



What's next?

Current and future developments

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Railway noise protection in the Netherlands

- Noise emission ceilings
- Noise abatement program (MJPEG)
- NDTAC
- Quieter routes EU (2024)

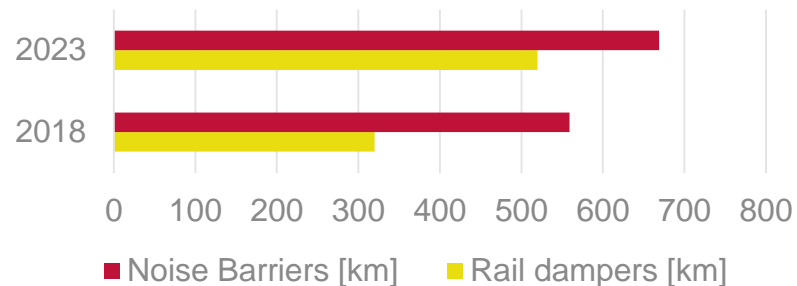


Noise mitigation measures



Forecast 2019 - 2023

- 81% silent freight trains



- Noise mitigation at 19 noisy bridges
- Planned façade insulation at 3.000 DU's
- Large scale squeal noise mitigation

Create possibilities for (future) innovative technologies

- Low height noise barriers
- Noise barrier with added diffraction elements
- Solar panels on noise barriers
- Testing ground for 'sustainable' bearers
- What's next...?



Noise & vibration control by monitoring track quality



- Passenger train as monitoring platform
- Axl box acceleration sensors and microphones (wheel-rail interface)
- Detect rail defects, track alignment deterioration, excessive noise emission, rail roughness growth
- Noise & vibration motivated maintenance

Challenges of railway vibrations



Increasing awareness asks for actions:

- More communication
- Research and development
- Clear policy and regulations
- Dose-response-relations
- Uniform calculation model
- Cost effective mitigation measures

Thank you!

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Verbindt. Verbetert. Verduurzaamt.