

Tyre & Road Wear Particles in the context of Microplastics

Fazilet Cinaralp
Secretary General



***“Invisible Ocean Pollutants” from our roads
-webinar***

December 8, 2020

Institute of Materials, Minerals & Mining

**EUROPEAN
TYRE & RUBBER
manufacturers'
association**



Tyre and Road Wear Particles

A complex sustainability challenge

The challenge:

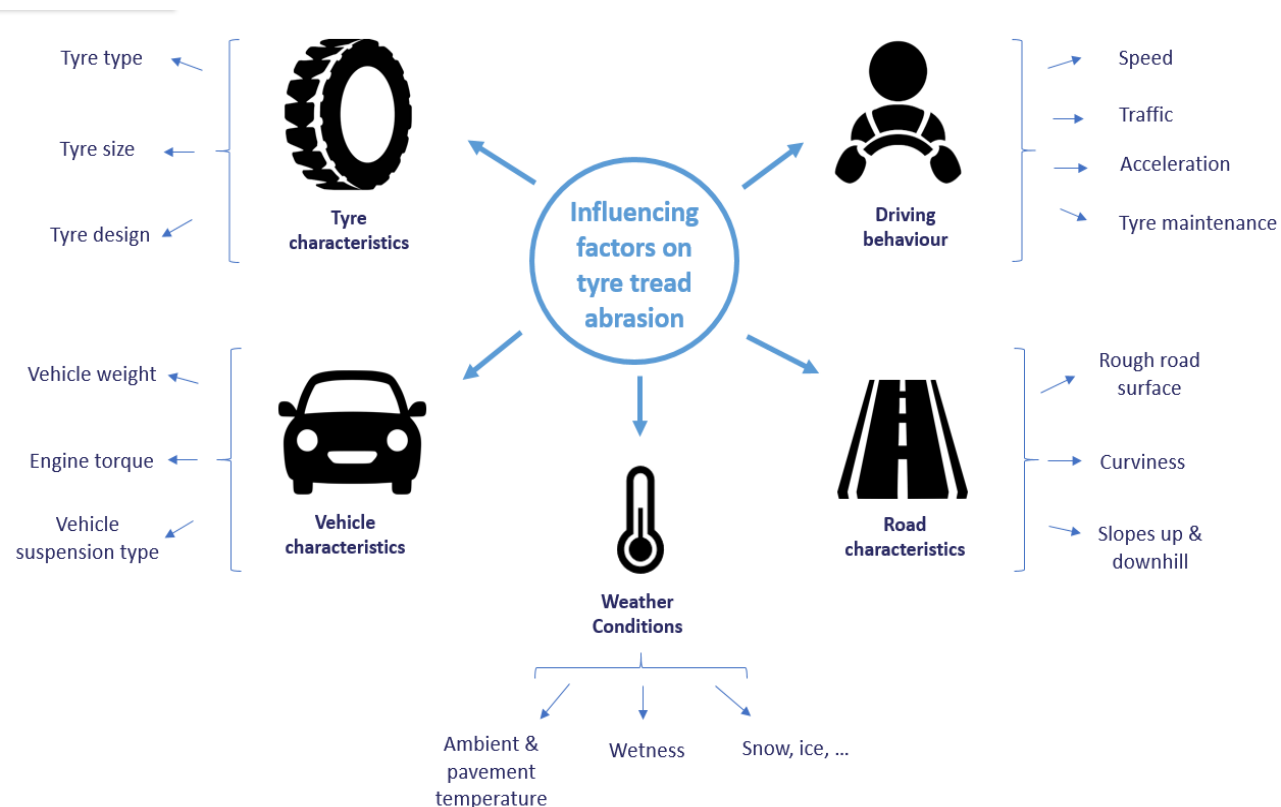
The friction between tyre and road (=grip) is essential to ensure **road safety**;

TRWPs are **tiny debris** which are formed from the friction between the tyre and the road, and consist of an agglomeration of approximately 50% weight by weight (w/w) of tyre tread and 50% road pavement materials

Reducing TRWP is complex.

TRWP levels do not depend exclusively on tyre characteristics and condition, but are affected by several **external factors**:

- driving behaviour,
- road characteristics (surface and topology),
- vehicle characteristics,
- weather conditions.



This is why a **holistic and multi-sectorial** approach is needed!

WE STRIVE FOR



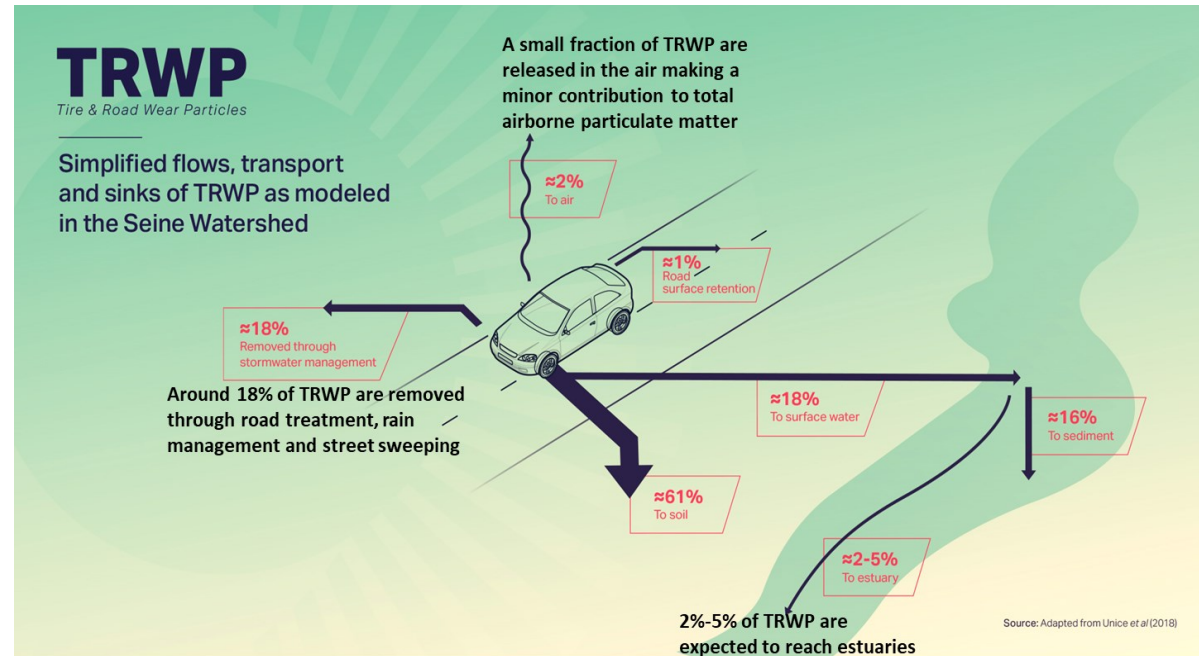
Tyre and Road Wear Particles

Building knowledge (1/2)

2017



- **ETRMA-commissioned study** analysed the distribution and retention of tyre and road wear particles in freshwater and transportation to saltwater environments.
- Main **conclusion** shows that **2-5%** of particles generated on roads are estimated to arrive at the end of river streams which flow into the open waters of seas and oceans.



2005-2020...



- The [Tire Industry Project](#) has been supporting research into tire and road wear particles since 2005
- **15 years** of TIP research knowledge is publicly available at this [link](#).
- TIP's research to date has found that the presence of TRWP presents no significant risk to humans or the environment.

- *Characterizing export of land-based microplastics to the estuary - [Part I](#): Application of integrated geospatial microplastic transport models to assess tire and road wear particles in the Seine watershed. (2018)*
- *Characterizing export of land-based microplastics to the estuary - [Part II](#): Sensitivity analysis of an integrated geospatial microplastic transport modelling assessment of tire and road wear particles. (2018)*



Tyre and Road Wear Particles

Building knowledge (2/2)

Tyre Industry, through TIP and regional tyre associations, continues to study

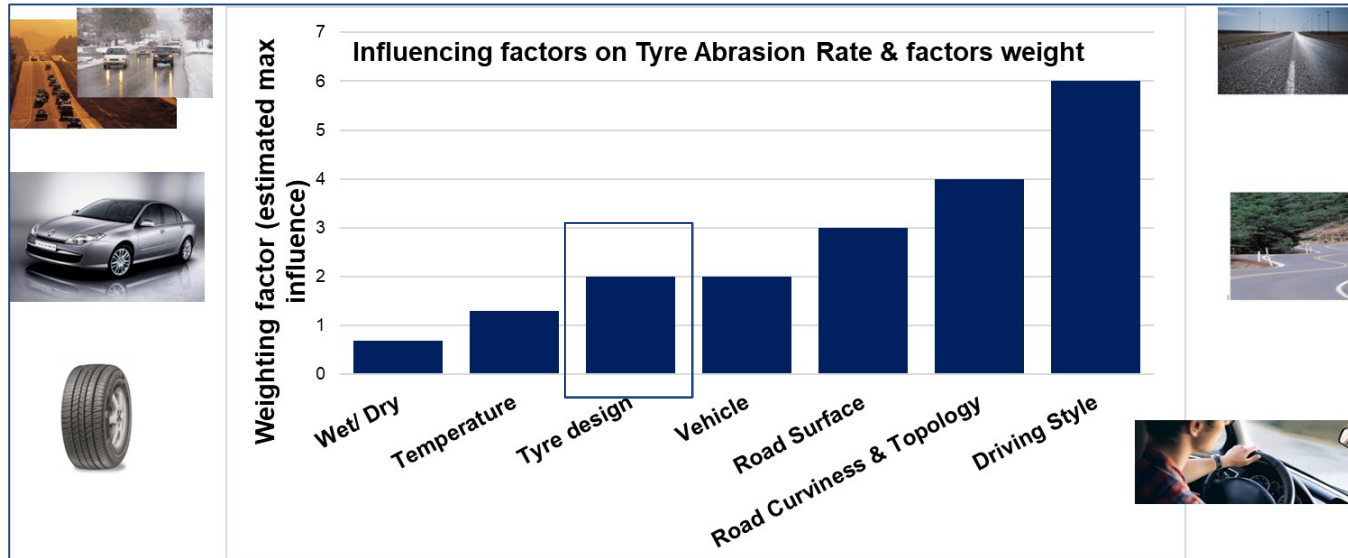
- **the potential impact to long-term exposure to TRWP,**
- **the degradation of TRWP in the environment, and**
- **the presence, fate and transport of TRWP in air, soil, rivers and oceans**



WE STRIVE FOR



Tyre and Road Wear Particles Mitigation Measures (1/2) Tyre design – Since 2018



Intensive industry resources to advance on a feasible and robust abrasion test method to minimize tyre abrasion, that could be used for regulatory purposes → to represent European market needs, conditions and targets, as well as new technologies to minimize trade-offs, mainly for wet traction.

Tyre and Road Wear Particles Mitigation Measures (2/2)

A multistakeholder approach – Since **2018**



The Platform –facilitated by CSR Europe- aims at creating an **open and inclusive dialogue** among all relevant stakeholders to explore a **balanced and holistic approach** to address and better understand Tyre and Road Wear Particles.

1. Share **state-of-the art scientific knowledge**;
2. Achieve a **common understanding** of the possible effects of particles generated during normal tyre use and wear;
3. Identify the **greatest potential for curbing TRWP**, and **co-design mitigation options**.



Participants of the Platform



Tyre makers



Roads



Automotive sector



Driving behaviour



Wastewater sector



Chemical industry



Civil society org.



EU Institutions



National authorities



The outcomes of the 1st year of activities (2018-2019)

After its first year of activities, **two reports** published:



The “[Scientific Report on TRWP in the Aquatic Environment](#)” by Prof. Dr Martin Jekel from TU Berlin:

Knowledge gaps identified include a.o.

- Need for a reliable and representative **tyre abrasion test**
- Influence of **road parameters** on TRWP generation
- Quantitative **analytical tools** for TRWP
- Degradation in **soils and sediments** (acting as sinks)
- **Capture systems** for TRWP in run-off and sewer overflow
- Improved and validated **mass balance models**
- **Ecological effects** of TRWP



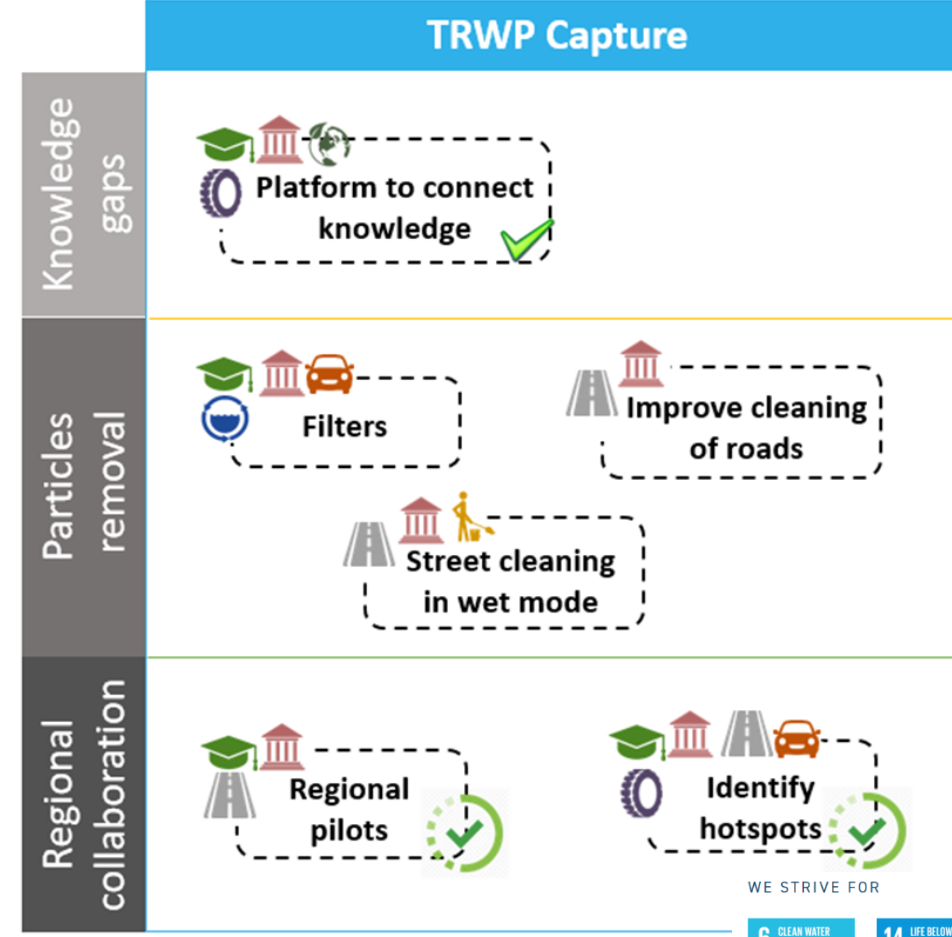
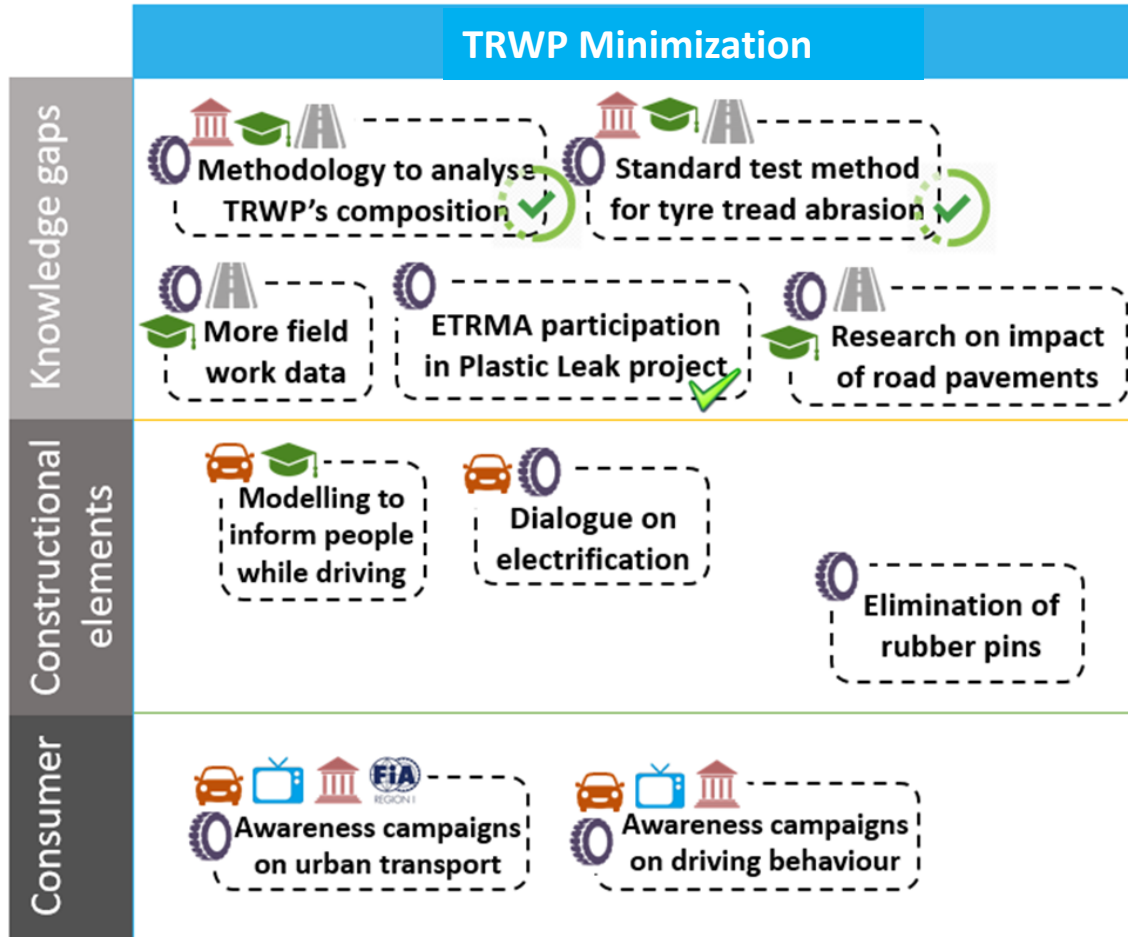
The “[Way Forward Report](#)” explores the most promising ways of mitigating the environmental impact of TRWP through potential actions of stakeholders across the entire value chain, including:

- measures to **minimize TRWP generation**;
- measures to address **TRWP capture and removal**;
- pathways for continued **cross-sector collaboration**.

WE STRIVE FOR



Measures identified that can be implemented in the short term



WE STRIVE FOR



Measures under implementation...

- **ETRMA commitment to TRWP Platform to become permanent platform**
- Work on **methodologies**
 - **Tyre abrasion rate is the appropriate indicator to address TRWP mitigation.**
Tyre Industry is working towards a harmonised, representative and discriminatory test method that could be used for regulatory purposes
- Work on **knowledge gaps**:
 - **through H2020/Horizon Europe**:
 - **Sept2020 – Project submitted by Consortium under TU Berlin coordination [ETRMA +10 other Partners]**
 - Abrasion test definition (led by tyre industry) and
 - Mitigation measures for TRWP definition and assessment
 - **Future research e.g. Electrification impact ...**
 - **WBCSD-Tire Industry Project continued Study plan**
- Create **incentives & awareness raising campaigns** towards positive driving behaviour
- Identify **hotspots** to facilitate the launch of regional pilots

WE STRIVE FOR



CONCLUSION

- 1) **The Tyre Industry recognises** the need to address TRWP and **sustains its action plan** with strong attention and efforts;
- 2) **Significant knowledge gaps** remain: we aim to address them, and at the same time we call for a proportionate approach to TRWP in the entire microplastics debate;
- 3) **Comprehensive and balanced approach** is essential for effectively tackling TRWP, considering other key tyre requirements;
- 4) **Solutions** can be comprehensive and effective only when **involving proportionately all stakeholders** relevant for the TRWP generation and mitigation;
- 5) **The EU tyre sector remains open for further dialogue and cooperation with the legislator and other relevant stakeholders**

WE STRIVE FOR



Thank you

Any Questions?



**EUROPEAN
TYRE & RUBBER
manufacturers'
association**

Fazilet Cinaralp

WE STRIVE FOR

