

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

Working Party on Inland Water Transport

Inventory of Most Important Bottlenecks and Missing Links in the E Waterway Network

Resolution No. 49

Revision 1



UNITED NATIONS
New York and Geneva, 2013

Amendments to Resolution No. 49 on the Inventory of Most Important Bottlenecks and Missing Links in the E Waterway Network

Resolution No. 74

(adopted by the Working Party on Inland Water Transport on 12 October 2012)

The Working Party on Inland Water Transport,

Duly taking into account the strategic objective set up by the Pan-European Conference on Inland Water Transport (Bucharest, 13–14 September 2006) to accelerate the development of inland waterway transport and to better integrate it into multimodal transport chains by ensuring, in particular, its reliability through harmonized fairway depths for interlinked waterway networks and respecting the need for environmental protection in the development of inland waterways (ECE/TRANS/SC.3/2006/11);

Responding to the policy Recommendation No. 1 of the UNECE White Paper on Efficient and Sustainable Inland Water Transport in Europe to make full use of pan-European mechanisms to coordinate the development of the E waterway network;

Recalling the European Agreement on Main Inland Waterways of International Importance (AGN) and the Protocol on Combined Transport on Inland Waterways to the European Agreement on Important International Combined Transport Lines and Related Installations (AGTC);

Considering Resolution No. 49 “Inventory of Most Important Bottlenecks and Missing Links in the E Waterway Network”, of 24 October 2002 (TRANS/SC.3/159 and Corr.1);

Taking into account the second revised edition of the Inventory of Main Standards and Parameters of the E Waterway Network (“Blue Book”, ECE/TRANS/SC.3/144/Rev.2);

Bearing in mind the overall objective to develop an efficient, balanced and flexible transport system which meets the economic, social, environmental and safety requirements of ECE member Governments;

Being aware at the same time of the present unsatisfactory state of the European inland waterway infrastructure due mainly to the somewhat fragmentary nature of the E waterway network and limited reliability of traffic on some of its sections which represents a major obstacle to further development of this mode of transport on the continent;

Desiring to give an impetus to improving the network of inland waterways of international importance, in particular, by drawing the attention of Governments and international institutions concerned to its most important bottlenecks and missing links;

1. *Decides* to replace the text of the annex to Resolution No. 49 with the text contained in the annex to this resolution,
2. *Invites* Governments to inform the Executive Secretary of the Economic Commission for Europe of any progress in the elimination of the bottlenecks and completion of missing links relating to their respective inland waterways,
3. *Requests* the Executive Secretary to place this Resolution periodically on the agenda of the Working Party on Inland Water Transport with a view to monitoring the progress in the elimination of the bottlenecks and completion of missing links in the E waterway network and revising the Inventory whenever necessary.

Annex

Inventory of Most Important Bottlenecks and Missing Links in the E Waterway Network

I. Introduction

The European Agreement on Main Inland Waterways of International Importance (AGN) in its annex I establishes the network of E waterways including a few portions that do not presently exist and are considered as missing links. In its annex III, the Agreement stipulates the requirements for the classification of E waterways. In total, 29,131 km of European inland waterways have been earmarked by Governments as E waterways. The above length excludes the double counting of sections on which two or more E waterways overlap.

The breakdown by classes of European inland waterways of international importance may be summarized in the table below.

Structure of E waterways

	<i>Missing links</i>	<i>Less than class IV</i>	<i>Class IV</i>	<i>Class Va</i>	<i>Class Vb</i>	<i>Class VIa</i>	<i>Class VIb</i>	<i>Class VIc</i>	<i>Class VII</i>	<i>Total</i>
Length (km)	2,328	2,580	4,963	4,558	4,625	524	3,532	4,274	1,747	29,131
%	8.0	8.9	17.0	15.6	15.9	1.8	12.1	14.7	6.0	100.0

In accordance with the AGN Agreement, only waterways meeting the basic minimum requirements of class IV (minimum dimensions of vessels: 80.00 m x 9.50 m) can be considered as E waterways. The Agreement recommends that the new E waterways to be built (for the completion of missing links) should meet, at least, the requirements of class Vb, while the waterways to be modernized should meet the requirements of at least class Va.

II. Definition of bottlenecks and missing links in the network of main inland waterways of international importance

In the course of its work on the draft AGN the Working Party on Inland Water Transport endorsed the following definitions of “bottlenecks” and “missing links” in the inland navigation network, elaborated by the ad hoc Group of Experts on Inland Waterway Infrastructure:

“Those sections of the European waterway network of international importance that have parameter values being substantially lower than target requirements are called bottlenecks.

There are two kinds of bottlenecks:

“**Basic bottlenecks**” are the sections of E waterways whose parameters, at the present time, are not in conformity with the requirements applicable to inland waterways

of international importance in accordance with the new classification of European inland waterways (class IV).

“**Strategic bottlenecks**” are other sections satisfying the basic requirements of the class IV but which, nevertheless, ought to be modernized in order to improve the structure of the network or to increase the economic capacity of inland navigation traffic.

“**Missing links**” are such parts of the future network of inland waterways of international importance which do not exist at present.

The basic condition for the elimination of bottlenecks and completion of missing links is the positive result of economic evaluation.” (TRANS/SC.3/133, paragraph 18 and TRANS/SC.3/WP.3/AC.1/4, paragraph 18).

III. Most important bottlenecks and missing links in the E waterway network by country

Austria

Missing links: Danube-Oder-Elbe Connection (E 20).

Strategic bottlenecks: Danube (E 80) from 2,037.0 to 2,005.0 km and from 1,921.0 to 1,873.0 km – low fairway depth (in some locations down to 2.20 m).

Belarus

Strategic bottlenecks:

1. Mukhovets (E 40) from Brest to Kobrin – low maximum draught (1.60 m).
2. Dneprovsko-Bugskiy Canal (E 40) from Kobrin to Pererub – low maximum draught (1.60 m).
3. Pina (E 40) from Pererub to Pinsk – low maximum draught (1.60 m).
4. Pripyat (E 40) from Stakhovo to Pkhov – low maximum draught (1.30 m).
5. Pripyat (E 40) from Pkhov to Belarus/Ukrainian border – low maximum draught (1.50 m).

Belgium

Missing links:

1. Meuse – Rhine link.¹
2. Maldegem – Zeebrugge (E 07).

Basic bottlenecks:

1. Bocholt – Herentals Canal (E 01–01), Bocholt – Dessel section.
2. Zuid – Willemsvaart (E 01–01), section Bocholt – Belgium/Netherlands border.
3. Gent – Oostende Canal (E 02), Brugge – Beernem section.

¹ This link is not mentioned in the AGN Agreement, however, the Government of Belgium has suggested including it into the Inventory.

4. Charleroi-Bruxelles Canal (E 04), Lembeek – Bruxelles section – upgrading the height under bridges and improvement of the waterway is required. Project is under study.
5. Bossuit – Kortrijk Canal (E 05–01), Zwevegem – Kortrijk section – upgrading from class I to class Va. Project is under study.
6. Dender (E 05–04), Aalst – Dendermonde section – upgrading from class II to class IV. Project is under study.
7. Beneden-Nete (E 05–06) upgrading the height under bridges. Project is under way.

Strategic bottlenecks:

1. Meuse (E 01) from Pont d'Ougrée to Liège – upgrading from class Vb to class VIb is envisaged.
2. Lys Mitoyenne – Lys (Menin – Deinze section) and Lys Derivation Canal up to Schipdonk (E 02) – upgrading from class IV to class Vb is envisaged within the Seine – Escaut link project. Project is under way.
3. Sea Canal Bruxelles – Schelde (E 04) – improvement of section Wintam – Willebroek. Project is under way.
4. Albertkanaal (E 05), Wijnegem passage and section Kanne – Liège – upgrading from class Vb to class VIb is envisaged.

Bosnia and Herzegovina

Basic bottlenecks: Sava (E 80–12), 507.0–174.8 km – upgrading from classes III/IV to classes IV/Va.

Bulgaria

Strategic bottlenecks: Danube (E 80) from 845.5 to 375.0 km – low fairway depth during dry seasons (below 2.50 m – value recommended by the Danube Commission) at several critical sections i.e.:

- (a) from 845.5 to 610.0 km, with fairway depth limited to 2.10–2.20 m for 10–15 days a year, and
- (b) from 610.0 to 375.0 km, with fairway depth limited to 1.80–2.00 m for 20–40 days a year.

Croatia

Missing links: Danube – Sava Canal (E 80–10) from Vukovar to Samac.

Basic bottlenecks: Sava (E 80–12) section between Sisak and Brčko – upgrading from class III to class IV.

Strategic bottlenecks: Sava (E 80–12) section between Brčko and Serbian/Croatian State border – upgrading from class IV to class Va.

Czech Republic

Missing links: Danube – Oder – Elbe Connection (E 20 and E 30).

Basic bottlenecks: Elbe (E 20) from State border to ústí nad Labem – extremely low fairway depth during dry seasons (0.9–2.0 m), in the years 1997–2004, the draught was

less than 1.40 m during 160–262 days a year making the section commercially non-navigable; the construction of two locks is necessary.

Strategic bottlenecks: Elbe (E 20) from Mělník to Chvaletice – narrow width of lock gates (12.00 m); from Chvaletice to Pardubice the construction of a lock at Přelouč is necessary.

Finland

Strategic bottlenecks: Saimaa Canal (E 60–11) from Vyborg (Russian Federation) to Kuopio/Joensuu – upgrading to class Va is envisaged.

France

Missing links:

1. Seine – Moselle Link (E 80).²
2. Seine – Nord Europe Link (E 05).³
3. Saône – Moselle Link (E 10–02)/Saône – Rhine Link (E 10).⁴

Basic bottlenecks: Seine (E 80–04) between Bray-sur-Seine and Nogent – upgrading is envisaged. Public debate took place between the end of 2011 and the beginning of 2012.

Strategic bottlenecks:

1. Saône (E 10) – extension of the Couzon Lock to 195.00 m by 12.00 m is envisaged.
2. Oise (E 80) from Conflans to Creil – low draught and height under bridges (3.40 m and 5.18 m, respectively) – increasing the water depth up to 4.00 m is under way.
3. Oise (E 80) from Creil to Compiègne – low draught (3.00 m), increasing the water depth up to 4.00 m is considered.

Germany

Basic bottlenecks:

1. Saale (E 20–04) from Calbe to Elbe – upgrading to class IV is under way.
2. Mittellandkanal (E 70) – sections which have not yet been modernized are being upgraded to class Vb. The project is under way.
3. Elbe – Havel – Kanal (E 70) – upgrading from class IV to class Vb is under way.
4. Untere Havel – Wasserstraße (E 70) from Plauen to Spree – upgrading from class IV to class Vb is under way.

² The secretariat was informed by the Government of France that the project concerning the Seine – Moselle link has been abandoned.

³ Currently, Voies Navigables de France undertake preparatory works regarding the Seine-Schelde connection project, that includes a 106 km long Seine-Nord Europe Canal (E 05, class Vb). The Canal will provide a link from the Rhine basin to the currently isolated western part of E 80 and E 80–04. A procedure of competitive dialogue is under way for the Canal project. To become operational as of 2017.

⁴ Public debate on the possibility of a Saône-Moselle/Saône-Rhine Link is envisaged in 2013 in accordance with the Grenelle Law of 3 August 2009.

5. Berlin region waterways (various sections) upgrading to classes IV and Va is under way.

6. Havel – Oder – Wasserstraße (E 70) – upgrading from class IV to class Va is under way to enable navigation of vessels with two layers of containers.

Strategic bottlenecks:

1. Rhine (E 10) – low fairway depth during dry seasons: downstream from Duisburg (2.50 m), from St. Goar to Mainz (1.90 m) and low height under bridges at Kehl/Strasbourg (6.75 m).

2. Elbe (E 20) lower Elbe – need for lifting of bridges for container transport with three layers of containers; middle Elbe from Lauenburg upstream to the border between Germany and the Czech Republic – low fairway depth during dry seasons (1.40 m).

3. Moselle (E 80) – construction of 10 second lock chambers is under way.

4. Main (E 80) upstream from Würzburg – low fairway depth (2.50 m).

5. Danube (E 80) from Straubing to Vilshofen – low fairway depth (1.55 m).

6. Danube (E 80) – low height (4.70 m) under the railway bridge in Deggendorf (km 2,285.87) – upgrading to 7.00 m is under way.

7. Danube (E 80) – low height under bridges at Bogen (km 2,311.27) – 5.00 m; at Passau (km 2,225.75) – 5.15 m and (km 2,230.28) – 6.30 m – upgrading to 7.00 m is necessary.

Hungary

Strategic bottlenecks:

1. Danube (E 80), joint Slovak – Hungarian section from Sap (1,810.0 km) to 1,708.2 km – low maximum draught during dry seasons (1.50 m as registered in the course of years up to November 2011) and at a High Navigable Water Level (HNWL) – low height under bridges: road bridge Medved'ov (1,806.35 km) – 8.85 m between pillars⁵ II – III and 9.19 m between pillars I and II; railway bridge Komárno (1,770.4 km) – 8.65 m between pillars IV – V and 8.68 m between pillars III – IV; road bridge Komárno (1,767.8 km) – 9.08 m at centre point of the arches between pillars II – III and III – IV, respectively. Upgrading of the draught to 2.50 m and the height under bridges to 9.10 m is required.

2. Danube (E 80), the section from 1,708.2 km to 1,433.0 km – low maximum draught (1.50 m – as registered in the course of years up to November 2011).

Italy

Missing links:

1. Milano – Po Canal (E 91) from Milano to Pizzighettone.

2. Padova – Venezia Canal (E 91–03) from Romea Dock to Padova.

Basic bottlenecks: Cremona – Casale Monferrato (E 91–02) – upgrading from class III to class IV is envisaged.

⁵ Numbering of pillars of bridges starts from the left bank on the Danube.

Strategic bottlenecks: Veneta Lateral Waterway (E 91) from Marghera to Porto Nogaro – upgrading from class IV to class Va is envisaged.

Lithuania

Basic bottlenecks: Nemunas (E 41) from Kaunas to Jurbarkas and from Jurbarkas to Klaipeda – insufficient depth of the fairway (1.20 m and 1.50 m, respectively).

Netherlands

Basic bottlenecks: Zuid-Willemsvaart up to Veghel (E 70–03) – upgrading to class IV is under way.

Strategic bottlenecks:

1. IJssel (E 70) from Arnhem to Zutphen – upgrading to class Va is envisaged.
2. Upgrading of the Zwartsluis at Meppel-Ramspol (E 12–02) is under way.
3. Upgrading of the Lemmer-Delfzijl section (E 15) to class Va enabling 4-layer container transport is under way.
4. Twente Canal (E 70) – upgrading to class Va is under way and an increase of the capacity of the Eefde lock is to be carried out.
5. Lekkanaal (E 11–02) – upgrading of the Beatrix lock.
6. Maasroute (E 01) – upgrading to class Vb enabling 4-layer container transport is under way.
7. E 06 waterway – increasing the capacity of the Kreekrak locks.
8. E 03 waterway – increasing the capacity of the Volkerak locks and Terneuzen lock is under study.

Poland

Missing links: Danube – Oder – Elbe Connection (E 30).

Basic bottlenecks:

1. Oder (E 30) from Widuchova to Kozle – upgrading from classes II and III to class Va is required.
2. Glivice Canal (E 30–01) – upgrading from class III to class Va is required.
3. Wisla (E 40) from Biala Gora to Wloclawek and from Plock to Warszawa – upgrading from classes I and II to class Va is required.
4. Zeran Canal (E 40) from Zeran to Zegrze Lake – upgrading from class III to class Va is required.
5. Bug (E 40) from Zegrze Lake to Brest – upgrading to class Va is required. The depth is limited to 0.80 m for 210 days a year.
6. Warta – Notec – Bydgoski Canal (E 70) from Kostrzyn to Bydgoszcz – upgrading from class II to class Va is required.
7. Wisla (E 70) from Bydgoszcz to Biala Gora – upgrading from class II to class Va is required.
8. Szkarpawa (E 70) from Gdanska Glova to Elblag – upgrading from class III to class Va is required.

Strategic bottlenecks: Oder (E 30) from Szczecin to Widuchova – upgrading from class IV to class Vb is expected.

Republic of Moldova

Basic bottlenecks:

1. Prut (E 80–07) from the mouth to Branest – upgrading to class Va is required.
2. Nistru (E 90–03) from Ukraine/Moldova State border to Bender – upgrading from class III to class Va is required.

Romania

Missing links:

1. Danube – Bucuresti Canal (E 80–05).
2. Olt (E 80–03) up to Slatina.

Basic bottlenecks: Prut (E 80–07) from the mouth to Ungheni.

Strategic bottlenecks:

1. Danube (E 80) from 863 to 175 km – low fairway depth during dry seasons (below 2.50 m – value recommended by the Danube Commission) at several critical sections, i.e.:
 - (a) from 863 to 845.5 km, with fairway depth limited to 2.20–2.30 m for 7–15 days a year;
 - (b) from 845.5 to 610 km, with fairway depth limited to 2.10–2.20 m for 10–15 days a year;
 - (c) from 610 to 375 km, with fairway depth limited to 1.80–2.00 m for 20–40 days a year;
 - (d) from 375 to 300 km, with fairway depth limited to 1.60–2.20 m for 30–70 days a year;
 - (e) from 300 to 175 km, with fairway depth limited to 1.90–2.10 m for 15–30 days a year.
2. Danube (E 80) from 170 km to the Black Sea – low fairway depth during dry seasons (below 7.30 m – value recommended by the Danube Commission) at several critical points, i.e. at 73, 57, 47, 41 and 37 nautical miles and at the Sulina bar at the mouth of the Sulina Canal where it meets the Black Sea, where the fairway depth is limited to 6.90–7.00 m for 10–20 days a year.

Russian Federation

Strategic bottlenecks:

1. Don (E 90) from Kalach to Aksay – insufficient depth downstream of the Kochetovski lock (of 116.3 km long).⁶

⁶ To eliminate the insufficient draught, the construction of a low-head hydraulic complex near the Bagaevsky village is being considered.

2. Volga (E 50) – low water depth from the Gorkovsky hydroelectric complex to Nizhni Novgorod.⁷

3. Volgo – Baltijskiy waterway (E 50) – the Nijne-Svirski hydro-electrical complex.⁸

Serbia

Strategic bottlenecks:

1. Danube (E 80) from 1,405.6 to 1,227.9 km – narrow fairway conditions.

2. Danube (E 80) – low height under the railway bridge at Bogojevo (1,366.5 km) – 8.15 m – upgrading to 9.10 m is required.

3. Danube (E 80) at Novi Sad (1,254.25 km) – low height under a temporary road/railway bridge (6.82 m).

4. Danube (E 80) from 863 to 845.5 km – low fairway depth during dry seasons (below 2.50 m – value recommended by the Danube Commission) with fairway depth limited to 2.20–2.30 m for 7–15 days a year.

Slovakia

Missing links:

1. Danube – Oder – Elbe Connection (E 20 and E 30).

2. Váh – Oder Link (E 81).

Strategic bottlenecks:

1. Danube (E 80) from Devín (1,880.26 km) to Bratislava (1,867.0 km) – insufficient depth at low water level and insufficient height under bridges: at Bratislava (1,868.14 km) – 7.59 m, at locks of the Gabčíkovo Hydro Electrical Complex (1,819.3 km) – 8.90 m. Upgrading is required to 9.10 m.

2. Danube (E 80) from Sap (1,811.0 km) to the mouth of the Ipel' River (1,708.2 km) – insufficient depth at low water level and insufficient height under the bridges.

Ukraine

Basic bottlenecks:

1. Desna (E 40–01) from the mouth to Chernihiv – upgrading from class III to class IV is required.

2. Danube, Kilia arm (E 80–09) – upgrading the fairway depth and/or width.

3. Dnestr (E 90–03) from Belgorod Dnestrovsky to the Ukraine/Moldova border – upgrading from class III to class Va is required.

⁷ To eliminate the insufficient draught, it is planned to build a low-head hydraulic complex in the area of Boljshoe Kozino or increase the water level of the Tcheboksary Reservoir.

⁸ The construction of a second parallel lock is planned.