EuroRAP position paper advocates for investment funds on road safety infrastructure for cities and regions in the framework of the Next Generation EU Package

The European Commission has recently presented a set of instruments to support the Recovery Plan for Europe, the #Next Generation EU, embedded within a long-term EU budget. Some are new such as the European Green Deal but it also includes the reinforcement of already existing programmes and instruments to better tackle the new challenges that Europe is facing after COVID-19 and support the urgent investments to propel Europe’s recovery and resilience, as mentioned in the latest press release in May of the European Commission.

It is time to consider scenarios for growing and transforming cities and regions, and how previous estimates of population and economic growth may change in response to the COVID-19 global health pandemic. Strategic planners need to consider these scenarios and adjust. With that said, many of the challenges that existed before the COVID-19 pandemic will continue including road safety. These problems are known and clear, and we have an opportunity right now to tackle these problems in a unique way.

With over half of the world’s population now living in cities, addressing urban road safety is becoming increasingly important to reduce road fatalities and serious injuries. Urban area road safety is closely linked to the safety of vulnerable road users (70% of the total fatalities in urban areas are vulnerable road users, according to the EC Road Safety Statistics 2018). Within urban areas, pedestrians and not the car occupants account for the largest share of victims: Inside urban areas, 40% of the fatalities are pedestrians, 12% are cyclists and 18% are powered two-wheelers. Cities universally cite aging and outdated infrastructure as a pressing resilience challenge. The safety and viability of the road network is essential not only to improve traffic safety but also improve the health of city residents by reducing air pollution and increasing rates of physical activity, which has been shown to greatly improve longevity and quality of life.

Road safety is also an essential component in the planning and implementation of local and regional Sustainable Urban Mobility Plan (SUMP) as sustainability is not possible without effective road safety measures. Effective road safety requires appropriate and stable funding. Local authorities still dedicate funds for road safety from their budgets for the implementation of SUMPs and their local road safety plans, but additional funding opportunities should also be made available from central government and EU funds.

Understanding where and how collisions happen and which road user groups are involved will help to define effective and specific road safety interventions in the urban area of which can be covered by the SUMPs. The EU Directive 2008/96 on Road Infrastructure Safety Management already requires EU Member States to integrate safety in all phases of planning, design and operation of road infrastructure on the Trans European Road Network (TERN). Although not mandatory, EU Member States are encouraged to extend the safe management principles to main urban roads.

The infrastructure safety management procedures include regular road safety audits, identification and treatment of high-risk sites and prioritisation of safety when building new roads and network-wide road safety assessment, including the need to consider the needs of all vulnerable road users.

Cities around the world are joining the Vision Zero movement as a way to change how the safety of road users is considered in the planning, design, construction and operation of their streets. The ESCAP Sustainable Urban Transport Index: Data Collection Guideline recommends that a good urban mobility plan should have alternatives to motorized transport which includes public transport, walking and cycling networks and intermodal interchange facilities. Some cities including Brussels recently are accelerating existing mobility changes, while the plans also address a significant concern of many city authorities, namely that people returning to work after the lockdown will seek out alternatives to public transport such as trams, metros and buses. It is hoped that allocating road space to bicycles and pedestrians, and reducing the space available for cars, will encourage people to cycle or walk rather than taking the car.

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In view of this, it is important to develop a generically applicable design methodology, with which the urban public space (including the traffic management infrastructure) can be reconfigured, whilst simultaneously considering quality of life, safety, and accessibility demands and requirements. As part of the ANWB Urban Mobility Survey done in the Netherlands, close to 75% state that not every street needs to be available to every type of road user, if this increases the flow and/or safety; even if it means that a section of road users (a particular vehicle family) needs to take a detour. This is an initial indication of the large amount of support for the design approach, which sometimes separates traffic flows and diverts routes if it proves necessary to optimise traffic function with residential quality on the street.

The road infrastructure needs to be backed by related policies and community-level road safety advocacy to encourage people to make work and school trips on active mobility and recreational walking and cycling. A focus on safe roads and streets, especially for the most vulnerable groups means meeting the demands of the most vulnerable categories of road users. By designing roads for, for example elderly, children and people with disabilities it is also expected that other users will profit from the safest urban environment possible. Types of infrastructure that promote active mobility include pedestrian crossings, and cycling lanes, walkways, and wide footpaths, cycling tracks, and resting areas along the routes.

EuroRAP supports Vision Zero cities around the world in eliminate road deaths and serious injuries and has also recently signed the “New Paradigm for Safe City Streets”, a city declaration launched by Polis and EUROCITIES on 10 principles for sound and effective action for traffic safety.

EuroRAP uses the global iRAP tools to enable cities to track their progress toward their Vision Zero targets. EuroRAP is addressing these challenges by developing evidence-based innovation tools like iRAP Star Rating for Schools and CycleRAP to inform and shape road safety investment on the way to halving road deaths and injuries, improve pedestrian and cyclist safety and ultimately achieving Vision Zero.

How does the RAP method contribute to bicycle safety? Thousands of bicyclists are injured each year, and in half of these accidents the design of the road plays a role. The existing Cyclist Star Ratings capture the basic needs for cyclists using the existing iRAP models. CycleRAP was developed in the Netherlands to meet the more detailed needs of cyclists. The approach is based on scientific research and pilot studies by SWOV and with the support of ANWB. The method analyses a larger number of road features and is based on a study of biking crashes. It provides insight into the roads and off-road cycle paths (road surfaces, obstacles and intersections) where there is a higher risk of an accident. Using this insight, municipalities and provinces (the road managers) can make roads safer.
The potential for urban road safety assessment using iRAP tools is growing. More than 42,000km of urban assessments are already summarised in the iRAP Big Data Tool. Big data and artificial intelligence can play a lead role in building the social and economic business case for safer roads and create the scale of change needed to save millions of lives. The accelerated and intelligent collection and coding of road attribute data (Ai-RAP) will reduce the time and effort required to undertake road safety assessments, reduce the costs and improve accuracy. Together with iRAP’s Star Rating models, Ai-RAP has the potential to put this road safety data at the fingertips of road authorities, policymakers, investors and road users worldwide.

iRAP Star Ratings are based on road inspection data and provide a simple and objective measure of the level of safety which is ‘built-in’ to the road for vehicle occupants, motorcyclists, bicyclists and pedestrians. Importantly, Star Ratings can be completed without reference to detailed crash data, which is often unavailable in low-income and middle-income countries.

Ai-RAP captures the advances in artificial intelligence, machine learning, vision systems LIDAR, telematics and other data sources to deliver critical information on road safety, crash performance, investment prioritisation and Star Rating of roads for all road users. Through automation, machine learning and converting existing data into iRAP attributes, this iRAP safety Star Ratings for roads will be available on a scale not previously possible. Ai-RAP provides the mechanism by which these data sources can be accessed, and their quality and accuracy verified via the Ai-RAP accreditation scheme to meet iRAP’s stringent quality standards.

iRAP Star Ratings, which assess over 50 different road attributes, provide a simple and objective measure of the level of safety which is ‘built-in’ to the road. Star Ratings are given for each road user type: for vehicle occupants, motorcyclists, bicyclists and pedestrians. Five-star roads are the safest while one-star roads are the least safe. The road survey data is then used to identify high risk locations and prioritise road safety treatments.

iRAP our global umbrella has carried out assessments of existing streets, street designs and street upgrades across a range of cities to support sustainable transport, deliver safer journeys for people using mass transit and create safer, healthier and more vibrant city streets across the World. In 2017, iRAP formally endorsed NACTO’s Global Street Design Guide which help city and road authorities in planning, designing and constructing 5-Star streets. Over five years (2015 – 2019), iRAP has worked with the World Bank’s Global Road Safety Facility (GRSF) and local partners to assess more than 15,200 carriageway-kilometre (c-km) roads in ten cities and five countries as part of the Bloomberg Philanthropies Initiative for Global Road Safety (BIGRS). This work has driven evidence-based interventions and importantly road upgrades saving 7,000 lives from countermeasures already implemented or scoped in designs.

Around schools, the safety of children walking along and across roads is a major concern. The road features and traffic conditions that impact the safety of a journey to school are known. The Star Rating for Schools (SR4S) allows the easy assessment of each of these features using evidence-based research of their impact on safety.

The safest locations are rated 1-star the safest as 5-stars, harnessing the power of the iRAP Star Ratings to identify the risk for pedestrians on the roads around schools. Star Rating for Schools was awarded a prestigious Prince Michael International Road Safety Award in December 2018, recognising the application’s huge potential at a community level to reduce risk and save lives of children and pedestrians worldwide.

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<https://www.vaccinesforroads.org/irap-big-data-tool/>
In Europe, our EuroRAP member, the Road Safety Foundation (RSF) has recently won funding for a project to enhance iRAP Investment Plans for Vulnerable Road Users (VRUs). The objective of the project is to improve the Safer Roads Investment Plans (SRIPs) generated by the iRAP approach, to ensure the latest thinking and innovation for safety measures for VRUs in urban environments are fully embedded for Road Authorities to use to help them make the case for investment to prevent VRU Fatal and Serious Injuries.

RSF will, in partnership with International Road Assessment Programme (iRAP), four Local Authorities (LAs) and other stakeholders, specify, develop and pilot new functionality within the iRAP tools (known as ViDA). The four Local Authorities who will form the Project Steering Group are Kent County Council, Hampshire County Council, Solihull Metropolitan Borough Council and Transport for Greater Manchester. Once the tools have been developed by partners iRAP, Kent County Council, Hampshire County Council and Solihull Metropolitan Borough Council will trial the approach and provide feedback on the output. At the end of the project, the updated tools will be freely available; the Star Rating tools are ‘free to air’ meaning the impact of this work will be truly global. The improved tools will help authorities to better analyse their urban road networks and identify cost effective improvements targeted at reducing fatal and serious injuries in all user groups. The project commenced on 1st February 2020 and will last three years.