

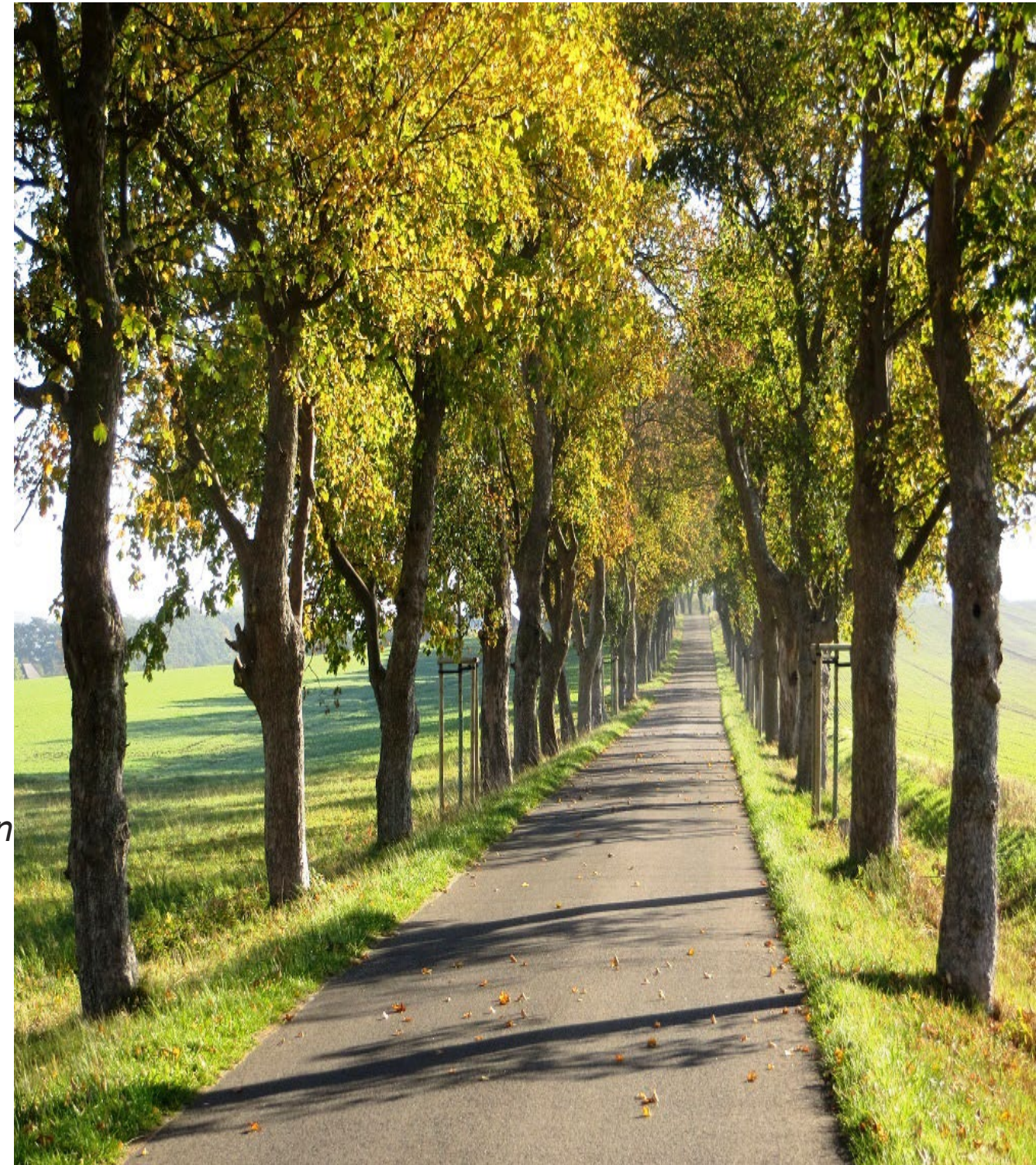
ANNUAL ROAD SECTOR CONFERENCE 2026

German Guidelines for Road Safety, Recommendations for Trees along Roads, and the German Alleenstrasse

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Director Transportation Unit



Presentation Agenda

A century of standardisation — from 1924 to 2024 and beyond

01

The FGSV & Standards & The Ministry of Transport

100 years of history and the regulatory framework

02

Road Safety Statistics

From 20.000 fatalities to less than 3.000!

03

Basics & Legal Foundations & Standards, Regulations

Objectives, legal requirements, standards and regulations, but also a cultural heritage!

04

Guidelines for Road Safety and Avenues

RPS, ESAB and others

05

New recommendations for existing and new trees on roads

06

The German Alleenstrasse

CHAPTER 1

The FGSV and Road Safety — A Century of Progress

The Road and Transportation Research Association (FGSV), Germany's foremost transportation regulation body and PIARC National Committee since 1955, celebrated its centenary in October 2024.

In the late 1920s, the FGSV focused on improving road conditions — reducing dust, testing asphalt and concrete surfaces, and establishing standards. It later provided critical impetus for motorway planning and construction.

Road Safety has been a core concern since the earliest days, e.g. beginning with guidance on snow chains in 1932 and the first de-icing leaflet in 1938.



Collaboration with the Federal Ministry of Transport

When the Federal Republic of Germany was founded in 1949, the FGSV began close cooperation with the Federal Ministry of Transport (BMV). Unlike many countries where ministries draft road regulations directly, Germany's BMV leverages the FGSV's expertise.

ARS Circulars

The BMV prescribes FGSV standards via 'General Circulars on Road Construction' for motorways and federal rural roads

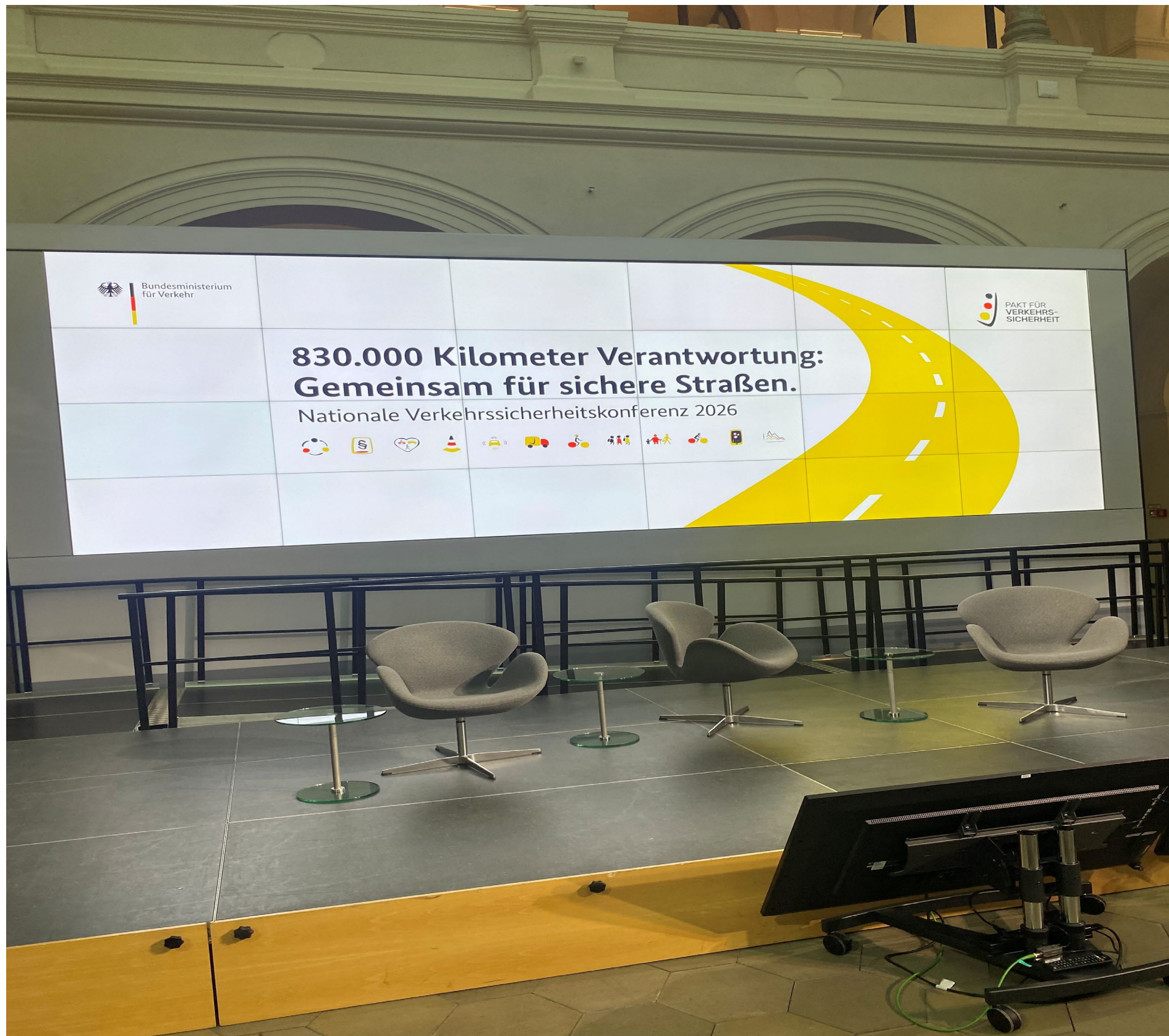
850+ Publications

FGSV Verlag publishes contract bases, regulations, knowledge documents and **25+ translations:** Road Design, Road Construction and Maintenance, Road Safety, Transportation Planning....

≈ 300 FGSV committees, on a volunteer base

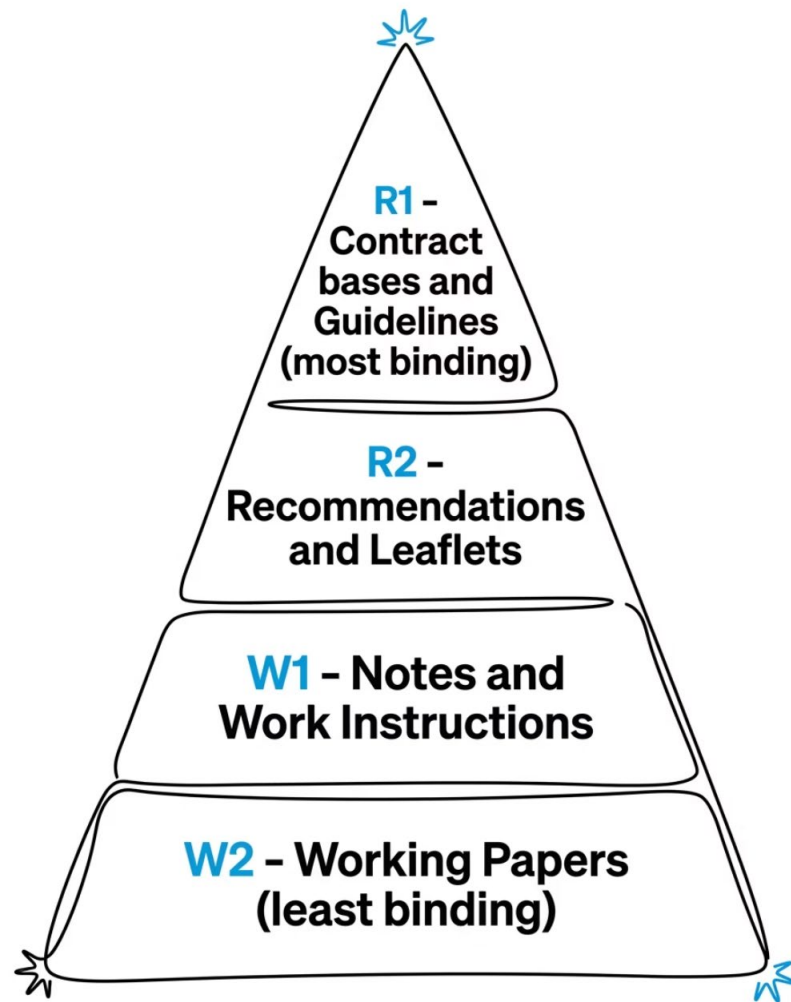
Photo: BMV





FGSV Publication Categories

Technical publications are organised into four tiers with descending levels of binding authority:



1

**R1 — Contract Bases,
Guidelines**

Highest binding level; prescribed by the
BMV

2

**R2 — Recommendations,
Leaflets**

Strong advisory status for practitioners

3

W1 — Notes, Work Instructions

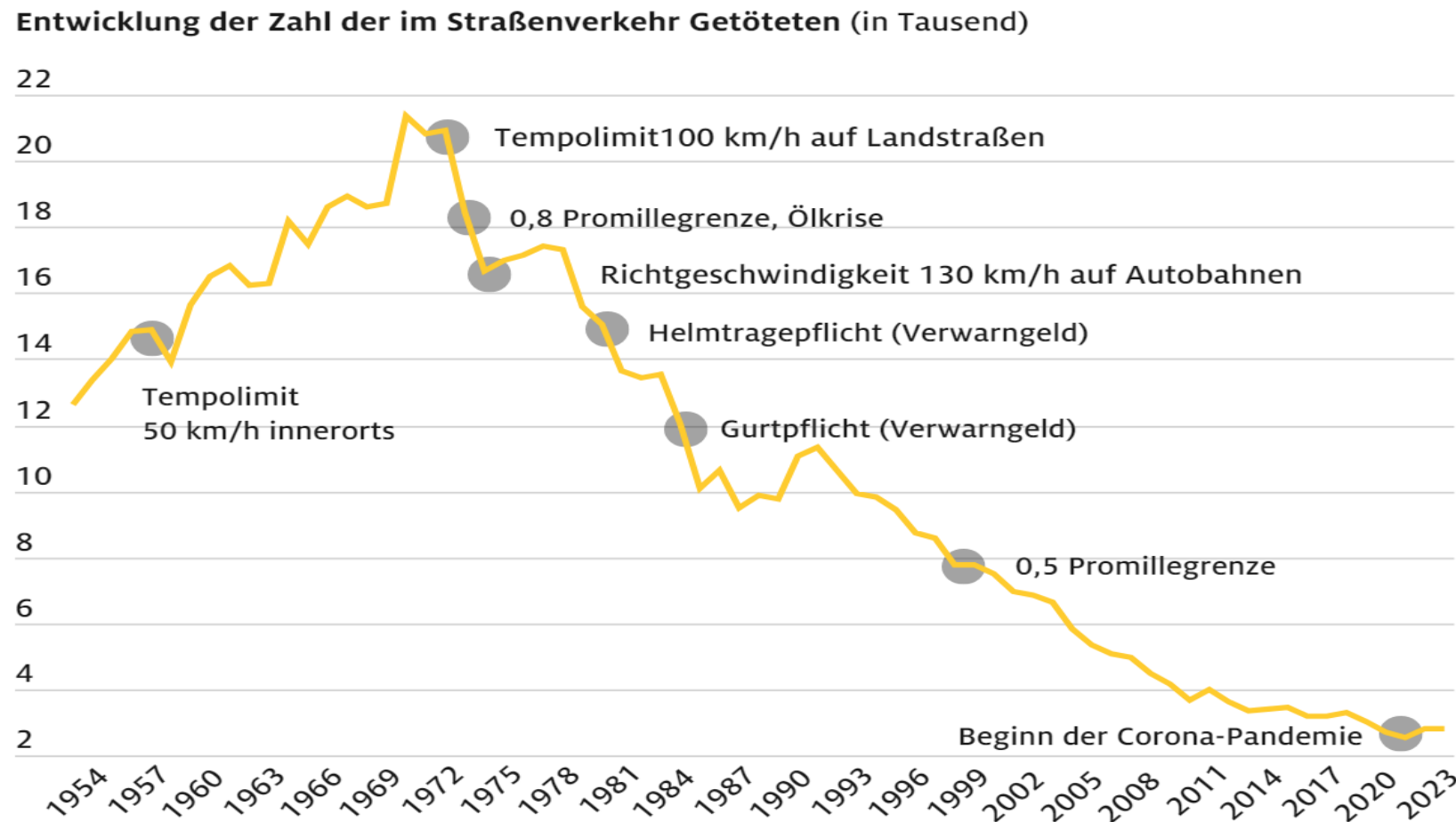
Practical guidance for field operations

4

W2 — Working Papers

Background research and discussion
documents

Statistics on German Road Safety



Quelle: Statistisches Bundesamt (Destatis)

©ADAC e.V. 02.2024

**From
more than
20.000
fatalities to
less than
3.000**



Statistics on Rural Roads and Road Safety

- Germany: 2.770 Fatalities (2024), 2.814 Fatalities (2025)
- On Rural Roads: 1.571 (2024) → 57 % of the killed people
- In the past: **one in four people killed** in accidents on rural roads died in collisions with trees; the only type of accident more common is those involving oncoming traffic. 2024: 449 killed people
- A sensible strategy for reducing collisions with trees addressing driver-related causes (particularly alcohol and speed, and associated checks) and optimising aspects of route alignment and road design (road visibility)
- **But there are not only tree-lined roads (avenues), but single trees, single lines, roads in forest**

Legal Foundations & Requirement Levels

Federal Trunk Roads Act (FStrG)

Together with the road and street laws of the federal states, this establishes the regulatory framework for road planning, construction and maintenance.

German Civil Code (BGB)

The traffic safety obligation requires that whoever opens a public thoroughfare must take reasonable precautions — to avert hazards.

Standards and Regulations

All European road authorities are advised to define and create Road Safety Standards after the EU Directive (EU) 2019/1936 on road infrastructure safety management and for the Vision Zero! Research important for Standards and Regulations!

Standards and Regulations

European Approach:

Directive 2008/96/EC on road infrastructure safety management (as amended by Directive (EU) 2019/1936) aims to reduce the number of fatalities and serious injuries on the EU road network by raising safety standards.

Vision Zero! → Enabling an nationwide road safety audit for planned and existing roads, more than 25 years in Germany.

German Approach:

ESAS 2002 (Recommendations for Road Safety Audit) and RSAS 2019 (Guidelines for Road Safety Audit), ESN (Safety analysis of road networks), **RPS and ESAB**

English Translations: e.g. RAL, RAA (Guidelines for Rural Roads and Motorways)

Cultural heritage, nature conservation and the landscape

- Significance!
 - Avenues and single-sided rows of trees form part of the natural and cultural heritage of many regions, for which road construction bears a particular responsibility - Legal protection in some federal states
 - Ecological significance; functions in the landscape ecosystem (particularly old avenues and rows of trees)
 - Cultural and historical significance; rare and regionally characteristic species - **The number of tree-lined roads in Germany has fallen by 30% in the last 20 years**
 - Landscape character
 - Significance also for the design of the road environment; influence on driving behaviour; road surfacing

Landscaping with tree lines

Optical guidance?



Source: S. Reiter



Foto: S. Reiter

Mapping Avenues – necessity and research

16 Federal States – 16 different road information systems – 830.000 km of roads (federal, state roads, county and municipal roads)

≈ 20.000 – 23.000 km of tree-lined roads in Germany (of ≈ 220.000 km of rural roads without motorways) – Brandenburg on Top! 1.924 km tree-lined roads and 1.432 km single sided trees

- The need for mapping all these roads!

Research Project „Alleen als schützenswerte Landschaftselemente! (Avenues as landscape features worthy of protection) (01/2019-06/2022) → Project Outcome: Guide for Germany

Research Projekt „Development of the framework for a tree register along national federal trunk roads” until 2025 → federal road information system

Forschungsgesellschaft für Straßen- und Verkehrswesen



Arbeitsgruppe Verkehrsmanagement

Richtlinien
für passiven Schutz an Straßen
durch Fahrzeug-Rückhaltesysteme

R 1

RPS

Ausgabe 2009

CHAPTER 4

RPS: The Guidelines for Passive Road safety through vehicle restraint systems — 2009 Edition

Following the 1989 edition, a new edition has been published by the FGSV in 2009 – new editions for motorways and rural roads are on their way.

The Guidelines remain the most important German standardisation source for restraint systems, officially introduced by the Ministry of Transport.

In which areas along roads must hazard points of specific risk levels be protected by safety barriers? Applicable to new roads or new obstacles, but not to existing infrastructure. Example: noise barrier next to the carriageway.

Risk level 3: 'Obstacles posing a particular risk to vehicle occupants', critical distance depending on speed and embankment height.

FORSCHUNGSGESELLSCHAFT FÜR STRASSEN- UND VERKEHRSWESSEN
ARBEITSGRUPPE VERKEHRSFÜHRUNG UND VERKEHRSSICHERHEIT

Empfehlungen
zum
Schutz vor Unfällen
mit Aufprall auf Bäume

ESAB

Ausgabe 2006

ESAB: The Recommendations for preventing accidents involving collisions with trees — 2006 Edition

Following the 2006 edition, new recommendations by the FGSV will be published in 2026/2027 – they will replace the ESAB and an 1992 Information Sheet on tree-lined rural roads!

Structure of the 2006 Recommendations ESAB



Introduction



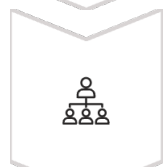
Identifying areas of road safety concern



Areas with a high incidence of accidents



Measures to reduce collisions with trees and the consequences of such accidents



Public relations, impact assessment



Planting along existing roads

ESAB and existing trees along roads: measures to prevent accidents and reduce collisions

- Where trees along existing federal roads may pose a safety risk, measures must be taken to reduce the number of accidents involving collisions with trees and to mitigate the consequences of such accidents.

Six measures (which can and should be combined):

- Construction measures (road construction and design measures)
- Operational measures – Road maintenance!
- Traffic engineering measures – e.g the federal program for retrofitting restraint systems
- Road traffic law measures
- Traffic speed monitoring (mobile or fixed)
- Removing the (federal) road from a tree-lined road

New recommendations: Specific requirements for certain scenarios

- More flexible application of the current regulations (discretion)
- Requirements for specific scenarios
- Three scenarios are distinguished here:
 1. Existing trees along roads: Landscaping and replanting
 - Measures to prevent accidents: removal of trees? Dealing with trees during construction works
 2. New trees along existing rural roads?
 3. Construction of new roads with trees?
- Related topic: Development of tree-lined avenues away from major trunk roads

New trees along existing rural roads?

- Replanting within existing stands is not considered new planting
- Challenge: Federal trunk roads serve inter-regional traffic and are often designed for higher speeds → high safety requirements
- Tree and avenue planting must comply with the requirements of the RPS
- No new trees within the critical distance from the edge of the paved area or Protection through passive safety barriers

New trees along existing rural roads?

- On at-grade rural roads, the following distances (A) must be maintained:

Roads with a design speed (V_{zul}) > 100 km/h: $A = 12.0$ m

Roads with a design speed (V_{zul}) of 80 to 100 km/h: $A = 7.5$ m

Roads with a design speed (V_{zul}) of 60 to 70 km/h: $A = 4.5$ m

- On embankments, the distances increase; on cuttings, the distances decrease.
- If a protective structure is already in place, new planting may be carried out behind it.



Replanting trees in the existing site

A long, straight asphalt road stretches into the distance, flanked by mature trees and metal guardrails. The road is flanked by metal guardrails on both sides. The trees are lush green, with some showing early autumn colors. The road leads towards a distant horizon under a clear sky. The overall scene is peaceful and scenic.

Source: Landesbetrieb Straßenwesen Brandenburg

Relocating the trees



Source: M. Engels

Planting a new tree line behind a cycle path



Source: Landesbetrieb Straßenwesen Brandenburg

Custom solutions



Source: S. Reiter

**Leitfaden für Sonderlösungen
zum Baum- und Objektschutz
an Landstraßen**



Erstellt durch die Bundesanstalt für Straßenwesen
mit Unterstützung des Arbeitsgremiums Schutzeinrichtungen

Bergisch Gladbach, 19.12.2017

**Steckbriefe für Sonderlösungen
zum Baum- und Objektschutz
an Landstraßen**



Erstellt durch die Bundesanstalt für Straßenwesen
mit Unterstützung des Arbeitsgremiums Schutzeinrichtungen

Bergisch Gladbach, 19.12.2017

Example „Deutsche Alleenstraße“ – a touristic gem

**2.900 km – 10 –
Parts**

**Goal: Preservation,
protection and
maintenance**





 Deutsche
Alleenstraße

Avenues in Europe - Yesterday, Today, Tomorrow

https://www.bund-mecklenburg-vorpommern.de/service/publikationen/detail/publication/avenues-in-europe-yesterday-today-and-tomorrow/

Presse Termine Publikationen Kontakt Tipps Impressum

BUND Landesverband Mecklenburg-Vorpommern e.V.

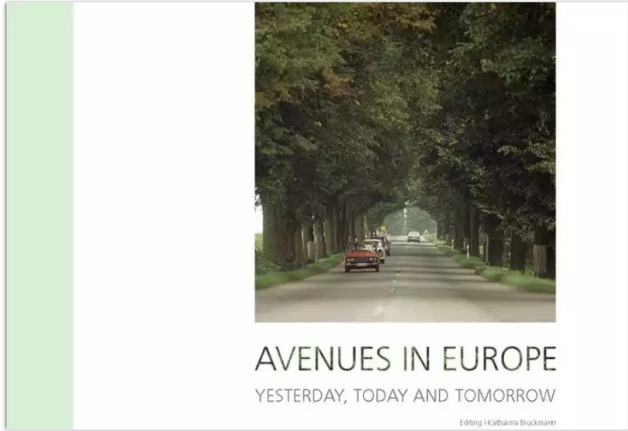
Jetzt spenden Mitglied werden

Mitmachen Über uns Mitglied werden Spenden BUNDjugend M-V Newsletter Themen

BUND - Mecklenburg-Vorpommern » Publikationen » Detail » Avenues in Europe - Yesterday, Today...

Avenues in Europe - Yesterday, Today and Tomorrow

01. November 2015 | Allein



Inhalt

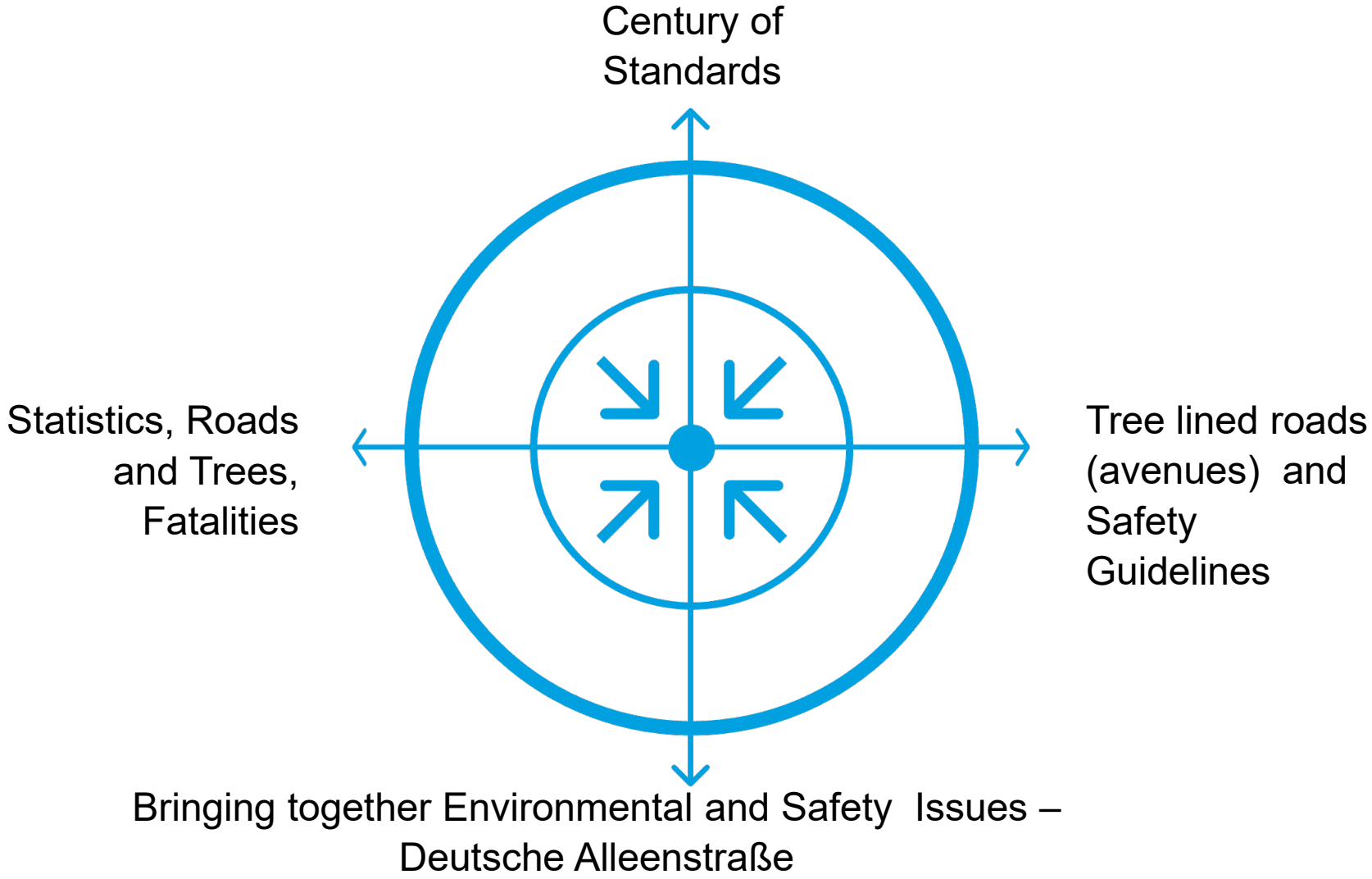
Dieses Buch entstand aus der Zusammenarbeit von 12 Alleenschützern aus Europa. Sie berichten von der Geschichte und zukünftigen Entwicklung der Alleen in ihrem Land.

"Avenues in Europe" ist bis jetzt nur in englischer Sprache erschienen, wird aber in diesem Jahr auch noch auf Deutsch erscheinen.

PDF DOWNLOAD (11.07 MB)

Folie 2 von 2 Deutsch (Deutschland) Barrierefreiheit: Untersuchen Notizen Anzeigeeinstellungen 66 % 11:15 21.04.2026

Key Takeaways



A century of collaboration between the FGSV and the Federal Ministry of Transport has produced one of the world's most comprehensive road safety regulatory frameworks — continuously refined through research, European standardisation and practical field experience.

Thank You

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English translation of Guidelines — 2026: [23.v.pdf](#)

References and further publications available at www.fgsv.de and
www.fgsv-verlag.de

