Interreg
Danube Transnational Programme
RADAR

Project co-funded by European Union funds (ERDF, IPA, ENI)

O3.3a STUDY VISITS

THEMATIC AREA 4: ROAD SAFETY NEAR SCHOOLS

RADAR – Risk Assessment on Danube Area Roads

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Abbreviation list

ASP	Associated Strategic Partner
DTP	Danube Transnational Programme
KFV	Kuratorium für Verkehrsicherheit (Austrian Road Safety Board)
PP	Project Partner
RADAR	Risk Assessment on Danube Area Roads (DTP project)
VRUs	Vulnerable Road Users

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Executive Summary

On behalf of RADAR PP6, Austrian Road Safety Board (KFV), project´s last Study visit was carried out in Vienna on December 4-5, 2019 dedicated to RADAR Thematic area 4: Road safety near schools.

RADAR team of both project partners and associated strategic partners met with road safety professionals and researchers at KFV in order to learn and discuss practices applied in Austria to ensure and increase road infrastructure safety in school areas. The programme included a theoretical session, as well as walking/bus tours to demonstrate different practical implementations in different urban or semi-urban environments.

While the first day of Study visit was dedicated to exploration of measures applied in the city of Vienna, the second day brought opportunity to visit by bus various projects and treatments introduced in municipalities surrounding the capital of Austria. Observed measures included those related to increasing safety around schools, as well as others targeted to safety of VRUs, general traffic calming and speed enforcement.

Prior to the excursion tours, the team of KFV hosted an introductory session on important road safety policy and strategy aspects in Austria (and Vienna), statistical data, lessons learned during the implemented projects, as well as supporting research and engineering justification for the schemes used in Austria (some of which the RADAR group visited).

Besides several revitalization and innovation projects (even community-oriented) to eliminate risk on daily school routes, RADAR team had a unique opportunity to experience traffic on the "Encounter Zone" schemes, providing one mixed space for movement of all traffic modes, under clearly specified and enforced rules. Not only used in the very centre of Vienna, encounter zones have been introduced on some of city´s busiest boulevards, such as Mariahilfer Strasse, too.

1. Study visit itinerary

RADAR Study visits are 2-day events providing enough space to share policy and technical aspects together with exploration and observation of road safety measures implemented in practice. Below is the itinerary of Austrian Study visit and the 2 maps indicating detailed excursion routes are attached to this report.

Wednesday 4 December 2019	
9:00	Registration at KFV, Schleiergasse 18, Vienna
9:30 – 13:00	Introduction and welcome; Topical presentations and discussion • Structure of Austrian road safety management, Towards a new Austrian Road Safety Strategy to 2030 *(Klaus Machata, KfV);* • The Austrian Design Guidelines RVS – dream and reality, specifically on VRU & schools *(Bernd Strnad, KFV);* *Coffee Break* • Traffic restrictions on streets around schools *(Martin Winkelbauer, KFV);* • Specific and general solutions for school and VRU safety: Safe-way-to-school maps, PediBus, encounter zones *(Bernd Strnad and Erwin Wannenmacher, KFV);* • Infrastructure to Save Riders' Lives: Assessed Classics and Innovative Measures (*Martin Winkelbauer, KFV);* • Impacts of Section Controls in Austria *(Bernd Strnad, KFV);* • **Briefings** on Wednesday & Thursday study visits;
13:00 – 14:00	Lunch break
14:00 – 18:00	Tour to Vienna sites (walking and public transport);
18:00	Close of walking tour

Thursday 5 December 2019	
9:30	Meeting at KFV, Schleiergasse 18, Vienna
9:45 – 13:00	**Bus tour** to several sites in & around Vienna: Traffic restrictions and specific solutions around schools and other good practices for traffic calming & facilities for VRU at town and village levels;
13:00 – 14:00	Lunch break at KFV
14:00 – 15:30	Conclusions and disperse

2. Topical presentations

According to the agenda the KFV team introduced numerous interesting figures on national road safety performance and approaches to reducing risk for children and other VRUs on urban or sub-urban roads. The following chapters highlight key messages of individual contributions, while all the slides presented during the session are available at project´s internal share-point.

2.1. Austrian road safety management structure and new strategy

Klaus Machata was the first to take the floor in order to welcome all participants at the premises of KFV and spend couple of minutes on presenting Austrian Road Safety Board´s structure, history, mission and activities.

Since KFV has always been one of the crucial advisory bodies in national road safety policy and strategy development, Klaus further explained the state-of-the-art framework managed by the national Road Safety Programme 2011-2020, presented findings of the latest Annual report and then moved to more detailed description of the on-going preparation process for a new Strategy 2021-2030.

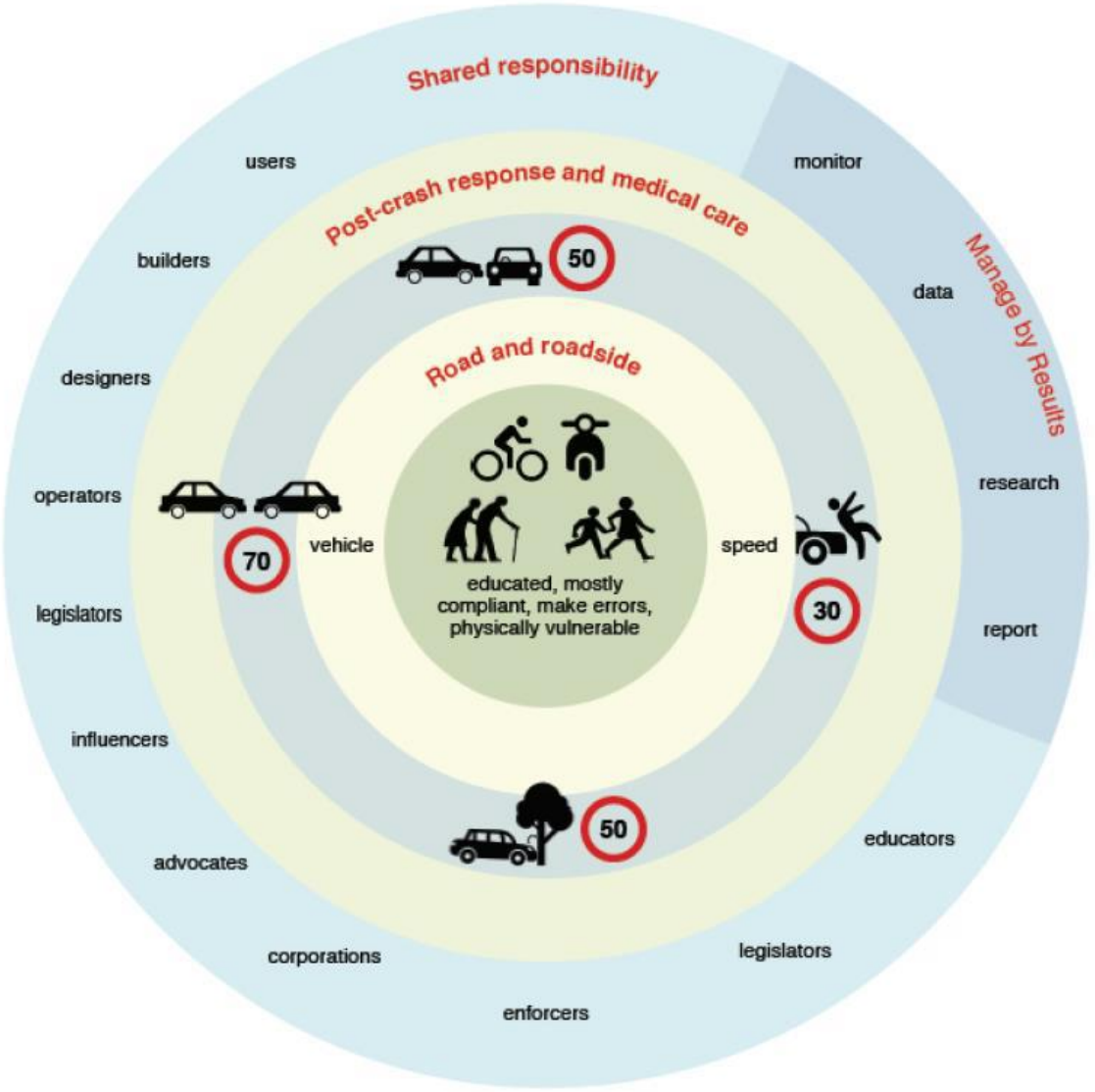
The Strategy shall be based on analytical evaluation of the existing Programme and follow several key objectives:

- in line with European developments,
- respecting a Safe System approach by adopting its 4 basic principles:
  - Humans make mistakes.
  - The human body has a limited physical ability to tolerate crash forces before harm occurs.
  - A shared responsibility exists among those who design, build, manage and use roads and vehicles, and provide post-crash care to prevent crashes resulting in serious injury or death.
  - All parts of the system must be strengthened.
- remaining flexible towards new developments in mobility and technology,
- being innovative and motivating,
- reaching all stakeholders and road users,
- being managed by objectives, i.e. by carefully selected safety performance indicators,
- consisting of measures proposed according to analysed evidence and best practices.

Speaking of analysis and performance monitoring, the experience from present Austrian Road Safety Programme is that such exercises are rather difficult, as the 10-year programme is not flexible enough and the link to safety activities of individual regions and municipalities is lacking.

The analysis conducted under the preparation of the new strategy 2021-2030 was mainly based on available crash and mobility data, safety performance indicators, identified attitudes towards risky behaviour and institutional framework of safety work.

Safe system approach illustration



Some key findings of the analysis include:

- rural roads carry >60 % of fatalities;
- shares of vulnerable road user victims increasing;
- motorcycle safety: 25 % of all fatalities on only 2 % of kilometres driven; high share of foreign tourists; one third of rural riders lacking sufficient protective clothing; a core issue of riding in left-hand bends;
- use of seatbelts and child restraints: 35 % of car fatalities unbelted; much poorer rear seat belt wearing compared to front, misuse or mistakes in using child restrains;
- nearly every third pedestrian distracted;
- lower acceptance of speed limits, high share of speed violators;
- new electric personal mobility devices need to be properly addressed and considered.

The final Strategy shall be adopted by 2020 and shall contain:

Reduction targets

- -50 % fatalities & serious injuries (Valetta Declaration 2017), Vision Zero for specific user groups, e.g. child fatalities;

Core principles

- Safe System, active mobility & intermodality, shared responsibility, sustainable road safety culture, evidence-based work;

Specified fields of action, with potential measures

- safe rural roads, active mobility, motorcycle safety, passenger cars, DUI & distraction, awareness & training, efficient administration;

Safety Indicators and targets

- e.g. seatbelt use, speed levels, distraction in traffic, etc.

2.2. Austrian Design Guidelines specifications for VRUs & schools

Bernd Strnad continued with a presentation on legal and technical specifications, which provide the framework for traffic behaviour of VRUs including children near schools. Those are given in the Austrian Traffic Code, as well as Austrian Design Guidelines.

Specific position of VRUs within the Traffic Code:

- Children and disabled are „preferential users";
- If driver detects one or more children want to cross the street, he must enable it and stop;
- Disabled people with relevant ID can park and drive in pedestrian zones and other restricted areas (access at least during specified times, with no time limit or costs in short parking areas);
- Pedestrian must use a zebra crossing if it is located within 25 m;
- Car drivers must enable pedestrians (on a zebra crossing or recognizable want to use it) the safe crossing on zebra crossing;
- Bicyclists: as for pedestrians, several regulations considering behaviour, right of way;
- A bicyclist must be at least 12 years old; children under 12 have to be accompanied by a person (min. 16 years old) or have to pass a test (at the age of 9 or 10); Very detailed regulations considering technical issues – number and size of reflectors, deceleration, lighting parameters; No specification regarding minimum distance during overtaking (in general and of bicyclists in particular).
- Definition of a bicycle street;
- There are 3 types of zones in Austria:
    - Pedestrian zone;
    - Residential street (traffic calmed area);
    - Encounter zone;

Encounter zones/streets – all road users use the road; traffic calming, low speeds, everyone has to pay (even more) attention, cyclists are allowed to ride alongside

Encounter street – Mariahilfer Strasse, 2018

After presenting the Traffic Code considerations providing legal basis for all measures being prepared and implemented, Bernd Strnad introduced various details coming out of valid Design Guidelines, which apply particularly to VRU. Many elements were photo-documented, both traditional and innovative, as well as successful and not effective (remaining problematic). The following guidelines were explained, with a special focus on children mobility, conditions around schools and general pedestrian facility installations in urban areas:

RVS 03.02.12 – Pedestrian Traffic (October2015)

RVS 03.02.13 – Bicycle Traffic (February2014)

RVS 03.04.13 – Child-Friendly Mobility (November 2015)

RVS 03.04.14 – Design of School Vicinity (June 2016)

RVS Working Paper – Application of Encounter Zones (July2016)

ÖNORM B 1600 – Barrier-free Constructions (April 2017)

Only selected features have been included in the report and many more examples are documented in respective presentations of Bernd Strnad and others, particularly those related directly road safety near schools.

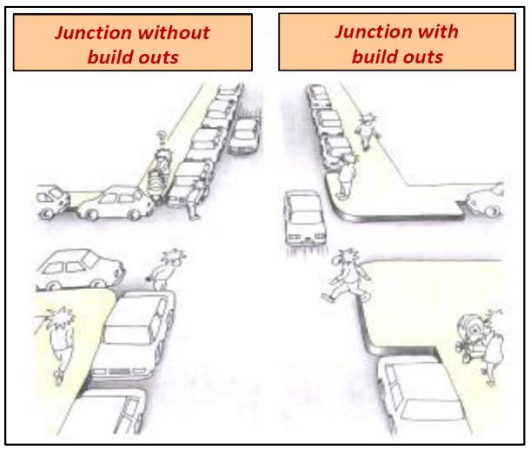
Pedestrian facility schemes

Speed bumps

Refuge islands

Individual approaches to pedestrian crossing solution

Build-outs



Cycling facility schemes

Bicycle lanes

Advisory lanes

Riding in opposite direction of one-way streets

2.3. *Traffic restrictions on streets around schools*

The next lesson was given by Martin Winkelbauer, who concentrated purely on the core theme of RADAR´s Study visit in Vienna – state-of-the-art practices, measures and, primarily, persisting problems with increasing road safety and traffic management around schools.

The presentation clearly indicated that solutions for making school streets/roads safer are not easy to implement, for various reasons. Even in Vienna there are still numerous locations with either no or insufficient measures applied, resulting in regular daily traffic complications during morning (or even) afternoon peak hours.

What was obvious from presented materials is that the phenomenon of "parent taxi" constitutes one of the major issues. Some parents tend to be very sensitive as it comes to perception of hazards and general risk awareness, which makes them decide to drive their children daily to school by cars, even for a couple of hundred meters only.

Parents stopping their vehicles in the very vicinity of schools to drop children off, or even parking them to accompany children to the building, create significant obstructions in traffic, resulting in higher risk for all participants, longer travel times, as well as higher negative impacts on both health and environment in general (due to higher emissions).

Traffic restriction measures are often too weak and not respected by majority of drivers in the most exposed hours. Moreover, enforcement becomes quite difficult at such locations and – in terms of towing from "no stopping" sections – it creates additional obstructions to traffic and even make the actual situation worse.

The following pictures of several school streets with no proper solutions clearly demonstrate the above-mentioned arguments.

Implementation of proper safety measures is often difficult for several reasons:

- different needs and interests of different players – parents only think of their children´s safety and security, politicians and other stakeholders are vague in decisions as they doubt the positive impacts of the measures, while road safety experts are careful to comment on the topic, as they seek for evidence and data to base their assumption on;
- not possible to realize robust measures on main streets/roads;
- "school road" as such is not a technical term;
- frequent unavailability of alternative options (e.g. public transport);
- no detour/bypass possibility due to exact destination, same for all.

On the other hand, RADAR participants to the Study visit had a chance to understand, how even the traditional measures might work sufficiently, in case there are different pre-conditions met before implementation.

The picture shows a successful measure introduced on Vereinsgasse street – **complete ban for motorized vehicles on school days between 7:45 and 8:15.**

Even though very restrictive, it proved to work thanks to two major conditions being met:

- **street not too short,** thus not tempting so many drivers to break the rule and pass through;
- **proper police enforcement applied** on spot

There is generally quite a high level of acceptance for strong measures among parents, as they mind safety of their children first. Conducted surveys showed that 93 % of them think the journey to school needs safety improvements, while 87 % finds a flexible "driving ban" measure acceptable, useful and working. Parents most often call for safer intersections, reduced speeds and reduced traffic volumes. In terms of decision-making on the mean of transport to school, parents mostly decide according to distance, as well as actual weather conditions.

2.4. Specific and general solutions for school and VRU safety

Theoretical session continued with the contribution of Bernd Strnad and Erwin Wannenmacher, who presented numerous measures planned or already implemented in Vienna in order to improve traffic safety situation around schools.

The scope of measures introduced to RADAR group was extensive, covering traditional traffic engineering approaches, innovative projects and even community-oriented initiatives, encouraging children, parents, teachers and administrations cooperate and contribute to the solution – such as Pedibus or local creative activities to support the implemented traffic calming schemes.

Many of those measures and many others were further observed "on site" during the 2 excursion tours. They include:

- speed limit on school days and "no entry for motorized traffic" signing in selected morning hours (school day´s start) plus acceptance-raising campaigning by children;
- creative approaches to schools´ surroundings and road safety features (children involved);
- campaigns and joint initiatives to help reduce the risk for children on their way to school;
- encounter zones – mixed-use spaces with speed limit of 20 km/h.

2.4.1. Flexible speed/entry enforcement in specific "school times"

2.4.2. Measures supporting traffic calming around schools

Opening of new school roads

Decorations on road blocks

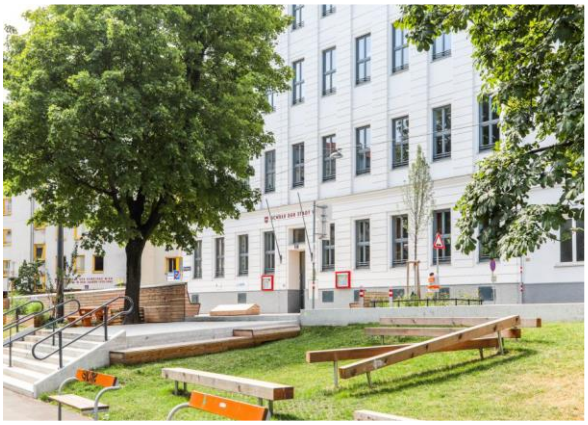
Rest area separating school entrance from busy street / Pictogram at school entrance

Offset sidewalk protected by low planting

Horizontal and vertical offset

Yellow-paved elevation of road surface

Car-free school forecourts



Bicycle playground for kids in Vienna

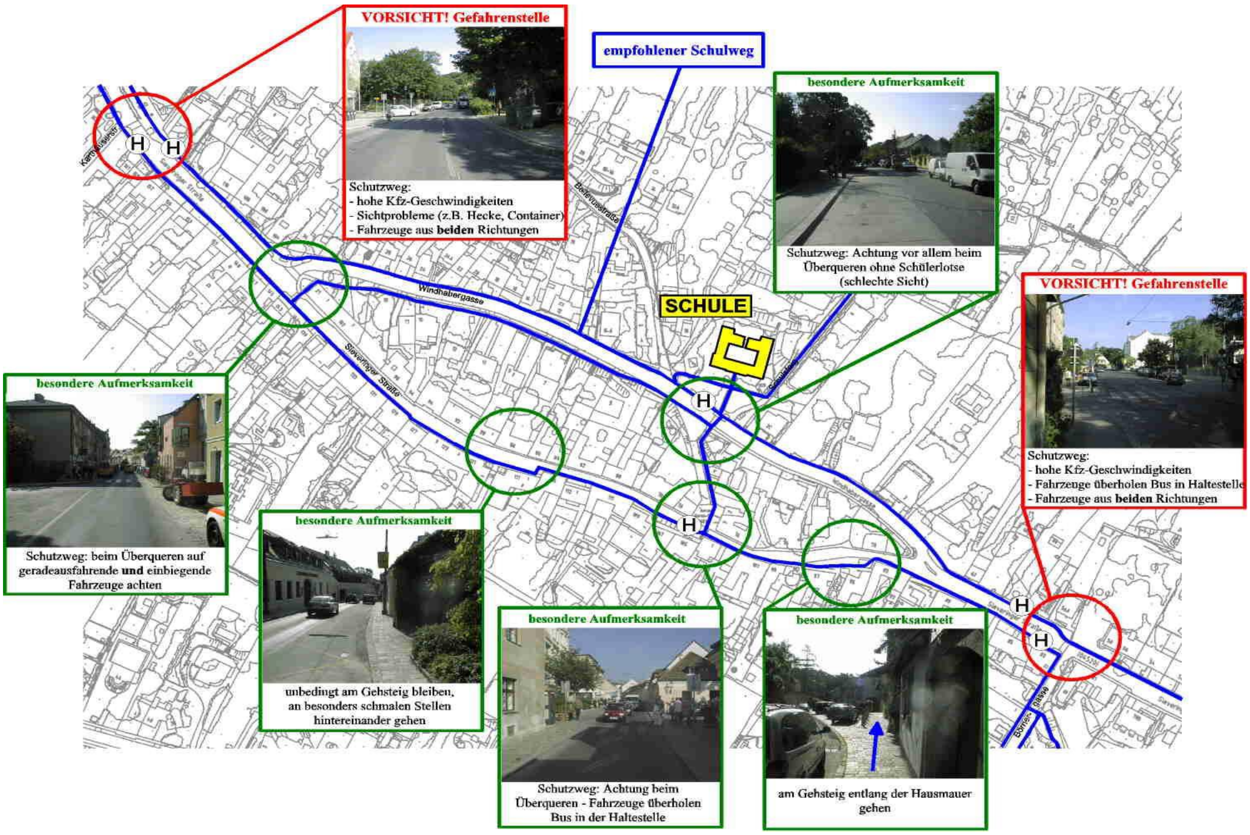
2.4.3. Educational and promotional campaigns to raise public awareness and engagement in road safety activities and solutions

2.4.4. Pedibus

Interesting and innovative approach to taking children to school – initiative co-organized with parents-volunteers, who individually switch in picking children up from installed "Pedibus stops" and walk them collectively and safely to their schools.

2.4.5. Safe-way-to-school map

Another initiative launched with the help of AUVA, one of social insurance authorities in Austria. It aims to provide important and visually attractive information on safety risks along typical routes to concrete schools. The maps provide overview of available and suitable routes, present existing risks from the perspective of a child (important when it comes to sight distances!) and provide helpful tips and recommendations. The activity has even achieved to initiate the preparation of real countermeasures at selected critical locations.


VORSICHT! Gefahrenstelle
Schutzweg:
- hohe Kfz-Geschwindigkeiten
- Sichtprobleme (z.B. Hecke, Container)
- Fahrzeuge aus beiden Richtungen
empfohlener Schulweg
besondere Aufmerksamkeit
Schutzweg: Achtung vor allem beim Überqueren ohne Schülerlotse (schlechte Sicht)
SCHULE
Windhabergasse
Steinhuberstraße
VORSICHT! Gefahrenstelle
Schutzweg:
- hohe Kfz-Geschwindigkeiten
- Fahrzeuge überholen Bus in Haltestelle
- Fahrzeuge aus beiden Richtungen
besondere Aufmerksamkeit
Schutzweg: beim Überqueren auf geradeausfahrende und einbiegende Fahrzeuge achten
besondere Aufmerksamkeit
unbedingt am Gehsteig bleiben, an besonders schmalen Stellen hintereinander gehen
besondere Aufmerksamkeit
Schutzweg: Achtung beim Überqueren - Fahrzeuge überholen Bus in der Haltestelle
besondere Aufmerksamkeit
am Gehsteig entlang der Hausmauer gehen
H


S
Schule
empfohlener Schulweg
Gefährliche Stellen:
Vorsicht
erhöhte Vorsicht
Gefahr! Querung vermeiden!
Stelle ausserhalb der Karte
Haltestelle
1
2
3
4
5

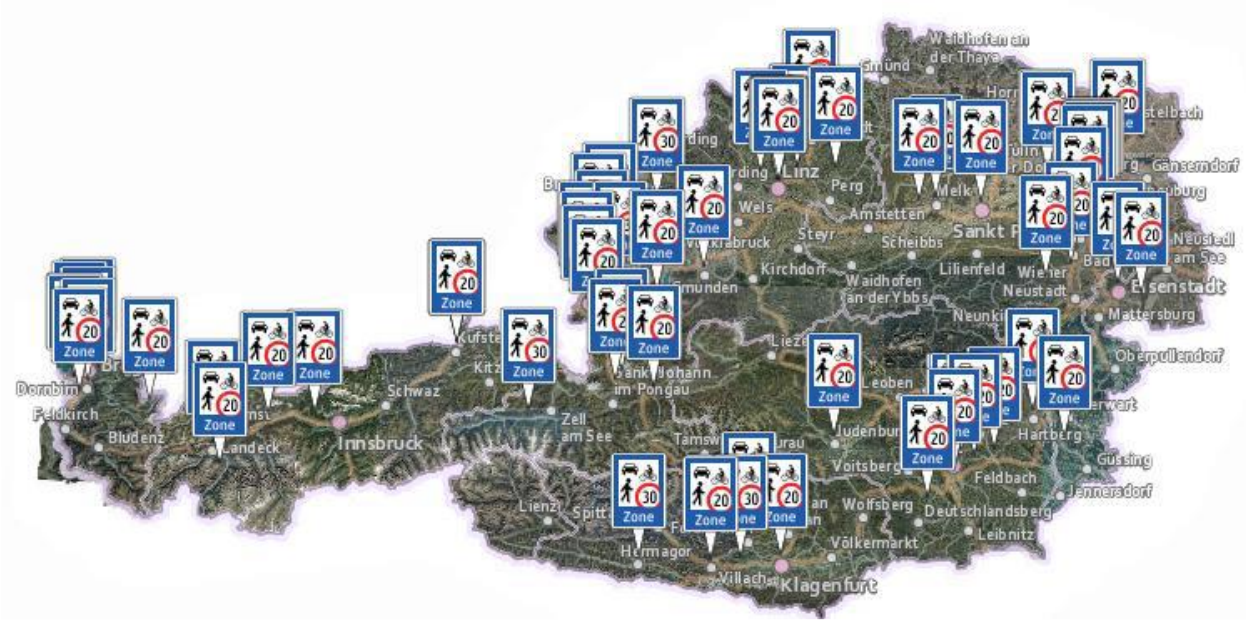

OPEL
FORD

18

2.4.6. Encounter streets

The scheme of an "encounter street" has already been mentioned and for sure represents one of the most innovative, ambitious and challenging concept in thinking about future urban spaces and infrastructure. It simply is **"a road, whose lane is intended for joint use by vehicles and pedestrians and which is marked as such"**. RADAR group had later a chance to visit and experience the concept on famous Mariahilfer Strasse.

There are already 75 documented encounter streets in Austria (http://www.begegnungszonen.or.at/).



Encounter street in Leobersdorf

Example of encounter street in a school´s vicinity (Gleinstätten)

2.5. Infrastructure to save riders' lives

After the core presentations on safety near schools, Martin Winkelbauer took the floor to make RADAR participants aware of another VRU road safety aspect, this time relevant for motorcyclists. He presented numerous professional and scientific studies and considerations relevant to safety of bikers, especially when it comes to infrastructure quality such as road alignment, which appeared to be the no. 1 "contributing" factor of motorcycle crashes in KFV´s in-depth study.

Martin Winkelbauer also made an overview of critical attributes ("traps and challenges") for bikers both in urban and rural environment. Since this was a side-presentation to the main theme of the Study visit, only one interesting phenomenon has been described in detail in the report, while the slides are available to all RADAR partners.

Urban traps as the result from the black spot analysis are:

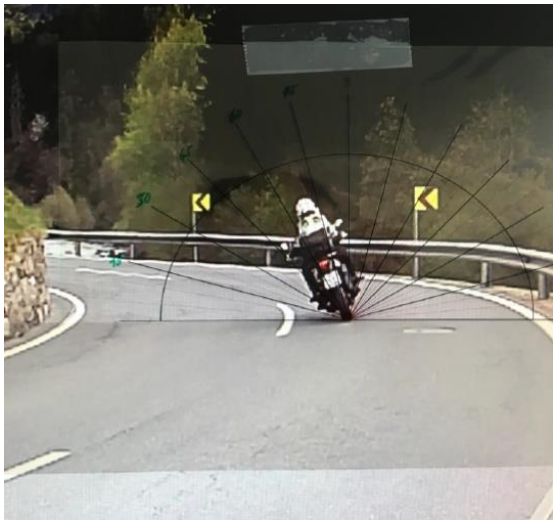
- Complexity of intersections;
- Size of intersections;
- Intersections meant to be particularly smart;
- Illegal filtering;

The rural challenges are:

- Parking near curves;
- Impaired forward visibility/ sight obstacles;
- Agricultural paths connection;
- Negative crossfall;
- Complexity of junction;
- Approaching speed.

Road marking to save lives

Among other studies and evaluations on measures and guidelines for bikers, KFV conducted a detailed analysis of risks and accidents of motorcyclists in left-hand curves, where risk of head-on collision with opposite vehicles (heavy vehicles and buses in particular) is very high due to specific trajectory of a biker in the curve. The following figures are self-explanatory.



Riders´ overall choice of lane trajectory

The study of KFV consisted of the following exercises:

- Literature survey
- Selection of locations
  - 9 locations
  - min. 3 relevant crashes within 3 years
- Selection of layout
- Before-after comparison
- Video observation
- Interview survey

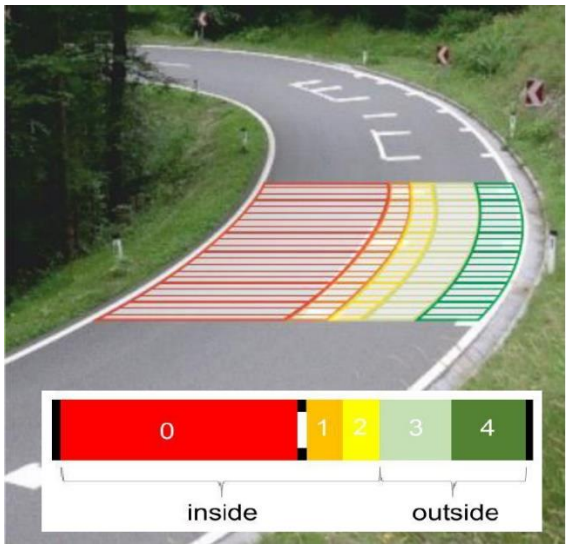
The objective was to assess positive impacts of new types of road marking in left-hand curves, delineating better a safe trajectory for bikers.

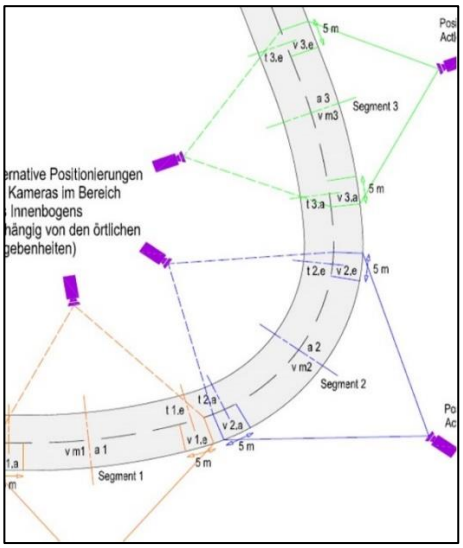
There were 2 layouts selected for the analysis – elliptic and bar designs:

But there were additional examples of suitable treatments shown.

The study provided very interesting results, which proved to be both effective and – on top of that – quite well accepted by bikers (as per interviews carried out). The following figures give more insights into the study.

Before/after video surveys





Promising results

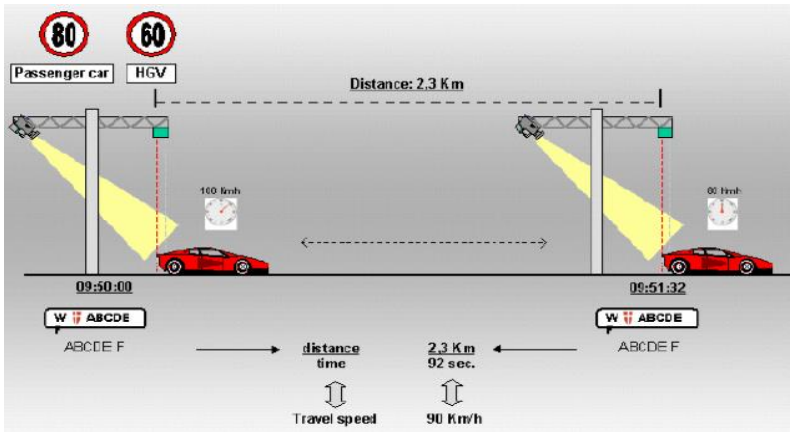
As per the feedbacks received, the measure also supports lower or even no changes of speed in the curve. Although the elliptic design was considered more effective, bar design appeared to be more intuitive and serving better as „psychological brake".

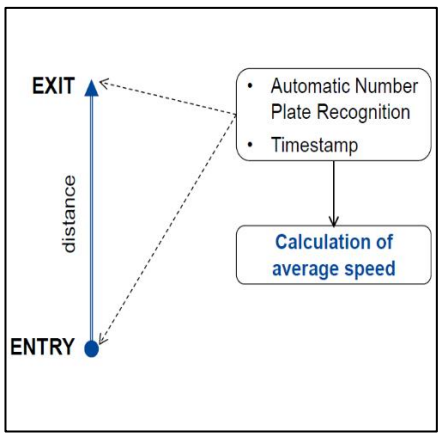
Similar road marking measures have been spreading across Austria, as well as other countries in certain modifications.

2.6. Impacts of Section Controls in Austria

The last presentation of the session was given by Bernd Strnad, who in brief introduced the project of speed section control installations in Austria and the study carried out to evaluate the impacts. Some of the installations were further visited during the bus tour around Vienna.

Figures illustrating the section control principle:





At the time being, there are 5 stationary installations and various mobile installations in road work zones on major road network, 3 further installations on minor roads. Section control study analysed the following accident parameters:

- accident density;
- accident rate;
- injury rate;
- accident cost rate.

Table summarizing key findings of the study:

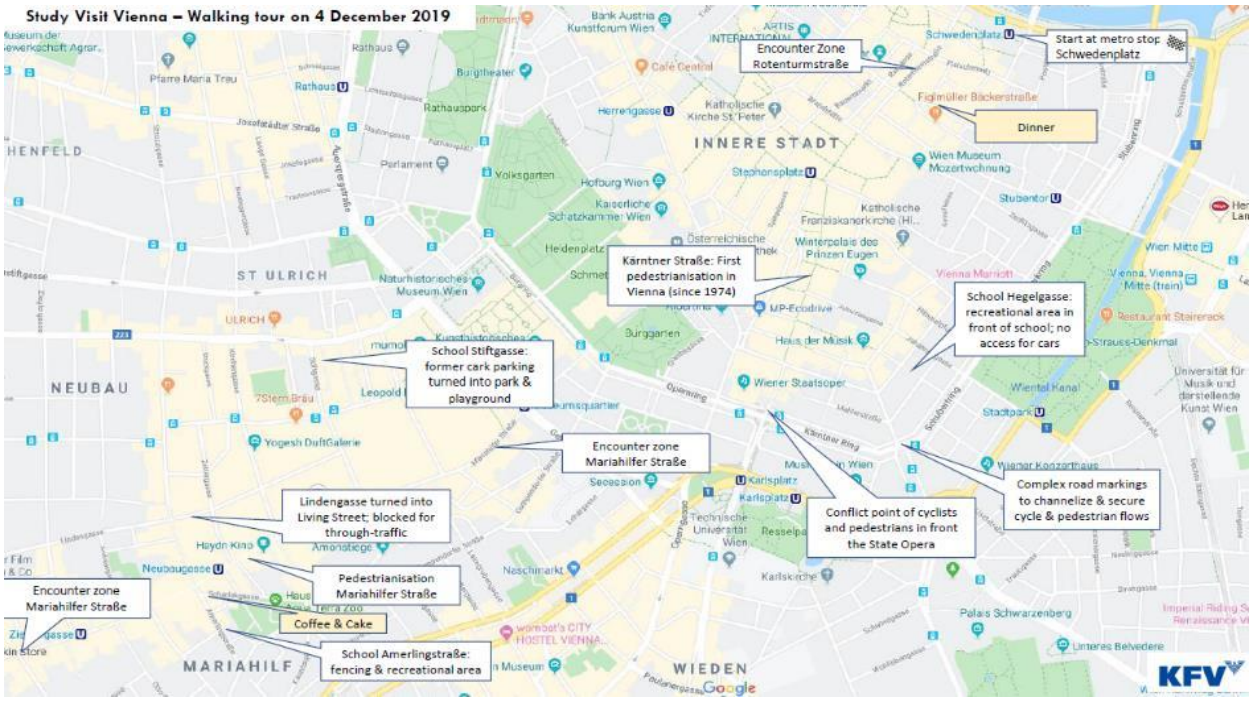
Parameter	Effect	Interpretation
Accident severity & Accident Cost Rate	↓↓	Section Control benefits roads with a high share of severe injuries
Benefit-Cost-Ratio	↑↑	Investing in Section Control has a high return value
Overall Speed & abrupt braking manoeuvres	↓	Section Control might reduce speed-induced accidents

3. Excursion tours of Vienna

Since the measures have been technically described to large extent in the previous chapter, this part only depicts the overall itinerary of the Vienna tours in the map, lists the locations together with specifications of the treatments implemented there and include several photos to document the RADAR group. Only a couple of additional pictures were selected from the vast photo library taken during the tour, which is available to all RADAR partners, especially from the bus tour, which contained quite a broader scope of treatments compared to those shared in topical presentations.

3.1. Walking tour

After the theoretical session at KFV, all RADAR Study visit participants went for an afternoon walking excursion around Vienna city centre, in order to visit many locations, where the before-discussed and presented treatments had been installed. The excursion was highly appreciated, as it provided further insights and understanding of different technical aspects, as well as practical functioning of the measures.



Observed measures included:

- Encounter zones Mariahilfer Straße;
- Pedestrianisation Mariahilfer Straße;
- Lindengasse turned into Living Street, blocked for through-traffic;
- School Amerlingstraße: fencing & recreational area;
- School Stiftgasse: former cark parking turned into park & playground;
- KärntnerStraße: First pedestrianisation in Vienna (since 1974);
- Encounter Zone Rotenturmstraße;
- School Hegelgasse: recreational area in front of school, no access for cars;
- Conflict point of cyclists and pedestrians in front the State Opera;
- Complex road markings to channelize & secure cycle & pedestrian flows.

3.2. *Bus tour*

Similarly to the city centre walking tour, the bus tour of the second day was perfectly planned and organized by KFV so that RADAR team had a unique opportunity to see many of the presented measures in real life and much more.

The bus tour included not only treatments aiming at increasing safety near schools but also many other schemes traffic calming and management, which were very inspirational and relevant to general focus areas of RADAR project.

Since the tour map is quite self-explanatory and the number of visited sites is high, it was decided to divide the map into 2 parts in order to allow better readability of text descriptions. Some of the photos inserted in the report provide some extra comments, especially where they depict topics, which have not been mentioned so far.

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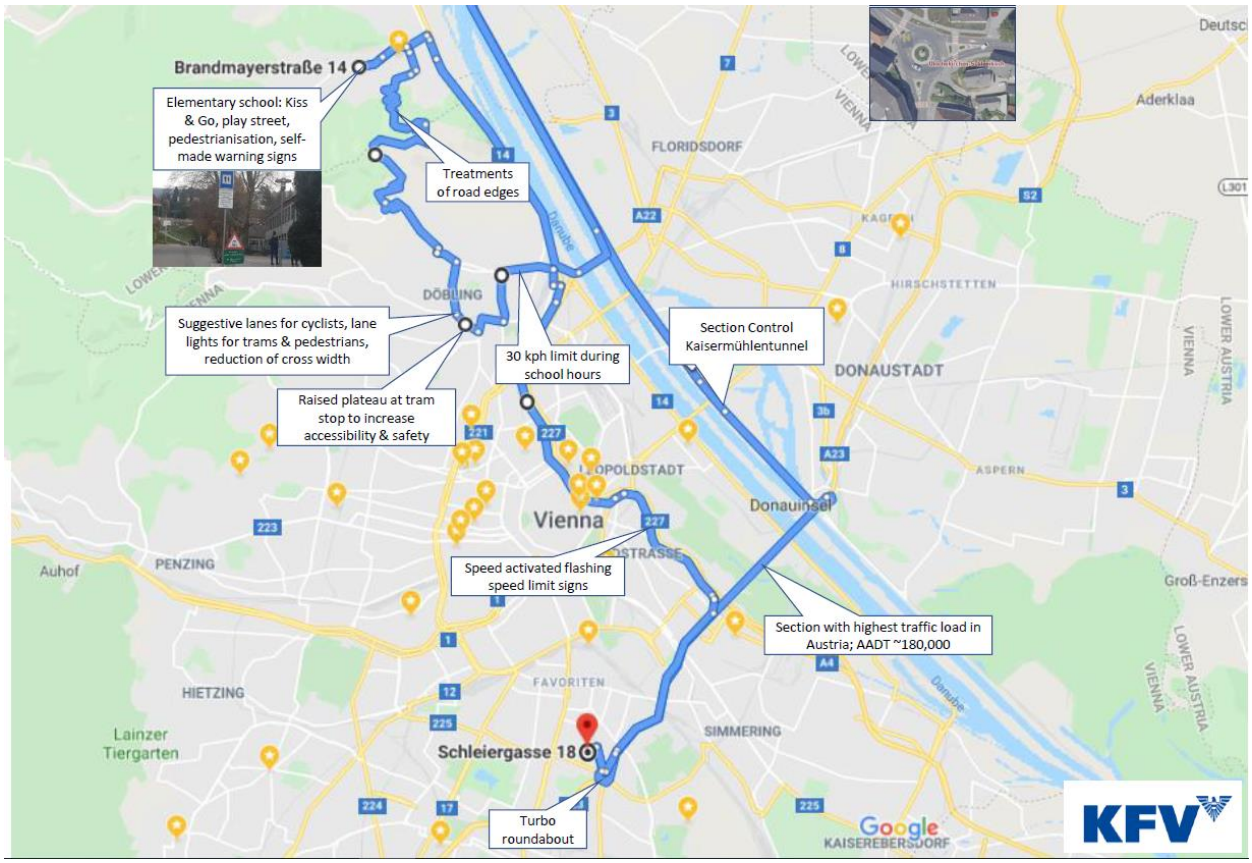
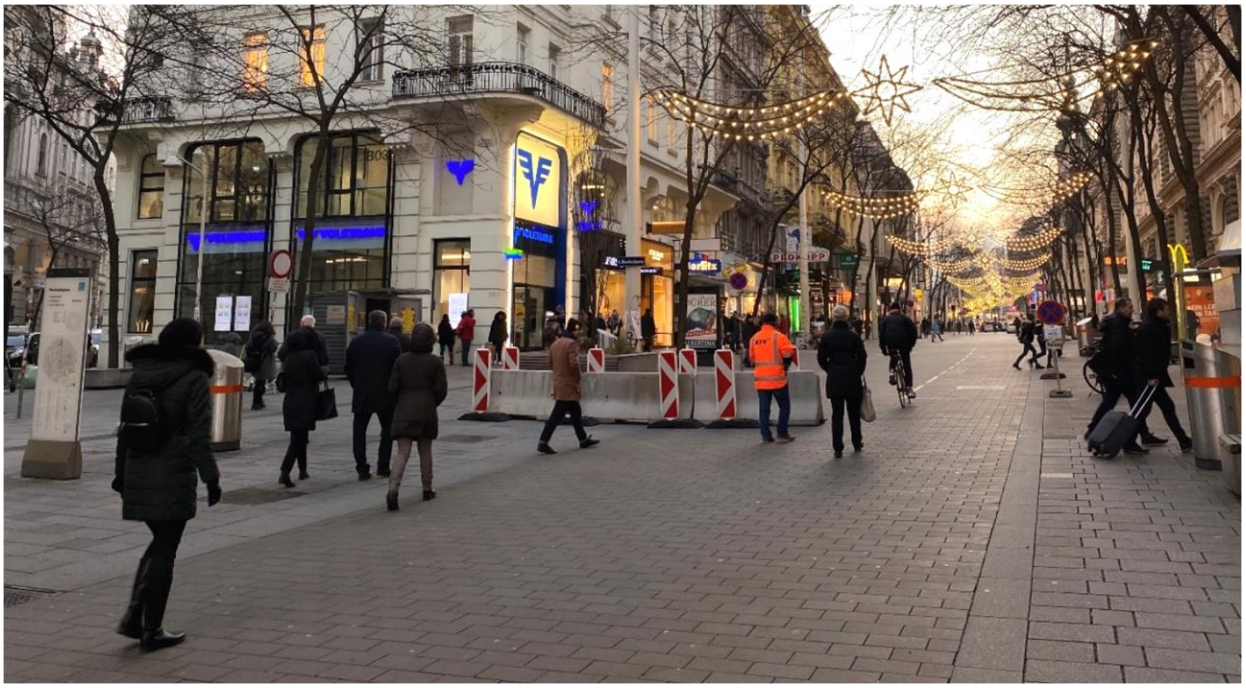
Study Visit Vienna – Bus tour on 5 December 2019



3.3. Photo documentation

Walking tour

Mariahilfer Straße

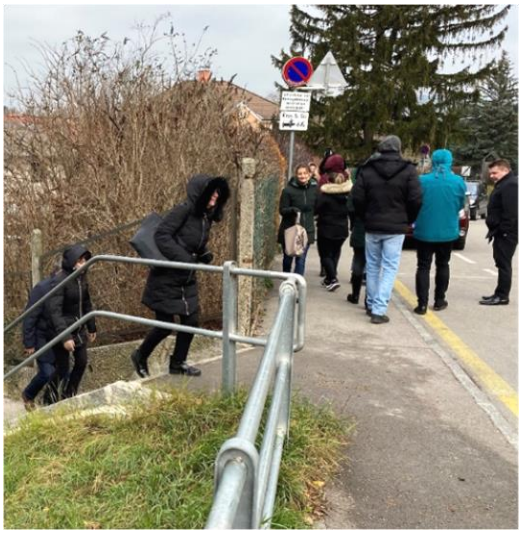


Stephansplatz

Mariahilfer Straße

Bus tour

Pedestrianisation around school in Klosterneuburg



Additional measures documented

Encounter zone near school & home for the elderly in (Wolkersdorf)

Improved visibility of railway crossing on road L1113 / Kiss & Go spot to drop-off children (Klosterneuburg)

Treatments for pedestrians and cyclists at crossings (Ulrichskirchen (left & below); Wolkersdorf)

Temporary 30 kph limit and cardboard policeman on through road near school (Stetten)

Examples of entry/exit gates in municipalities (Stetten; Mollmannsdorf)

Ulrichskirchen

Wolkersdorf

Elementary school: Kiss & Go, play street, pedestrianisation, self-made warning signs (Klosterneuburg)

Raised plateau at tram stop to increase accessibility and safety (Wien 19, Grinzing)

4. Lessons learned

RADAR Study visit organized by KFV in Vienna was an excellent event, in terms of both preparation and relevance to the theme of road safety near schools. Representatives of RADAR PPs and ASPs had a great opportunity to see and learn about a large variety of measures, which are being prepared and implemented across Vienna and its surrounding municipalities.

Visited schemes aimed at improving safety of vulnerable road users in urban environment, particularly pedestrians and children on their way to/from schools. There are traditional engineering approaches to traffic calming supported by quality technical documentation and guidelines. On top of that there are many new ideas and opportunities coming out in line with swift progress of modern communication technologies, overall development of society as such and its step-by-step shift towards the approach of making cities attractive to live in.

Key measures observed have been described in this report and many more examples were presented during the TA4 Study visit. In short, they can be summarized as follows:

- permanent or temporary speed enforcement in risky locations with high volumes of pedestrians and school children;
- implementation of street zones aimed at provision of more comfortable and safer conditions for movement of VRUs – standard pedestrian zones, as well as innovative and ambitious encounter zones;
- infrastructure elements supporting traffic calming (surface treatments/paintings, speed bumps, physical separation by fencing/planting);
- wider street space modifications to make living in calmed areas more attractive – rest areas, playgrounds, play streets, street art attractions;
- engagement of all players of the game (authorities, experts, administration, public) and their contribution to final solutions;
- innovative ideas of activating community – involvement of parents, children, volunteers, charities, modern ways of social campaigning and communication.

4.1. General key success factors

As for each Study visit report, some preconditions to be met for successful and effective implementation of observed measures have been identified. They tend to repeat in general context in similar Thematic areas (in this case TA4 and TA2 on VRUs), and cover:

- political support and commitment;
- availability of financial resources;
- good communication strategy towards public;
- willingness to actively deliver more than necessary minimum.

In order to extend those pillars with more reference to Vienna´s study visit findings the following specifics shall be highlighted:

- **Strategy with safe system approach in mind**

  Austria surely belongs among highly developed countries, whatever criteria would be applied to assess that. As such, the country has relevant policies and strategic frameworks in place in order to manage future development, road safety included. But truly successful solutions are often difficult and need a joint effort of all involved parties. One pre-condition to be met in order to implement Safe system effectively is **"shared responsibility"** of all partners in that system. In this respect, Austria has successfully initiated the development process for a new Road Safety Strategy 2021 – 2030, which shall reflect Safe system approach carefully. Safe system strategy is also a vital pre-condition for an ambitious plan to decrease the number of fatalities on Austrian roads to 50 %, as the present relative figures put Austria somewhere among the average of EU 28.

- **Courage to introduce strong measures**

  It has been clear from the shared knowledge and experience that many of the measures would not have been possible without certain level of political commitment and trust to the solutions being proposed by experts. And professionals also need courage, since there often is not enough data, evidence and experience to support some measures. Even though nothing is perfect, Vienna definitely stands for the best-practice example in this respect and serve as the reference for RADAR project countries, as well as other Danube Region countries.

- **Actively cooperating and contributing "mature" society**

  The Study visit also illustrated, how important it is to achieve common understanding of different roles of different players in the system, and their commitment to contribute to that system by own ideas and activities. The process of gradual transformation of cities from the centres focused primarily on economic growth towards the places, where also people are happy to live, is perhaps one of the most difficult tasks for future. And Vienna definitely serves as an example in many perspectives. People begin to understand that they can influence the conditions they live in more by contributing, rather than complaining.

4.2. Critical issues

In one approach, critical issues would easily be formulated as the conditions, where general key success factors are not met. However, they can also be understood as present limitations hampering the achievement of success factors and promising results in road safety improvement. In such a perspective, it is possible to point out the following:

- **Availability of alternatives**

  Should traffic calming measures be successful, they must respect concrete traffic and infrastructure conditions and transport system logic. It is not possible only to ban or limit vehicle´s entrance, unless some other options to fulfil the demand are available. At first, public transport comes to mind but the issue is also relevant to the state of completion of primary and regional road networks, which can absorb majority of volumes and leave local

urban roads and streets free to mobility needs of local communities. When speaking specifically of schools, one more limitation for any traffic calming-related measures is that schools are the destination points in certain peaks and such traffic cannot easily be avoided in the short term but rather requires a process towards more sustainable transport modes.

- **Legal and technical limitations**

  It is also necessary to mention that sometimes efforts to raise safety for VRUs reach limits of presently valid legislation or technical guidelines. Particularly for schools in Vienna or other Austrian municipalities, one issue of nature was mentioned – a term "school road" as such simply does not exist and thus cannot be properly defined. In addition, it is clear that implementation of traffic calming measures would have different limits on different street/road categories. Sometimes the measures are just not technically relevant and possible for certain main streets – but schools are often present there, too. Pros and cons of individual solutions must always be carefully assessed, not to create even more complications on other parts of the network. However: the prevention of crashes should always have highest priority.

4.3. Potential for transfer across DTP countries

Experts of KFV shared with the RADAR team quite unique and extensive knowledge related to traffic calming engineering practices and awareness-raising initiatives, which seem to deliver promising results. In terms of potential transferability of presented best practices, it is important to point out that – although technically compatible – they often require certain system pre-conditions to be met (as described in previous chapters).

RADAR project countries, as well as majority of other Danube region countries, suffer from much lower quality and completion level of road networks, which of course limits their resources and efforts dedicated to traffic calming. On the other hand, the RADAR team has already had a great opportunity to see many interesting and emerging trends and solutions being applied also in other DTP countries, when it comes to VRUs – those are summarized in the Study visit report on VRUs (TA2), which presents practices and case studies conducted in Slovenia and Croatia.

Besides technical aspects, some treatments also require high social maturity level in terms of respect to rules, tolerance to other users of urban space and individual engagement to contribute to better living in the surrounding community, especially in larger cities. There are for sure more traditional measures, which can be easily and quickly implemented in other DTP countries, too, but some other ambitious and effective solutions (the encounter street concept, for instance) remain rather a strategic vision for future. Vienna, as frequently considered one of the best European cities to live in, shall certainly serve as a best-practice example.