



Rijkswaterstaat  
Ministry of Infrastructure  
and Water Management



Rijkswaterstaat  
Ministerie van Infrastructuur en Waterstaat



# What you hear is what you get

Communicating about noise  
effects with residents

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# 1. Introduction Rijkswaterstaat

- national road authority (NRA) Netherlands
  - 6 nationwide and 7 regional organizational units
  - approximately 10.000 employees
- We manage & maintain
  - approximately 3100 km national roads (*5860 km carriageways*)
  - 1130 km noise barrier
  - 1800 km quiet road surfaces
  - A4 the Hague, is one of the most busiest highways of Europe – 250.000 v/day
- Other road authorities:
  - Provinces (8000 km), municipalities (120.000 km), waterboards (7.000 km)





## 2. Noise legislation in the Netherlands

- Maintenance & road widening projects:
  - “preferred limit value” = standstill compared to situation 2012 + 1.5 dB
  - Max 65 dB
- New roads:
  - “preferred limit value” = 50 dB
- If preferred limit value may be exceeded, authorities must provide valid reasons for their decision. Wherever possible, they must also reduce noise through measures that:
  - tackle the source of the noise, e.g. using quieter road surfacing material;
  - shield the noise recipient from the source, e.g. a noise barrier;
  - insulate the noise recipient, e.g. acoustic insulation of homes.
- Remediation program > 65 dB facade noise level



### 3. Why communicate about noise effects?

- > 30 road widening projects 2012 – 2020
- Each project had to consult and inform residents
- Be transparent about environmental effects, don't raise false expectations
- [FAMOS study](#) (2022):
  - **F**actors **M**oderating people's **S**ubjective reactions to noise
    - Residents attitudes towards authorities and road owners can lead to a shift in noise annoyance equivalent to 20 dB from highest trust to lowest trust
    - Whether expectations are met or not met can lead to a shift in noise nuisance equivalent of about 5 – 10 dB



## 4. Working methods in road widening projects

- Information meetings with noise demonstrations:
  - calculated the noise level of individual houses and apartments during rush hour
  - before and after completion of the roadworks including the new noise measures.
  - Visitors could hear (calibrated) samples of the noise levels
- Because residents recognized the current noise level, they had confidence in the effect of the measures
- Better predictability and tool of communication for residents & decision makers. They will know and experience what to expect



## 4. Working methods in road widening projects

- General information (internet)
  - Explainer video's:
    - [geluid in beeld](#)
    - [MJPG geluidsanering](#)
  - Noise demonstration site:
    - [Wiehoortwatwaar.nl](#)
    - (who hears what where)





# Demonstration Wiehoortwatwaar.nl

- to hear the sound at the correct level you must adjust the computer sound in advance
- Correct level = "as if I am standing next to you"
- You can hear the noise:
  - inside & outside the house
  - high/low traffic; Quiet pavement
  - Noise barriers; façade insulation
  - Background noise (just for fun)







# Demonstration Wiehoortwatwaar.nl

- For demo switch to video [whww.mp4](#)





# Questions?

