) connections to major sea and river ports; and (d) connections to major container terminals and depots.

Priority route 2: Pusan-P'ohang-Kosong

This route provides connections between the Korean peninsula and Central Europe, through Pusan- Wonsan (the Democratic People's Republic of Korea) and China (Changchun and Harbin), to Mongolia and the Russian Federation. It also provides connections to seaports on the east cost of the Korean peninsula, a growth zone (TRADP), capitals, major industrial and agricultural centres and major container terminals. This route also provides access to other international routes and to the Trans-Siberian Highway in the Russian Federation.

This route meets Criteria: 1(b) connections to main industrial and agricultural centres as well as the "growth zone"; (c) connections to major sea and river ports; and (d) connections to major container terminals and depots.

Both of the above routes originate from Pusan, the southern port in the Republic of Korea, therefore it opens up the possibility of extending the Asian Highway Route A-1 to Japan through a ferry link or possibly a submarine tunnel to Shimonoseki from Pusan.

The routes recommednded by the expert group meeting for inclusion in the Asian Highway network in the Republic of Korea are shown in figure 30 and table 127.

Table 127. Asian Highway routes in the Republic of Korea

Route	Length (km)	Asian Highway criteria
Pusan-Seoul- Munsan-border of the Republic of Korea	444	1(a) capital-to-capital links (b) connections to main industrial and agricultural centres as well as "growth zones" (c) connections to major sea and river ports (d) connections to major container terminals and depots
Pusan-P'ohang-Kosong- border of the Republic of Korea	456	1(b) connections to main industrial and agricultural centres as well as "growth zones" (c) connections to major sea and river ports (connections to major container terminals and depots

Figure 30. Asian Highway routes in the Republic of Korea

6. The Russian Federation

The routes proposed for inclusion in the Asian Highway network in the Russian Federation in accordance with Asian Highway route criteria are shown in table 128 and figure 31.

Table 128. Asian Highway routes proposed by the Russian Federation

Routes (Priority)	**Major points on the route**	**Length (km)**	**Criteria**
P–1	Minsk (border of Belarus) - Moscow – Ryazan – Penza – Samara – Ufa – Chelyabinsk – Kurgan – Omsk – Novosibirsk – Krasnoyarsk – Irkutsk – Ulan-Ude – Chita – Svobodnyy – Zavitinsk – Obluch'ye– Birobidzhan– Khabarovsk – Vladivostok	8,760	Connection to North Europe and North-East Asia Capital-to-capital links Connection to main industrial and agricultural centres Connection to major sea and river ports Connection to major container terminals and depots
	Connecting links		
P-1-1	Samara – B. Chernigovka	187	
P-1-2	Chelyabinsk – Troitsk	117	
P-1-3	Omsk – Cherlak	178	
P-1-4	Novosibirsk – Biysk	935	
P-1-5	Barnaul – Rubtsovsk	319	
P-1-6	Krasnoyarsk – Kyzyl	1,066	
P-1-7	Kultuk – Mondy	218	
P-1-8	Ulan-Ude – Kyakhta	219	
P-1-9	Chita – Zabaykal'sk	482	
P-1-10	Svobodnyy – Blagoveshchensk	143	
P-1-11	Ussuriysk – Pogranichny	117	
P-1-12	Vladivostok –Nakhodka	143	
P-1-13	Vladivostok – Hasan	221	
	Subtotal	**4,345**	
P-2	Kursk – Voronezh – Saratov – Ozinki	970	Connection to Central Europe and Asia Capital-to-capital links Connection to main industrial and agricultural centres
P-3	Border of Kazakhstan – Astrakhan – Volgograd – Kamensk-Shakhtinskiy	801	Connection to Central Europe and Asia Capital-to-capital links
P-4	Border of Finland-Vyborg – St. Peterburg – Novgorod - Moscow – Tambov – Volgograd – Astrakhan – Makhachkala – border of Azerbaijan	2,801	Connection to Europe and Central Asian republics Capital-to-capital links Connection to main industrial and agricultural centres
	Total	**17,677**	

Note: The letter "P" stands for the priority of the proposed routes in the Russian Federation.

Figure 31. Proposed Asian Highway routes in the Russian Federation

Traffic characteristics, length, number of lanes and classification by category for the proposed routes are shown in table 129.

Table 129. Condition of Asian Highway routes proposed by the Russian Federation

Routes (Priority)	Major points on the route	Length (km)	Class	Number of lanes	Traffic volume, veh/day (in 1000)
P-1	Minsk (border of Belarus)	437	I	6-4	3.7-24.0
	Moscow - Ryazan	186	I-II	4-2	9.5-33.4
	Ryazan - Penza	450	II-III	2	4.5-8.1
	Penza - Samara	390	II-III	2	6.7-17.8
	Samara - Ufa	437	III	2	4.5-8.8
	Ufa - Chelyabinsk	394	II-III	2	4.6-9.8
	Chelyabinsk - Kurgan	278	II-III	2	2.8-7.1
	Kurgan - Omsk	316	II-III	2	3.0-3.8
	Omsk - Novosibirsk	613	II-III	2	1.3-5.4
	Novosibirsk - Krasnoyarsk	734	I-II-III	4-2	2.3-8.6
	Krasnoyarsk - Irkutsk	1,008	II-III	2	1.0-8.8
	Irkutsk - Ulan-Ude	433	II-III	2	1.9-2.7
	Ulan-Ude - Chita	656	II-III	2	2.0-3.4
	Chita - Chernyshevsk	154	III	2	1.6
	Chernyshevsk - Never	510	No road		
	Never - Svobodnyy	410	No road		
	Svobodnyy - Zavitinsk	116	III	2	0.7
	Zavitinsk - Bureya	45	No road		
	Bureya - Obluch'ye	120	III	2	0.8
	Obluch'ye - Birobidzhan	161	III	2	1.2
	Birobidzhan - Khabarovsk	173	III	2	1.4
	Khabarovsk - Vladivostok	740	I-II-III	4-2	1.3-12.0
	Subtotal	**8,760**			
P-1-1	Samara – Bol'shaya Chernigovka	187	III	2	1.2-3.9
P-1-2	Chelyabinsk - Troitsk	117	I,III	2	3.7-6.0
P-1-3	Omsk - Cherlak	178	II	2	1.8-2.6
P-1-4	Novosibirsk - Biysk	935	II-III	2	1.1-12.0
P-1-5	Barnaul - Rubtsovsk	319	II-III	2	2.5-4.2
P-1-6	Krasnoyarsk - Kyzyl	1,066	II-III	2	1.2-4.1
P-1-7	Kultuk - Mondy	218	III-IV	2	0.9-1.9
P-1-8	Ulan-Ude - Kyakhta	219	II-III	2	1.2-4.5
P-1-9	Chita - Zabaykal'sk	482	III-IV	2	1.5-4.8
P-1-10	Svobodnyy - Blagoveshchensk	143	I,IV	2	0.8-3.5
P-1-11	Ussuriysk - Pogranichny	117	III-IV	2	0.4-1.6
P-1-12	Vladivostok - Nakhodka	143	II-III	2	5.0-14.0

Routes (Priority)	Major points on the route	Length (km)	Class	Number of lanes	Traffic volume, veh/day (in 1000)
P-1-13	Vladivostok - Hasan	221	IV	2	0.5-1.0
	Subtotal	**4,345**			
P-2	Kursk - Voronezh	216	II-III	2	3.1-4.8
	Voronezh - Saratov	459	III	2	3.6-9.8
	Saratov - Ozinki	295	II-III	2	0.9-3.5
	Subtotal	**970**			
P-3	Border of Kazakhstan - Astrakhan	58	II-III,V	2	0.8-3.3
	Astrakhan – Volgograd	378	II-III	2	3.9-4.5
	Volgograd - Kamensk-Shakhtinskiy	365	II-III	2	2.0-4.5
	Subtotal	**801**			
P-4	Vyborg – St. Peterburg	138	II-III	2	1.9-14.0
	St. Peterburg – Novgorod	161	I-II	4-2	4.5-10.9
	Novgorod – Moscow	472	I-II	4-2	4.5-32.1
	Moscow – Tambov	325	I-II	6-2	4.0-25.0
	Tambov – Volgograd	615	II	2	3.3-12.4
	Volgograd – Astrakhan	378	II-III	2	3.9-4.5
	Astrakhan – Makhachkala	525	II-III,IV	2	1.5-3.5
	Makhachkala – border of Azerbaijan	187	I	4	6.0-7.5
	Subtotal	**2,801**			
	Total	**17,677**			

A brief detailed description and assessment of the proposed routes is provided in the following paragraphs.

Priority route P-1: Border of Belarus (to Minsk) -Moscow – Samara – Ufa – Chelyabinsk – Kurgan – Omsk – Novosibirsk – Krasnoyarsk – Irkutsk – Ulan-Ude – Chita – Never - Svobodnyy – Khabarovsk – Vladivostok-Hasan

This route connects Central Europe with North-East Asia, through Moscow, Ufa, Chelyabinsk Omsk, Novosibirsk, Irkutsk, Ulan-ude, Chita, Never, Svobodnyy, Khabarovsk and Vladivostok to the Korean Peninsula, using the Trans-Siberian Trunk Highway. It provides links to the capital, Moscow, from Astana, the capital of Kazakhstan through A-83, Ulaanbaatar, the capital of Mongolia through A-3, and the capitals of the Democratic People's Republic of Korea and the Republic of Korea. It also provides a connection to major container terminals, and industrial and agricultural centres in European and Asian parts of the Russian Federation located along the southern border. It connects sea ports in the far eastern part of the Russian Federation, the "growth zone" in the Tumen River region in the Korean peninsula and Europe. This route is under study as part of a feasibility study of the international route Paris-Moscow-Vladivostok-New York. This route is included in the CIS

network and part of this route is included in the E-network which connects the Asian part of the Russian Federation with the E-road network (route E-30 Moscow-Minsk).

Therefore, this route meets Criteria: 1 (a) capital-to-capital links; (b) connections to main industrial and agricultural centres as well as the "growth zone"; (c) connections to major sea and river ports; and (d) connections to major container terminals and depots.

Priority route P-2: Kursk – Voronezh – Saratov – Ozinki

This route provides connections to container terminals in the Russian Federation (Saratov, Borisoglebsk, Voronezh, Kursk), and links industrial and agricultural centres in Kazakhstan, the Russian Federation and Central Europe through the E-road network (route E-38). This route is also included in the CIS network.

Therefore, this route meets Criteria: 1(b) connections to main industrial and agricultural centres as well as the "growth zone"; and (d) connections to major container terminals and depots.

Priority route P-3: Border of Kazakhstan – Astrakhan – Volgograd – Kamensk-Shakhtinskiy

It provides connections to the main industrial centres, agricultural centres, sea and river ports (Astrahan, Volgograd) and container terminals (Astrahan, Volgograd). It connects to the existing Asian Highway route A-70 in Kazakhstan and provides a link to central Europe. This route is included in the CIS network.

Therefore, this route meets Criteria:1 (b) connections to main industrial and agricultural centres as well as the "growth zone"; (c) connections to major sea and river ports; and (d) connections to major container terminals and depots.

Priority route P-4: Border of Finland-Vyborg – St. Peterburg – Novgorod - Moscow – Tambov – Volgograd – Astrakhan – Makhachkala – Derbent - border of Azerbaijan

This route provides connections to Northern Europe and Central Asia, through major industrial centres container terminals (Sankt - Peterburg, Volgograd, Astrakhan, Tambov, Novgorod), river ports and sea ports (Tambov, Volgograd, Astrahan, Makhachkala). It also provides a connection to the capitals of the Russian Federation and Azerbaijan; through Asian Highway route A-5 from Volgograd, further it provides connection to Central Asia through Asian Highway routes A-5 and A-70. This route is a part of the E-road network (E-105 and E-115) and is also included in the CIS network. Part of this route is included in the Crete corridor No.9 (Moscow-Astrakhan).

Therefore, this route meets Criteria: 1(a) capital-to-capital links; (b) connections to main industrial and agricultural centres as well as the "growth zone"; (c) connections to major sea and river ports; and (d) connections to major container terminals and depots.

Route P-1-1: Samara – Bol'shaya Chernigovka

This route provide links to existing Asian Highway routes A-61 and A-63 from the Trans-Siberian Trunk Highway through Bol'shaya Chernigova, connecting industrial and agricultural centres in Kazakhstan and the Russian Federation..

This route meets the Criteria: 1 (b) connections to main industrial and agricultural centres as well as the "growth zone" and is recommednded for inclusion in the Asian Highway network as extension of route A- 63.

Route P-1-2: Yekaterinburg-Chelyabinsk – Troitsk

This route is an extension of the existing Asian Highway route A-74 from Troitsk and provides a connection between capitals, industrial and agricultural centres in Kazakhstan and the Russian Federation.

This route meets the Criteria: 1 (b) connections to main industrial and agricultural centres as well as the "growth zone".

Route P-1-3: Omsk – Cherlak

This route is an extension of the existing Asian Highway route A-60 from Cherlak and connects industrial and agricultural centres in Kazakhstan and the Russian Federation.

This route meets the criteria: 1 (b) connections to main industrial and agricultural centres as well as the "growth zone".

Routes P-1-4: Novosibirsk – Biysk - Tashanta

This route connect Mongolia from Novosibirsk in the Trans-Siberian Trunk Highway and thus providing link between the capitals of Mongolia and the Russian Federation as well as industrial and agricultural centres.

This route meets the criteria: 1 (a) capital-to-capital links; and (b) connections to main industrial and agricultural centres as well as the "growth zone".

Route P-1-5: Barnaul – Rubtsovsk

This route provides a link to existing Asian Highway route A-60 and also provides a short connection between the capitals of Kazakhstan and Mongolia as well as providing a link to industrial and agricultural centres in Mongolia, Kazakhstan and the Russian Federation.

This route mests the Criteria: 1 (a) capital-to-capital links; and (b) connections to main industrial and agricultural centres as well as the "growth zone".

Route P-1-6: Krasnoyarsk – Kyzyl

Although this route is proposed to provide connections to Mongolia, as there is no link identified in Mongolia, its inclusion in the Asian Highway network depends on the identification of connecting links in Mongolia.

Route P-1-7: Kultuk – Mondy

The route is close and parallel to the route P-1-8 and its inclusion in the Asian Highway network depends on the identification of connecting links in Mongolia.

Routes P-1-8: Ulan-Ude – Kyakhta

This route is an extension of the existing Asian Highway route A-3, and provides connections to the Trans-Siberian Trunk Highway, links the capitals of the Russian Federation and Mongolia, and also connections to industrial and agricultural centres, major container terminals and river ports that are located along the southern border of the Russian Federation.

This route meets the Criteria: 1(a) capital-to-capital links; (b) connections to main industrial and agricultural centres as well as the "growth zone"; and (d) connections to major container terminals and depots.

Routes P-1-9: Chita – Zabaykal'sk

This route provides a connection to the industrial and agricultural centres in north-east China with industrial and agricultural centres located along the Trans-Siberian Trunk Highway in the Russian Federation. This route could also provide a short link for Siberia with the port Najin in the Democratic People's Republic of Korea and Nakhodka in the Russian Federation through Harbin and Changchun, China.

This route meets the Criteria: 1(a) capital-to-capital links, (b) connections to main industrial and agricultural centres as well as the "growth zone", and (c) connections to major sea and river ports.

Route P-1-10: Svobodnyy – Blagoveshchensk

This route is proposed to connect North-east China with Siberia and the far eastern part of the Russian Federation. The road connection to China is also well developed from Hiehe, currently the border traffic is about 250 vehicles a day.

Route P-1-11: Ussuriysk – Pogranichny

This route is proposed to connect north-east China with Siberia and the far eastern part of the Russian Federation. It provides a short link to Vladivostok and Nakhodka from the eastern part of China. It provides connection to Harbin, China through Suifenhe.

Route P-1-12: Vladivostok –Nakhodka

This route connects major industrial centres in the far eastern part of the Russian Federation through the Trans-Siberian Trunk Highway with the sea port in Nakhodka which has a complementary role for Vladivostok, functioning as a major port connecting to Siberia.

This route meets the Criteria: 1 (b) connections to main industrial and agricultural centres as well as the "growth zone"; and (c) connections to major sea and river ports.

Route P-1-13: Vladivostok – Hasan

This route connects all major industrial centres in the far eastern part of the Russian Federation through the Trans-Siberian Trunk Highway with sea ports in the Korean peninsula (with the Democratic People's Republic of Korea).

This route meets the Criteria: 1 (b) connections to main industrial and agricultural centres as well as the "growth zone"; and (c) connections to major sea and river ports.

The routes recommended by the expert group meeting for inclusion in the Asian Highway network in the Russian Federation are shown in table 130 and on figure 32.

Table 130. Asian Highway routes in the Russian Federation

Route	Length	Remarks
Border of Belarus (to Minsk) –Smolensk-Moscow – Ryazan – Penza – Samara – Ufa – Chelyabinsk – Kurgan – Omsk – Novosibirsk – Krasnoyarsk – Irkutsk – Ulan-Ude – Chita – Never - Svobodnyy – Zavitinsk – Bureya – Obluch'ye– Birobidzhan– Khabarovsk – Vladivostok-	8,981	(a) Capital-to-capital links (b) Connection to main industrial and agricultural centres as well as "growth zones" (c) Connection to major sea and river ports (d) Connection to major container

Route	Length	Remarks
Hasan		terminals and depots
Connecting links		
Samara – Bol'shaya Chernigovka	187	
Chelyabinsk – Troitsk	117	
Omsk – Cherlak	178	
Novosibirsk – Tashanta	935	
Barnaul – Rubtsovsk	319	
Ulan-Ude – Kyakhta	219	
Vladivostok-Nakhodka	142	
Svobodnyy – Blagoveshchensk	143	
Ussuriysk – Pogranichny	117	
Yekaterinburg -Chelyabinsk		
Border of Ukraine - Kursk – Voronezh – Saratov – Ozinki	970	(b) Connection to main industrial and agricultural centres as well as "growth zones" (d) Connection to major container terminals and depots
Border of Kazakhstan – Astrakhan – Volgograd – Kamensk-Shakhtinskiy - border of Ukraine	801	(b) Connection to main industrial and agricultural centres as well as "growth zones" (c) Connection to major sea and river ports (d) Connection to major container terminals and depots
Border of Finland-Vyborg – St. Peterburg – Novgorod - Moscow – Tambov – Volgograd – Astrakhan – Makhachkala – Derbent-border of Azerbaijan	2,801	(a) Capital-to-capital links (b) Connection to main industrial and agricultural centres as well as "growth zones" (c) Connection to major sea and river ports (d) Connection to major container terminals and depots

Figure 32. Asian Highway routes in the Russian Federation

C. Numbering system of identified Asian Highway routes

1. Existing route numbering system for the Asian Highway network

The existing numbering system for the new Asian Highway network was approved by the Expert Group Meeting held from 29 November to 3 December 1993 in Bangkok, attended by fifteen Asian Highway member countries, Bangladesh, Cambodia, China, India, Indonesia, Islamic Republic of Iran, the Lao People's Democratic Republic, Malaysia, Mongolia, Myanmar, Nepal, Pakistan, Sri Lanka, Thailand and Viet Nam.

The existing numbering system is outlined in the following paragraphs:

1. Route numbers begin with "A", which stands for "Asian", followed by one or two digits. This is an application of the same principle used for the development of the European "E" road network numbering system, based on the "European Agreement on Main International Traffic Arteries, 1975". The purpose is to make the numbering system for the Asian Highway uniform with the European system, and to make these two regional road networks fully compatible in the future.

2. As some countries use the letter "A" symbol on national roads, the "AH" letters, which stand for "Asian Highway", instead of "A", will be used on road signs. Each member country will decide the colour to be used to distinguish the Asian Highway network signs from other national road signs.

3. The identified Asian Highways in these countries are classified as international routes and subregional routes. International routes are those, that will facilitate uninterrupted transportation across the subregions (zones) and subregional routes are those routes that facilitate transport across countries within one subregion (zone). Accordingly, the international and subregional route numbers are assigned to the identified routes.

4. Route numbers 1 to 9 are assigned to international routes, which run across the zones described below.

5. The whole region is divided into four zones (subregions) as follows:

Zone 1: Cambodia, Indonesia, the Lao People's Democratic Republic, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Viet Nam

Zone II: Bangladesh, India, Nepal and Sri Lanka

Zone III: Afghanistan, Islamic Republic of Iran and Pakistan

Zone IV: China and Mongolia

Note: The Commission at its fiftieth session in 1994 endorsed the revised regional subgrouping which covers the above-mentioned zones. These zones are to be replaced with the following subregional groupings: Subregional Group 1 for Zone III, Subregional Group 2 for Zone IV, Subregional Group 3 for Zone II, Subregional Group 4 for Zone 1.

6. Route numbers 10 to 39, 40 to 59, 60 to 79, and 80 to 99 are assigned to subregional routes, which run within Zone I, II, III and IV, respectively.

7. The present route numbers (of the existing Asian Highway routes) are kept unchanged where possible to avoid confusion.

As the current study includes the Democratic People's Republic of Korea, the Republic of Korea, and the Russian Federation as new members, all these countries are proposed to be included in Zone IV (Group 2) owing to their location in North-East Asia. Additionally, as the Russian Federation is a big country extending to Europe and Central Asia, it is also proposed to be included in Zone III (group 1). Therefore, the revised zoning for the numbering system is shown in the following table.

Table 131. Revised subregional groupings

Zone (Group)	Countries	Subregional Route Numbers
Zone I (Group 4)	Brunei Darussalam, Cambodia, China, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam	10-39
Zone II (Group 3)	Bangladesh, Bhutan, India, Myanmar, Nepal, Pakistan, and Sri Lanka	40-59
Zone III (Group 1)	Afghanistan, Armenia, Azerbaijan, China, India, Islamic Republic of Iran, Kazakhstan, Kyrgyzstan, Pakistan, the Russian Federation, Tajikistan, Turkey Turkmenistan, and Uzbekistan	60-79
Zone IV (Group 2)	China, the Democratic People's Republic of Korea, Kazakhstan, Mongolia, the Republic of Korea and the Russian Federation	80-99

2. Numbering of the Asian Highway routes

(a) International routes

There are five routes that could potentially be designated as international Asian Highway routes in North-East Asia as they pass through more than one zone, as indicated above. Among the five routes, four routes are considered to be extensions of the existing international routes in those countries and one route is a new international route.

The route from the border of Viet Nam-Hong Kong, China-Changsha-Zhengzhou-Beijing-Shenyang-Sinuiju-Pyongyang- Seoul- Pusan is considered an extension of the existing route, A-1. The route Changsha – Zhengzhou – Beijing is the existing A-3 route. After renumbering, the proposed link to Pyongyang and Seoul will also be part of Asian Highway route A-1. Route A-82, from Hong Kong, China to Changsha is now considered an international route connecting Beijing with Pyongyang and Seoul, and thus it is proposed to renumber A-82 to A-1.

The route from Mong La and Ban Bo -Jinghong-Kunming-Changsha- Zhengzhou -Beijing-Saynshand-Ulaanbaatar- Altanbulag is existing route A-3, which will be extended to Ulan-Ude in the Russian Federation.

The route Urümqi-Kashi- Hongqilafu-Khunjerab is part of route A-4 identified by a previous study as connecting sea ports in Pakistan to the Central Asian republics and western China.

Route A-4 from Shanghai to Urumqi in China, which was identified during a previous study, is now proposed for renumbering as A-5. It will be extended to Korgas, Kazakhstan to link to the existing international route A-5 in Central Asia and will continue from Baku to the newly proposed route in the Russian Federation through Derbent, Volgograd, Moscow, St. Peterburg, to the border of Finland.

The proposed route from Pusan- Seoul-Pyongyang- Changchun- Harbin-Chita--Moscow-Smolensk to the border of Belarus is a new international route and is designated as A-6. The route from Hasan - Vladivostok -Khabarovsk-Chita is also considered as an alternate international route and has been assigned route number 6A.

(b) Subregional routes

The identified subregional routes provide links to the identified new international routes, or are an extension of already identified subregional routes in those countries or are new subregional routes in North-East Asia. The individual routes identified in the countries are linked to form 16 subregional routes. Most of these subregional routes are assigned an existing route number or a new route number from 80-99, corresponding to Zone IV (Group 2). As two of the proposed routes in China provide connections to Myanmar and the Lao People's Democratic Republic which belong to Zone I (Group 4), two new route number 14 and 16, corresponding to Zone I are assigned to these routes because of the proximity to the region. One of the proposed routes connects to Nepal which belongs to Zone II (Group 3), so the existing route number 42, corresponding to Zone II, is assigned to this route. Six proposed routes provide connections to western China and the Russian Federation from Central Asia, which corresponds to Zone III (Group 2), therefore the existing route numbers A-60, A-61, A-70, A-72, and A-74 from Zone III have been assigned to the identified routes.

(c) Proposed route numberings

Route numbers A-1, A-3, A-4, A-5, and A-6 (6A) have been assigned to the identified international Asian Highway routes and route numbers A-14, A-16, A-42, A-60, A-61, A-63, A-70, A-72, A-74, A-81, A-83, A-87, A-88, A-89, A-90 and A-91 have been assigned to identified subregional Asian Highway routes.

The recommended Asian Highway routes and route numbers for the identified international and subregional routes in China, Kazakhstan, Mongolia, the Russian Federation, the Democratic People's Republic of Korea and the Republic of Korea, are shown in table 132 and figure 33.

Table 132. The Asian Highway routes and numbering

International routes:

A-1	Border of Viet Nam-Pingxiang-Shenzhen-Changsha-Zhengzhou-Beijing-Shenyang-Dandong- Shinuiju-Pyongyang-Kaesung-Seoul-Taejon-Pusan
A-3	Daluo (to Myanmar)/Mohan(to Lao People's Democratic Republic)-Mengla-Jinghong-Kunming -Changsha- Zhengzhou -Beijing-Erdenet-Dzamiin-Uud-Ulaanbaatar- Altanbulag –Ulan-Ude
A-4	Urumqi- Khasi- Hongqilafu-Khunjurab
A-5	Shanghai-Xi'an-Lanzhou-Urumqi-Khargos-Almaty-Tashkent-Ashgabat-Turkemenbashi-Baku-Derbent-Makhachkala- Astrakhan-Volgograd- -Tambov-Moscow- St. Peterburg- Vyborg- Border of Finland

A-6	Busan-Seoul-Pyongyang-Wonsan- Ch'ongjin-Rason-Hunchun-Yanji—Changchun-Harbin-Manzhouli- Chita-Ulan-Ude-Novosibirsk- Omsk-Petropavlovsk-Chelyabinsk-Samara- Moscow-Smolensk-Border of Belarus
6A	Hasan-Vladivostok-Khabarovsk-Birobidzhan-Svobodnyy-Never-Chita
Subregional routes:	
A-14	Kunming-Hekou (to Viet Nam)
A-16	Kunming-Ruili (to Myanmar)
A-42	Kodari (Border of Nepal) - Choksum- Lhasa
A-60	Omsk- Cherlak- Pavlodar
A-61	Border of Ukraine -Kursk-Voronezh–Saratov-Ural'sk – Aktyubinsk-Kyzylorda-Shymkent-Bishkek- Turugart- Kashi
A-63	Samara-Bol'shaya Chernigovka- Ural'sk- Atyarau
A-70	Border of Ukraine-Kamensk-Shakhtinskiy – Volgograd- Astrakhan-Atyrau
A-72	Kuytun-Alashankou (Dostyk)
A-74	Yekaterinburg-Chelyabinsk-Troitsk-Kostanay-Astana-Balkhash-Almaty
A-81	Beijing- Tanggu
A-83	Petropavlovsk- Astana- Pavlodar-Rubtsovsk- Barnaul-Tashanta-Ulaanbaishint-Tsagaannuur-Olgiy-Hovd-Tseterleg-Harhorin- Ulaanbaatar- Ondorhaan-Choybalsan-Sumber – Yirshi-Ulanhot-Baicheng- Changchun
A-87	Harbin- Suifenhe- Ussuriysk-Vladivostok- Nakhodka
A-88	Pusan-P'ohang-Kosong-Wonsan
A-89	Hong Kong, China-Shanghai-Lianyungang-Shenyang-Changchun-Harbin- Heihe-Blagoveshchensk-Svobodnyy
A-90	Novosibirsk- Barnaul-Tashanta- Ulaanbaishint -Hovd-Bulgan Sum-Yarantai-Ertai-Urumqi
A-91	Zhezkazgan-Karaganda- Pavlodar

As the present study covers six countries, the above numbering of the Asian Highway routes will be reviewed while considering overall numbering of the Asian Highway routes during the expert group meeting planned for all Asian Highway member countries in 2002.

Figure 34 shows the overall Asian Highway network including the existing Asian Highway network in other countries and the routes recommended by the study.

Figure 33. Asian Highway network connecting China, Kazakhstan, Mongolia, the Russian Federation and the Korean Peninsula

Figure 34. Overall Asian Highway routes