



# Integrating cycling in the trans-European transport network

From TEN-T regulation to practical implementation



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# Introduction

The Trans-European Transport Network (TEN-T) is a network of roads, railway lines, inland waterways, ports, maritime shipping routes and airports. It is not very often associated with cycling, but TEN-T projects can have huge impact on conditions for active mobility. Up until now, often the impact has been negative, with a new ring road or an upgraded rail line creating a barrier for walking and cycling, but in some cases these projects have also been used as an opportunity to create new connections or even prioritise active mobility.

For the past five years, the European Cyclists' Federation (ECF) has worked on integrating cycling in the regulation of the European Parliament and of the Council on Union guidelines for the development of the trans-European transport network (TEN-T regulation). In 2024, for the first time ever, promoting active modes of transport has been included in TEN-T objectives, highlighted for synergies, included in general priorities for the whole network and additional priorities for railways, inland waterways and roads. The revised regulation also recognises the critical role of urban nodes, stipulating the need of integrating cycling with long-distance transport and modal shift towards active modes.

The document is intended for the technical experts working in administrations tasked with implementing this regulation and specific TEN-T projects. It can also be used by local and regional authorities involved in planning and implementation of cycle networks, but it assumes a degree of familiarity with the TEN-T regulation,<sup>1</sup> focusing only on its new aspects most relevant for cycling. It provides and analyses excerpts from the regulation, and follows with a brief practical advice on how to optimally integrate cycling in different types of TEN-T projects and different aspects of project preparation.

**The current draft is based on the provisional agreement, with the intention to revise the document after the new regulation is formally adopted and published in the Official Journal of the European Union.**

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<sup>1</sup> The European Commission website includes a good introduction to the TEN-T policy and terminology. [https://transport.ec.europa.eu/transport-themes/infrastructure-and-investment/trans-european-transport-network-ten-t\\_en](https://transport.ec.europa.eu/transport-themes/infrastructure-and-investment/trans-european-transport-network-ten-t_en). Accessed 27/03/2024.

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# 1. Cycling and active modes in the TEN-T regulation

The section provides and analyses excerpts from the regulation most relevant to cycling. The excerpts reflect the provisional agreement resulting from interinstitutional negotiations, dated 9 February 2024, as published in the Legislative Observatory of the European Parliament.<sup>2</sup> As of the time of writing, vote on the adoption of the revised regulation is expected on 22 April 2024. ECF intends to update the document after the final text is published in the Official Journal of the European Union.

Text in **serif font** represents verbatim quotes from the revised regulation. **Emphasis** is used to highlight parts relevant for cycling, especially where the relevant text is only a part of a significantly longer article or point, and not to distinguish contributions from a specific EU institution.

Text in **sans-serif font** represents the ECF view on the preceding provision. Depending on the provision, this can include a brief explanation of concepts not included in the excerpts, links to other relevant documents, interpretation doubts, potential benefits or threats resulting from the new provision.

**The key changes introduced in the revised regulation can be found in:**

|   |                                 |
|---|---------------------------------|
| Definition of active modes  | Article 3 (p)                   |
| Inclusion of health in the cost-benefit analysis  | Article 3 (ak)                  |
| Active modes as one of TEN-T objectives   | Article 4 (2) (d) (vii)         |
| Taking into account synergies with cycling infrastructure                               | Article 5 (1) (f) and (g)       |
| Active modes in TEN-T general priorities  | Article 12 (1) (c) and (2) (c)  |
| Active modes in additional priorities for railways, including cycle parking at stations | Article 19 (g)                  |
| Active modes in additional priorities for inland waterways                              | Article 23 (g)                  |
| Excluding non-motorised traffic from TEN-T roads  | Article 29 (2) (a)              |
| Excluding at-grade crossings across TEN-T core and comprehensive core roads             | Article 30 (1a)                 |
| Active modes in additional priorities for roads   | Article 31 (a) and (d)          |
| Obligatory Sustainable Urban Mobility Plans in urban nodes                              | Article 40 (1) (b) (i) and (1a) |
| Multimodal passenger hubs accessible by active modes                                    | Article 40 (1) (c)              |
| Mobility data indicators for urban nodes  | Article 40 (1) (b) (ii) and (2) |

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<sup>2</sup> Procedure File: 2021/0420(COD).

[https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2021/0420\(COD\)](https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2021/0420(COD)). Accessed: 2024/03/20.



Figure 1. Example of a barrier created by a TEN-T project. A cycle track in the town of Zielonka, Poland (co-funded by the EU through Integrated Territorial Investments) is interrupted by an upgraded section of Rail Baltica (co-funded by the EU through Cohesion Funds).

## 1.1. Recitals

- (9) In the implementation of projects of common interest, due consideration should be given to the particular circumstances of the individual project concerned. Where possible, synergies with other policies should be exploited, for instance with the trans-European energy or telecommunication networks or with the dual-use infrastructure for military purposes as well as with tourism aspects by **including, within civil engineering structures such as bridges or tunnels, bicycle infrastructure for cycling paths, including the EuroVelo routes**, or with security aspects by including new technologies such as sensors in bridges.
- (52b) **The promotion of active modes, particularly in urban nodes, contributes to the Union's climate goals, improves public health, reduces congestion, offers last mile solution for passengers and provides economic benefits. When planning or upgrading transport infrastructure due account should be taken of active mode infrastructures, including walking and cycling infrastructures.**
- (54) Multimodal digital mobility services help to enhance the integration of the different transport modes by combining several transport offers into one. Their further development should contribute to nudge behaviours towards the most sustainable modes, public transport and **active modes such as walking and cycling**, and unlock the full benefits of “Mobility as a Service” solutions.

**ECF VIEW:** Recitals set out reasons for the provisions of the regulation. While they are not normative by themselves, they can play a limited role in the interpretation in case of ambiguity in a particular provision within the regulation.

## 1.2. General principles

### Article 3

#### Definitions

For the purpose of this Regulation, the following definitions apply:

- (f) 'urban node' means an urban area where elements of the transport infrastructure of the trans-European transport network for passengers and freight, such as ports including passenger terminals, airports, railway stations, bus terminals, multimodal freight terminals, located in and around the urban area, are connected with other elements of that infrastructure and with the infrastructure for regional and local traffic; **including infrastructure for active modes;**

**ECF VIEW:** As for now there is no clear delimitation of urban nodes. The amendment to extend the definition to “functional urban areas” with an established EU-OECD methodology has not been included in the compromise text. The resulting definition is somewhat self-contradictory: on one side it is defined as “urban area”, on the other it includes transport infrastructure “in **and around** urban area”. We can only suppose that the understanding of urban nodes may differ from the administrative borders of the municipalities listed in the Annex to the Regulation, for example including an airport serving the city even if it is not inside the city’s boundaries.

- (p) ‘active modes’ means the transport of people or goods, through non-motorised means, based on human physical activity, including vehicles with electric auxiliary propulsion as referred to in Article 2(2) (h) of Regulation (EU) No 168/2013;

**ECF VIEW:** The definition includes electrically assisted cycles, but only with an auxiliary electric motor up to 250 W, cut off before the vehicle speed reaches 25 km/h. Therefore, speed pedelecs or heavier cargo bikes are not included in the TEN-T definition of active modes, even though they can play a significant role in replacing trips currently made by motorised vehicles (commuting from suburbs, urban logistics).

- (ak) 'socio-economic cost-benefit analysis' means a quantified ex-ante evaluation, based on a recognised methodology, of the value of a project, taking into account all the relevant social, economic, **health**, climate-related and environmental benefits and costs. The analysis of climate-related and environmental costs and benefits shall be based on the environmental impact assessment carried out pursuant to Directive 2011/92/EU of the European Parliament and of the Council;

**ECF VIEW:** Including health in the cost-benefit analysis of transport infrastructure projects is a very important addition. The health benefits of cycling linked to increased physical activity can change the economic feasibility of for example including a cycle track on a motorway or railway bridge. No specific methodology for analysis of health costs and benefits has been named in the regulation, but earlier documents<sup>3</sup> indicate [Health Economic Assessment Tool \(HEAT\)](#) by World Health

<sup>3</sup> Commission Staff Working Document Accompanying the document Communication From The Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Sustainable And Smart Mobility Strategy – Putting European Transport On Track For The Future. <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52020SC0331>. Accessed: 2024/03/20.



Organisation. Additionally, the EU-funded Danube Cycle Plans project<sup>4</sup> provided more specific guidance and example application: [Extended CBA Methodology for Transport Infrastructure Projects](#) and [Application of Updated CBA Methodology for Transport Infrastructure Projects](#). Taking cycling into account in cost-benefit analysis is further discussed in section 2.3.

#### Article 4

##### Objectives of the trans-European transport network

2. The trans-European transport network shall strengthen the social, economic and territorial cohesion of the Union and contribute to the creation of a single European transport area which is sustainable, safe, efficient and resilient and which increases the benefits for its users and supports inclusive growth. It shall demonstrate European added value by contributing to the objectives laid down in the following four categories:
  - (d) increasing the benefits for its users through:
    - (vii) **supporting active modes of mobility by enhancing accessibility and quality of related infrastructure, thereby improving safety and health for active users of infrastructure and fostering the environmental benefits of those modes.**

#### Article 5

##### Resource-efficient, resilient network and environmental protection

1. The trans-European transport network shall be planned, developed and operated in a resource-efficient way, and in accordance with the applicable Union and national environmental requirements, through:
  - (f) the taking into account and optimisation of possible synergies with other networks, in particular the trans-European energy or telecommunication networks including, where relevant, the whole electric grid in order to ensure consistency between the recharging infrastructure planning and the respective grid planning, and the taking into account of possible synergies with the dual-use of infrastructure identified in the Military Requirements for Military Mobility within and beyond the EU approved by the Council on 26 June 2023 and 23 October 2023 and in any subsequent document revising those requirements approved thereafter, **as well as with cycling infrastructure, including long-distance cycle routes;**

**ECF VIEW:** Explicit mention of long-distance cycle routes implies that the synergies need to be considered not only in urban context. There are many corridors, where long distance cycle routes, for example belonging to the EuroVelo network, are collocated with TEN-T infrastructure. In 2020, ECF analysis identified nearly 10,000 km of overlaps between EuroVelo and TEN-T,<sup>5</sup> for example in mountain valleys, on coastal roads, or on approaches to border crossings. In such cases it is critical to closely coordinate the development of routes for different modes of transport and seize opportunities for synergies.

<sup>4</sup> Danube Cycle Plans. Policies, plans and promotion for more people cycling in the Danube region. <https://www.interreg-danube.eu/approved-projects/danube-cycle-plans>. Accessed: 2024/03/27.

<sup>5</sup> Close friends: EuroVelo connects with TEN-T network nearly 8,000 times. [https://pro.eurovelo.com/news/2020-10-30\\_close-friends-eurovelo-connects-with-ten-t-network-nearly-8-000-times](https://pro.eurovelo.com/news/2020-10-30_close-friends-eurovelo-connects-with-ten-t-network-nearly-8-000-times)





Figure 2. Between Dresden (Germany) and Prague (Czechia) EuroVelo 7 follows the Elbe river (TEN-T waterway), together with a TEN-T rail line. Water management and rail service roads provide safe and comfortable route away from busy roads.

- (g) **the development of green, sustainable and climate resilient infrastructure, taking into account active modes** and the promotion of new technologies aimed to decarbonise the construction of transport infrastructure, including through the use of resource-efficient and climate-proof materials, designed to reduce as much as possible the negative impact on the health of citizens living around the network, the environment, including from air and noise pollution, and degradation of ecosystems;

**ECF VIEW:** Green, sustainable and climate resilient infrastructure should not only make use of new technologies, but also take into account active modes. Providing a cycle track is often a low hanging fruit that can make a project more sustainable and bring in a positive impact on the health of citizens living around.

## 1.3. General provisions

### *Article 12*

#### **General priorities for the core, the extended core and the comprehensive network**

1. In the development of the core, the extended core and the comprehensive network, general priority shall be given to measures that are necessary for:
  - (c) ensuring optimal integration of the transport modes and interoperability between transport modes, **including active modes of mobility in urban areas;**

**ECF VIEW:** The priorities listed in article 12 apply to all types of infrastructure on all parts of network. ECF welcomes a clear reference to active modes, even though the optimal integration of

active modes should not be limited to urban areas. Integration of cycling with other transport modes has an important role to play also in suburban or rural areas, for example by extending the catchment areas of train stations. This omission is partially alleviated by provisions of Article 12 (2) (c) and 19 (g), discussed further in the document.

2. In order to complement the measures set out in paragraph 1, particular consideration shall be given to measures that are necessary for:
  - (c) contributing to positive health and environmental effects by **promoting the use of active modes of mobility through the development of corresponding infrastructure for cycling and walking;**

**ECF VIEW:** “Promoting the use of active modes of mobility through the development of corresponding infrastructure for cycling and walking” is an overarching general priority that should be considered in all TEN-T projects.

## 1.4. Specific provisions

### 1.4.1. Railway transport infrastructure

#### *Article 19*

##### **Additional priorities for railway infrastructure development**

In the promotion of projects of common interest related to railway infrastructure, and in addition to the general priorities set out in Articles 12 and 13, attention shall be given to the following:

- (g) when building or upgrading railway infrastructure, ensure the continuity and accessibility of pedestrian and cycling paths, and develop bicycle parking in the vicinity of the stations in order to promote the active modes of transport;

**ECF VIEW:** “Ensure the continuity and accessibility of pedestrian and cycling paths” is an additional priority that has been included for railway, inland waterway and road transport infrastructure. It can however be interpreted differently depending on the stakeholders involved, and refers to an informal, undefined concept of “cycle paths”. To avoid costly mistakes, ECF stresses the need for good communication between the authority implementing the TEN-T project and authorities responsible for national, regional and local cycle networks. The continuity and accessibility should be considered for routes both along and across the TEN-T infrastructure. The project should take into account planned cycle routes, but the plans may be adapted to take advantage of new opportunities created by the project (see examples in section 2.2). The interpretation of “upgrading” should cover also works like replacing level crossings with road tunnels or bridges, as these are often critical for continuity and accessibility of cycle routes.

“Bicycle parking in the vicinity of the stations” is an additional priority specific to railways only. Secure cycle parking in adequate numbers are necessary not only in large multimodal transport hubs, but also at all smaller stations and stops along TEN-T railway lines. The size of the cycle

parking should comply with the recast directive on the energy performance of buildings (EPBD).<sup>6</sup> Furthermore, safe and direct cycle routes allowing to reach the train station from the nearby settlements can greatly increase its “catchment areas”, and therefore the efficiency of rail infrastructure. As a bare minimum, cycle accessibility from the distance of 4 km, equivalent of a 15 minute ride on a conventional bicycle, should be considered.

## 1.4.2. Inland waterways transport infrastructure

### *Article 23*

#### **Additional priorities for inland waterway infrastructure development**

In the promotion of projects of common interest related to inland waterway infrastructures, and in addition to the general priorities set out in Articles 12 and 13, attention shall be given to the following:

- (g) when building or upgrading inland waterways infrastructure, ensuring the continuity and accessibility of pedestrian and cycling paths in order to promote the active modes of transport;

**ECF VIEW:** See the commentary for railway infrastructure and article 19 (g).



Figure 3. The main objective of the project was to raise the clearance under bridges on Albert Canal (TEN-T inland waterway) in Belgium, but it has also been used as an opportunity to add or improve cycle infrastructure on the bridges.

<sup>6</sup> Procedure File 2021/0426(COD).

[https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2021/0426\(COD\)&l=en](https://oeil.secure.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2021/0426(COD)&l=en).

Accessed 27/03/2024.



### 1.4.3. Road transport infrastructure

#### *Article 29*

##### **Transport infrastructure requirements for the comprehensive network**

2. Member States shall ensure that by 31 December 2050 the roads referred in Article 28 (1)(a) of the comprehensive network meet the following requirements:
  - (a) the road is specially designed, built or upgraded for motor traffic;

**ECF VIEW:** The requirement increases the risk that TEN-T road projects will create new barriers for walking and cycling. Currently, many TEN-T roads, especially in more remote areas of the EU, serve many different modes of transport. Sometimes a TEN-T road is the only asphalted road in the area, only access to a ferry terminal or a border crossing, or the main connection between neighbouring towns or villages. “Upgrading” these to roads serving only motorised traffic has to be compensated by providing alternative routes for active modes. These do not have to be placed directly next to the TEN-T road and can make use of lower category roads, but should not make walking or cycling trips longer; generally the cycle route should be shorter than the route for motorised traffic.

#### *Article 30*

##### **Transport infrastructure requirements for the core network and extended core network**

- 1a. Member States shall ensure that the roads, as referred in Art 28(1)(a), comply with the following requirements, by 31 December 2030 for the road infrastructure of the core network and by 31 December 2040 for the road infrastructure of the extended core network:
  - (i) the roads are specially designed, built or upgraded for motor traffic;
  - (ii) the roads provide, except at special points or temporarily, separate carriageways for the two directions of traffic, separated from each other by a dividing strip not intended for traffic or by other means ensuring equivalent level of safety; and
  - (iii) the roads do not cross at grade with any road, railway or tramway track, bicycle path or footpath.

**ECF VIEW:** The requirement that the roads belonging to the core and extended core network do not cross at grade with any other road, cycle path or footpath, increases the risk of TEN-T roads creating barriers for active modes of transports. To balance it out, the upgraded roads will need sufficient density of grade separated crossings for cyclists and pedestrians. As detours are affecting active modes much more than motorised vehicles, the density of crossings for cyclists should be significantly higher than for cars. In particular, for built-up areas, various standards and guidelines set the cycle network mesh density (distance between neighbouring cycle routes or crossings) between 200 and 500 m.



Figure 4. Triq l-Imġarr leads to the ferry between Gozo and Malta, and is an example of a TEN-T road where different modes of transport are mixed. "Upgrading" these roads to serve only motorised traffic needs to be accompanied by providing segregated infrastructure or alternative routes for active modes.

### Article 31

#### Additional priorities for road infrastructure development

In the promotion of projects of common interest related to road infrastructure, and in addition to the general priorities set out in Articles 12 and 13, attention shall be given to the following:

- (a) improvement and promotion of road safety, taking into account the needs of vulnerable users and road users in all their diversity, in particular persons with reduced mobility;

**ECF VIEW:** ECF welcomes the reference to road safety taking into account the needs of vulnerable road users. It is however somewhat disappointing that safety is listed only as an additional priority for TEN-T roads, and not integrated in infrastructure requirements.

- (d) when building or upgrading road infrastructure, ensuring the continuity and accessibility of pedestrian and cycling paths in order to promote the active modes of transport **and considering, where relevant, to improve the infrastructure for active mobility;**

**ECF VIEW:** See the commentary for railway infrastructure and article 19 (g).

## 1.4.4. Maritime and air transport infrastructure

**ECF VIEW:** No specific cycling-related infrastructure requirements or additional priorities have been defined in the regulation for maritime or air transport infrastructure (chapter 3, sections 3 and 5 of the regulation). However, the general priorities of Article 12 (1) (c) and (2) (c) and the requirements for multimodal passenger hubs (see further) still apply. It should be kept in mind that TEN-T seaports and airports are not only hubs of passenger traffic, but also of commercial activity, offering a high concentration of workplaces. At the same time they are often excluded from municipal planning competences. Good cycling infrastructure in the area managed by port or airport authorities, integrated into the wider cycle network, may be critical for keeping the TEN-T infrastructure and related workplaces accessible.

## 1.4.5. Urban nodes

### *Article 40*

#### **Urban nodes requirements**

1. When developing the trans-European transport network in urban nodes, in order to ensure the effective functioning of the entire network without bottlenecks, Member States shall ensure:

[...]

- (b) by 31 December 2027:

- (i) the adoption and monitoring of a sustainable urban mobility plan (SUMP) for each urban node that includes inter alia measures to integrate the different modes of transport and shift towards sustainable mobility, to promote efficient zero and low-emission mobility including urban logistics, to reduce air and noise pollution and where appropriate, **to assess the user's accessibility to transport;**

**ECF VIEW:** While the requirement to “assess the user's accessibility to transport” does not refer specifically to cycling, it is clear that users' accessibility to transport includes accessibility to cycling transport. Access to safe cycling infrastructure is definitely a parameter that varies dramatically between different Member States and even between different cities in the same country. It would be appropriate to make it an integral part of the assessment. Example metrics could include:

- percentage of inhabitants living within a specific distance of a safe cycle route,
- percentage of inhabitants having access to a safe cycle route to the closest TEN-T multimodal passenger hub (see below).

Regarding SUMP, see commentary on Article 40 (1a) below.

- (ii) the collection and submission to the Commission of urban mobility data per urban node in the fields of sustainability, safety and accessibility according to the indicators and methodology referred to in paragraph 2 of this Article;
- (c) **by 31 December 2030**, the development of multimodal passenger hubs to facilitate first and last mile connections, **including the facilitation of access to public transport infrastructure and active mobility**, and which are equipped with at least one recharging station as defined in Article 2, point (52), of Regulation (EU) 2023/1804 dedicated to serve buses and coaches. Member States shall also examine the

development in such hubs of a refuelling station, as defined in Article 2, point (59) of that Regulation, used for hydrogen dedicated to serve buses and coaches.

**ECF VIEW:** Multimodal passenger hubs, which act as an interface between long-distance transport and urban nodes, should be easily accessible by active mobility. By 2030 major railway stations, bus stations, airports and ferry terminals should be connected to the cycle network of the urban node they serve. In most cases, it will be a shared responsibility of the national and local level.

- 1a. When adopting and monitoring the SUMP, local authorities, in cooperation with national authorities where relevant, shall make all possible efforts to ensure that SUMP are in line with the guidelines in Annex V while also taking into consideration long distance trans-European transport flows.

**ECF VIEW:** As of the time of writing, the text of Annex V has not been published together with the regulation. To properly integrate the different modes of transport and shift towards sustainable mobility, SUMP should include measures such as:

- circulation plans ensuring elimination of through traffic from city centres and residential areas,
- cycle highways connecting suburbs with the city centre.

SUMP should also set a goal to achieve a certain percentage of cycling modal share, that can later be monitored

2. The Commission shall adopt, no later than one year after the entry into force of this Regulation, an implementing act (i) defining, in a limited number, the indicators to be used for data collection provided for under paragraph 1, point (b); (ii) establishing a methodology for the collection and submission of data pursuant to that paragraph, and (iii) specifying individual deadlines for submitting such data. Those deadlines shall be set from 3 to 5 years. The implementing act shall be prepared in close cooperation with Member States and their regional and local authorities and when doing so, the availability and accessibility of data at local level, as well as existing urban mobility plans, shall be taken into consideration. That implementing act shall be adopted in accordance with the examination procedure referred to in Article 59(3).

**ECF VIEW:** Harmonised data collection on urban mobility in the TEN-T urban nodes is long overdue. While it remains to be seen whether the deadline of one year for the implementing act is realistic, work on defining Sustainable Urban Mobility Indicators (SUMI) is already ongoing in the SUMP subgroup of the Commission Expert Group on Urban Mobility. In a survey on data collection among urban nodes initiated by the subgroup in 2023, many cities indicated that they already collect cycling data in one way or the other. For the definition of the indicators, we will advocate for inclusion of cycling in data collection and harmonised methodologies especially when it comes to modal split, safety (including exposure data), and infrastructure.

4. By ... [one year after the entry into force of this Regulation], the Member States shall, without prejudice to Article 8(4a), designate a national SUMP contact point and shall establish a national SUMP programme with the aim of supporting the urban nodes to adopt and to implement the SUMP referred to in paragraph 1, point (b), sub-point (i).



**Additional priorities for urban nodes**

In the promotion of projects of common interest related to urban nodes, and in addition to the general priorities set out in Articles 12 and 13, attention shall be given to the following:

[...]

(b) seamless interconnection between the infrastructure of the trans-European transport network and the infrastructure for regional and local sustainable transport. It may include, for passengers, the ability to access information, book, pay their journeys and retrieve their tickets through multimodal digital mobility services in order to allow for optimised itineraries for vehicles in view of improving the management of traffic flows, road safety and reducing congestion and air pollution, and for freight, urban logistic facilities to enhance the consolidation of deliveries in urban areas, such as micro-hubs and **cycle logistic hubs**, in particular those connected with railway and waterborne transport infrastructure;

(ba) sustainable, seamless and safe interconnection of passenger transport infrastructure between rail, road, and as appropriate, inland waterway, air, and maritime, **including the integration of infrastructure for active modes**, especially when building or upgrading transport infrastructure;

[...]

(e) where appropriate, increase of the modal share of public transport and of active modes through measures to orientate primarily the mobility of passengers in favour of these modes including safe and secure infrastructure for active modes;

## 2. How to integrate cycling into large infrastructure projects?

While the revised TEN-T regulation is clear as a policy document stipulating the need of integrating cycling into other infrastructure projects, it does not include much specific guidance how to do that. The section aims to fill the gap with brief practical advice for different types of projects and different aspects of project preparation.

### 2.1. Quality requirements for cycling infrastructure

Cycling infrastructure standards are a basis:

- for determining whether and where (dedicated) cycle facilities are necessary,
- for their detailed designs.

Most EU countries already have standards or guidelines for cycling infrastructure in place. However, some of them do not cover all quality aspects, some do not ensure sufficient level of safety, some are adopted on the municipal level or focus on urban areas, which means they are not binding, or not the most relevant for typical TEN-T projects.



Figure 5. The eastern section of the S8 expressway in Warsaw, Poland was equipped with cycling facilities, but because of lack of enforcement of quality requirements the cycle tracks are not safe to use.

To address the gaps, in the 2019 revision of the directive on road infrastructure safety management (RISM Directive)<sup>7</sup> the European institutions mandated the Commission to prepare quality requirements

<sup>7</sup> Consolidated text: Directive 2008/96/EC of the European Parliament and of the Council of 19 November 2008 on road infrastructure safety management. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02008L0096-20191216>. Accessed 2024/03/28.

for infrastructure for vulnerable road users. Unfortunately, the works of the subgroup started only in 2024.

In parallel, a similar document has been nearly completed by the United Nations Economic Commission for Europe (UNECE) Group of Experts on cycling infrastructure (GE.5). The draft guide for designating cycle route networks (expected to be finalised by June 2024, most recent revision published on 18 March 2024<sup>8</sup>) includes in Annex II guidance on types of cycle infrastructure and their parameters, and in Annex III – on cycle crossings. ECF recommends including the two annexes in terms of reference for design or design and build contracts for TEN-T projects, unless more stringent binding standards are already in place.

Generally, cycling infrastructure should meet the criteria of coherence, directness, safety, attractiveness, comfort. The general criteria translate into specific technical requirements, covering in particular:

1. Acceptable detour factor, delays, frequency of interruptions;
2. Criteria for segregation/integration of cyclists with motorised traffic, based mostly on volume and speed of motorised traffic (optionally also volume of cyclists);
3. Criteria for segregation/integration of cyclists and pedestrians, based on (expected) volume of pedestrians and cyclists;
4. Geometric parameters: minimum width and clearance, horizontal and vertical curve radii, maximum gradients, stopping sight distance, visibility splays on crossings;
5. Surface quality.

#### Further reading:

1. [Guide for designating cycle route networks](#), Annex II and Annex III. UNECE 2024 (work in progress).
2. [Geometric design requirements for cycle infrastructure](#). ECF 2022.
3. [Catalogue of Cycling-friendly Infrastructure Standards for the Danube Countries](#). Ministry of the sea, transport and infrastructure of Croatia 2021.

## 2.2. Cycle audit

Large scale infrastructure projects, such as TEN-T projects, should undergo a cycle-friendliness check (audit) to make sure:

1. They do not create new barriers for cycling (“Do No Significant Harm” principle);
2. Opportunities to improve conditions for cycling are fully used;
3. Elements of cycle infrastructure included in the project meet the quality requirements.

The scope of the audit depends on the type and location of the project. The following table can be used as the first guideline:

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<sup>8</sup> Guide for designating cycle route networks. <https://unece.org/transport/documents/2024/03/working-documents/guide-designating-cycle-route-networks>. Accessed 2024/03/28.

|   | Type of project                                  | Cycle audit focus  |
|---|--|--|
| 1 | All road and railroad constructions and upgrades | Sufficient density of cycle crossings meeting quality standards – higher than density of crossings available for motorised traffic.<br>Cycle infrastructure along the (rail)road, if there is potential for cycle traffic and no alternative route meets quality standards.              |
| 2 | Ring road/bypass of a town/city                  | In addition to 1:<br>Circulation plan in the bypassed area that ensures elimination of through motorised traffic from it.  |
| 3 | Road projects in new itineraries                 | In addition to 1:<br>Adaptation of the substituted road for safe walking and cycling, for example reallocating a part of the carriageway to pedestrians and cyclists, introducing traffic filters to eliminate through traffic, or reclassifying the whole carriageway to a cycle track. |
| 4 | Railroad line construction or upgrade            | In addition to 1:<br>Secure cycle parking at stations.<br>Safe routes to reach the stations (design of the area around the station).<br>Accessibility of platforms with cycles (ramps or large enough lifts).  |
| 5 | Inland waterways                                 | Cycle infrastructure along the river/canal/coast (possible synergy with service roads).<br>Cycle infrastructure on new/modernised bridges.   |
| 6 | Ports and airports                               | Cycle infrastructure enabling access to passenger terminals and workplaces   |
| 7 | All projects                                     | Upgrade of other roads affected by the project (for example, where traffic is likely to increase as a result of the project) to meet the quality requirements for cycle infrastructure   |



Figure 6. 6,000 cyclists per day use “Snelbinder”, a 2-km long cycling bridge attached to the railroad bridge over the Waal river and embankment in Nijmegen, Netherlands.



#### Further reading:

1. [Cycling and Dutch national infrastructure. Working towards a more structural approach to incorporating cycling in national-level projects.](#) Ministry of Infrastructure and Water Management, and Rijkswaterstaat, 2020.
2. [Interim Advice Note 195/16. Cycle Traffic and the Strategic Road Network](#), Section 2.1. Highways England 2016.

## 2.3. Impact assessment

Projects should integrate into their cost-benefit analysis:

1. the impact of the investment on modal split and number of trips by different modes of transport,
2. health impact through increased or decreased physical activity, resulting from changes in number of trips by active modes,
3. impact of number of trips by different modes of transport on CO<sub>2</sub> and other emissions.

For example, if a project claims time savings in road journey times (positive effect), it will make car journeys more competitive in comparison to more sustainable modes of transport, resulting in a shift of some trips towards individual motorised transport. This will likely increase CO<sub>2</sub> emissions and reduce physical activity of the users (negative effects). To achieve overall positive balance, the negative effects might need to be compensated by additional measures (for example, leading to time saving also for cycle trips).

#### Further reading:

1. [Health Economic Assessment Tool \(HEAT\)](#). WHO 2023.
2. [Extended CBA Methodology for Transport Infrastructure Projects](#). KTI Institute for Transport Sciences 2022.
3. [Application of Updated CBA Methodology for Transport Infrastructure Projects](#). KTI Institute for Transport Sciences 2022.

## 2.4. Case studies

An interactive map of good and bad practices in integrating cycling into TEN-T infrastructure is available in the [TEN-T section of the ECF website](#). As of March 2024, 93 case studies from 25 countries (22 EU Member States, Norway, Switzerland and UK) are displayed.

A considerable effort has been made to ensure that the information presented is current and accurate. If outdated or incorrect information is brought to our attention, ECF will correct or remove it. Additional case studies are also welcome.



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