



STAR RATING
FOR SCHOOLS

ACM
AUTOMOBIL CLUB
DIN MOLDOVA



Safe crossings - safe journeys project

**School zone assessment in 3 localities:
Balti, Singerei and Ungheni municipalities**

Introduction

According to reports of the National Inspectorate for Public Security of Moldova, annually around 20 children die on Moldovan roads. Speeding is considered the main cause of road crashes. Everyday routes and school zones represent high risks for children, parents and teachers as speed limits in school zones are often high or disregarded by drivers. Pilot school zones assessment and Star Rating for two Moldovan schools performed last year proved of a low quality of road infrastructure around schools.

In 2020-2021, the Automobile Club of Moldova (ACM) initiated the low speed streets campaign within the UN/Global Road Safety Weeks and other road safety projects on safe school zones, supported by FIA, FIA Foundation and EASST with the main objective to apply the 30km/h policy around all educational institutions in the country. The necessary amendments to the Road Regulations were successfully implemented in the autumn of 2022. Thus, the reduction of speed limits to 30km/h around “areas with increased flow of vulnerable traffic users” is mandatory in school zones and roads around hospitals, parks, and historic landmarks. This amendment follows a 2-year advocacy campaign led by the ACM, supported through EASST by the FIA Foundation’s Advocacy Hub. The aim of the campaign was to reduce speed related road crashes and casualties around schools by securing a commitment to mandatory 30 km/h speed limits. A decrease by 50% in the number of crashes and victims is the main globally set goal of the new UN Decade of Action for Road Safety. Moldovan national authorities and profile institutions are also following this global target. In 2022 it is planned by the National Road Safety Council to start developing a new National Road Safety Strategy and National Plan of actions for road safety improvements. The relevant road safety responsible stakeholders need to be persuaded, endorsed and assisted by the CSOs in reaching a safer road environment and conditions for vulnerable road users including children.

The Automobile Club of Moldova is a non-governmental organisation created in 1998. Since 1999, the ACM has been a member of the Alliance Internationale de Tourisme (AIT) and Federation Internationale de l'Automobile (FIA); the Association is Member of iRAP and Global Alliance of NGOs for road safety. The Automobile Club of Moldova is the main promoter of road safety and healthy and green

environment in Moldova, being the main link between public authorities and civil society for a more effective management of social problems, mainly road safety and safety of all categories of road users; twice awarded with the Prince Michael International Road Safety Award. In 2009 the ACM was nominated as a NGO Member of the National Road Safety Council in Moldova; together with the relevant Ministries, in 2010 participated and contributed to the development of the National Road Safety Strategy 2011-2020 and production of mid-term or annual National Plans to improve road safety in Moldova.

The ACM was the main initiator of introducing the iRAP in Moldova, thus the ACM is one of the main partners of iRAP and star rating and risk mapping projects in the RM. ACM was also the ENI Partner in the RADAR Project (Risk Assessment on Danube Area Roads) a project funded by the Interreg Danube Transnational Project. One of the pilot activities of the given project in Moldova was focused on safer zones around schools, which gave the opportunity to test star rating toolkit.



Safe crossings - safe journeys project School zone assessment in Balti, Singerei and Ungheni municipalities”

This initiative is aimed at providing safe and sustainable low-cost interventions at three selected pedestrian crossings situated in three cities at the north of Moldova - Balti, Ungheni and Singerei.

Balti is the second biggest city of Moldova and called the second capital of the country; Singerei is a city situated very close to Balti, while Ungheni is a city situated at the border with Romania, that are considered as the most agglomerated locations. In terms of statistical data, in 2021 there were registered 148 crashes resulting in 18 deaths and 178 seriously injured in these target localities.

Children making journeys to and from school and kindergartens must be secured. Street design in all localities in Moldova is based on old, soviet approaches with no adequate provisions for pedestrians (children). Safe pedestrian crossings for children need refuge islands, speed-lowering measures and other safety interventions for safety and comfort.

The main goal of the project is to address the urban mobility and sustainable development of the target cities in a modern way, by taking into account the needs of all road users, but prioritizing the pedestrians (schoolchildren) and low mobility category. As in 2 previous FIA&ACM projects, the urban mobility expert and the team will carry out analysis, select, elaborate appropriate solutions and implement the recommendations. Three (one per city on regional level) pedestrian crossings will be improved by using tactical urbanism approach and lowering speed measures focusing on child safety and school zones. The previous project experience with Star Rating and Safer Schools Zones, pilot transformation at local level will be replicated at the regional level in the North of Moldova.

The main target and goal of the “Safe crossings - safe journeys project” funded by FIA (and supported by EASST) is to:

1. Increase road safety level for children/around schools by transforming 3 selected zones (pedestrian crossings) in the Northern cities of Moldova.
2. Analyse and identify the zones for interventions and transformations.



3. Transform three pedestrian crossings in 3 selected localities (Balti, Ungheni, Singerei) to raise the safety level of school-children's journeys.
4. Improve level of safety and access for pedestrians (especially children).
5. Raise awareness of citizens (parents, teachers, children, etc.) and advocate to Local Public Authorities regarding the road safety for children, especially at pedestrian crossings, high-risks at school zones.

Project partners: National Inspectorate for Public Security, Local Public Authorities, local schools, UNICEF.



Star Rating for Schools

The Star Rating for Schools App (SR4S) is a systematic approach to quantifying the road safety risk of road infrastructure around schools based on evidence-based research. The system combines an easy-to-use School Assessment Android app and a Global Reporting for Schools web application. These applications work together to harness the power of the International Road Assessment Programme's (iRAP) Star Ratings to measure the risk children are exposed to on their journey to and from school.

The iRAP Star Ratings are an internationally recognized measure of risk on the roads, with the least safe roads rated as 1-star and the safest as 5-star. Star Rating for Schools utilises the pedestrian component of Star Ratings to provide a measure of the contribution of road design to the risk for each pedestrian. The app can deliver a quick and easy measurement of safety at the site and can point towards potential road upgrades.

The Star Rating for Schools App has been made possible thanks to the generous support of the Founding Sponsor FedEx and the Major Donor FIA Foundation, and is powered by iRAP. iRAP is a registered charity dedicated to saving lives through safer roads.



Balti Municipality

Background Information

Balti is the second largest city in terms of population, area and economic importance, after Chisinau. The city is one of the five Moldovan municipalities. Sometimes also called "the northern capital", it is a major industrial, cultural and commercial centre and transportation hub in the north of the country.

There are 13 lyceums and 6 professional education institutions offering the last 3 years of high school education and 2 years post-high school technical education. Also, 14 secondary schools, 7 professional or professional-technical schools, and 3 boarding schools, including one for the visually impaired are located in the city.

Selected schools

For this assessment the following educational institutions: "Ștefan cel Mare", "B. P. Hasdeu" and "Mihai Eminescu" in Balti have been selected.

"Ștefan cel Mare" Lyceum: <https://goo.gl/maps/wgJKmcbPG1gPLrBt9>

"B. P. Hasdeu" Lyceum: <https://goo.gl/maps/a2FMpvKzy2rK5Byb8>

"Mihai Eminescu" Lyceum: <https://goo.gl/maps/9rnXLjTfMzTTc2dD7>

"Ștefan cel Mare" and "B.P. Hasdeu" Lyceums are situated in the same area, close to Calea leșilor street, which is the main access street to both schools.

<https://goo.gl/maps/zBHWsraNhBp8UguR7>

Therefore one assessment has been performed on Calea leșilor street, in the perimeter of Ostrovski and P. Botu streets, at the pedestrian crossings. The second assessment was done on the Ștefan cel Mare street, at the intersection with Decebal and Hotin streets.

<https://goo.gl/maps/KXujG9FYvKX9wStx5>

Location - "Stefan cel Mare" and "B.P. Hasdeu" lyceums area

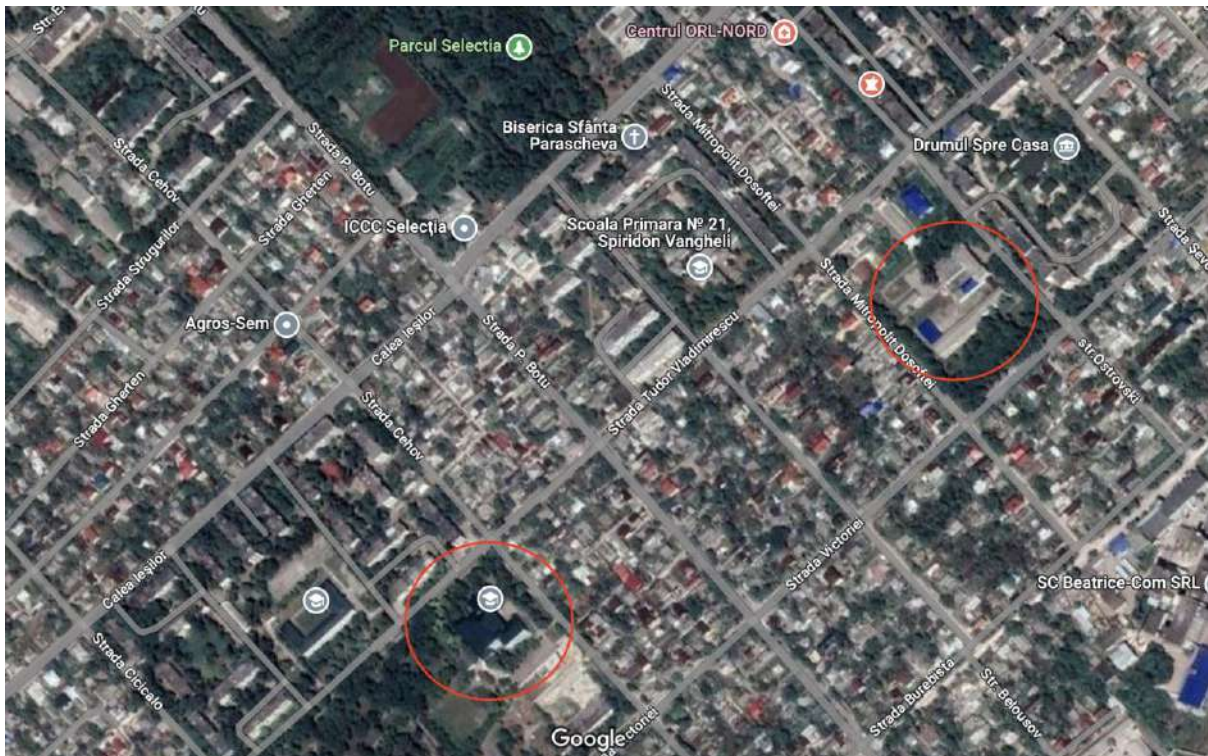


Figure 1: Location of "Stefan cel Mare" and "B.P. Hasdeu" Lyceums assessed in Balti

Source: Google Maps

This area has a high concentration of educational institutions that generate a large pedestrian flow, mainly of children. Calea lesilor street is also a transit thoroughfare, on which public transport runs, with which children travel to school.

Areas marked in green represent intersections with pedestrian crossings with particular risk for pedestrians.

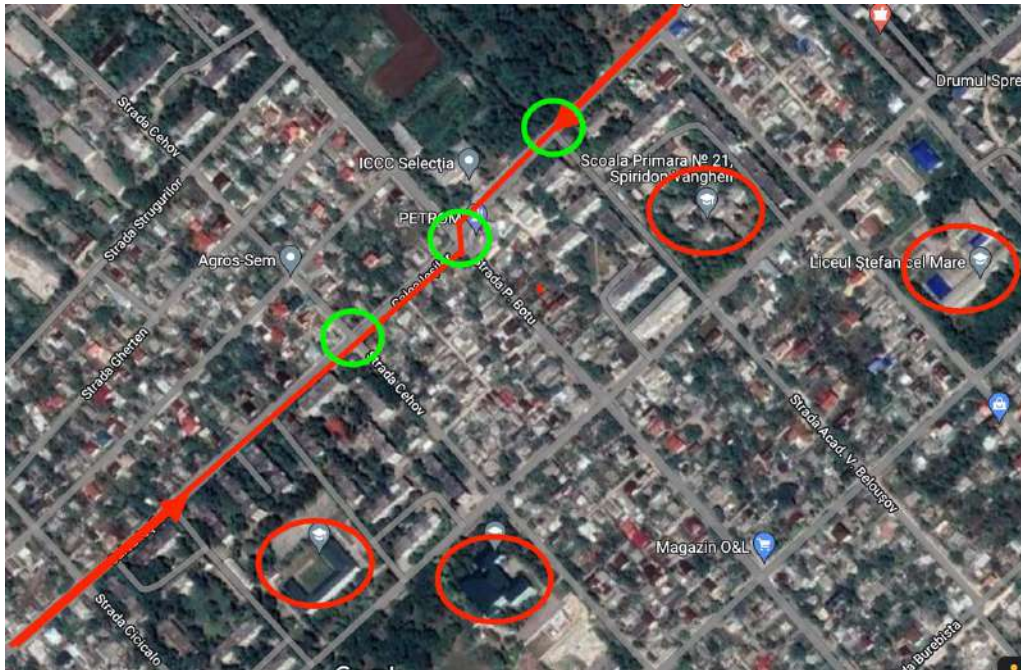


Figure 2: Pedestrian risk areas assessed

Source: Google Maps

Assessment

The assessment was carried out on Calea Iesilor Street, in the areas with increased risk for pedestrians: pedestrian crossings, public transport stations, intersections.

Figure 3 shows the four locations where the assessments were conducted.

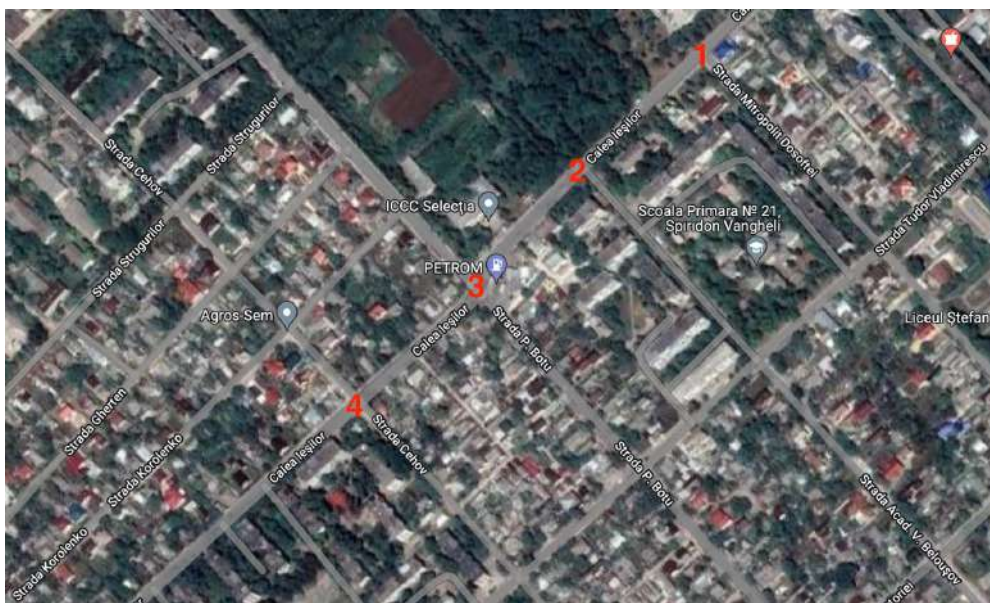


Figure 3: Locations assessed at "Stefan cel Mare" and "B.P. Hasdeu" Lyceums

Source: Google Maps

The assessment established that Calea Iesilor street is a street with three lanes of traffic in both directions, the middle lane being an overtaking lane in both directions. Each lane is 3 metres wide, forming a carriageway almost 10 metres wide.



Figure 4: Balti, Calea Iesilor street, area of "Stefan cel Mare" and "B.P.Hasdeu" Lyceums

Source: ACM

Throughout the evaluated length, intersections and pedestrian crossings are not signaled and the street has priority in relation to the intersected ones.

All these characteristics favour the high-speed circulation of cars, especially in the situation of overtaking public transport. Along the entire length of the street, cars travel at speeds that considerably exceed 50 km/h.



Figure 5: Balti, Calea Iesilor street, area of "Stefan cel Mare" and "B. P. Hasdeu" Lyceums

Source: ACM

At the intersection of Calea Iesilor street with Pavel Botu street, the axis of the street is shifted and the radius of the curves allow turning at speed, which causes the widening of the carriageway. In this intersection, the pedestrian crossing is more than 15 metres wide, which increases the risk of pedestrian injuries.

Along the entire length of the analysed segment, pedestrian crossings are marked and signposted, but there are no signs that would prevent drivers from approaching the school area. Also, pedestrian crossings are marked only on one side of the analysed intersections.

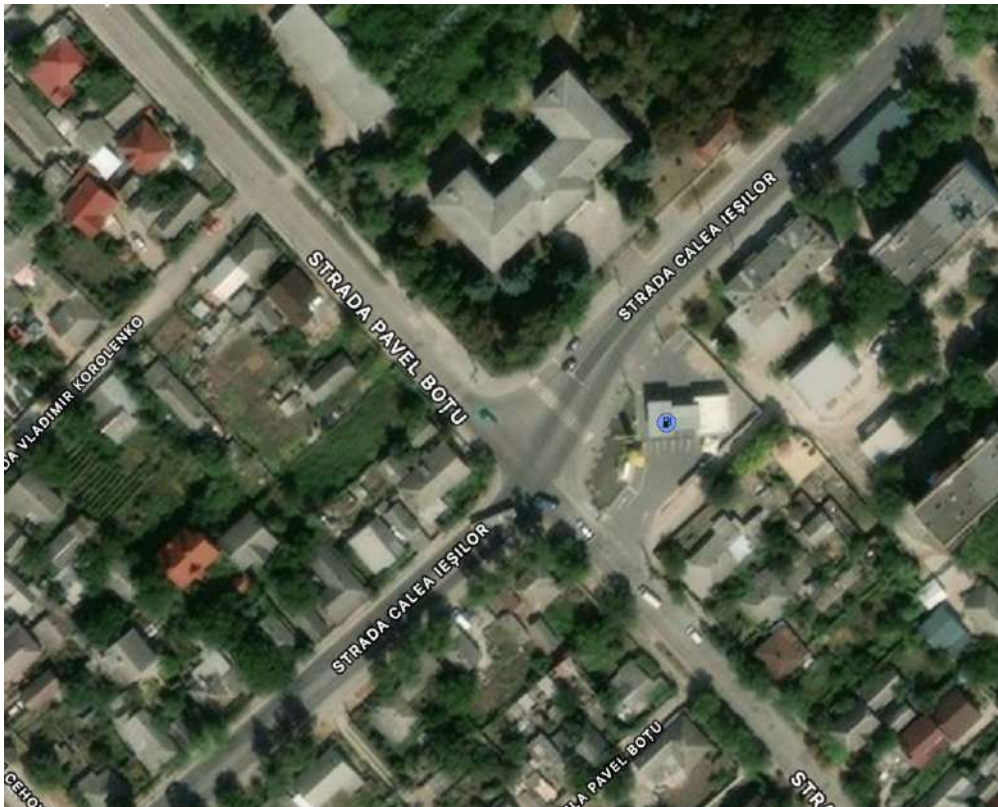


Figure 6: Balti, Calea Iesilor street, area of "Stefan cel Mare" and "B.P.Hasdeu" Lyceums

Source: Google Maps

Every year, multiple road accidents take place on this street, including involving pedestrians.



Figure 7: Car crash on Calea Iesilor str. on 13.07.2020. Source: <https://protv.md/actualitate/grav-accident-la-balti-cu-implicarea-unei-masini-de-politie---2534269.html>



Figure 8: Car crash on Calea Iesilor str. on 30.09.2021. Source: <https://www.tvn.md/ro/fotovideo-accident-violent-in-balti-cu-implicarea-unei-masini-de-paza-doua-persoane-au-ajuns-la-spital/>

A particular situation is at the intersection of Calea Iesilor street and Belousov, where is present one of the main pedestrian crossings linking the two high schools and public transport stations on Calea Iesilor.



Figure 9: Balti, intersection of Calea Iesilor and Belousov streets

Source: ACM

At this location, on Belousov street the pedestrian crossing is missing and the pedestrian infrastructure is very damaged and inaccessible. The pedestrians making their way from trolleybus stop to "B. P. Hasdeu" lyceum have to cross the Belousov street exposing themselves to the cars that are turning to Calea Iesilor street and walking right on the carriageway.



Figure 10: Balti, intersection of Calea Iesilor and Belousov streets

Source: ACM

Additionally, there is very narrow and broken pavement which makes people walk through green areas, creating the desired paths.



Figure 11: Balti, intersection of Calea Iesilor and Belousov streets. Source: ACM

Results

The pedestrian crossing at the intersections of Calea leșilor and Belousov streets, near the “Stefan cel Mare” and ”B.P.Hasdeu” lyceums in Balti was secured through tactical urbanism interventions, namely:

- School zone warning signs installation, signs and markings to guide drivers and warn them of their proximity to a school;
- 30 km/h speed limit introduction;
- Redesign of the Calea Iesilor/Belousov intersection with the addition of a pedestrian crossing on Belousov street and pavement improvement;
- Pedestrian guardrails installation on both streets in the crossing perimeter.

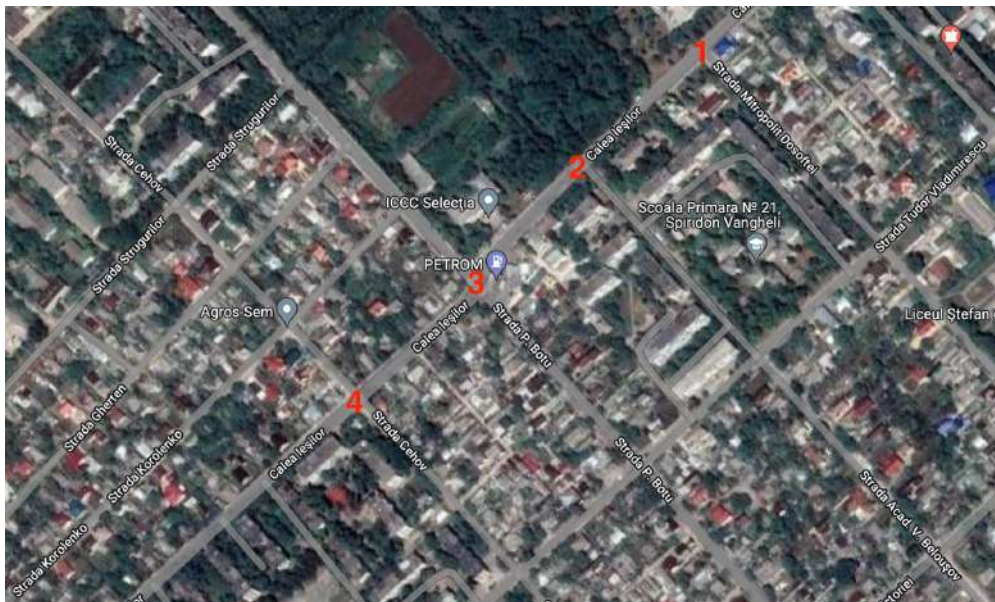


Figure 12: Locations assessed at “Stefan cel Mare” and ”B.P.Hasdeu” Lyceums

Source: Google Maps

Table 1: Interventions proposed for Calea Iesilor street in Balti

Calea Iesilor street		
Attribute	Before: 3 stars	After: 5 stars
School Zone Warning	No school zone	Signs/Markings
Pedestrian crossings	Unmarked	Marked
Speed limit	50 km/h	30 km/h
Pedestrian guardrails	No	Yes



Figure 13: Balti, Calea Iesilor street after interventions. Source: ACM



Figure 14: Balti, Calea Iesilor street after interventions. Source: ACM

Table 2 presents the Star Rating for the assessed location before and after the improvements.

Location	Results before implementation	Results expected after implementation
Area Calea Iesilor and Belousov Streets	1	4

Table 2: Results before and after improvements at the assessed area on Calea Iesilor in Balti



Figure 15: The safety level of the location according to the Star Rating for Schools tool. Before intervention. Source: iRAP Demonstrator tool, ACM.



Figure 16: The safety level of the location according to the Star Rating for Schools tool. After intervention. Source: iRAP Demonstrator tool, ACM.



As a result of the provided interventions the Star Rating for Schools of the location assessed location on Calea Iesilor street in Balti has improved from 1.6 to 4.4 stars (Figure 16).

Location -" Mihai Eminescu" lyceum area

"Mihai Eminescu" is located in the city centre, close to Ștefan cel Mare street - the main street in Balti municipality.

This area has a high concentration of administrative, social and educational institutions that generate a large pedestrian flow. Ștefan cel Mare street is also a transit thoroughfare, on which public transport runs, with which children travel to school.

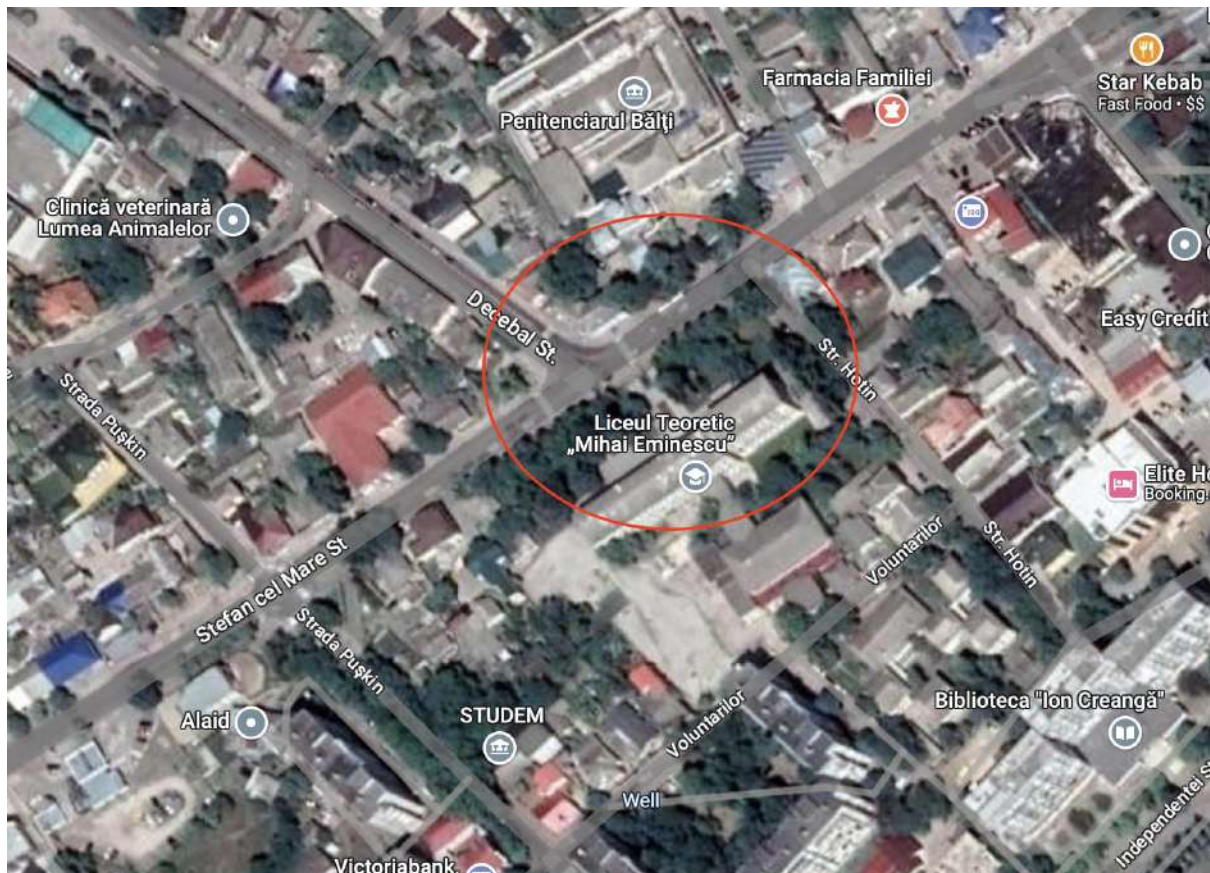


Figure 17: Balti, intersection of Ștefan cel Mare, Decebal and Hotin streets. Location of "Mihai Eminescu" lyceum

Source: ACM

Assessment

In this area the intersection of Stefan cel Mare and Decebal streets represent a T-shaped intersection with pedestrian crossings, traffic lights and safety barriers, which make it safe enough for pedestrians.



Figure 18: Balti, intersection of Stefan cel Mare and Decebal streets

Source: ACM

However, the intersection of Stefan cel Mare street and Hotin does not have a marked and signed pedestrian crossing. This makes the intersection less safe, and sometimes drivers do not give priority to pedestrians.

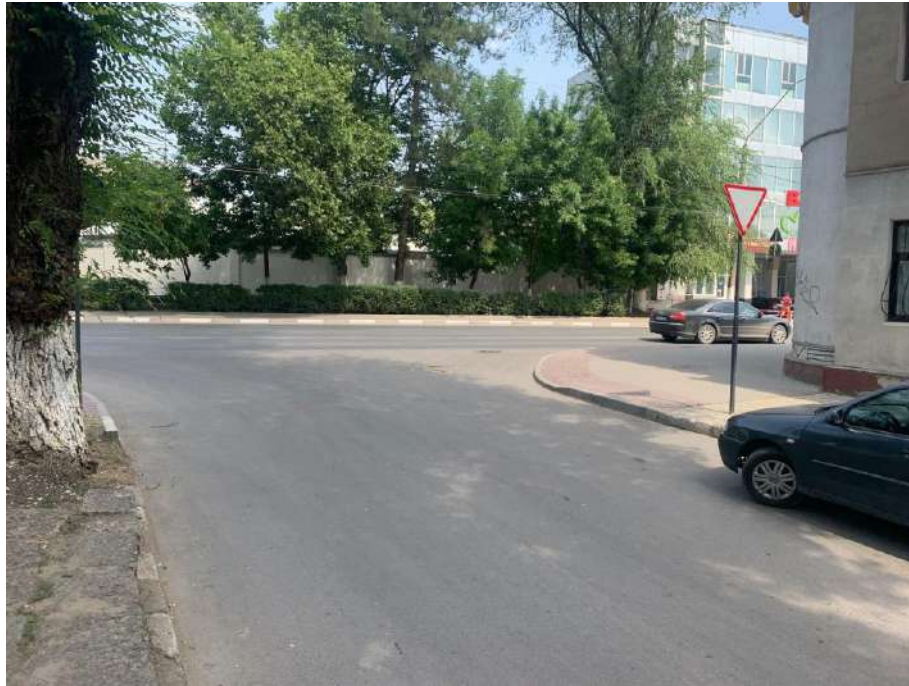


Figure 19: Balti, intersection of Stefan cel Mare and Hotin streets

Source: ACM



Figure 20: Balti, intersection of Stefan cel Mare and Hotin streets

Source: ACM

Results

Table 3 highlights the key improvements to be implemented in the assessed location.

The assessed locations can achieve a 5-star rating after the implementation of the improvements that include the following:

- School zone warning signs installation, signs and markings to guide drivers and warn them of their proximity to a school.
- 30 km/h speed limit introduction on Stefan cel Mare and Hotin streets.
- Raised pedestrian crossing at the intersections of Stefan cel Mare and Hotin streets.

Stefan cel Mare street		
Attribute	Before: 3 stars	After: 5 stars
School Zone Warning	No school zone	Signs/Markings
Pedestrian crossings	Marked	Raised
Speed limit	50 km/h	30 km/h
Traffic calming measures	No	Yes

Table 3: Interventions proposed for Hotin street in Balti

Table 4 presents the Star Rating for the assessed locations before and after the improvements and Figures 21 and 22 show the star rating before and after the measures' implementation.

Location	Results before implementation	Results expected after implementation
Hotin street, Balti	3	5

Table 4: Results before and after improvements on Hotin street in Balti



Figure 21: The safety level of the area according to the Star Rating for Schools tool. Existing situation.
Source: iRAP Demonstrator tool, ACM



Figure 22: The safety level of the area according to the Star Rating for Schools tool. After interventions. Source: iRAP Demonstrator tool, ACM

As a result of the proposed interventions implementation the Star Rating for Schools at the assessed location will improve to 5 stars.

City of Singerei

Background Information

Singerei is a city located in the north of the Republic of Moldova, the seat of Singerei district, approximately 25 km southeast of Balti municipality.

The education system consists of 4 preschool institutions, a gymnasium ("Anton Crihan", former middle school no. 2) and 3 high schools: "Olimp" Theoretical High School (former middle school no. 3), "Mihai Eminescu" Theoretical High School, "Dimitrie Cantemir" Theoretical High School (former middle school no. 1, Russian school), Creative and Recreation House, "Nicolae Iorga" District House of Culture.

Location - "Dimitrie Cantemir" high school area

For this assessment, the "Dimitrie Cantemir" Theoretical High School has been selected.

<https://goo.gl/maps/4eP7W4S3hx8xfQDq8>

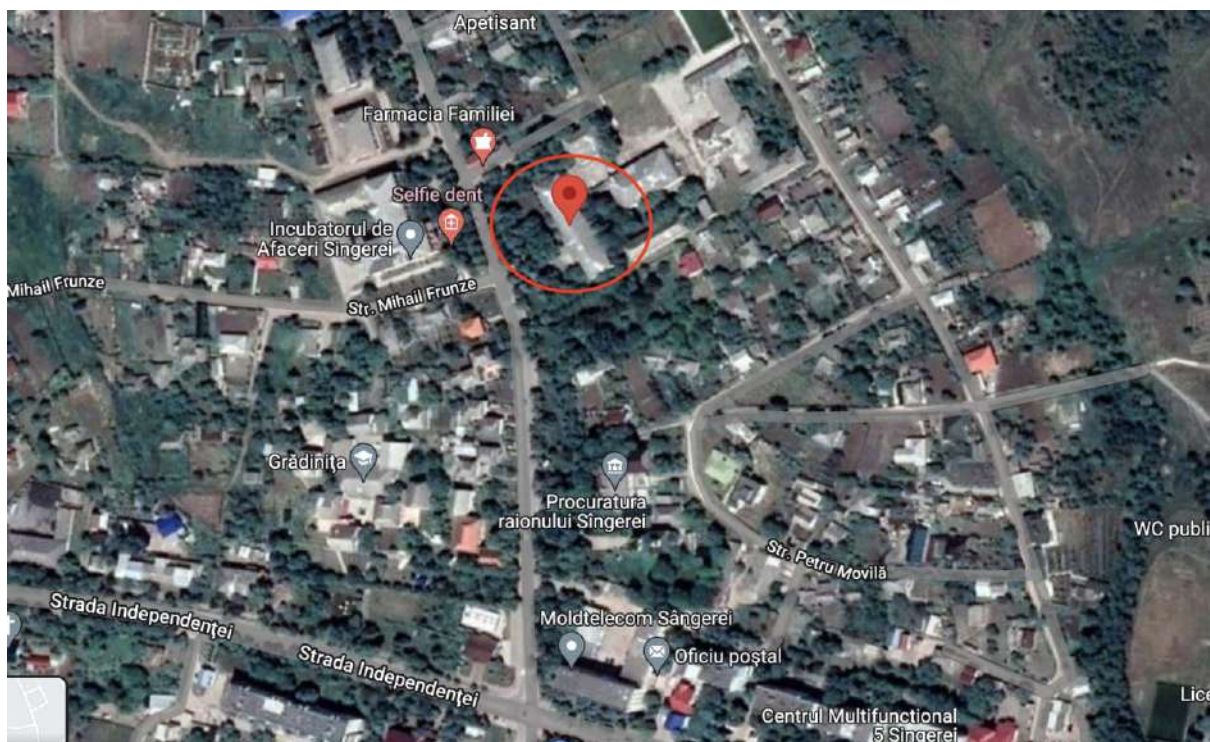


Figure 23: Location of "Dimitrie Cantemir" high school in Singerei. Source: Google Maps

The assessment has been performed on Nicolae Testemitanu street, in the perimeter of Independentei and Sadoveanu streets, at the pedestrian crossing right in front of the school.

The high school is located in an area with mixed infrastructure (Public Health Centre, district prosecutor's office, business incubator, kindergarten) which generates an increased pedestrian flow but also a large flow of cars on Testemitanu Street.

Assessment

Figure 24 shows the location where the assessment was conducted (green area).

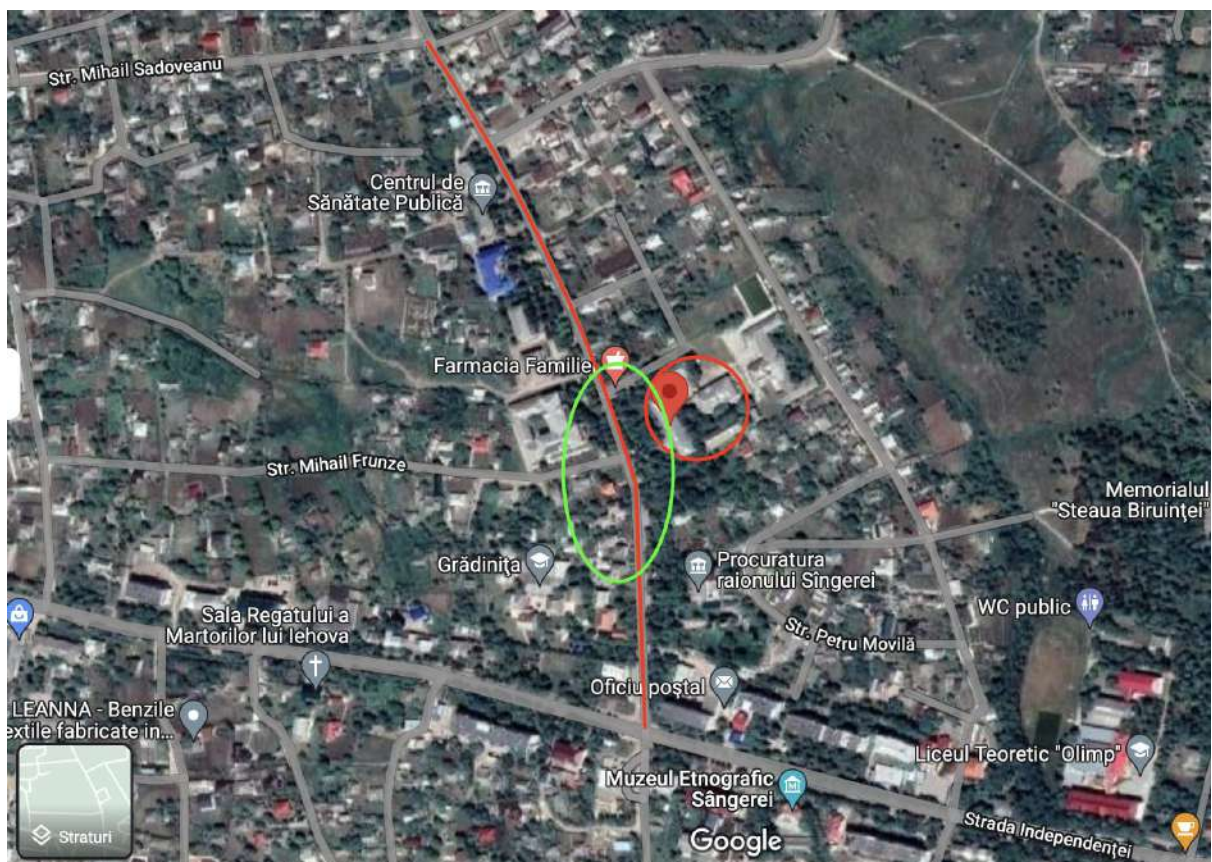


Figure 24: Area of assessment in Singerei. Source: Google Maps

At the indicated location, only one marked pedestrian crossing is in place, right in front of the "Dimitrie Cantemir" school, at the intersection of Nicolae Testemitanu and Mihail Frunze Street.



Figure 25: Pedestrian crossing in "Dimitrie Cantemir" school zone, Singerei. Source: Google Maps

The assessment established that Nicolae Testemitanu Street has two lanes of traffic in both directions. Each lane is 3,5 metres wide, forming a carriageway exceeding 7 metres wide.



Figure 26: Pedestrian crossing in "Dimitrie Cantemir" school zone, Singerei. Source: ACM

The pedestrian crossing has no access ramps, which makes it more difficult to access. Parking is not properly regulated and during peak hours, the pedestrian crossing has reduced visibility due to parallel parked cars on the road.



Figure 27: Parking at pedestrian crossing in "Dimitrie Cantemir" school zone, Singerei

Source: Google Maps

In this area, Testemitanu Street forms a curve. Parking near the pedestrian crossing and the lack of traffic calming elements generate an increased risk for pedestrians crossing the street at this location.



Figure 28: Pedestrian crossing in "Dimitrie Cantemir" school zone, Singerei

Source: Google Maps

Results

The pedestrian crossing near the "Dimitrie Cantemir" lyceum in Sîngerei was secured through tactical urbanism interventions, namely:

- narrowing the pedestrian crossing with bollards;
- preventing parking in the area 5 meters from the crossing by means of plastic bollards;
- applying reflective markings, inscription "SCHOOL" and coloured paint along the sidewalk;
- installation of traffic signs (including 30 km/h limit, "Attention, children", "Pedestrian crossing) and construction of access slopes from the sidewalk.

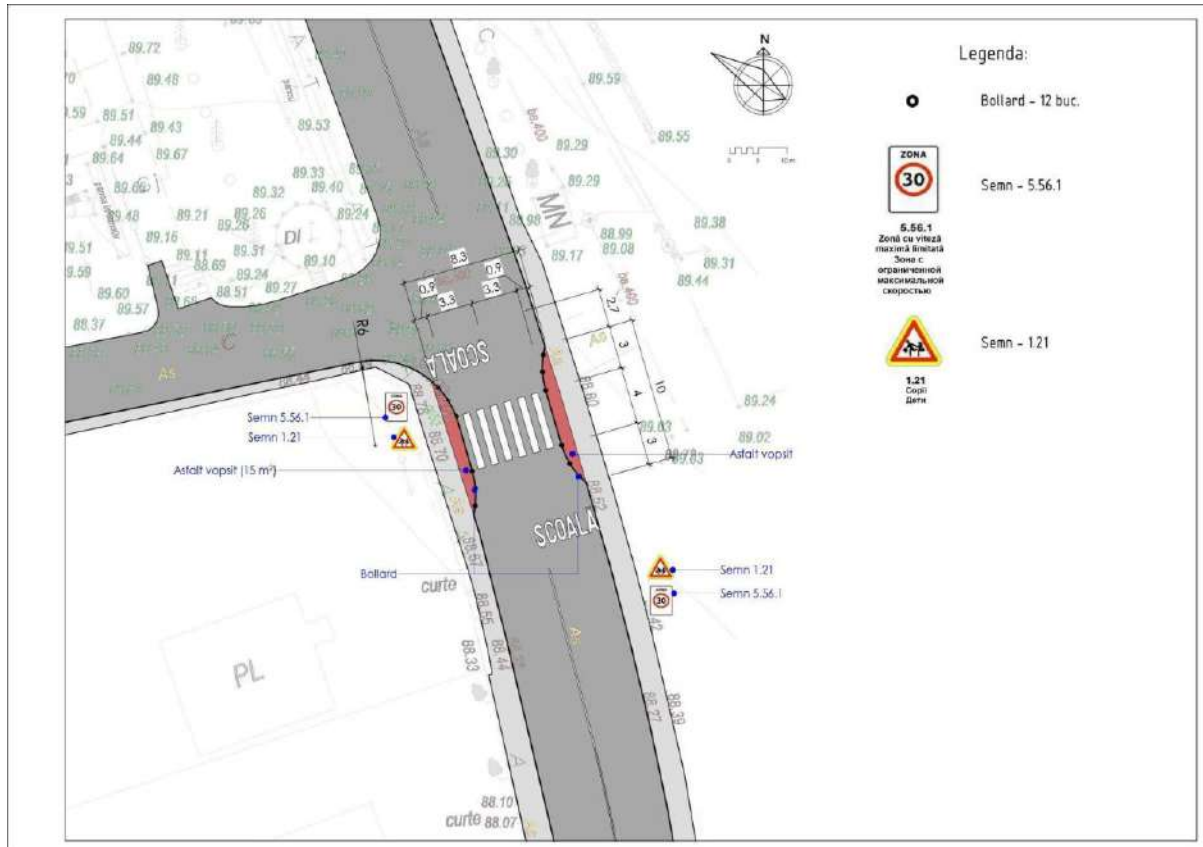


Figure 29: Tactical interventions layout for pedestrian crossing in "Dimitrie Cantemir" school zone, Singerei.

Following the intervention, the security rating of the pedestrian crossing, assessed according to the "Star Rating" methodology, increased from three stars to four stars, due to the reduction of operating traffic speed and the improvement of the visibility and accessibility of the pedestrian crossing.



Figure 30: Pedestrian crossing in "Dimitrie Cantemir" school zone, Singerei, after intervention. Source:

ACM

Table 5 presents the Star Rating for the analysed location before and after the improvements.

Location	Results before implementation	Results after implementation
“D. Cantemir” lyceum, Singerei	3 (39.06)	4 (14.30)

Table 5: Results before and after improvements at the points assessed

Table 6 highlights the key improvements implemented in the assessed location.

Testimitanu street		
Attribute	Before: 3 stars	After: 4 stars
Number of lanes	2	2
School Zone Warning	No school zone	Signs/Markings
Pedestrian crossings	Marked	Marked and narrowed
Speed limit	50 km/h	30 km/h
Traffic calming measures	No	Yes

Table 6: Interventions performed at the location



SR4S RESULTS

Before intervention



Operating speed: 60 km/h

Vehicle flow: 300 veh/day

Ped. Crossing at peak hour: 100

Crossing facility: Marked

Parking: on both sides

Lane width: 3,5 m.

School zone signs: no

After intervention



Operating speed: 35 km/h

Crossing facility: Marked with reflective paint.

Parking: restricted 5 meters from crossing

Lane width: 2,7 m.

School zone signs: yes.

Location – “M. Eminescu” and “Olimp” lyceums

The “M. Eminescu” and “Olimp” lyceums are located in central part of the city, near Independentei street, which is the main street of the city.

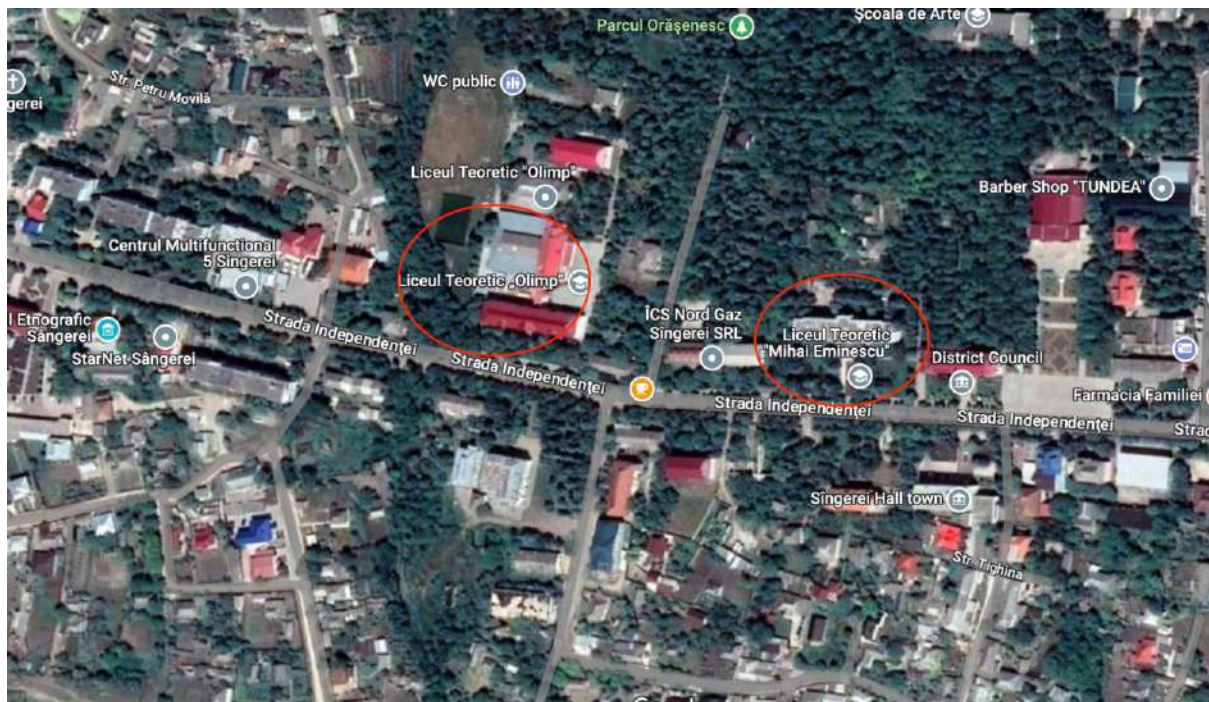


Figure 31: Location of “M. Eminescu” and “Olimp” lyceums in Singerei

Source: Google Maps

Assessment

The assessment has been performed on Independentei street, between Boris Glavan and Testemitanu streets.

Independentei street is a two-lane street, one in each way. Each lane is 4 metres wide, leaving enough space for parking on each side. On a span of 550 metres there are three crosswalks, one in front of each education institution.

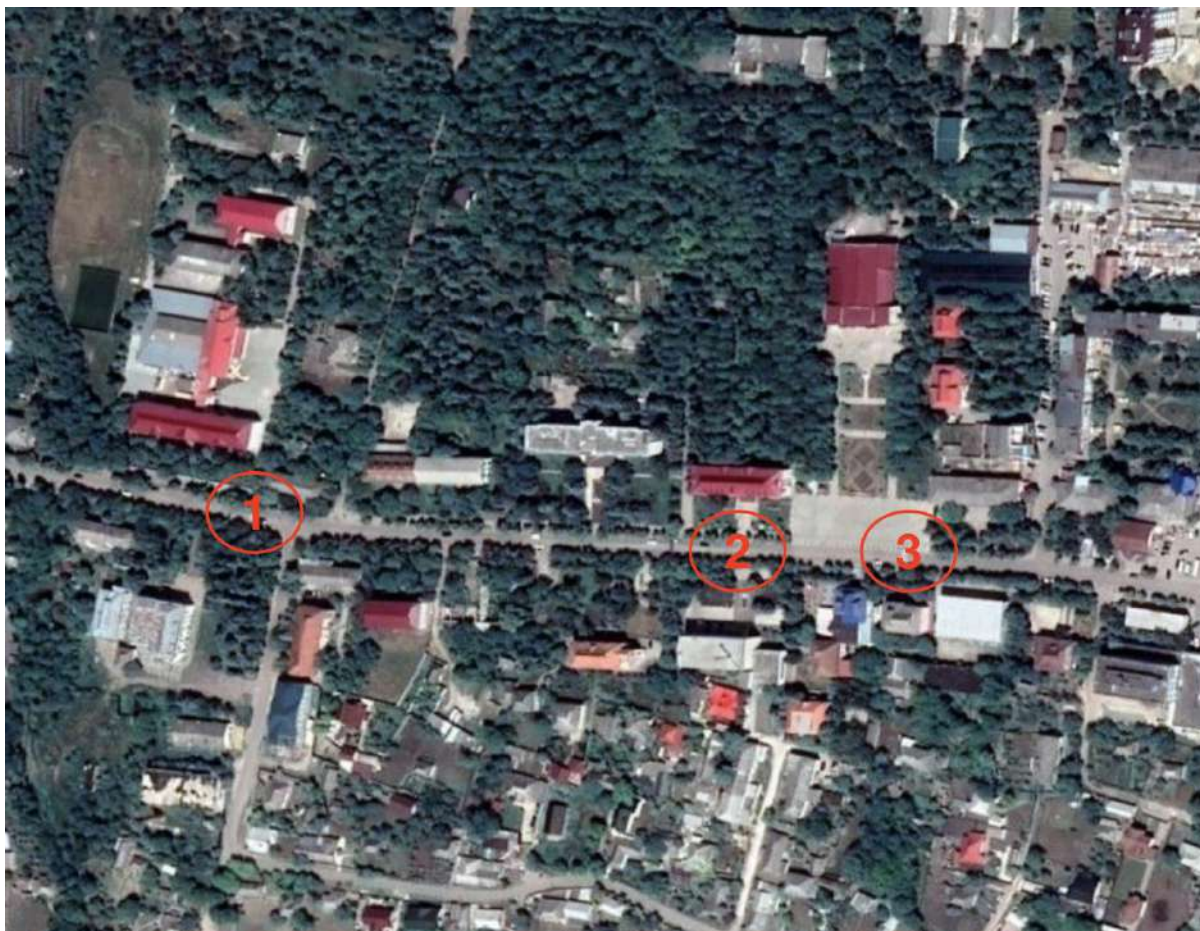


Figure 32: Location of crosswalks in assessed school zone in Singerei

Source: Google Maps

The surface on the street is degraded and the marking is almost invisible. However the crosswalks is better than the rest of the marking and is renovated each year.

The portion of the street in front of the "Mihai Eminescu" and "Olimp" lyceums has a 30 km/h speed limit.



Figure 33: 30 km/h speed limit on Independentei street in Singerei

Source: Google Maps



Figure 34: Crosswalk near "M. Eminescu" lyceum in Singerei

Source: Google Maps

Results

The assessed locations can achieve a 5-star rating after the implementation of the improvements that include the following:

- School zone warning signs installation, signs and markings to guide drivers and warn them of their proximity to a school.
- 30 km/h speed limit introduction on the Independentei street in school area.
- Raised pedestrian crossing in front of the school.
- Narrow down car lanes in crosswalk zone and prevent parking using cones or barriers.

Table 7 presents the Star Rating for the analysed location before and after the improvements and Figure 5 shows the star rating before and after.

Location	Results before implementation	Results expected after implementation
Independentei Street, Singerei	3	5

Table 7: Results before and after improvements at the point assessed



Figure 35: The safety level of the area according to the Star Rating for Schools tool before intervention. "M. Eminescu" and "Olimp" school zone, Singerei.

Source: iRAP Demonstrator tool, ACM



Figure 36: The safety level of the area according to the Star Rating for Schools tool after proposed intervention. "Eminescu" and "Olimp" school zone, Singerei.

Source: iRAP Demonstrator tool, ACM

As a result of the proposed interventions the Star Rating for Schools will improve to 5 stars.

Ungheni Municipality

Background Information

Ungheni is a municipality in Moldova. With a population of 35,157, it is the seventh largest town in Moldova and the seat of Ungheni District.

Currently in the city are 5 high schools, 2 primary schools, 4 colleges, 2 sports schools, a music school and a fine arts school. In total, about 12,000 children are study in the city's educational institutions.

Location - "Alexandr Puskin" lyceum area

For this assessment the "Alexandr Pushkin" Lyceum has been selected.

<https://goo.gl/maps/w9gTjpPznV1Qr1Hs9>

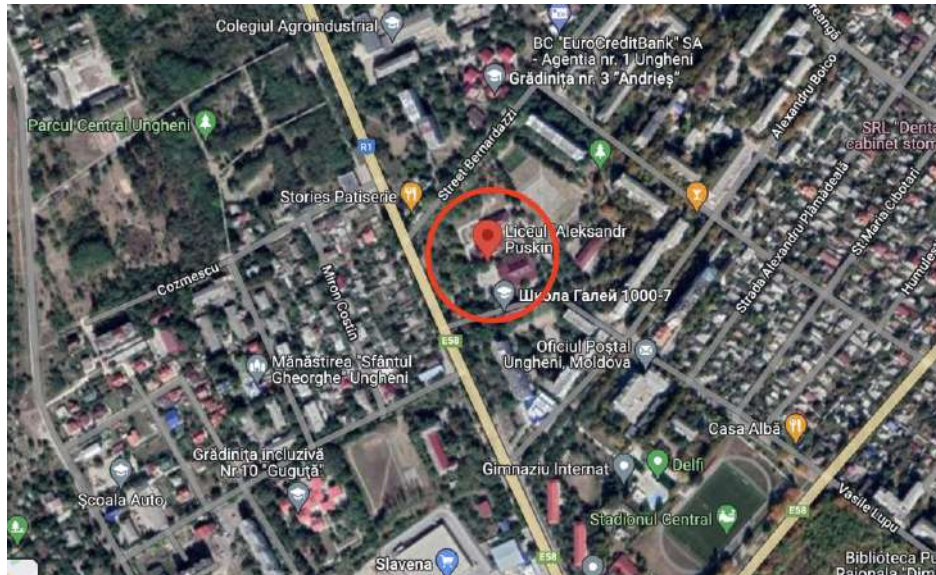


Figure 37: Location of school assessed in Ungheni.

Source: Google Maps

Assessment

The assessment has been performed on Decebal Street, in the perimeter of A. Boico and Bernardazzi streets.

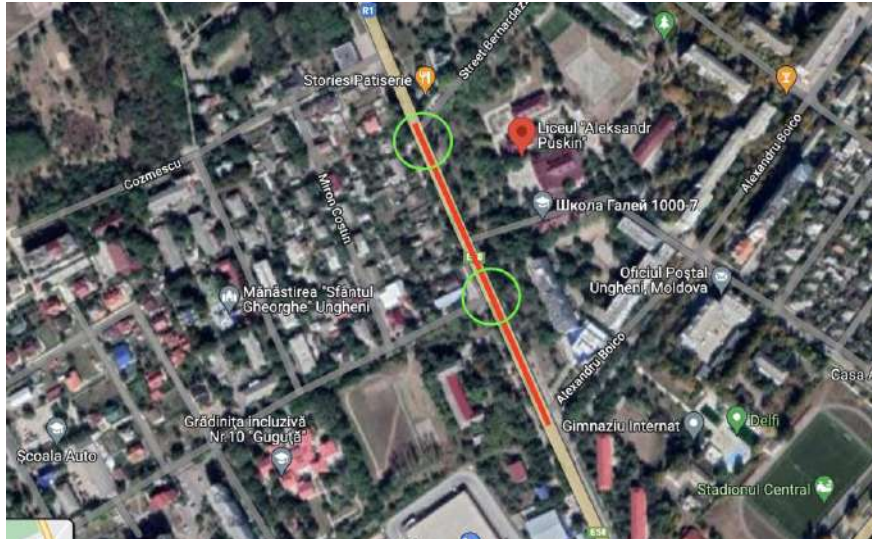


Figure 38: Pedestrian risk areas assessed in Ungheni

Source: Google Maps

Figure 39 shows the locations where the assessments were conducted. Location 1 is at Decebal and Bernardazzi intersection. Location 2 is at Decebal and Ciprian Porumbescu street.

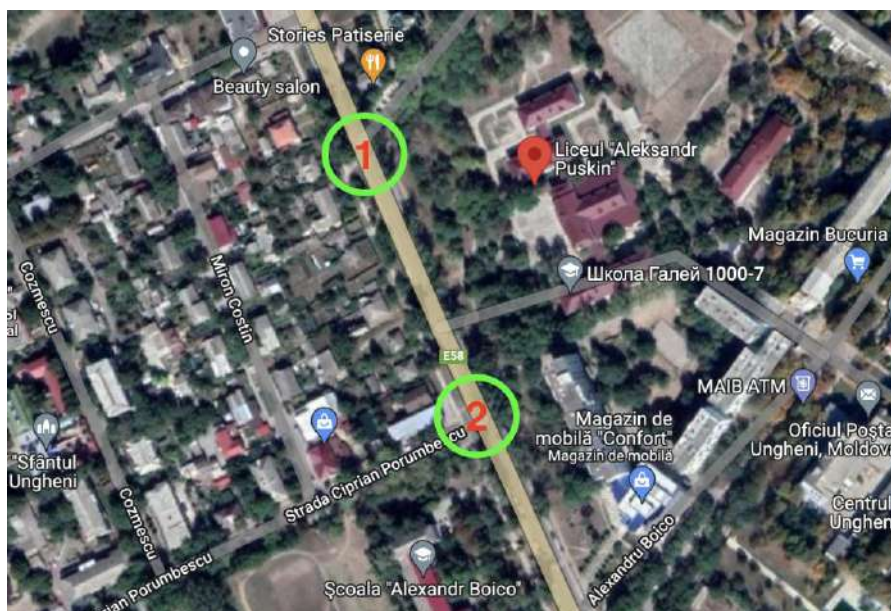


Figure 39: Locations assessed at "Aleksandr Puskin" Lyceum in Ungheni

Source: Google Maps

Location 1 is an intersection on main street (Decebal) and a secondary street (Bernardazzi). The junction is slightly angled and has a pedestrian crossing only on Bernardazzi side.



Figure 40: Ungheni, Decebal street, area of "Alexandr Pushkin" Lyceum

Source: ACM



Figure 41: Ungheni, Decebal and Bernardazzi street, area of "Alexandr Pushkin" Lyceum

Source: ACM

However, due to the fact that the closest pedestrian crossing is at Ciprian Porumbescu street (180 metres away); there is a presence of a frequent illegal crossing of the street.

The illegal crossing is stimulated by a pedestrian pathway that connects both sides of the street.



Figure 42: Ungheni, Decebal and Bernardazzi street, area of "Alexandr Pushkin" Lyceum

Source: ACM



Figure 43: Ungheni, Decebal and Bernardazzi street, area of "Alexandr Pushkin" Lyceum. Source:

ACM

The presence of the crosswalk on Via Bernardazzi and the pedestrian path on both sides of Via Decebal is misleading, suggesting that crossing Via Decebal is allowed.

This fact represents an increased risk for pedestrians, especially for children travelling to and from school.



Figure 44: Ungheni, Decebal and Bernardazzi street, area of "Aleksandr Pushkin" Lyceum

Source: ACM

The second location represents a traffic light pedestrian crossing at the junction of Decebal and Ciprian Porumbescu Street.



Figure 45: Ungheni, Decebal and Porumbescu street, area of "Alexandr Pushkin" Lyceum

Source: ACM

Because both streets are two-way main streets, a traffic light regulates the intersection.

However, Decebal is a two-way wide street with each lane having almost 4 metres. With a speed regime of 50 km/h, it is quite dangerous for pedestrians with special needs or for small kids.

Speeding and fatal crashes are being reported regularly on this street:

<https://stiri.md/article/social/accident-mortal-la-ungheni-tanarul-ar-fi-mers-cu-150-km-h>

<https://unghiul.com/trei-accidente-rutiere-in-municipiul-ungheni-intr-o-singura-seara/>

<https://www.jurnal.md/ro/news/ac356d262fa2eb97/un-baietel-de-noua-ani-din-ungheni-lovit-de-o-masina-in-timp-ce-se-deplasa-cu-bicicleta.html>



Figure 46: Ungheni, Decebal and Porumbescu street, area of "Alexandr Pushkin" Lyceum

Source: ACM

Results

Table 8 presents the Star Rating for each of the assessed locations before and after the improvements and Figures 47 and 50 show the star ratings before and after the proposed improvements.

Location	Results before implementation	Results expected after implementation
Name of location 1	3	5
Name of location 2	3	5

Table 8: Results before and after improvements at the points assessed



Figure 47: The safety level of the area according to the Star Rating for Schools tool. "Alexandr Pushkin" school zone, before, Ungheni.

Source: iRAP Demonstrator tool, ACM

Table 9 highlights the key improvements to be implemented in the assessed locations.

The assessed locations can achieve a 5-star rating after the implementation of the improvements that include the following:



- School zone warning signs installation, signs and markings to guide drivers and warn them of their proximity to a school.
- 30 km/h speed limit introduction on Decebal Street, in perimeter between Bernardazzi and Porumbescu streets.
- Raised pedestrian crossing at the intersection of Decebal and Porumbescu Street.
- Additional raised pedestrian crossing at the intersection of Decebal and Bernardazzi Street.
- Redesign of the Decebal/Porumbescu intersection with curb radius reduction and pedestrian refuge island.

Decebal street		
Attribute	Before: 3 stars	After: 5 stars
Number of lanes	2	2
School Zone Warning	No school zone	Signs/Markings
Pedestrian crossings	Marked	Raised
Speed limit	50 km/h	30 km/h
Traffic lights	Present	Present
Traffic calming measures	No	Yes

Table 9: Interventions proposed for Decebal Street, Ungheni



Figure 48: Example of raised pedestrian crossing. Source: Google photos



Figure 49: Example of refuge island at the intersection. Source: Google photos

As a result of proposed interventions the Star Rating for Schools will improve to 5 stars.



Figure 50: The safety level of the area according to the Star Rating for Schools tool. "Alexandr Pushkin" school zone, after improvements, Ungheni.

Source: iRAP Demonstrator tool, ACM

Location - "Mihai Eminescu" lyceum area

For this assessment the "Mihai Eminescu" Lyceum has been selected.

<https://maps.app.goo.gl/Kwcsh6cJ4HcsYuN2A>

Assessment

The assessment has been performed on Nationala Street, at the intersection with Alexandru cel Bun street.

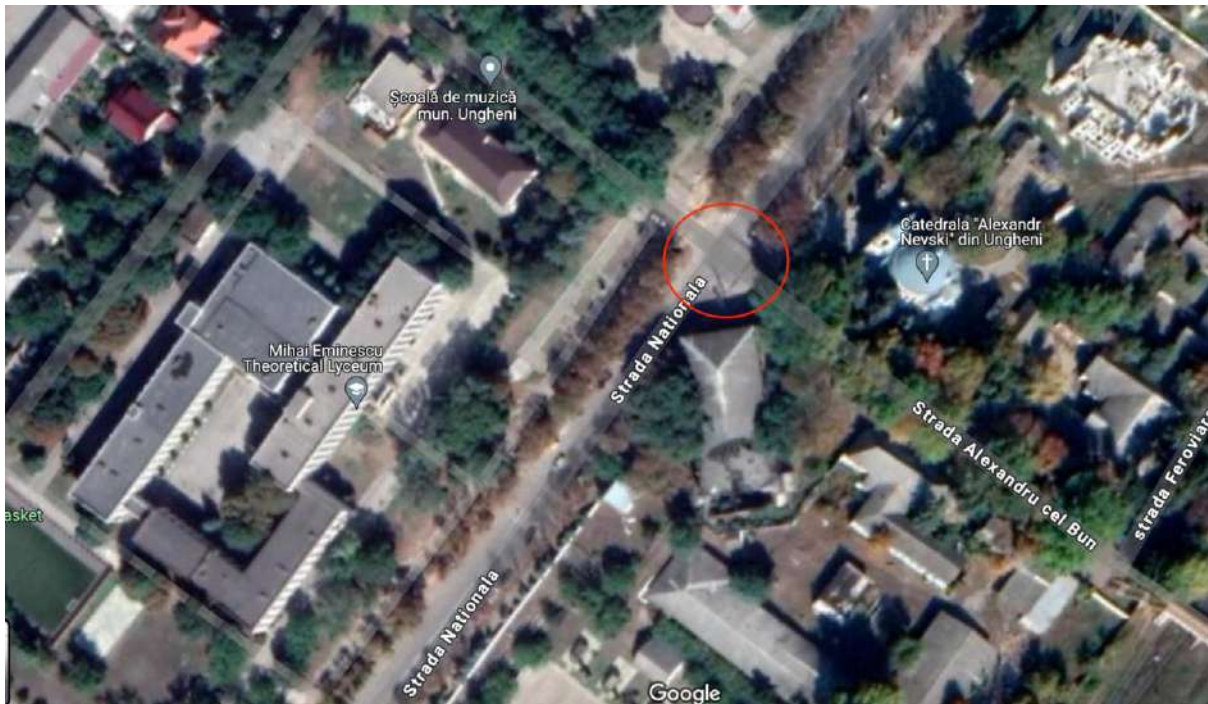


Figure 51: Location of the assessed area on Nationala Street, Ungheni

Source: Google photos

Nationala street is the main street of Ungheni. It is a two-way street with four lanes: two for traffic and two for parking, on each side.

Each lane is 3 metres wide, forming a carriageway almost 12 metres wide.



Figure 52: Parking mode, Nationala Street, Ungheni. Source: ACM

The Nationala street has 40km/h speed limit and has "School zone" sign at the pedestrian crossings next to the school.



Figure 53: Pedestrian crossing on Nationala Street, school area, Ungheni. Source:ACM

However, the crossing have a low level of pedestrian safety because of the Nationala street has a very intense traffic and the crosswalk visibility is reduced by the parked cars along the street.

Also, because of the wideness of the carriageway and lack of traffic calming measures, the assessed intersection is quite dangerous for pedestrians.

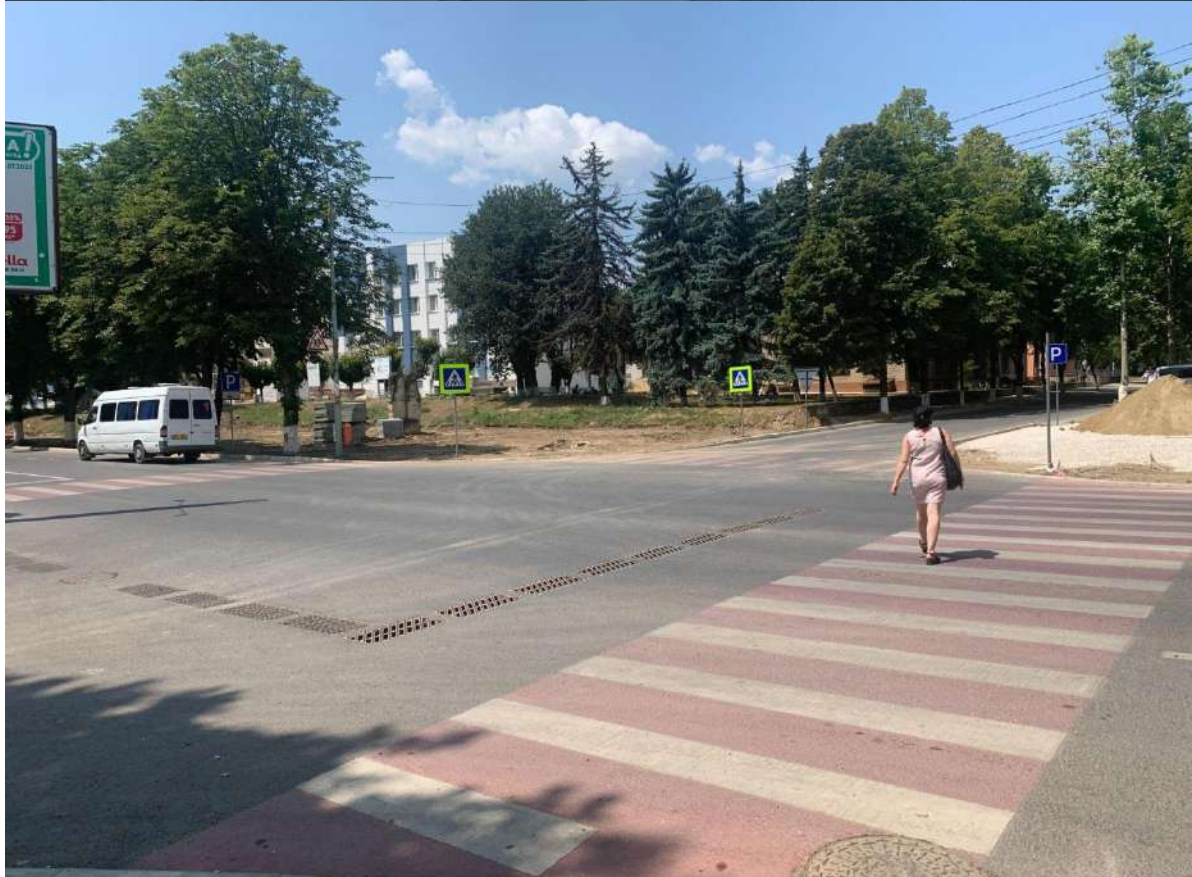
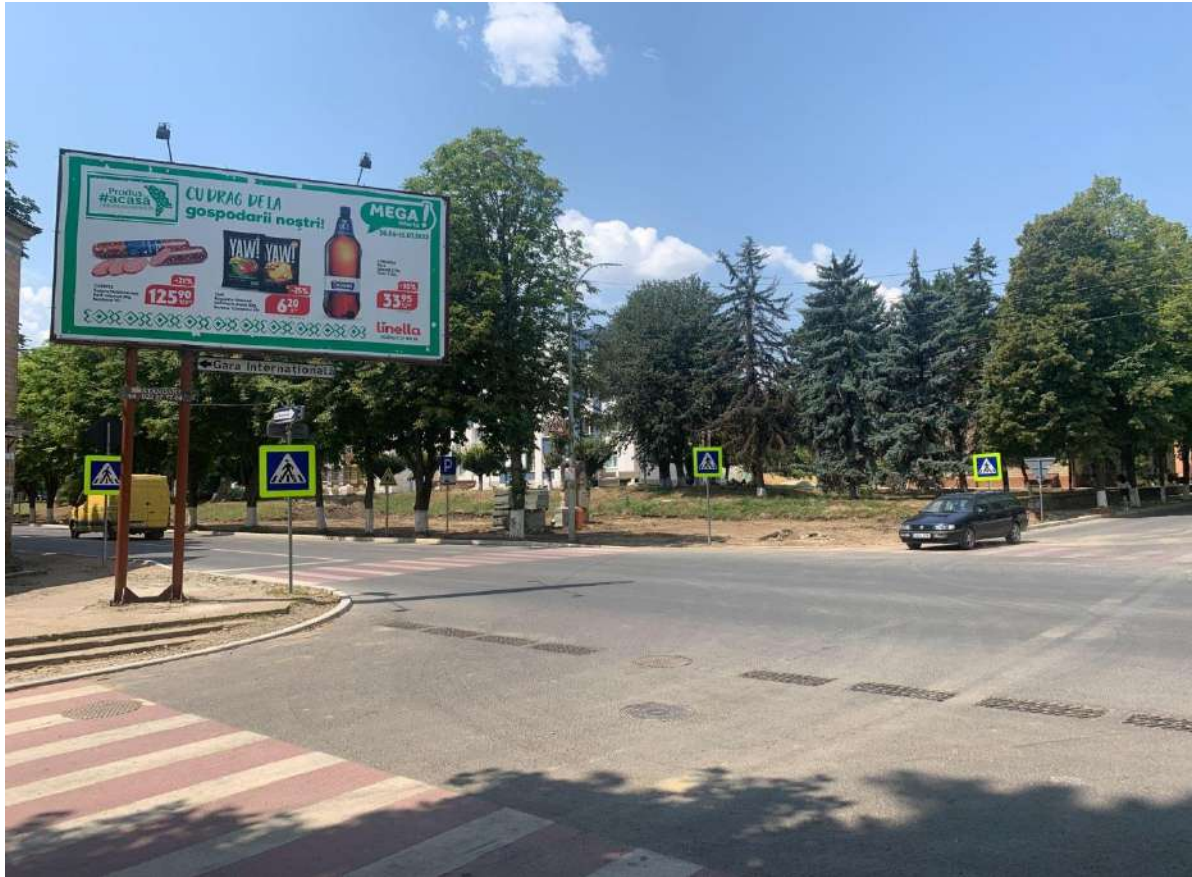


Figure 54: Pedestrian crossing area, “M. Eminescu” Lyceum, Ungheni. Source: ACM

Results

Table 10 presents the Star Rating for each of the assessed locations before and after the improvements and Figures 55 and 56 shows the star ratings before and after the proposed improvements.

Location	Results before implementation	Results expected after implementation
Nationala/Alexandru cel Bun intersection	1	4

Table 10: Results before and after improvements at the area assessed



Figure 55: The safety level of the area according to the Star Rating for Schools tool. Existing situation
 Source: iRAP Demonstrator tool, ACM



Figure 56: The safety level of the area according to the Star Rating for Schools tool. After proposed interventions. Source: iRAP Demonstrator tool, ACM.

Table 11 highlights the key improvements to be implemented in the assessed locations.

The assessed locations can achieve a 4-star rating after the implementation of the improvements that include the following:

- 30 km/h speed limit introduction on Nationala Street, in perimeter between Alexandru cel Bun and Solidaritatii streets.
- Raised pedestrian crossing at the intersection of Nationala and Alexandru cel Bun Street.
- Redesign of the Nationala/Alexandru cel Bun intersection with curb radius reduction and pedestrian refuge island.

Nationala Street		
Attribute	Before: 1 star	After: 4 stars
Curb radius reduced	No	Yes
Pedestrian crossings	Marked	Raised
Speed limit	40 km/h	30 km/h
Traffic calming measures	No	Yes

Table 11: Interventions proposed for Nationala Street



Figure 57: Example of refuge island at the intersection. Source: Google photos

As a result of the provided interventions the Star Rating for Schools of the assessed location can increase from 1.9 to 4.1 stars.

Location - "Vasile Alecsandri" lyceum area

For this assessment the "Vasile Alecsandri" Lyceum has been selected.

<https://maps.app.goo.gl/t6XJWxMifUy8fWZdA>

The assessment has been performed on Mihai Eminescu Street, in the perimeter of Vasile Alecsandri and Veronica Micle streets. It is a main street, connecting two blocks of the lyceum and it is a way used for most of the lyceum students during the day.

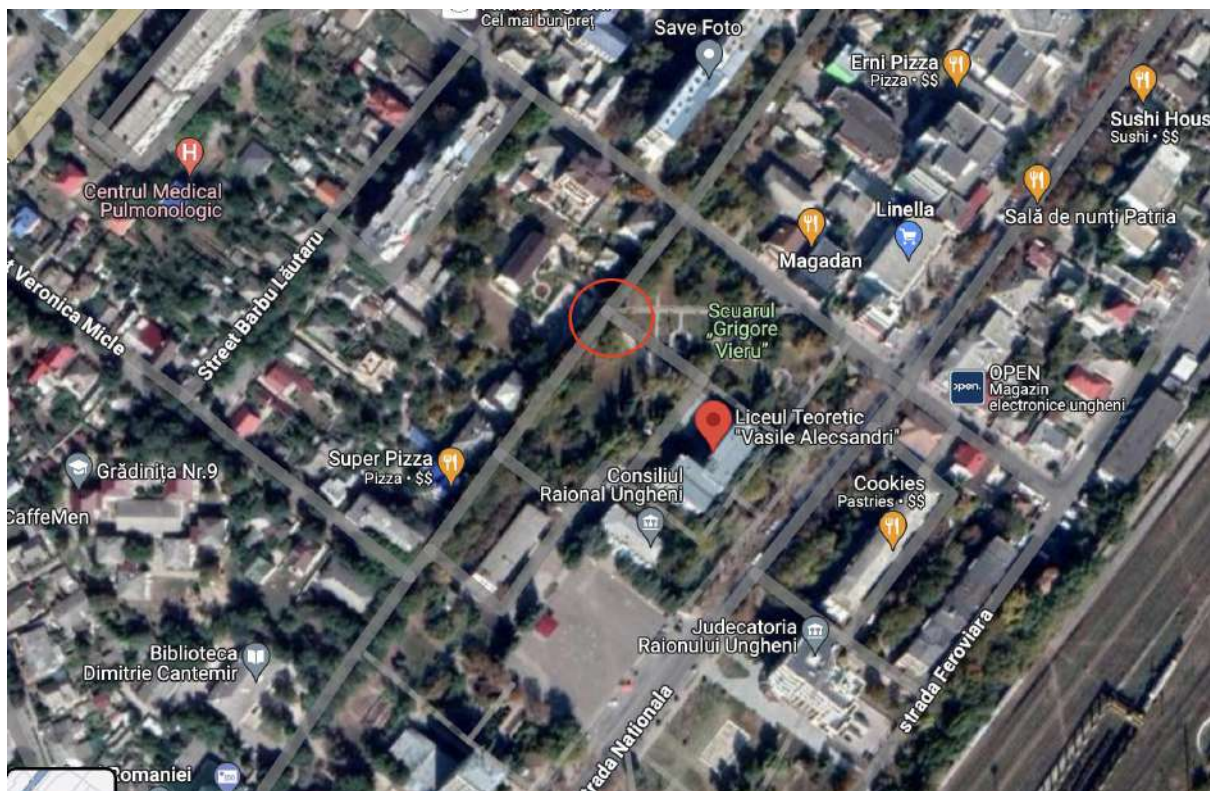


Figure 58: Assessed area "Vasile Alecsandri" lyceum, Ungheni. Source: ACM

Assessment

Mihai Eminescu street is a local street situated in the city centre and it is one of the main routes for the children going to and from school, because it connects the housing zone with the backyard of the school.

It is a two lane street, with 3 metres each lane. It used to be a two-way street, but recently it has been transformed into a one-way street.

Some 50 metres before the intersection of Eminescu and Alecsandri street, there is a pedestrian crossing.

The traffic on the Eminescu street is not very intense, however the crosswalk is quite dangerous because of the parked cars along the street and it is not very accessible because of the curbs.



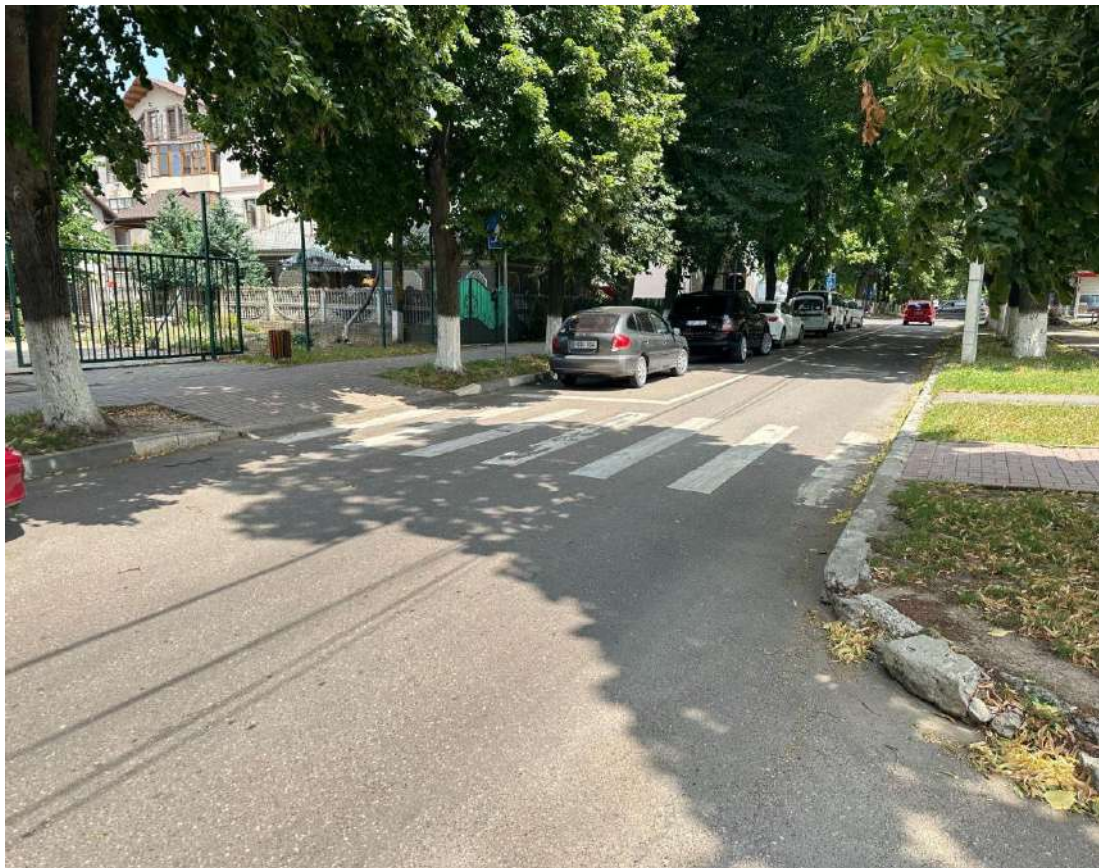


Figure 59: Pedestrian crossing, "Vasile Alecsandri" lyceum area, Ungheni. Source: ACM

Results

The pedestrian crossing near the "Vasile Alecsandri" lyceum in Ungheni was secured through tactical urbanism interventions, namely:

- Marking the pedestrian crossing;
- Preventing parking in the area 10 metres from the crossing using plastic bollards;
- Applying reflective markings and coloured paint along the sidewalk;
- Lowering the curbs on both sides of the crossing and construction of access slopes from the sidewalk;
- Installation of traffic signs (including 30 km/h limit, "Attention, children", "Pedestrian crossing").

Table 12 highlights the key improvements implemented in the assessed location.

Mihai Eminescu street		
Attribute	Before: 3 stars	After: 4 stars
Number of lanes	2	2
School Zone Warning	No school zone	Signs/Markings
Pedestrian crossings	Marked	Marked and narrowed
Speed limit	50 km/h	30 km/h
Parking prevention	No	Yes

Table 12: Interventions performed at the location

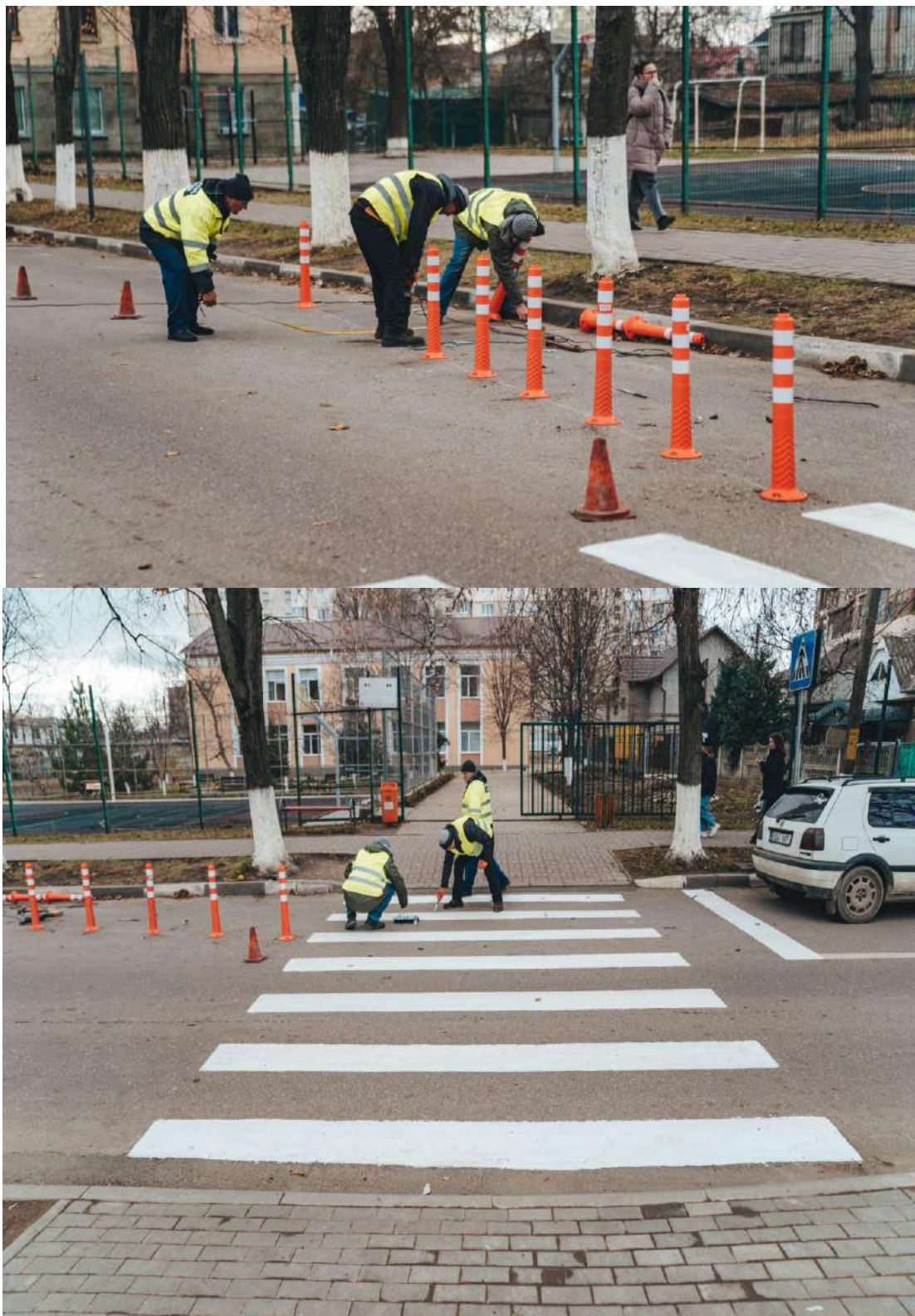


Figure 60: Pedestrian crossing, “Vasile Alecsandri” lyceum area, after proposed interventions, Ungheni. Source: ACM



Figure 61: Pedestrian crossing, “Vasile Alecsandri” lyceum area, after proposed interventions, Ungheni. Source: ACM

Following the intervention, the security rating of the pedestrian crossing, assessed according to the Star Rating methodology, increased from three stars to four stars, due to the reduction of operating traffic speed and the improvement of the visibility and accessibility of the pedestrian crossing.

Table 13 presents the Star Rating for the analysed location before and after the improvements.

Location	Results before implementation	Results after implementation
Location Singerei	1 (1.9)	4 (4.6)

Table 13: Results before and after improvements at the point assessed.



Figure 62: The safety level of the area according to the Star Rating for Schools tool. Existing situation.

Source: iRAP Demonstrator tool, ACM



Figure 63: The safety level of the area according to the Star Rating for Schools tool. After intervention.
Source: iRAP Demonstrator tool, ACM



Conclusions and general recommendations

The proposed interventions to increase the level of road safety in the assessed area are important and necessary, considering the concentration of educational institutions and number of vulnerable pedestrians crossing the area.

The assessment carried out within the project identified a low safety level for pedestrians, especially for children who frequent the schools in the area.

All the listed locations show common infrastructure problems that reduce pedestrian safety around schools: lack of speed reduction zones, lack of traffic calming elements, inadequately marked pedestrian crossings or their absence.

The evaluation accomplished using the iRAP tool showed that all the assessed locations have a low level of safety, and the proposed solutions for intervention are effective for increasing the rating and safety level for all traffic participants.

The proposed interventions are aimed at traffic calming and preventing road accidents involving pedestrians, as well as increasing the general level of road safety in the perimeter of educational institutions.

The application of the provided measures requires coordination between local authorities, school administration and local residents.

As infrastructure interventions require time for design coordination and approval, but also budget for implementation, a solution could be to test interventions through tactical urbanism measures, with the use of plastic bollards, delimiters and paint.

As further action, it is necessary to involve the selected schools' administration, parents and the local residents in order to gain support for the intervention and initiate a dialogue with the local public authorities and police for the authorization and implementation of proposed interventions.