

Analytical Brief

IMPLEMENTATION OF TEN-T ROAD STANDARDS IN UKRAINE

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Chapter 21 of the EU acquis covers the development of trans-European networks (TEN-T, TEN-E, TEN-Telecom), aimed at integrating Europe's transport, energy and digital infrastructure with clear technical [standards](#), environmental requirements and interstate cooperation. In June 2025, Ukraine successfully completed the [screening](#) of its legislation under this chapter, presenting to the European Commission an analysis of over 3,000 regulatory acts, of which approximately 400 require adaptation to EU norms, opening the path to the next stage of accession negotiations.

Key Technical Requirements of TEN-T

According to Regulation (EU) 2024/1679, which is one of the key regulations in this field, Ukraine must implement specific technical and institutional standards to comply with TEN-T requirements. One such standard is the creation of separate traffic lanes (traffic separation lines) to improve safety, efficiency and capacity of road infrastructure.

According to Article 14, as well as Annex V, Section 1 (Roads) of Regulation (EU) 2024/1679, it is stipulated that TEN-T roads must have separation of traffic flows in opposite directions. This can be achieved either:

- **by a physical barrier between directions (for example, guardrails, central strip with fencing),**
- **or by engineering measures that ensure traffic separation and reduce the risks of head-on collisions.**

In addition, the Regulation defines minimum characteristics for TEN-T core network roads, including:

- **4 traffic lanes (2 in each direction);**
- **physical separation of directions;**
- **priority is given to infrastructure that allows continuous movement without obstacles;**
- **width of each lane — minimum 3.5 m;**
- **[restricted](#) access from secondary roads to avoid conflict points.**

To achieve these characteristics, it is first necessary to make changes to Ukraine's legislation and construction standards for automobile roads (Table 1).

Table 1. Comparative characteristics between Regulation (EU) 2024/1679 regarding separate traffic lanes for TEN-T roads and the current state in Ukraine

Criterion	Requirements of Regulation (EU) 2024/1679	Current state in Ukraine	Necessary steps for harmonization
Physical separation of traffic directions	Mandatory physical separation for TEN-T core network roads (dual carriageway or equivalent division).	Partially implemented on selected highways (M-06, M-03), mainly on new sections. Most roads have one lane in each direction without barriers.	Amend the law "On Automobile Roads" and DBN regarding the mandatory physical separation of lanes for TEN-T.
Number of traffic lanes	Minimum 2 lanes in each direction (4 total) for TEN-T core network.	On most sections — one lane in each direction. Rarely — 2+2 (exception: M-06 Kyiv–Chop).	Redesign TEN-T sections to IA or Category I road type with 2+2 lanes.
Traffic lane width	Minimum 3.5 m per lane.	In Ukraine stipulated: 3.5 m on Category I roads, but in practice on many sections — 3.25 m or less.	Ensure actual width compliance with TEN-T standards through reconstruction and State Building Norms (DBN) verification.
Concept of "traffic separation lanes" in legislation	Clearly defined concept in EU regulation as a safety criterion.	Absent in Ukrainian law. DBN uses the term "separation strip", but without obligation for TEN-T.	Introduce the concept into legislation and establish obligation for international corridors.
Engineering solutions for lane separation	Requires central strip with barrier, or other means (guardrails, islands, safety strips).	Usually — separation strip without barriers; guardrails are not everywhere.	Amend DBN and DSTU regarding mandatory barrier separation on TEN-T roads.
Design standards for TEN-T	Unified EU standard (TEN-T core/comprehensive) according to Annex V to the Regulation.	Ukraine has its own DBN, which partially comply, but without reference to TEN-T.	Update DBN taking into account TEN-T structure, specify separate requirements for

Criterion	Requirements of Regulation (EU) 2024/1679	Current state in Ukraine	Necessary steps for harmonization
Reconstruction of existing roads	Required to achieve standard by 2040 for comprehensive, by 2030 for core.	Partial reconstruction was within the framework of "Great Construction", but not focused on TEN-T.	core/comprehensive networks. Create a state program for TEN-T highway modernization taking into account EU standards.

Source: [REGULATION \(EU\) 2024/1679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL, Law of Ukraine "On Automobile Roads", DSTU B V.2.3-12-2004 Transport Structures, DBN V.2.3-4:2015 "Automobile Roads. Part I. Design Part II. Construction"](#)

Length and Structure of the TEN-T Network in Ukraine

According to Transport Community (2023) data, the length of the core TEN-T network in Ukraine is 4,753 kilometers. This network covers key international transport corridors that must be brought into compliance with EU requirements by 2030. These include sections of routes such as M-06 Kyiv–Chop (via Lviv), M-05 Kyiv–Odesa, as well as western directions in Lviv region — M-07, M-08, M-09 — leading to the Polish border. Part of these routes already has express standard — dual-lane highways with physical separation of traffic directions, but a significant part remains in the format of single-lane roads. The total length of such express-level sections in the core network is estimated at approximately 2,380.8 km.

The comprehensive TEN-T network in Ukraine covers another 2,619 kilometers of roads that provide connections between regional centers, border crossing points and less congested sections. This network includes roads such as M-15 Odesa–Reni (with access to Romania), M-14 Odesa–Melitopol–Novoazovsk (to Donetsk region and Crimea), as well as M-13 Kropyvnytskyi–Platonove. Only about 333 km of this network meets [express standard](#) with appropriate infrastructure and technical characteristics (Figure 1).

Figure 1. Indicative map of TEN-T road network expansion in Ukraine



Source: [Development of the Indicative TEN-T Extensions of the Comprehensive and Core Network](#)

Modernization Costs

When assessing potential costs for bringing the rest of the network to the standards of Regulation (EU) 2024/1679, one can use the example of Slovakia — one of the Eastern European states actively developing its road infrastructure in accordance with TEN-T requirements. In particular, the construction of 10.4 km of the R2 highway between Pstruša and Kriváň cost the Slovak government [EUR 177 mn](#), which equals approximately EUR 17 mn per kilometer. Other similar projects in this country (for example, R3) ranged between EUR 14–17 mn/km. Given similar engineering and geographical conditions in Ukraine, for an indicative [calculation](#) one can adopt an average rate of EUR 15 mn per kilometer of new or reconstructed road that will meet [TEN-T](#) requirements for safety, capacity and physical separation of traffic lanes.

Thus, reconstruction of the entire TEN-T core network in Ukraine (4,753 km) to the level of dual-lane highways with separated traffic will cost approximately EUR 71.3 bn. Similar upgrading of the comprehensive network (2,619 km) will require about EUR 39.3 bn. Total costs for full alignment of Ukraine's TEN-T network with EU standards will amount to approximately EUR 110.6 bn. This sum does not include potential costs for bridges, tunnels, interchanges, land issues or environmental measures, which may significantly impact the final budget. However, even the basic assessment demonstrates the scale of necessary

investment resources, which can be implemented with support from international financial institutions — such as CEF, EIB, EBRD and other donors focused on Ukraine's integration into the European transport system.

Ukraine already has partial experience in building roads that comply with European standards of the core and comprehensive TEN-T networks, particularly thanks to the "Great Construction" program. In 2020, the average cost of building 1 km of new road that technically approaches TEN-T standards (dual-lane traffic with physical separation of flows, limited access, lane width of at least 3.5 m) was [UAH 170.6 mn](#) (EUR 5.3 mn at the exchange rate of 32 UAH/EUR). Meanwhile, major repairs of such a road cost about UAH 60 mn/km (EUR 1.88 mn), and reconstruction — up to UAH 100 mn/km (EUR 3.13 mn).

In 2021, within the same program, the average cost of project implementation was [UAH 15–20 mn/km](#) (EUR 0.46–0.61 mn, exchange rate 32.75 UAH/EUR), since mostly current repairs and modernization of existing sections were performed, rather than full construction of highways according to TEN-T standards. Unfortunately, there is no more recent statistics on road construction costs in Ukraine. Overall, the 2025 budget provides for [UAH 12.6 bn](#) for road repairs.

Considering Slovakia's experience, where construction of individual highway sections lasted on average 1.5–2 years for every 10 km, bringing Ukrainian TEN-T roads to EU standards will take approximately until 2047–2050. For the core network with a length of 4,753 km, about 21–22 years will be needed, considering preparatory stages and an average construction pace of 250 km per year after the first years of launch.

Implementation of the comprehensive network, which covers another 2,619 km, will require an additional 10–11 years. This work can be performed partially in parallel with core projects. Overall, modernization of the entire Ukrainian TEN-T network may take approximately 25 years. In case of resource mobilization, external financing and involvement of powerful international contractors, the timeframes could be reduced by a third. However, even under the best conditions, this will remain a long-term strategic project, similar to the implementation of large-scale infrastructure programs in Eastern Europe.

Conclusions

Therefore, implementation of the separate traffic lanes standard according to Regulation (EU) 2024/1679 will improve road safety, reduce accident rates on roads, promote Ukraine's integration into the EU and access to TEN-T financing. This is a large-scale and strategic project that requires approximately EUR 110 bn in investment and up to 25 years of implementation. Considering the experience of Slovakia and other Eastern European countries, the average cost of modernization is about EUR 15 mn per kilometer, and a realistic pace of implementation is up to 250 km annually. With stable financing and involvement of international support, these plans can be implemented by 2050, integrating Ukraine into the European transport space.



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