

Bikes around tramlines: friends or foes? —

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Foreword —

Every year, many cyclists find themselves in hazardous situations in the vicinity of tram tracks, especially at intersections. These often complex urban configurations are regularly cited by local authorities and user associations as sensitive areas in terms of comprehensibility and safety. And indeed, today's infrastructure does not always guarantee safe coexistence between active mobility and guided transport. Who has never felt uncomfortable on their bike around a tram crossing? It is a very familiar scenario that illustrates the safety and planning challenges that local authorities have to contend with.

With cycling set to play a central role in the ongoing ecological transition, it is becoming imperative to rethink the way public spaces are designed. France is seeing a steady increase in the number of tram lines and their length, and their output in terms of kilometres travelled is constantly rising. At the same time, bicycle movements in France are soaring: +41%¹ in 2022 compared to 2018. As we can see, there is therefore a real need to support these two powerful movements to maintain a high level of safety and ensure that they complement each other rather than conflict with each other.



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¹ Source: CEREMA / ADEME

*Tram line T6 crossing a Dutch-style junction
at the entrance to Doua university campus*



Development of tram networks in France

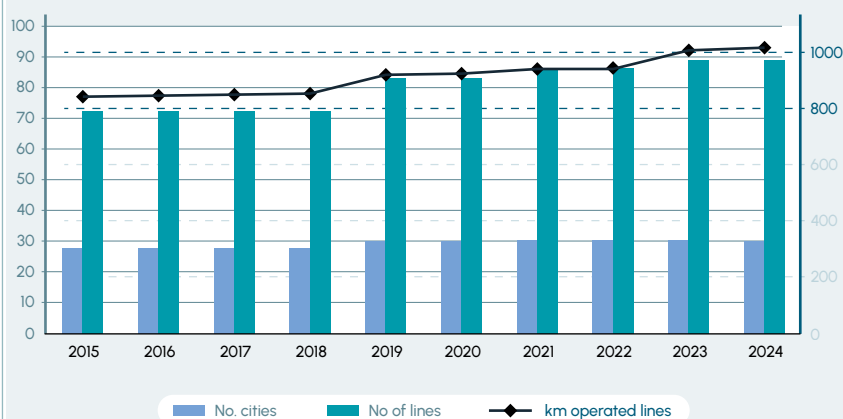


Figure 1: Number of city regions, lines and kilometres of operated lines
Source: STRMTG

Tramways and bikes: a need for coexistence

Tramway project design must take into account the needs of cyclists, considering their safety, comfort and ease of movement. One of the basic principles is to keep bicycles **off the tram track bed** as much as possible. This requires a rethink of the public space running alongside the lines, either by providing separate cycle ways or by creating traffic-calmed streets with reduced and low-speed motor traffic, allowing for safe mixed use.



Cycle lane distant from tram line, with safe crossing zones

The principle of distance is also essential: cyclists must be positioned sufficiently far from the tram track bed, except when trams are travelling at low speed and the tram and bike can see one another perfectly. This condition makes it easier to accommodate bicycle movements at intersections, particularly when they are turning.



Crossing point of two tram tracks
and two major cycle lanes

At junctions, it is crucial that cyclists cross tram tracks **perpendicular to them**. Crossing the tracks at right angles reduces the risk of falls and improves visibility between the different users.



Cycle lane running alongside tram line with
perpendicular crossing point and specific traffic lights

Safety also depends on the **clarity and credibility of cycle routes**: waiting times at traffic lights must be limited to the bare minimum to discourage cyclists from taking risks. Where possible, cycle lanes can be operated in tandem with tram lanes at junctions, allowing cyclists to benefit from the same right of way and protection as trams.



Example of traffic lights allowing bikes to pass
at the same time alongside light rail vehicles

The Dutch-style junction: an appropriate solution? —

The protected intersection or Dutch-style junction, named after its country of origin, offers cyclists safer passage with its specific geometry. Users can see each other more easily, the lanes are diverted to avoid areas of potential conflict, and cyclists enjoy free movement including for left turns.

At Egis, we have studied how to incorporate this model into the French streetscape while complying with STRMTG² specifications to maintain the safety of tram tracks. The adaptations that are needed include the addition of traffic islands between the road and the tram line, and between the road and the cycle paths. Cyclists can turn right without stopping, but traffic lights are implemented for routes that cross roads and tram tracks.

This type of junction could work with two-phase sequencing, which is compatible with French legislation. Tram traffic would have its own specific phase, with pedestrian and bike movements happening in parallel. However, this model should not be used indiscriminately. It is only advantageous when dictated by road traffic conditions (heavy and/or fast traffic), and where sufficient space is available. Building this type of junction will often entail reducing road traffic volumes and cutting the number of lanes in order to free up the extra space.

² The Service Technique des Remontées Mécaniques et des Transports Guidés is the French nationwide guided transport supervisory authority reporting to the Ministry for the Ecological Transition, and more specifically its Directorate General for Infrastructure, Transport and Marine Affairs (DGITM).

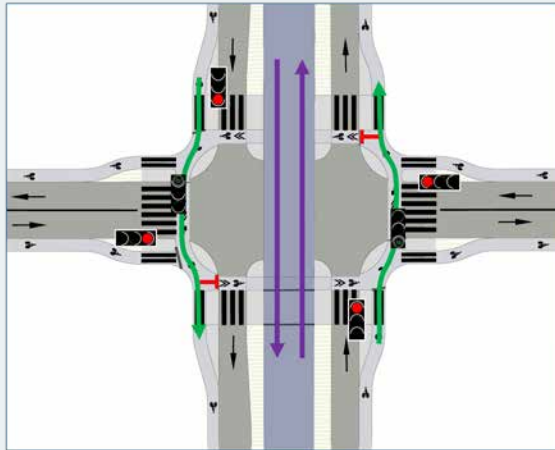


Figure 2: Adaptation of Dutch-style intersection to allow trams and bikes to continue straight on at the same time.

Concrete examples and local trade-offs —

The T6 North light rail project in Villeurbanne, France, project-managed by Egis, is a good illustration of the trade-offs that must be made in a dense urban setting. By prioritising traffic flows, redesigning circulation plans and adapting junctions, the needs of the tram can be reconciled with those of cyclists. This type of project shows that even in heavily restricted environments, efficient solutions can be enacted.



Safe traffic control at a Dutch-style junction: LRVs and bikes pass alternately

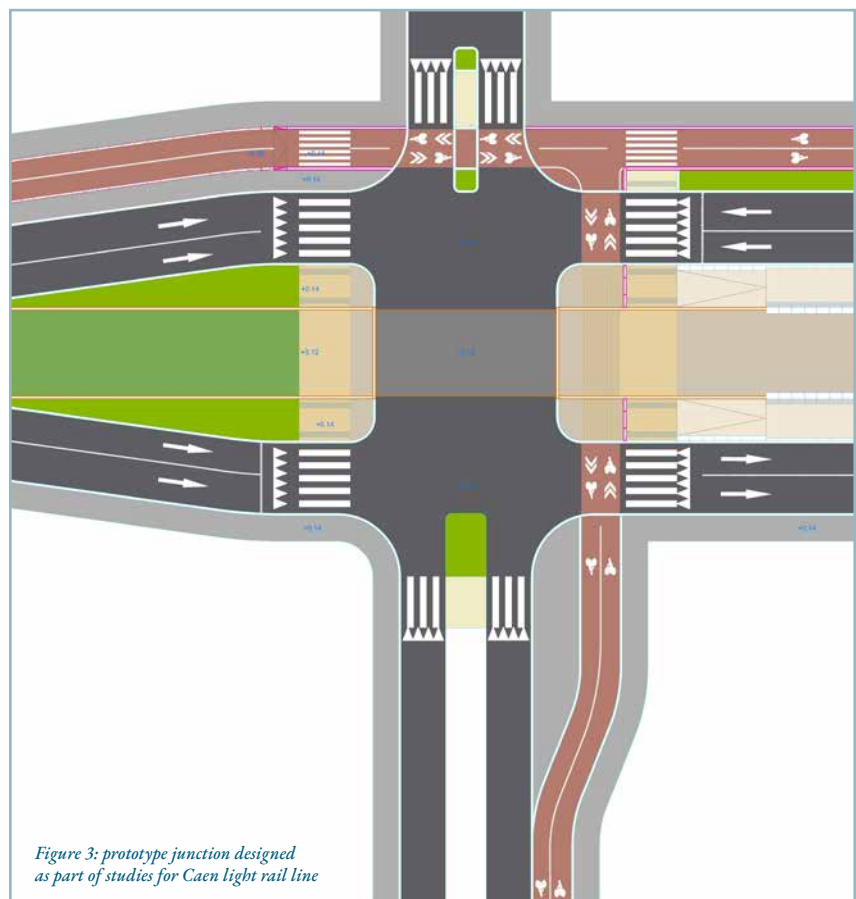
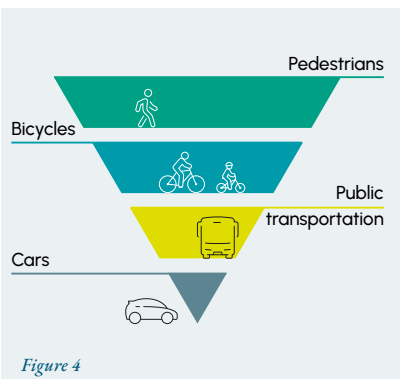


Figure 3: prototype junction designed as part of studies for Caen light rail line

The case for a coherent nationwide strategy —

France is experiencing strong growth in tramway development, with more than 30 projects underway³ or in the pipeline. At the same time, cycling traffic is booming, driven by ambitious national targets: to achieve a 12% modal share for cycling by 2030.⁴ To support these developments, local authorities are increasingly relying on the inverted mode pyramid, which places pedestrians and cyclists at the top of planning priorities.



In the coming decades, tram networks will approach their full potential in terms of network length. However, operating density on lines will tend to increase, with the creation of shared routes and interlinked networks. The necessary coexistence of bicycles and trams will become a major challenge, and the modal share of cycling still has enormous room for improvement compared to the most cycle-friendly countries in Northern Europe. There is therefore a great deal at stake

in the creation of safe, comfortable and appropriately sized cycling infrastructure, including in major public transport corridors.

Ultimately, the growing presence of both cycling and tramways in urban mobility policies should not be seen as competition between two modes of transport, but as an opportunity for far-reaching transformation of public spaces. When planned from the outset, these two modes can coexist to create safer, more accessible and more liveable cities.

The design principles mentioned here — distance, right angle approaches, clarity, compatibility — are not simply technical recommendations: they reflect a political desire to make cycling a fully-fledged, respected and integrated mode of transport. Dutch-style junctions, traffic-calmed streets and continuous cycle lanes are not urban fantasies, but concrete solutions that have already been implemented in many places.

At a time when local authorities are investing heavily in guided transport infrastructure, it is essential not to allow cycling to be considered as an afterthought. It is by intelligently combining tramways and cycling infrastructure that we will be able to address the challenges of safety, ecological transition and quality of life. As a committed contributor to the design of sustainable mobility solutions, Egis supports this transformation by putting forward innovative technical solutions tailored to French urban environments



Cycle lane built as part of the Angers LRT project

³ Transbus.org – Tramways en France [villes-cyclables.org]

⁴ France à vélo 2030 [transitionvelo.com]

Layout of Lyon LRT



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