

REPORT

Results of interventions for ensuring the accessibility of five pedestrian crossings in Chisinau

(*'Equal Road Rights project', 2020*)



Chisinau, 2022

INTRODUCTION

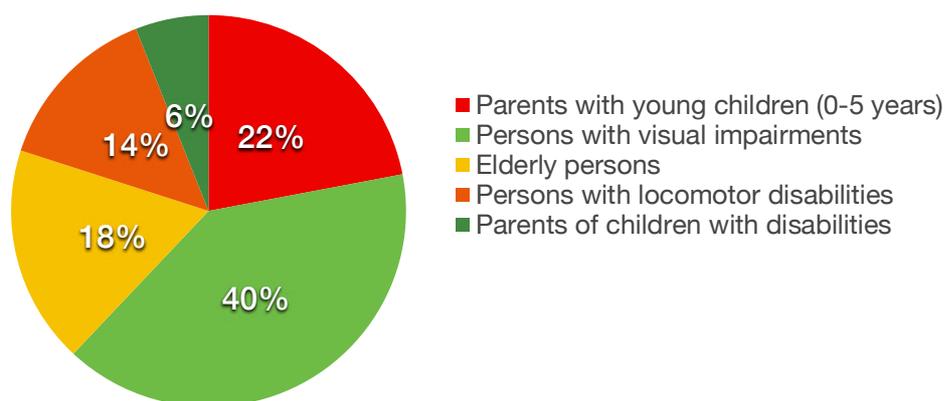
This report presents the results of interventions for the intervention of five pedestrian crossings according to the principles of universal design, made by the Automobile Club of Moldova (ACM), UNIVERSAL ACCES SRL and Center for the Rights of Persons with Disabilities (CDPD) within the 'Equal Road Rights' project. The project is initiated and implemented by the ACM, funded by the FIA, FIA Foundation and Eastern Alliance for Safe and Sustainable Transport (EASST), and supported by the Mayor's Office of Chisinau Municipality and the National Public Security Inspectorate of the General Police Inspectorate, Republic of Moldova.

At the initial stage of the project, in May 2020, a study was carried out, "Identifying the needs of people from groups with limited mobility (GLM) regarding the safety of crossing streets in Chisinau".¹

Based on the inception study-report, interventions and renovation works in the areas selected by the project beneficiaries were carried out within the project in cooperation with local authorities.

This final report (produced in March 2022) describes the technical work carried out and the results of a survey of 50 people with limited mobility

Figure 1. Distribution of survey participants by categories



using the renovated pedestrian crossings.

¹ <http://saferoads.md/index.php?view=news&t=pietonilor-cu-mobilitate-limitate-sunt-nclcate-drepturile-de-acces-liber-i-sigur-pe-strzile-chiinului->

Out of all the people with limited mobility surveyed, there were 22% parents with young children, 40% people with visual impairments, 18% elderly people, 14% people with locomotor disabilities (including wheelchair users) (Figure 1). In terms of gender distribution, 63% of

Figure 2. How often, since August 2020, did you cross these pedestrian crossings?

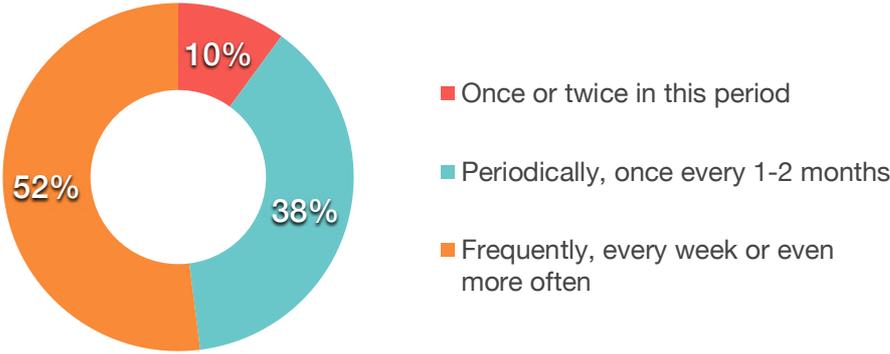
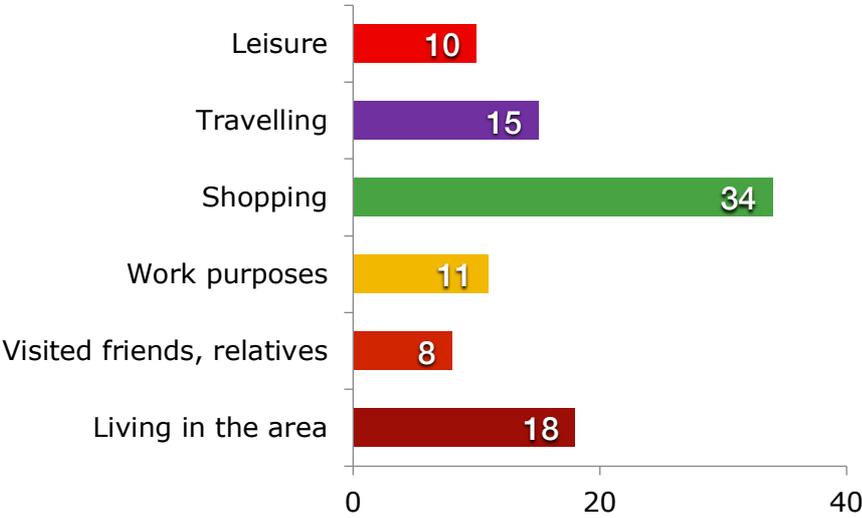


Figure 3. What was the purpose of your visit to that area / crossing the intersections named? (answers)



respondents were women and 37% were men.

People were asked how often they visited the renovated intersections since August 2020. The majority (52%) answered that they cross the given intersections weekly, or even more often (Figure 2). Most of the respondents mentioned the purpose of their visiting that area: shopping or they live in the neighborhood (Figure 3).

1. RENOVATED PEDESTRIAN CROSSINGS

As a result of the study “Identifying the needs of people from groups with limited mobility on safety of crossing streets in Chisinau”, carried out in 2020, five pedestrian crossings proposed for renovation were identified. They are located at the following intersections: 1. Dacia Boulevard – Zelinski Street; 2. Ștefan cel Mare Boulevard – Pushkin Street; 3. Ismail Street – Mitropolit Varlaam Street.

These pedestrian crossings were suggested by the persons with visual disabilities and other people with limited mobility who participated in the research “Identifying the needs of people from groups with limited mobility on safety of crossing streets in Chisinau”. Subsequently, the ACM made an appeal to the General Directorate of Transport and Communication Routes of the Chisinau Mayor’s Office, requesting cooperation in the renovation of the selected pedestrian crossings.

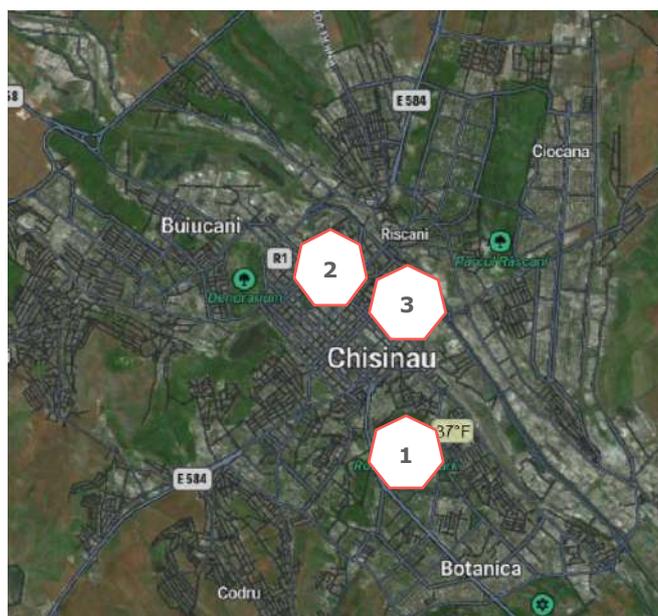


Figure 3. Intersections renovated within the project

	Intersection	Information	Proposed renovations
1.	Dacia Boulevard – Zelinski Street (2 pedestrian crossings)	- The crossing was renovated in 2019-2020, but there was no provision for the installation of acoustic/signaling traffic lights .	- Installation of acoustic traffic lights (4 devices) - Installation of tactile paving

	<ul style="list-style-type: none"> - It has been mentioned several times by people from GLM (groups with limited mobility) - There is an intense traffic of pedestrians and vehicles in the intersection 	
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Figure 4. Dacia-Zelinski pedestrian crossing

	Intersection	Information	Proposed renovations
2.	Stefan cel Mare Boulevard – Puskin Street	<ul style="list-style-type: none"> - The crossing was renovated in 2017-2018 as part of street repair works, but no acoustic traffic lights were installed. - It has been mentioned several times by people from GLM - There is an intense traffic of pedestrians and vehicles in the intersection - In the immediate vicinity there are several important public institutions (Government, City Hall, etc.), as well as cultural centers, shopping centers, etc. 	<ul style="list-style-type: none"> - Installation of sound-based traffic lights (2 devices)



Figure 5. Pedestrian crossing Stefan cel Mare Boulevard – Puskin Street

	Intersection	Information	Proposed renovations
3.	Ismail Street – Mitropolit Varlaam Street	<ul style="list-style-type: none"> - The interviewed people representing GLM several times indicated it as dangerous and with poor pedestrian visibility. - In the area, there are transport hubs and important points of attraction: the central market, bus station, Tiraspol market, etc. - There is an intense traffic of pedestrians and vehicles in the intersection 	<ul style="list-style-type: none"> - Arrangement of a pedestrian island on Ismail Street, due to more than 4 lanes and intense traffic. - Lowering curbs at pedestrian crossings - Installation of sound-based traffic lights (6 devices)



Figure 6. Ismail-Varlaam intersection

2. TECHNICAL WORK DONE

In July 2020, ACM project support was offered to the municipal company LUMTEH Electrical Lighting Networks in the application of SM ISO 23600:2017 standards regarding the installation and type of signal for sound-based traffic lights. In August 2020, the technical settings of traffic lights, specifically the schedule and sound volume, were discussed with visually impaired people.

ACM and its partner organization UNIVERSAL ACCES SRL procured 10 devices of traffic lights with audio signals. The chosen device was the sound device UZS-1M, manufactured by the Comsignal LLC. This equipment was chosen jointly with LUMTEH municipal company following the evaluation of the operation of acoustic traffic lights in Chisinau at that time. It was found that sound-based traffic lights must comply with the national standard SM ISO 23600:2016, particularly with the requirement 4.3.2.3, i.e. that the acoustic signal volume must automatically adjust to the level of external noise. In addition, it is recommended to install traffic lights with audio signals in compliance with the requirements of SM ISO 23600:2016, namely that loudspeakers need to be installed and directed strictly in the area of the pedestrian crossing, if necessary, placed on separate pillars. It is a priority to install traffic lights at large and busy intersections with

several lanes, where crossing is dangerous. It is also necessary to install acoustic traffic lights at intersections where points of attraction, public institutions, medical centers, markets, transport stations, parks and state institutions are located.

In March 2021, acoustic traffic lights were installed. In total, **10 devices were installed**: two at the Dacia-Zelinski crossing (Figure 7), two at the Stefan cel Mare-Puskin crossing (Figure 8), and six at Ismail-Varlaam crossings (Figure 9).

Subsequently, UNIVERSAL ACCES and ACM teams provided assistance to LUMTEH company correctly set the signal of acoustic traffic lights, as a frequent issue is the fact that due to incorrect installation either the visually impaired cannot hear the signal, or people living in nearby houses complain that the sound is too disturbing.

Upon installation of the traffic lights by LUMTEH, an evaluation was made, and it was found that technical adjustments were needed:

- focusing loudspeakers strictly in the direction of the pedestrian crossing;
- replacing the signal of the traffic lights with one that is not too disturbing but still can be heard.

In June 2021, ACM, UNIVERSAL ACCES, LUMTEH and visually impaired people made a visit on site to adjust the signal of the traffic lights.

Subsequently, the project team made another visit on site. The changes made were appreciated by the people working nearby and by the visually impaired.

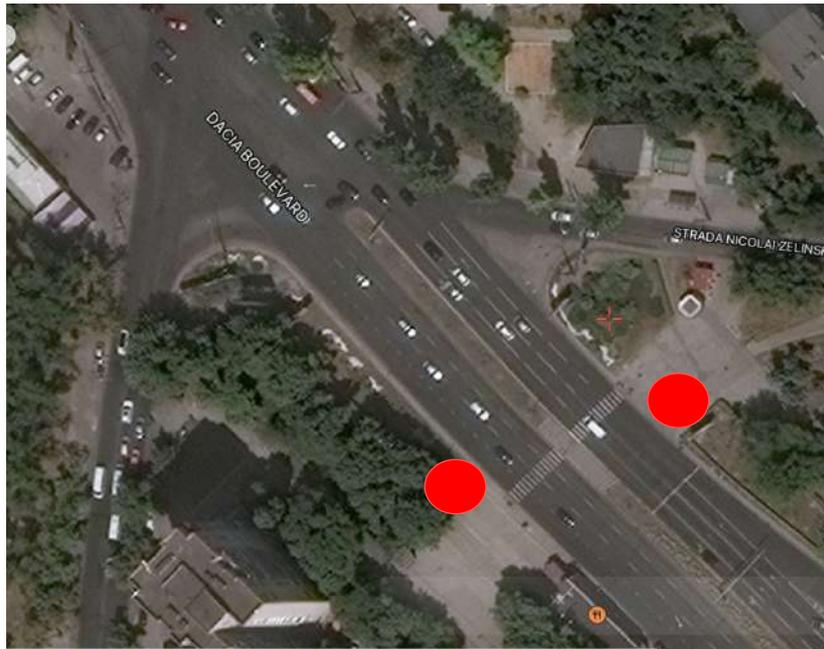


Figure 7. Two acoustic traffic lights were installed at the Dacia-Zelinski intersection

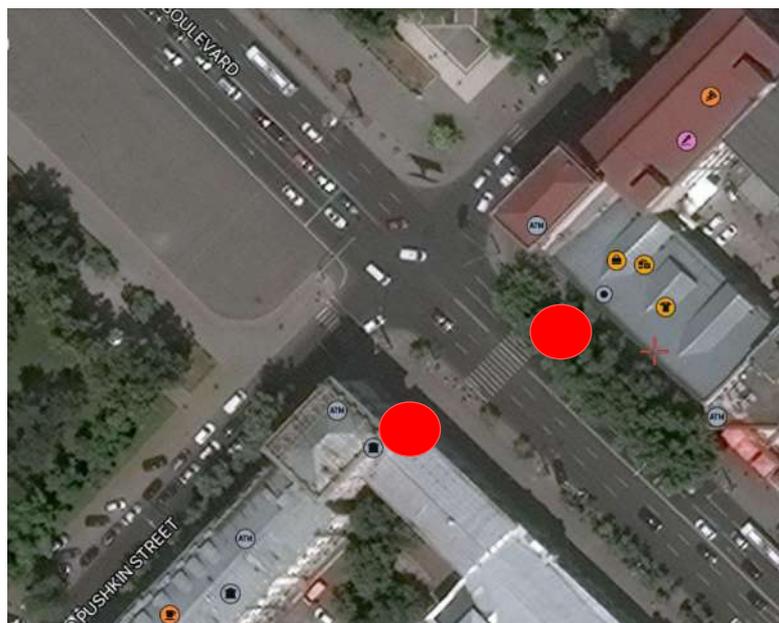


Figure 8. Two devices were installed at the Stefan cel Mare-Pushkin crossing

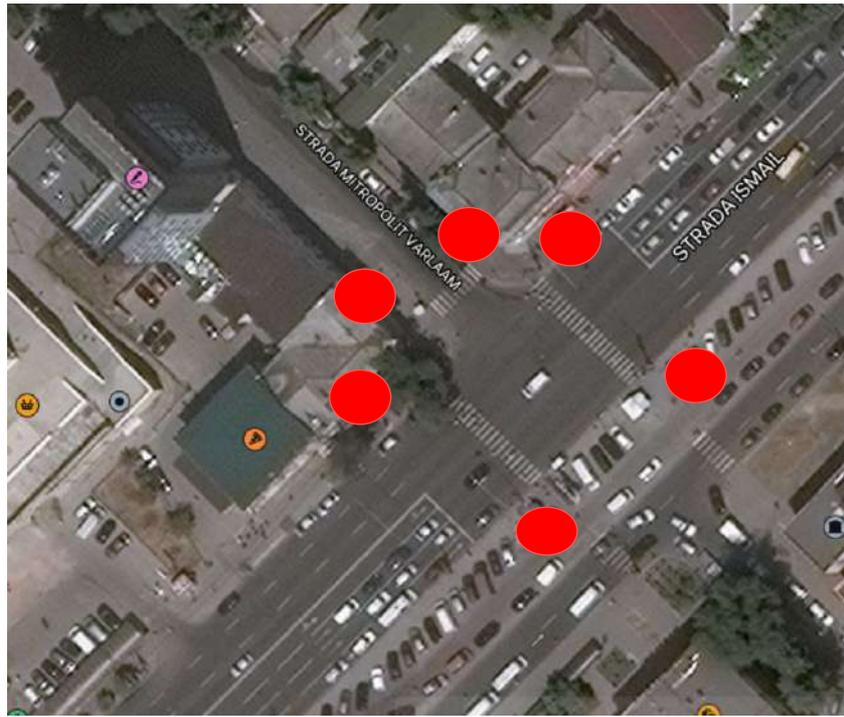


Figure 9. Six acoustic traffic lights were installed at the Ismail-Varlaam intersection

3. USER SURVEY

3.1. Road traffic safety in Chisinau for pedestrians with limited mobility

The majority of people representing groups with limited mobility (GLM) interviewed in March 2022 feel unsafe or at risk when they travel within the city, particularly when crossing the street. When asked **whether they feel safe moving around the city**, 33% of respondents said they felt unsafe, and 58% felt average/acceptable (Figure 10). 42% of pedestrians from GLM feel unsafe crossing the street, and 54% consider the crossing acceptable (Figure 11).

Figure 10. Do you feel safe in the city as a pedestrian?

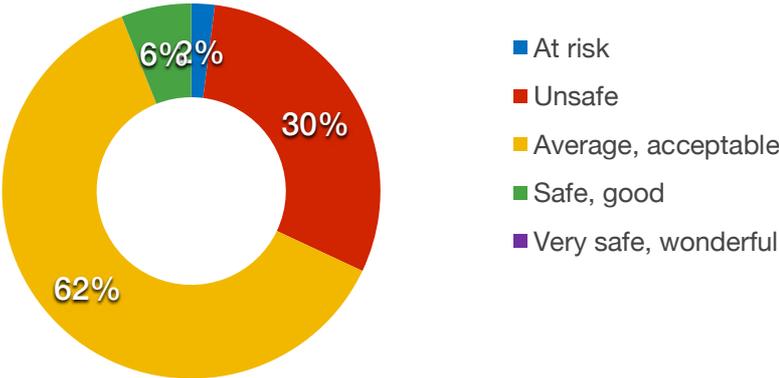
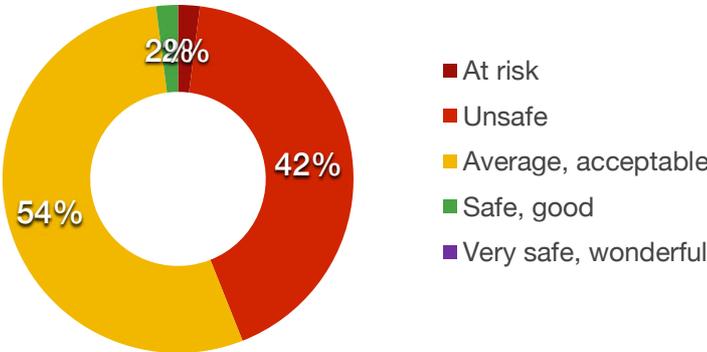


Figure 11. How safe do you feel crossing the street at a pedestrian crossing (intersection)? (March 2022)



To report the challenges, they encounter when crossing the street or moving through the city, people with limited mobility identified three categories of issues.

1. **Lack of facilities for people with disabilities** at pedestrian crossings, such as ramps, acoustic traffic lights, tactile paving.

Lack of acoustic or improperly regulated traffic lights in Chisinau were the primary reported issues by the people with visual impairments. Thus, the visually impaired cannot detect where the crossing is and do not know when they can cross due to noise. The existing sound-based traffic lights in some cases are poorly installed, are heard from two directions when they start to work, and it is not clear what color the traffic light at the crossing is.

The survey respondents also mentioned the lack of tactile paving or ramps at curbs. At pedestrian crossings renovated in recent years, where tactile paving and lowered curbs are available, it is much simpler and safer for people with limited mobility to cross the street.

"I don't feel safe moving around the city without an accompanying person. There are a lot of cars parked on the sidewalk or at the intersection and I bump into them when crossing the street... The sidewalks are damaged", – a respondent told.

2. **Obstacles** in front of pedestrian crossings.

Steps on the sidewalk, bollards/parking limiters, sewer wells without a lid, high curbs are obstacles that prevent people with limited mobility from moving. Several respondents noted that they were disturbed by cars parked on the sidewalk near pedestrian crossings, which limit visibility. Another frequently reported issue was damaged sidewalks, including at pedestrian crossings.

3. **Problems with the organization of road traffic.**

People with limited mobility believe that pedestrians are not visible on the crossing. Not all drivers let them pass or give them priority. Also, in some

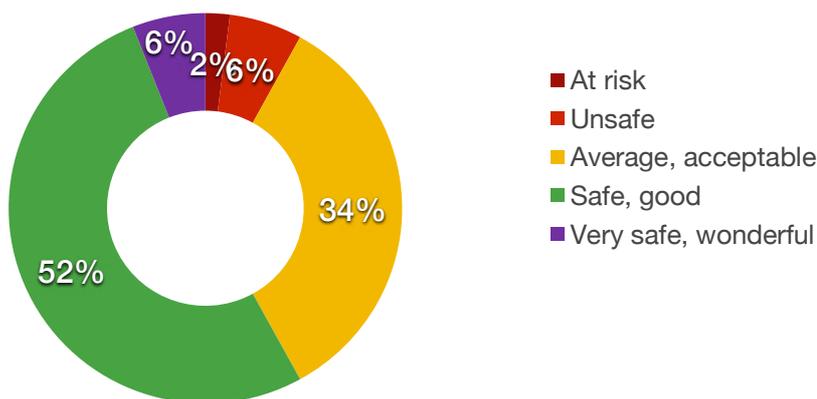
cases the time for green light is too short and they do not manage to cross, so pedestrian safety islands are needed.

The presence of the “green arrow” indicator (indicator 6.23), which allows cars to go on the red light, makes the movement of people with limited mobility more difficult. It is quite challenging for visually impaired people to find their way, because they do not know when the green lights up, as cars move constantly. For people with mobility disabilities, parents with young children and the elderly it is also difficult because drivers do not have the patience to wait for them to cross.

“At wider intersections I usually fail to cross the street within the time indicated by the traffic light. Either I wait between two lanes or I finish crossing on the red light, and that makes me feel insecure. I move with crutches. Another challenge is that not all drivers give way and I am very careful when I want to cross the street”.

3.2. Evaluation of pedestrian crossing renovations (Dacia-Zelinski, Ismail-Varlaam, Stefan cel Mare-Pushkin)

Figure 12. How safe did you feel crossing the street at THESE specific pedestrian crossings (intersections)?

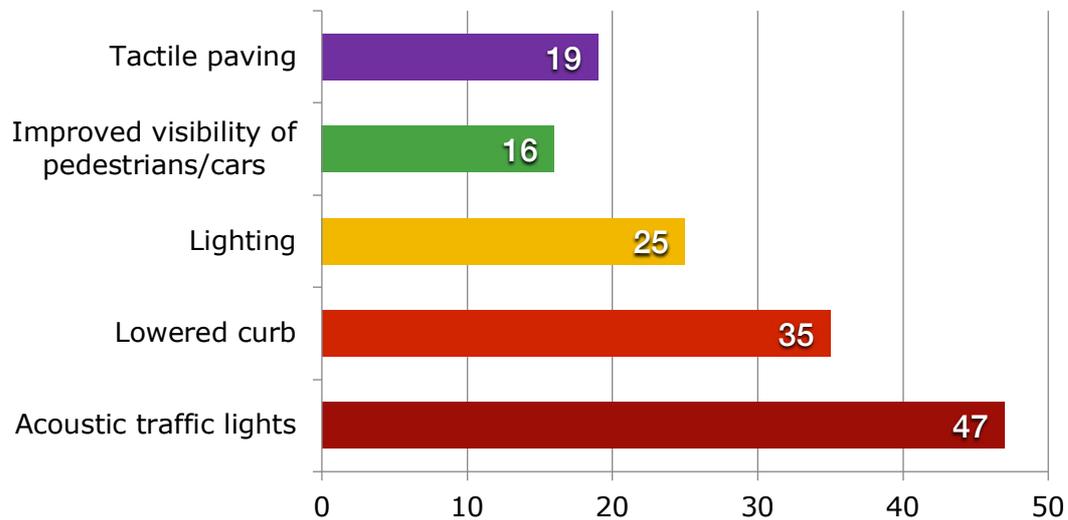


- **How safe did you feel crossing the road at these pedestrian crossings (renovated intersections)?**

34% of survey participants said they felt acceptable, 52% felt safe, and 6% felt very safe when they crossed the pedestrian crossings renovated as part of the project. Compared to other intersections in the city (the

crossing of which felt acceptable for 54% and safe for 2%), we notice that the number of people who feel safe crossing the renovated intersections is practically twice as high. (Figure 12)

Figure 13. Which renovations do you find have increased your safety and comfort in these intersections?



- ***Which renovations do you find have increased your safety and comfort in these intersections?***

Most of the respondents appreciated the installation of acoustic traffic lights; also, the lowered curb (at the intersections of Dacia-Zelinski and Stefan cel Mare-Pushkin) was appreciated, as well as the improved lighting near the pedestrian crossing (Figure 13).



Figure 14. Equipment installed at the intersection of Ismail-Varlaam

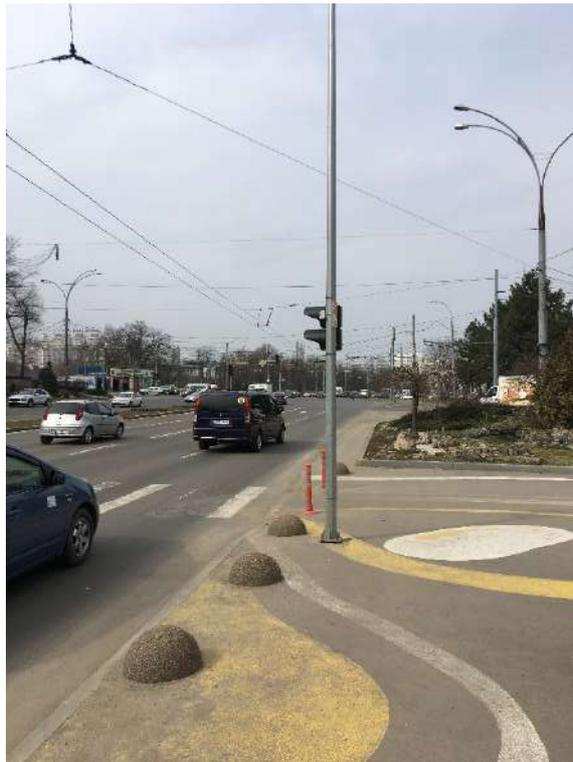


Figure 15. Acoustic traffic light at the intersection of Dacia-Zelinski



Figure 16. Traffic light installed at the Stefan cel Mare-Puskin crossing

- ***What suggestions do you have for improving safety in crossing these intersections?***
 - For a part of the respondents the improved pedestrian crossing was satisfactory and they had no suggestions.
 - To bring the crossing infrastructure to international accessibility standards.
 - To lower curbs at the intersection of Ismail-Varlaam, install tactile paving. To adjust the crossing. The sidewalk is too narrow in some portions. Cars stop just close to the pedestrian path and narrow the passage.
 - Several people mentioned that they would like the traffic light to hold the green light longer.

- ***What suggestions do you have in general to improve pedestrian safety in the city and crossing streets?***

The main recommendations of people with limited mobility interviewed: to install acoustic traffic lights, lower curbs, install tactile paving, repair

sidewalks, remove cars from sidewalks, remove obstacles from pedestrian paths, good lighting of pedestrian crossings.

It was also proposed to install pedestrian islands in the intersections with high risks, improve lighting of sidewalks, install some ground-level crossings and close underground crossings, separate lanes for cyclists on sidewalks.

People of GLM have come up with specific proposals for certain sectors in the city:

- Provide lighting on the sidewalk on Dokuceaev Street, remove street sales on Dokuceaev Street.
- Create a pedestrian crossing at ground level at the intersection of Ismail and Stefan cel Mare or install an elevator in the underground crossing; repair sidewalks, create parking lots in the area.

The report was presented to the Transport Department of Chisinau for consideration within the follow-up projects of street transformation/reconstruction. Currently, new proposal for pilot transformation (including proposed ones within the given report) is discussed with the Department and Police.

Conclusions

The main results of implementation of activities are as follows.

- Renovation works were carried out, according to the needs of people with limited mobility, of five pedestrian crossings located at three busy intersections in Chisinau (Dacia-Zelinski, Ismail-Varlaam, Stefan cel Mare-Pushkin).
- Ten acoustic traffic lights devices were installed in a collaboration between the municipal company LUMTEH, responsible for traffic lights management in the city, and UNIVERSAL ACCES SRL, a company that provided consultancy in the application of the standard *SM ISO 23600:2016 Assistance products for persons with visual impairments and visual and hearing impairments – Acoustic and tactile signals for pedestrian traffic lights*.
For the first time in Chisinau, devices were installed that are compatible with the traffic lights existing in the city, which allow adjusting the work schedule per days of the week and holidays.
- Activities were focused on active consultation with people with visual disabilities at all stages: intersections for priority installation of acoustic traffic lights, the operating schedule of acoustic traffic lights, the type of signal used, the way of installation of equipment.
- A survey among users showed that the safety of crossing the renovated intersections has increased considerably compared to other intersections in the city. Only 8% of respondents from GLM feel unsafe or at risk when crossing the renovated intersections, compared with 44% of persons with limited mobility who feel unsafe or at risk when crossing other intersections in the city.
- The experience obtained will serve as a basis for further renovation of pedestrian crossings, including the installation of acoustic traffic lights, in accordance with the needs of people with limited mobility, which will increase the accessibility and safety of pedestrians on the streets of Chisinau.