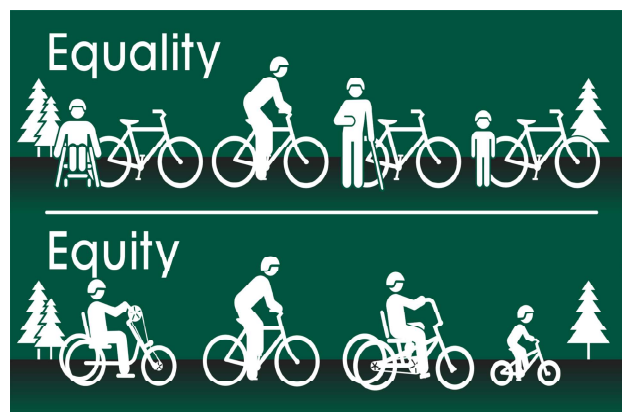


Project Report

-Group 1 -
-Accessible biking in Šiška-



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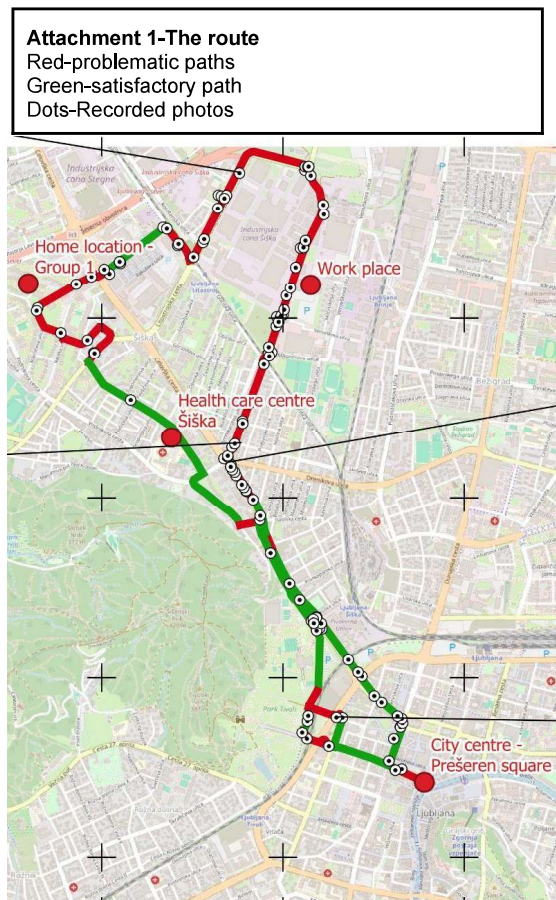
September, 2024 - Ljubljana

INTRODUCTION

The main goal of the summer school is evaluating the current state of cycling infrastructure of the city of Ljubljana, with a special emphasis on creating a comprehensive network of accessible paths for vulnerable social groups (elderly people, kids and people with limited mobility). Since these groups of people require different requirements for cycling, we studied a given route, analysed potential barriers, and devised strategies to create safer, more inclusive cycling paths.

THE ROUTE

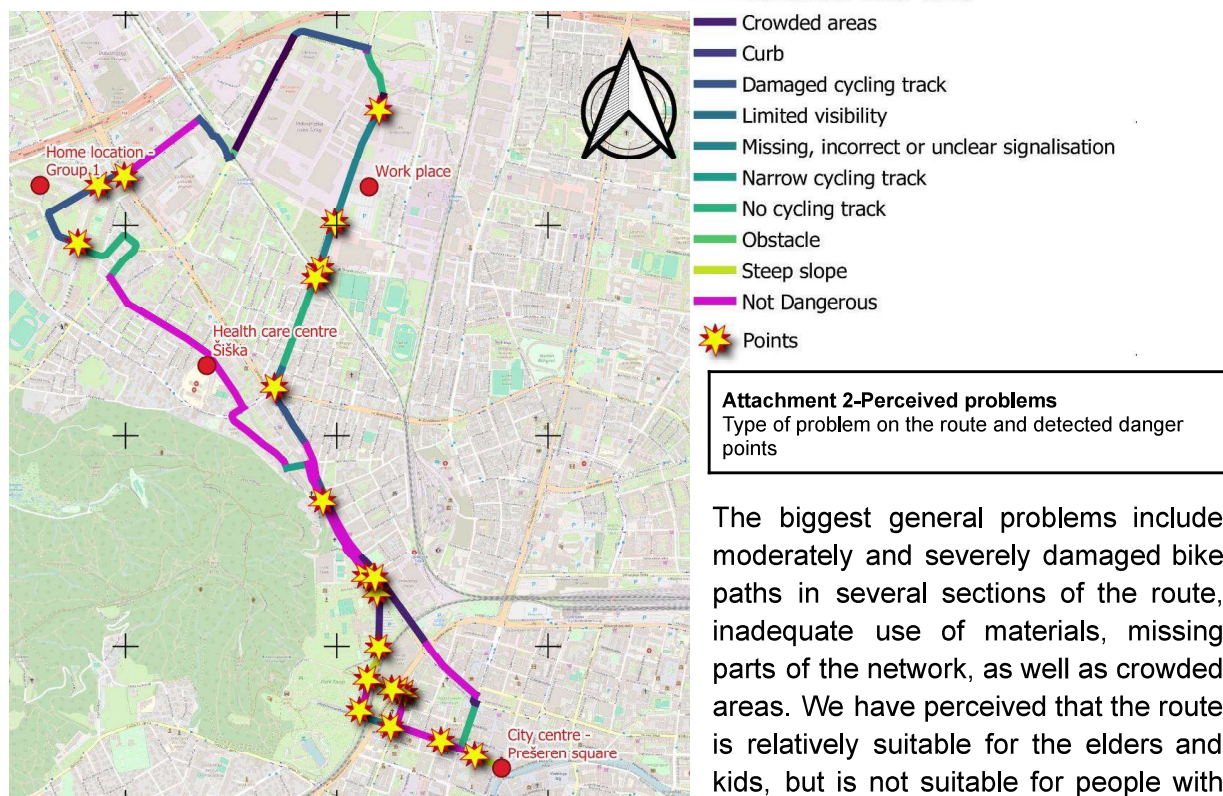
Our group was given a task to analyse a potential route for cyclers that live in Zgornja Šiška and are headed towards the three Points of Interests which are Šiška Medical Center, workplace at Šiška industrial zone - Lek, and the city centre - Prešern square. We tried to review as many roads as possible, therefore we passed 3 different routes from the city centre to Union Pivovarna, where all of the possible routes intersect - two through Tivoli park and one via Slovenska, Gosposvetska and Celovška cesta. The route was chosen after consultations and the analysis of the maps of existing and planned bike paths in the city. Afterwards, we passed through Celovška cesta and Alešovčeva ulica, all the way to the rail crossing and the entrance to the industrial zone, where we made a circle around it. We continued to Šiška and passed the residential roads and connected to the Celovška cesta. The route is about 13.5 kilometres long. Parts of the route overlap with the Green Belt around Ljubljana, which is meant to be a pedestrian and cycling path surrounded with lush vegetation.



DATA ANALYSIS

The most important criteria for locating the problems were: missing connections, path surface, slopes, obstacles, signalisation, curbs, steps, visibility, water fountains accessibility and conflicts with pedestrians and road traffic. Using QField and geopositioned photos taken by us while passing the route with bikes, we managed to map the problematic points of the route. Afterwards, via QGIS, we managed to do spatial analysis and identify the hotspots, which furthermore helped us with our solutions proposal for the problematic points and the network in general. Using QGIS we managed to mark the routes with better, worse and missing paths and also show together with recorded problems and hotspots. Via PowerPoint we presented the process and the results with maps, photos, ideas and a SWOT analysis.

PERCEIVED PROBLEMS



The biggest general problems include moderately and severely damaged bike paths in several sections of the route, inadequate use of materials, missing parts of the network, as well as crowded areas. We have perceived that the route is relatively suitable for the elders and kids, but is not suitable for people with special bikes. We noticed that the signalisation differs from road to road, and is also missing in some parts which can lead to confusion and accidents. Main problems are around the intersections, city centre and in the industrial zone.

Some of the most problematic points would be Šopotova ulica and the connection from Cankarjeva cesta to Tivoli park where there is some missing signalisation and conflicts with crowded pedestrian zones and paths, the area around Union pivovarna, where few bike paths, Celovška cesta, entrance to the park, car and bus parking intersect in a tight place. Together with these conflicts, there is a missing bike connection between the existing ones and also the road and the pavement are in a very bad condition resulting in uncomfortable situations and possible accidents. The hotspots would also include the part around the railway crossing at the entrance to the industrial zone where high curbs, steps, missing and inadequately marked bike paths can be found, creating a confusing situation for all traffic users. Then there is a whole industry zone with some bike paths which are not connected nor properly signed, and usually end into a wall. The parts of the Green Belt found in the route can be potential problems due to several huge potholes and coarse gravel. The last recorded hotspot would be Litostrojska cesta where cyclists have to cycle on the busy industrial road between the vehicles and parking space.



Attachment 3-Recorded problems

Some of the most problematic points we have encountered

Alongside the problems we have recorded, we have also noticed some good practices, since the cycling culture is widely developed alongside the citizens and the will of the authorities is increasing. The bike path network is extensive, often physically separated, some intersections are well marked. There are also traffic signs targeting the cyclist, making it easier to navigate through. Mirrors are located on sharper angles, and most of the paths are levelled and without any curbs. The bike sharing system is extensive, affordable and widely used but it is not adapted to people with needs for special kinds of bikes. The culture and respect of the signalisation is well, therefore cyclists are safer.

SWOT

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Mostly flat terrain; • Good road condition; • Good connection to the city centre; • Existing cycling culture; • Support from the authorities; • Bike sharing system • Park and ride system; 	<ul style="list-style-type: none"> • No space for new infrastructure in the city centre; • Poorly maintained cycling infrastructure; • Narrow parts of the bike paths; • Missing/inadequate signalisation; • Lack of sound signals on traffic lights; • Missing safe lanes for people with disabilities; • Some bike lanes end unexpectedly; • No water fountains and repair points;

OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Widening the bike path network; • Raising awareness in the public about different kinds of disabilities in bike traffic; • 15 minutes city; • Bike and ride system more adapted to people with disabilities; • New technologies; • Cycle tourism; • Improvement of safety standards; • Maps and signposts for cyclists; 	<ul style="list-style-type: none"> • Limited funding • Poor infrastructure in the periphery; • Conflicts between road users; • Diversity of safety standards; • Feels of danger in traffic; • Lack of awareness for different needs of people; • Vandalism and theft;

PROPOSED IDEAS AND SOLUTIONS

Solutions for the mentioned problems are not easy to implement because of the already built infrastructure that takes up space that could be used for widening the bike paths, constructing new ones and making every part of the city accessible to all. But still, it is important to have ideas and solutions that could be implemented in the future.

Some of the solutions that could be implemented in a short time could be lowering the high curbs, installing clear markings and proper signalisation with some kind of barriers to separate different forms of traffic, providing maps and apps that highlight accessible paths to encourage people to cycle, introducing more accessible bike-sharing stations in busy areas, enhancing lighting and adding tactile paving for better navigation of disabled users, installing surveillance cameras and emergency contact points and widening the existing bike paths and making new ones where that is possible.

More precisely, a very important step would be repainting all the bike infrastructure, with proper and clear signalisation. Šopotova ulica, as the main connection between Prešeren square and Slovenska cesta, is very important to all people living in Ljubljana and should have a separated bike track that would prevent further conflicts between pedestrians and cyclists. Many bike paths that already exist are not in a satisfactory condition and are not accessible to all. They should be renewed using materials that are more comfortable to ride on. We should create dedicated bike paths that cater to people with disabilities, such as tricycles or adaptive bikes and also build free repair bike spots.



Attachment 4-Proposed ideas
Better and standardised signalisation and wider more visible paths

Other than that, a huge part of making a sustainable network of safe cycling tracks and paths that are accessible to all, is also collaboration with local organisations in creating awareness campaigns and workshops on cycling with highlighted health and environmental benefits of cycling in an encouraging way, launching some educational programs in schools and communities about safe cycling and disability-friendly infrastructure and the most important, in this whole process, taking input from disabled people about their needs. Even though these measures wouldn't show their results in a short time period, they're equally important in making the whole idea a reality.

CONCLUSION

In general, the cycling infrastructure is quite good except for some problems like potholes, damaged asphalt and broken curbs. Therefore, it is important to make repairs as well as maintain and improve the best sides of this system in order to make it safer for those who use bicycles. With regard to disabled people, the current tracks are not fully accessible. All users should be considered when designing new infrastructure and already built in infrastructure should be adapted to everyone. It would be a great idea to have roadmaps for cyclists with special needs that they could use while moving around the town. With challenges in paving, the downtown area should have pathways that are safe to use for everyone including people who have disabilities especially in places such as health facilities, financial institutions and educational institutions.