

Increasing the accessibility and safety at the cyclist/pedestrian tunnel at Enschede Kennispark

The underpass at the station 'Enschede Kennispark' frequently floods during extreme rainfall events (figure 1). Furthermore, the traffic situation is experienced as dangerous due to the mixed traffic flows and poor visibility. These issues have a large impact on the safety and accessibility of the tunnel for daily users.

Main issues:

The main issues of this location could be roughly divided into three categories.

Flooding:

The tunnel can flood up to 1 meter during heavy rainfall events. The tunnel is located at the end of the sewer system. Therefore, during heavy rainfall, is the sewer system at that location full due to the rain upstream. This results in the water flowing towards the tunnel, where the storage capacity is insufficient.

Traffic safety:

The shared space in the tunnel and the station square causes conflicts between cyclists and pedestrians. Neither group knows where to expect the other, which, in combination with blind corners and poor visibility, increases the risk of accidents.

Growth pressure:

Due to the planned stadium expansion of the 'Grolsch Veste' and the increasing use of the F35 cycling path, will the tunnel be used more intensively in the coming years.



Figure 1: Underpass Enschede Kennispark flooded.

Expert voices:

When speaking with the involved stakeholders, some interesting insights were gained. The *Grolsch Veste* identifies the tunnel as a major safety concern and a bottleneck during football games, especially with the upcoming stadium expansion. The *Traffic Department of the municipality of Enschede* recognises the confusing layout and poor visibility as safety concerns. They seek short-term and easy-to-implement solutions to improve the situation.

The *Water Department of the municipality of Enschede* focuses on reducing the effects, as preventing flooding is not feasible. Their focus is on mitigation and resilience measurements.

Proposed solutions:

Due to the preference for cost-effective and practical interventions by the municipality of Enschede, does the proposed solution consist of a package of smaller measures that can be taken.

This package includes: *Dynamic signage*, which can be used to give directions during events or propose other routes in case of flooding in the tunnel. *Tunnel markings*, indicate flows and make movements more predictable in the tunnel. *Mirrors* could improve the visibility at the blind corners. This would reduce the collision risks and enhance the overall safety. *Speed bumps*, to slow down cyclists before entering the tunnel and reduce the water runoff.

Conclusion:

The underpass at Station Enschede Kennispark can be made safer and more resilient by using relatively simple and cost-effective solutions. Implementing measures such as signage,

markings, mirrors, and speed bumps can increase visibility and guide users through the tunnel. This creates a safer and more accessible route for daily commuters and event visitors.

If you want to learn more about this challenge, you can take a look at the poster about the redesign of the underpass at Station Enschede Kennispark by clicking on the link below:

If possible, we would like here a link to the attached Poster

If you have any comments or questions, do not hesitate to contact us!

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