

SUSTAINABLE MOBILITY IN SLOVENIAN JULIAN ALPS

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Abstract

Some mountainous areas, especially tourist areas, are facing traffic loads that exceed the carrying capacity and bring problems to local residents, visitors, public services, etc. Traffic problems can also cause a decrease of popularity of the tourist site and a decrease of tourist income; therefore, in some Alpine areas in Slovenia, measures have begun to be taken to decrease traffic loads, and to support measures of sustainable mobility. This article deals with such measures and plans that have been taken in the Julian Alps of Slovenia to decrease the negative traffic impacts of tourism mobility in the municipalities of Kranjska Gora, Bohinj and Bovec.

Key words: Slovenia, Julian Alps, traffic, mobility, sustainable development

TRAJNOSTNA MOBILNOST V SLOVENSKEM DELU JULIJSKIH ALP

Izvilleček

Gorska območja, zlasti zavarovana območja, so precej bolj občutljiva od nižinskih, saj so njihove nosilne sposobnosti manjše. Zlasti velik sezonski obisk je v doživljajsko pestrih predelih in ker pride večina turistov z lastnim prevozom, se negativni učinki prometa zgoščujejo. Pogosto prihaja do konfliktov med lokalnim prebivalstvom in turisti, hkrati se zmanjša tudi doživljajska pestrost teh območij, kar prispeva k zmanjšani ekonomski vrednosti, saj gre za turistična območja. Prispevek govori o načrtovanih in izvedenih projektih umirjanja prometa v slovenskem delu Julijskih Alp, s katerimi želijo lokalni deležniki zmanjšati negativne učinke prometa na gorsko naravo in nezadovoljstvo zaradi prometne gneče.

Ključne besede: Slovenija, Julijske Alpe, promet, mobilnost, trajnostni razvoj

I. INTRODUCTION

Mobility in mountainous regions is markedly different from mobility in the urban areas. In most areas, traffic densities are much lower than in urban areas, with the exception of trans-boundary corridors or main highways. For example, the biggest traffic volume in Slovenia is on the Ljubljana ring, where the average daily traffic volume reaches 66,000 vehicles on some parts. However, in the Julian Alps (not considering traffic in the town of Jesenice and the A-2 highway corridor, which briefly crosses the area and goes north through the Karavanke Tunnel to Austria) the most highly trafficked road is the one from Jesenice to Kranjska Gora with average daily traffic volume of 5878 vehicles in Gozd-Martuljek (Prometne obremenitve 2008, 2012). However, in some places, e.g. in tourist resorts or some tourist spots like scenic Alpine valleys or passes, the traffic volumes in the high seasons can reach relatively high values, i.e. exceeding the ecological capability of the vulnerable Alpine space, and also causing conflicts between the local residents or visitors, and among visitors as well. High traffic volumes, with traffic jams accompanied by noise and emissions from cars, also contribute to lower levels of tourist value in some tourist resorts, especially Alpine resorts, because pleasant, clean and scenic Alpine landscapes with fresh air and water are what Alpine tourism is traditionally known for. Thus, the authorities of some tourist areas can face a paradox: their wish to have many guests to obtain more tourist income and a better reputation leads to degradation of social and natural environment, which leads to economic decline.

In this article, we examine how local authorities decided to start manage traffic in some of the most visited parts of Julian Alps (where the only Slovenian national park is situated). We will focus on some passes and Alpine valleys, where some measures for calming traffic were taken, as well as plans for mobility management. The reasons for these measures were tourist pressures, related with tourist traffic in high seasons. We will also discuss how far the local stakeholders have implemented these plans to date.

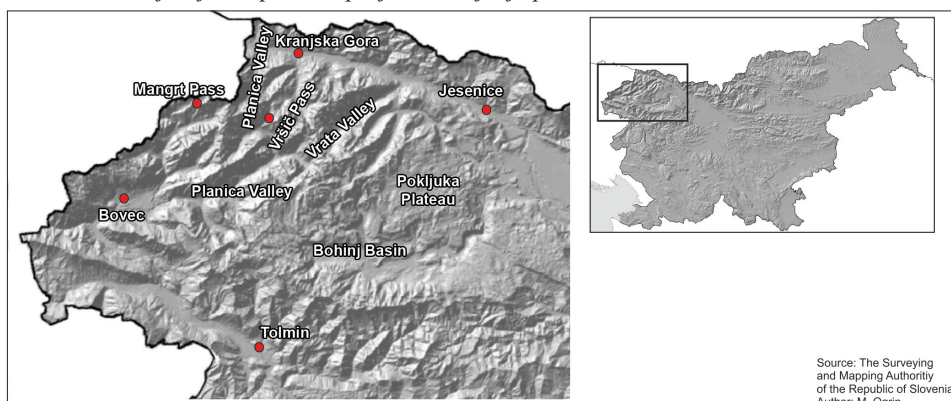
2. TRAFFIC VOLUMES IN JULIAN ALPS

The Julian Alps are the biggest Alpine group in Slovenia, covering 1542 km² (Slovenija – pokrajine in ljudje, 1998, p. 54) or 7.6% of Slovenia. They are situated in the northwestern part of the country, continuing over the state border to Italy, where the western Julian Alps are located. In the Slovenian part of Julian Alps, there are no cities, but there are small towns such as Tolmin (population 2012: 3503), Kranjska Gora (pop. 1488), Kobarid (pop. 1133) and some others (SI-Stat Data Portal, 2012). Although the Julian Alps are appealing as a tourist area, the biggest Slovenian roads avoid this region. The three main roads that enter the Julian Alps are Jesenice–Kranjska Gora (5878 vehicles per day in Gozd-Martuljek), Nova Gorica–Tolmin–Kobarid–Bovec or Idrija–Tolmin–Kobarid–Bovec (4000 vehicles at Idrijsko near Kobarid), Radovljica–Bled–Bohinjska Bistrica (4087 vehicles per day at Bohinjska Bela; Prometne obremenitve 2008, 2012). Highway A-2, connecting southeastern part of Slovenia with northwestern part, touches the Julian Alps. This road has greater traffic volume at Lipce, the average daily traffic volume is 18,392 vehicles (Prometne obremeni-

tive 2008, 2012) and at the border crossing with Austria at the Karavanke Tunnel, average daily traffic flow falls to 6681 vehicles. This indicates that more than half of the traffic in Lipce goes to Jesenice or to the Upper Sava Valley, and only a smaller part travels towards Austria. The town of Jesenice, with a population of 13,289 (SI-Stat Data Portal, 2012), at the edge of the study area also generates traffic volumes; thus, roads in the town area can reach 16,000 vehicles per day (Prometne obremenitve 2008, 2012), but its influence to transport in or through Julian Alps is relatively small.

Figure 1: Area of projects for traffic calming

Slika 1: Območje, kjer so potekali projekti umirjanja prometa



Regarding tourism, in summertime, the Kranjska Gora–Bovec road over Vršč Pass (1611 m), which is the highest Slovenian pass, connecting Trenta Valley with the Gorenjska region and central Slovenia, is also important, but on average it still has only 363 vehicles per day (Prometne obremenitve 2008, 2012). This road is closed in winter for several weeks to several months, depending on snow conditions. This connection was extremely important in the past, especially during World War 1 and partly also after World War 2, when the border with Italy was not so open. In recent years, however, especially after Slovenia's entering the Schengen agreement in December 2007, the situation has changed. For Upper Posočje region, a better connection with central Slovenia is over the Predel Pass through Italy, and back to Slovenia via Rateče. However, even this road, which is open all year, has average daily traffic of only 611 vehicles (Prometne obremenitve 2008, 2012). Only during certain events, such as the Alpine skiing World Cup in Kranjska Gora or the ski-jumping World Cup in Planica, do traffic volumes on some roads increase tremendously, which requires exceptional management of traffic, for one to three days each year.

This article, however, will focus on a highly specific situation in Alpine valleys, roads and passes in the summer, where traffic volumes have begun to cause environmental problems, such as noise and air pollution, degradation of the natural environment due to reckless parking, conflicts among owners of land, public services (forestry service, Triglav National

park rangers), visitors and local stakeholders. Many Alpine valleys in the Julian Alps end with cirques, and they represent an entrance to the central part of the Julian Alps, where many mountain huts, paths and climbing routes are located. The most visited among them are Vrata, Planica, Krma, Krnica, Voje and Tolminka valleys. In many valleys at the end of the path, there is a mountain hut, which is also a point of interest for many tourists; since most of these tourists visit the valley by car, traffic flows can cause conflicts and environmental problems. These valleys do not have transit roads, and most of them are also without any settlements or they have only sparse settlements. Traffic volumes in the summer high season can reach up to 600 vehicles per day in the most visited valleys, such as Vrata, but in the rest of the year there is much less traffic; in winter most of the roads are closed or partly closed. It is obvious that such traffic flows are not comparable with those on the main roads in Julian Alps or even in other parts in Slovenia.

3. METHODOLOGY

Sustainable development is based on the use of environmental sources to the level of their regeneration capacities (Špes et al., 2002; Vintar Mally, 2007). Sustainable mobility is a part of a sustainable way of life – and theoretically it is mobility enabling the mobility of people, goods, services and information; however, achieving these tasks uses environmental sources to the level of their regeneration capacities. Usually the term ‘sustainable mobility’ includes public transport, cycling, walking, motorized transport using renewable sources of energy, mobility planning with high energy and spatial efficiency, and similar. Although some of these means of mobility (in the form that we know them today) also use fossil fuels, they are much more energy and spatially efficient and much more sustainable. Therefore, they represent solutions to today’s transport-related environmental problems, so we consider them to be sustainable, although theoretically this is not entirely true.

Sustainable mobility management is still undeveloped in Slovenia, especially in rural areas. In some urban areas, such as the capital city, Ljubljana, or the second largest city, Maribor, as well as in some others, some measures towards sustainable mobility have been taken, like closing city centers to motorized vehicles, introducing one-way traffic, building bicycle lanes and connecting them in networks, improving public transport, adopting transport strategies or policies that also include sustainability, and others. In Ljutomer, they have developed the first sustainably oriented transport strategy for a town in Slovenia (Plevnik et al., 2012). Of course, these cities have bigger problems due to transport, and in some cases the negative impacts are already dangerous for human health; this is the case in some areas of Ljubljana (Ogrin, M., 2007); there are also negative impacts on the quality of living. In mountainous areas, traffic flows are usually much lower and, therefore, environmental and other impacts are much smaller than in urban areas. However, the perception of environmental impacts is decidedly different and subjective in different areas. In the case of traffic impacts, perception is often not correlated proportionally with traffic volumes, which means that in relatively calm areas people often complain about traffic pressures in much the same way that people do in areas with much higher traffic volumes (Vintar Mally, 2009). People in remote mountainous areas are used to less motor traffic, less noise and fewer emissions;

therefore, their tolerance to these disturbances is lower. Many people also come to these areas to spend their holidays in calm nature, far away from city noise and traffic; thus some areas became prominent tourist centers, which increased traffic pressures. A study, made by Cigale (2007) showed that tourist-related traffic in Slovenia contributes a share from 30 to 90% of all traffic in Slovenian Alps. Despite of much lower traffic volumes, up to 70% of local residents in the Slovenian Alps find traffic problems to be the main problems related with tourism, especially where main road passes the village (Cigale, 2007).

Furthermore, the infrastructure in such areas is not adapted to high traffic volumes, noise or emissions. If such areas have high natural and cultural values, it is likely that they will have many visitors in the tourist season. Since over 86% of all personal mobility is made by car in Slovenia (in other European countries this rate in general is not much lower; EU energy and transport in figures, 2010), it is highly likely that the majority of these visits to the mountainous areas are made by car, which already means that some mountainous areas are at a point at which negative impacts reach or exceed environmental or ecosystem capacity. That is the reason some local authorities decided to start with mobility management, to avoid the negative impacts of increased traffic flows in some points of interest, such as Alpine valleys, Alpine passes, or tourist areas.

Mobility management of tourist areas is based on several steps. These steps were identified through several traffic studies we made in recent years.

I. Analysis of study area, including:

- Macro- and mezzo-location of the area;
- Basic environmental, economic and social facts of the area;
- Economic, social, environmental advantages and disadvantages of the area;
- The structure, origin and habits of tourists;
- The history of the area, if it is relevant with traffic issues.

II. The definition of traffic situation includes:

- List of activities that cause main traffic flows;
- List of the main sites or events that have the biggest share in traffic demand;
- Mobility habits of tourists and local residents in the area;
- Traffic flows on main roads;
- Density of roads;
- Number of parking places in the area;
- Number of 'wild' (i.e. illegal) parking places;
- The quality of the accessibility by different modes;
- The history of transport development in the area;
- Organization of local supply;
- Mobility needs of local services and activities (health service, mountain rescue service, forestry, farming, etc.);
- Options for improvement of spatial, economical and energetic efficiency of traffic in the area.

III. The definition of a problem through public participation includes:

- Meetings with local stakeholders, decision makers and residents to determine their perception of traffic impacts, and researching the opinion of specific target groups (visitors, residents, stakeholders);

- Meetings with local stakeholders.
They should bring answers to following questions:
 - Where do local stakeholder and local residents see traffic problems?
 - What is the magnitude of these problems?
 - Which problems are important and which not?
 - How strong is the willingness to solve them?
 - What are possible solutions to the traffic situations?
 - What is the role of local stakeholders, and where local residents can help?
 - Where they see their potential to help?
 - How many similar cases from other areas we know and what can we learn from them (good and bad practice examples)?

IV. Analyzing Step 3 and preparation of possible solutions: Solutions should include remarks of stakeholders, decision makers and residents. If needed, some additional individual meetings can be useful.

V. Presentation of possible solutions

Propositions must be presented as the output of Steps 3 and 4. It is particularly useful to prepare more propositions, from conservative to radical, and all of them must be presented as equal with their advantages and disadvantages. For each solution, it is essential to say who will be the leader or manager, and what are the functions and roles of other stakeholders. It is also very important that all recommended solutions be realistic, so that finding solution remains a real possibility.

With each proposition, it is also very important to put a realistic time plan in place. At this step, one should know that no solution will be realized if the local community will not accept it. It is better to accept a decidedly conservative solution, with the acceptance of public, than try to impose a solution, which the public perceives as being too hard, although it could bring faster and better results. In the first case, there will still be time to improve the measures if visitors and local residents are pleased with the results and methodology, while in the second case the confidence between public and stakeholders will be lost and any further consensus will be impossible.

VI. Choosing the most appropriate solution

The best solution is always the one that most of the public likes; this solution has the best chance of being implemented.

To the upper six points it is highly important to know that, in addition to this methodological framework, it is necessary to know the local particularities of the study area. Therefore, this framework can be adapted or modified. In some cases, measures do not need a previous complex analysis if the area does not have settlements, and there are not many different interests in this area. Sometimes, local authorities take measures without previous studies if the problem is well known and if situation causes problems to most of the residents, or if most of the residents do not care about this area; in both cases the majority does not object to the measures. However, in many other cases, when people have different interests and opinions, it is highly important to communicate with the public and involve them in the process of decision-making; otherwise, the opposition of people can bring an opposite effect than was expected.

4. TRAFFIC REGIME IN PLANICA VALLEY

Planica Valley starts from Upper Sava Valley south of Rateče village and goes south into the western Julian Alps. It ends at the foot of Mount Jalovec after 6 km from its beginning. In terms of traffic, the valley can be divided into three parts. The first part is the first two kilometers, which have paved road and end at ski jumping facilities, with several large car parks, accompanied by a small ski slope, small hotel and restaurant. Traffic volumes are the highest in this part of the valley, especially during sport events or in the tourist season when visitors come to see the ski-jumping infrastructure. To use the parking lots, visitors have to pay to the local tourist association, which keeps the parking lots clean and tidy throughout the year.

The second part of the valley is from the car parks to mountain hut in Tamar (1108 m). This section features a local gravel road, which is closed in wintertime until the snow melts in April. For this part, the municipality of Kranjska Gora decided to implement a specific traffic regime, because traffic volumes were increasing to such a level that many conflicts happened on this road between drivers, hikers, cyclists and others.

The problem was that road to the hut was a hiking trail to one group, a biking trail for another but also an access road to the hut, shortening a mountain tour for climbers on their tour. Because it is a local road, the municipality of Kranjska Gora can implement changes by decree, without consulting the state. They closed this section of the road with a gate for all vehicles in summertime, from 8:00 to 18:00, except for owners of land, public service, employees in mountain huts, or emergency services (Odlok o prometni ureditvi ..., 1999). During the day, between 12:00 and 14:00, the road was partly opened for those who wanted to leave the valley, e.g. for morning climbers, but not for those who wanted to enter the valley. If someone wanted to leave the valley during closing time, he had to pay twice the price for parking in Planica. In wintertime, the road is closed and not maintained.

It is interesting that after the closure of the road, the profit in the mountain hut in Tamar increased, because the road in this second part of the valley became an interesting hiking route for many hikers, and also because many climbers and mountaineers decided to stop in the hut after the five-kilometer walk at the start of the tour or at the end of it. The road, which had been a place of conflict between drivers and other users, became an interesting and calm route for enjoying the nature of the valley. Since 2008 the road is not closed with a gate but only with a sign (Odlok o razveljavitvi ..., 2008).

It is important to note that this decree was implemented by the municipality without previous studies or consulting with owners of the land or the owner of the hut. At first, the owner of the hut at Tamar was against the decree and started a campaign to cancel the new regime. However, he soon realized that since the road was closed, visitors walking through the valley stopped at his hut more frequently. Before the new regime was implemented, his hut had been more or less the main car park from which visitors started mountain tours and where they ended it, without stopping at the hut. Now, with the hut five kilometres from parking, many climbers stop to have a drink or lunch. Moreover, the valley has become a pleasant walking route for many visitors, who previously avoided it due to traffic.

5. VRATA VALLEY

Vrata Valley is one of the most visited valleys in Slovenia's Julian Alps. It starts in the village of Mojstrana in the Upper Sava Valley and goes to the southwest. After 12 km, the valley ends with the Luknja Gap, surrounded by high walls on the southern and northern sides. There are many reasons for visitors to see this valley. The valley is best known as the cradle of Slovenian mountaineering with the most celebrated mountain hut in Slovenia, Aljažev dom, in the last part of the valley. The valley is also a starting point for visiting the central part of Julian Alps for tours on Triglav, Škrlatica, Stenar, etc., and the valley itself ends with steep Triglav north face, which is the largest mountain wall in Slovenia. In the first part of the valley, there are very scenic Peričnik waterfalls.

In the high summer season, especially at weekends in August, traffic in the valley exceeds the capability of narrow gravel road. On such days, walking or cycling on this road becomes dangerous; dust and noise also cause problems in a wide belt at the bottom of the valley. Because almost the entire valley is in Triglav National Park, traffic problems and impacts are even more significant.

During previous 20 years, several research projects were made in Vrata Valley to determine the effects of traffic impacts.

Triglav National Park (TNP) did some traffic monitoring in 1995 and 1997. Between May and October 1995, monitoring of traffic was done on several spots in the valley, but only on Saturdays, between 9:00 and 17:00. Parked vehicles on parking lots were counted, too. The peak of traffic was in August: the highest number of parked vehicles that year, when a traffic volume of 333 parked vehicles/hour was observed on 12 August 1995 on the main car park, near the Aljažev dom mountain hut. The first conclusions were that traffic flows are very much dependent on weather, and the time of the year (Podatki o štetju prometa v Vratih, 1995).

During this summer' monitoring, TNP did some further research, counting traffic in many parts of the national park, and again in Vrata Valley. They monitored traffic on one Thursday and one weekend in July and August in the last part of the valley between Tiležev Rovt and Aljažev dom. This showed that 82% of all visitors came by car; cyclists and pedestrians accounted for only 5% (Podatki o štetju prometa v Vratih, 1995).

Table 1: Number of vehicles, passing observing point in summer 1997

Preglednica 1: Število avtomobilov na opazovalni točki poleti 1997

Saturday, 19 July	Thursday, 7 July	Sunday, 17 August	Thursday, August
187	290	335	173

Source/Vir: Podatki o štetju prometa v Vratih, 1995

In 2005 and 2006, a larger research project was conducted, with the aim of obtaining recent data about traffic volumes in the valley, which would be the basis for a study on how to manage the traffic in the valley. The research was made for the municipality of Kranjska

Gora by CIPRA Slovenia, a non-governmental organization for the protection of the Alps, in the frame of the DynAlp 1 program.

The survey was made of several phases:

- Analysis of study area and analysis of traffic situation in the valley. In this phase, previous researches were also included;
- Field work: additional traffic monitoring and counting was done, and questionnaires for visitors, stakeholders and residents of the villages of Dovje and Mojstrana were conducted;
- Definition of the problem through public participation. Five workshops were organized, three for the public and two for stakeholders;
- Presentation of solutions and selection of one scenario.

In the summer seasons of 2005 and 2006, the traffic was observed for eight days from 5:00 to 19:00. Traffic was monitored at the beginning of the valley, at the end of the village Mojstrana. On each day of monitoring, at least 170 vehicles were counted; 80% of all traffic was personal cars. The busiest days were the last weekend of July 2005 (283 into the valley, 368 out) and 15 August 2006 (329 into the valley, 309 out). The share of cyclists varied from 5 to 24%, depending on the weather.

Figure 2: Car park at Aljažev dom mountain hut (photo: M. Ogrin)

Slika 2: Parkirišče pri Aljaževem domu (foto: M. Ogrin)



The vehicles mostly entered the valley between 10:00 and 12:00, indicating that in the high season visitors are at least as important as mountaineers. We noticed three peaks of traffic into the valley during the day: between 5:00 and 7:00, between 10:00 and 12:00, and between 13:00 and 15:00. People mostly left the valley between 15:00 and 18:00. For visitors entering the valley, a questionnaire was prepared about their perception of traffic problems and opportunities in the valley. For most of the visitors, the main disadvantage of the valley was the gravel road with potholes, and heavy traffic in summer, both of which cause dust and noise. Most of the visitors agreed with the parking fee at the end of the valley; some of them even thought that the fee was too low. The survey showed that visitors were willing to experience the valley on foot, but with possible public transport in the other direction, because the valley is 12 km long, and walking in both directions would be too long for the average visitor.

A total of 37% of visitors questioned also thought that closing the valley to vehicle traffic on summer weekends and arranging a large car park in Mojstrana, at the entrance to the valley, would be a satisfactory solution for solving traffic problems in the valley. However, the valley should be open for traffic in the early morning, before 7:00, for those who are going on mountain tours and of course, they should also be allowed to leave the valley in the afternoon. During the day, when the valley would be closed, public transport should be organized. Visitors were also aware of environmental problems related to traffic in the valley and were ready to take actions to decrease the negative impacts on the environment and, also, the quality of experience (Pirc, Prašnikar, 2006).

Figure 3: Winter image of Mojstrana village and Vrata Valley from Dovje (photo: M. Ogrin)

Slika 3: Zimska podoba Mojstrane in doline Vrata iz Dovjega (foto: M. Ogrin)



The second target group, for which we also made a questionnaire, were inhabitants of Mojstrana and Dovje villages, because they are situated at the entrance of the valley and many villagers also own land in the valley, such as pastures, forests or small houses. This group was also aware of traffic problems in the valley and they also pointed out that similar problems with traffic are in the neighboring valleys of Kot and Krma, so people from Dovje and Mojstrana also supported the parking fee at the end of the valley as the first step, but later also the organization of public transport and limitations to car access to the valley. People also suggested potential locations for a large car park in Mojstrana, where visitors would leave their cars and take public transport for visiting the valley.

In the following process, during workshops with local people and local stakeholders, five scenarios were prepared and one was chosen for the future traffic regime in the valley. The entrance into the valley would remain free for all vehicles, but the parking fee at the end of the valley, which is obligatory for all vehicles in the summer season, would be much higher. This would stimulate visitors to use public transport, which would also be organized in summertime.

The first and extremely important task is to build the car park at the entrance into the valley. Before implementing this regime, it is also necessary to find a co-ordinator for the traffic regime in the valley, which would control the traffic and prepare the information campaign for visitors about the new regime. Organization of public transport also requires the reconstruction of the road on some spots. The best solution would be to cover it with asphalt, which would incur substantial investment costs. Building bus stops is also necessary. For all parking places in the valley, vehicle capacity must be defined; when the parking capacity has been reached, the car park would be closed until some vehicles would leave. At the entrance to the valley, a check point should be built where the visitors would get information about the traffic regime and the current state of traffic. They would also get information about Triglav National Park, on the importance of sustainable traffic for preserving nature, and sustainable tourism.

Five years after this study was made and after traffic regime was accepted, it must be said that the first condition for the implementation of the regime has still not been implemented, i.e. Mojstrana still does not have a main car park and, therefore, all other steps still wait to be implemented. However, even today, for the municipality of Kranjska Gora the calming of traffic in Alpine valleys is still seen as an important task for the future. A small positive signal came in August 2012, when local stakeholders organized, in the frame of Alpine Convention Day, a biking trip into the valley under the slogan 'By bicycle to the Alpine valleys' and the valley was closed to motorized traffic for several hours. The aim of the event was mainly to inform the public about possible mobility solutions and to raise public awareness.

Seeing that the commitment to sustainable mobility is also a function of green tourism, the municipality of Kranjska Gora also confirmed two other projects.

The first was building a new bicycle lane, which is called the 'Bicycle Lane of Three Countries', because it connects bicycle lanes from Italy and Austria with Slovenia. The project started over ten years ago, in 1998, when bicycle infrastructure from Mojstrana through Gozd-Martuljek, Kranjska Gora to Rateče was established; it continues to Trbiž/Tarvisio, Italy, and from there further on to Kanalska dolina/Val Canale Valley and also to

the Carinthia region of Austria. In 2012, the whole section between Mojstrana and Rateče was finally finished.

Figure 4: The bicycle lane from Mojstrana through Kranjska Gora to Rateče and further on into Kanalska dolina/Val Canale (Italy) is a highly significant piece of infrastructure for implementing sustainable mobility in tourism in Kranjska Gora (photo: M. Ogrin)

Slika 4: Kolesarska steza od Mojstrane prek Kranjske Gore in Rateč naprej v Kanalsko dolino je pomemben del infrastrukture za uresničevanje trajnostne mobilnosti v turizmu Kranjske Gore (foto: M. Ogrin)



6. VRŠIČ AND MANGRT PASSES

The second project was implementing public transport over Vršič Pass from Kranjska Gora to Bovec in 1995, which was the result of cooperation between the municipalities of Kranjska Gora and Bovec. From Vršič Pass, there are many possibilities to start mountain hikes, thus many mountaineers can start their trip on the pass and do not have to come back to the starting point. The problem on the Vršič Pass is parking, because there are not enough parking places during summer peaks. Both municipalities started to charge parking fees for vehicles in the high tourist season in 1995. Some parking places were arranged, but the income of parking fee usually is not enough for covering all costs with parking places, so they also need other sources. The parking fee is charged only from June to September, when traffic volumes on the pass are high. Some new parking lots should be still arranged, or the parking should be limited during high peaks, when visitors should be redirected to public transport.

For many years, there has been a plan to build a tunnel under Vršič Pass, which would connect the Upper Soča Valley with central Slovenia. As a collateral benefit, the road over Vršič Pass would only have a tourist function. Then, implementing the new traffic regimes would be much easier as is the case on some other roads in the Alps, such as the scenic road on Dobrač/Dobratsch, Austria, the Grossglockner High Alpine Road in Austria, or road to Tre Cime in the Dolomites in Italy.

The road to the Mangrt Pass is the highest Slovenian road, the only road above 2000 m. It ends on the Mangrt Pass at an elevation of 2050 m, and it has exclusively tourist function; however, it is also useful for forestry, land owners, herdsmen, alpine rescue and other services. On the Mangrt Pass, there is a mountain hut, open only in the summer season, when the road is used also by many mountaineers who climb Mount Mangrt (2678 m). Instead of walking from Log pod Mangrtom village (650 m) in Koritnica Valley or the Predel Pass (1156 m), they drive above 2000 m and have much shorter climb. In the winter season, from November to the end of May, the road is closed.

Figure 5: Mangrt Road is the highest road in Slovenia and the only public road above 2000 m (photo: M. Dovečar)

Slika 5: Mangrtska cesta je najvišja cesta v Sloveniji in edina slovenska cesta, ki nas pripelje nad 2000 m (foto: M. Dovečar)



Although this is the state road, in 1995 the state gave the municipality of Bovec permission to charge a parking fee for all motorized vehicles. The fee is collected at the check point in first third of the road, near Mangrt pasture. The money collected is used for a local cooperative in Log pod Mangrtom for local development. The improvement of traffic calming was done in 2009 according to a plan requiring that the section of road from Mangrt pasture to the top be closed to individual motor vehicles, and that public transport be implemented in the summer season. In Log pod Mangrtom, parking lots should be built for tourists going

to the Mangrt Pass, and public transport would take them to the pass. The price for parking would include a ticket for public transport to the pass and back. In Log pod Mangrtom, a center for sustainable mobility should be established, where visitors would get all necessary information about mobility possibilities in the Upper Soča Valley. To date, this plan has not been implemented, or even started, so the road is still open to all vehicles in summer; at the Mangrt alpine pasture, a local cooperative charges a parking fee. In 2012, the fee was 5.00 €, and it is officially called an ecological tax.

The main reason for implementing the fee was to obtain some financial resources from users of this road for local development. Thus, two conditions of sustainability – social development and economic profit – have at least been partly fulfilled, but the environmental upgrade is still missing and must be done in the future.

7. BOHINJ

Bohinj is one of the most heavily touristed areas in Slovenia. It is a center for winter tourism and entrance to the Triglav National Park; especially in summer, Lake Bohinj is a destination for many tourists. Today, many think that besides farming and forestry, which are traditionally the main activities in Bohinj, the most important activity should be sustainable tourism.

Triglav National Park and well-preserved Lake Bohinj (Maraž, 2007, p. 70) represent a particularly strong basis for this direction of development. However, in peaks of the summer and winter seasons, problems related with heavy traffic volumes have appeared in recent years. Single-day swimming and skiing tourism causes traffic jams in Bohinj or even in Bled, but another problem is a lack of parking places and consequently disorganized parking. Around 3500 tourists can visit Bohinj in one day at a sunny summer weekend, but in Bohinj there are only around 1400 public parking places (Ogrin, D., 1997; cv: Smukavec, 2004). The lack of parking places is one of main problems for summer tourism in Bohinj (Maraž, 2007). Therefore, many conflicts between locals and tourists or between tourists themselves are consequences of these traffic problems, which not only irritate the people involved, but also decrease economic income and increase environmental degradation. A particular problem is road traffic's impact upon Lake Bohinj. Both, illegal parking places and legally built parking lots do not have any sewer system for waste liquids from the vehicles, such as motor oil or fuel, and these liquids often flow into the lake (Maraž, 2007).

Visitors to Bohinj are aware that the traffic regime in Bohinj needs to be changed towards sustainable mobility. In a survey conducted by Smukavec (2004), 70% of the visitors asked agreed with closing of the road at the entrance to the Triglav National Park near Lake Bohinj.

Within the same project as for the Vršič and Mangrt passes, a plan for calming of traffic was also made for Bohinj. Some studies have been done to analyze traffic situation and also to recommend solutions for some environmental problems and for the traffic in years before this project, including the research of D. Ogrin (1996), Smukavec (2004), Maraž (2007), as well as some research by Triglav National Park (*Predvidena obremenjenost ...*, 1997). The

recommendations are combination of those in previous studies and interests, and the possibilities of municipal transport and economic policy. For the whole Bohinj area, three zones with different traffic regimes were proposed (Umirjanje prometa v Julijskih Alpah, 2009):

- **Zone 1:** Lake Bohinj, Voje Valley, Blato and Vogar alpine pastures. This is the area with highest protection, because it lies in Triglav National Park. In this zone, no new car parks should be built, and the enlarging of existing ones should be prevented. Car parks in Ukanc and at the Vogel cable car should be arranged. When their capacity will be full, the rest of visitors should be redirected to public transport. Public transport infrastructure should be improved, and also the infrastructure for cyclists and walkers. All illegal parking places around the lake should be closed (Urbanistična delavnica Bohinj 2008, 2008, p. 11) and parking outside arranged car parks should be prohibited.
- **Zone 2:** Upper and Lower Bohinj Valley and Ribčev Laz. This is the area of sparse settlements, where the local population partly still lives from traditional activities, such as farming or forestry. The area is ecologically less endangered than the first zone; however, it is an area of traditional alpine landscape and has significant importance for Bohinj's identity. Increasing traffic in this area could be a problem, if it is not localized and if parking is not strictly organized. Farming land, i.e. pastures, is under pressure from illegal parking in summer. Building of new parking garage is allowed in this zone. In Ribčev Laz, at the entrance to the first zone, a car park could be built with a capacity up to 700 vehicles. This should be also for users of the Vogel cable car, who would get to the cable car station by public transport. A parking garage should be also built near the store in Stara Fužina, and some new parking lots with a total capacity of 400 vehicles should be built elsewhere. In the village of Srednja Vas, two new car parks with total capacity of 50 vehicles were foreseen, and in the village of Bohinjska Češnjica a new car park was planned within small industry and trade zone, so that parking near the road would be stopped. The village of Jereka needs a smaller car park with a capacity of six vehicles and a bus stop. Bus stops should also be renovated in other villages of Zone 2.
- **Zone 3:** Bohinjska Bistrica and nearby villages. This zone is urbanized and has the densest population among all three zones. In Bohinjska Bistrica, there are hotels and other services, industry and an important transport node where the Bohinj railway enters a tunnel to Baška Grapa Valley and further to Nova Gorica. The economic potential of this zone is greater than in the first two zones, and the area is neither in the national park nor on its border. Bohinjska Bistrica was planned to be the entrance into Zones 2 and 3, so most tourist capacities should be concentrated here. More car parks should be built here, so that in the high tourist seasons and at important tourist events, visitors should be stopped here and redirected to public transport for entering other two zones.

Until today, this plan has not been implemented; however, authorities in Bohinj will try to do so in the future. Meanwhile, they are slowly implementing some measures or activities, which indicate that they are aware of importance of sustainable development. In recent years, they have arranged many parking lots in Zone 2. Public transport to Bohinj is well organized with connections to Ljubljana each hour. For visitors, they have prepared

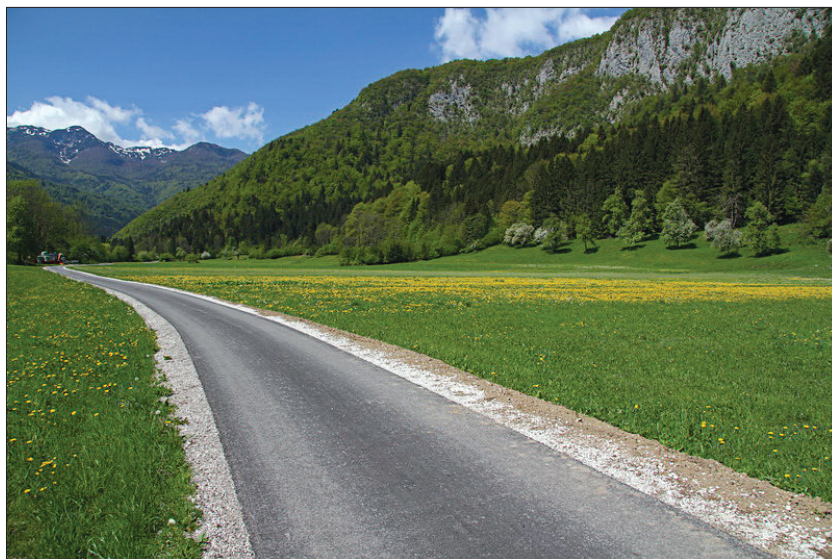
the so-called Bohinj Card. With this card, they support tourists in spending more days in Bohinj as they want to decrease one-day tourism in Bohinj. Tourists staying for two or more days in Bohinj are allowed to buy this card, with which they obtain many discounts in public transport and other services. A special focus for card owners is to provide them with cheap public transport. They get a 50% discount for a boat trip on the lake, a 50% discount for renting an electric bike, a 10% discount for bus drives, and also for some other tourist services. Guests with a card also get free parking on all public parking places. The number of card holders who used discounts on public transport was only 62 in 2010, but the following year it jumped to 439, which is highly encouraging.

Another significant project is the 'Green Weekend in Bohinj' – an event started in 2010. For one weekend in April, visitors get a 50% discount for train tickets to Bohinj and free tickets for buses within Bohinj area. Visitors must participate in the program, which also includes small working or cleaning projects for half a day; they also get free accommodation with breakfast. With this action, they promote public access to Bohinj as well as sustainable mobility in Bohinj area from one place to another.

In 2011, a bicycle lane was built from Bohinjska Bistrica to the lake and in the upper Bohinj valley, a significant step towards implementing sustainable mobility in tourism. Nowadays, single-day tourists can leave their car in Bohinjska Bistrica and go swimming in the lake or enjoy the rest of the valley by bicycle. For tourists who find biking too strenuous, ten electric bikes are available for rent.

Figure 6: Bicycle lane in Bohinj is a significant acquisition for sustainable mobility in Bohinj (Source: Tourism Bohinj)

Slika 6: Kolesarska steza v Bohinju pomembno prispeva k izvajanju trajnostne mobilnosti v Bohinju (Vir: Turizem Bohinj)



8. DISCUSSION

The examples described show that in the municipalities of Bohinj, Bovec and Kranjska Gora, they have recognized that in some places, traffic volumes in high seasons have already exceeded the environmental carrying capacity or are close to doing so. Most of the measures were orientated for tourism mobility; however, local people can also benefit from the reduction in traffic.

Traffic jams and illegal parking also bring economic damage, angering visitors and dissuading them from visiting the area again; local residents also find such traffic situations troublesome. For this reason, they decided to start with mobility management in some Alpine valleys and passes but, the full implementation of accepted mobility plans still waits to be finished. A positive sign is seen in some projects, which indicate that authorities (in spite of delays in implementing mobility plans) still try to decrease the traffic pressures of daily tourists. Between Kranjska Gora and Bovec, a bus drives each summer season and enables tourists to enjoy the Vršič Pass without car. They can also start and finish a mountain tour at different places. First in Kranjska Gora, but in 2011 also in Bohinj, they built a bicycle lane, so now daily visitors can enjoy nature during a safer bike ride, but such infrastructure is also quite useful for local people.

In Bohinj, tourists now can leave their cars in Bohinjska Bistrica and take a bike ride to the lake or to the Upper Bohinj Valley. In Bohinj, a 'green weekend' is held each year when tourists can come to Bohinj with sustainable transport means for low prices. For multi-day guests, the Bohinj Card is available with many benefits in public transport. In Bovec, they also charge fees for driving up to the Mangrt Pass and the collected money goes to local development.

Some isolated events, like bike tours to Vrata Valley during the Alpine Convention Day in Mojstrana, a bike race and running race to Vršič Pass or bike race to Mangrt Pass indicate that sustainable mobility is important for the tourist images of municipality. However, there are still many possibilities for implementation of sustainable mobility. For instance, major sport events like the World Cup in ski jumping in Planica, or the Alpine ski World Cup in Kranjska Gora should be organized with much bigger support of public transport. On Pokljuka plateau, municipalities still have not found an answer for the increasing traffic in the summer and winter seasons. A particular problem are international sport events at the biathlon center on Pokljuka. The train connection between Soča Valley and Bohinj is not used enough. This scenic and historical railway has the potential for a global world reputation and a chance to take a significant share of migration between Soča Valley and Bohinj, but it needs more financial support, reconstruction and promotion.

The next step of local authorities should be implementation of prepared mobility plans for Vrata Valley, Bohinj and the Mangrt Pass, and the preparation of a similar plan for the Pokljuka plateau. The Julian Alps of Slovenia should become a region where sustainable mobility is a vital part of spatial planning and also of tourist services. However, sustainable tourism mobility does not start and end at the tourist destination: it is also important how tourists come to the destination. In the future, Slovenian Alpine tourist destinations should also think about how to get a bigger share of tourists who would come on holidays with

public transport. However, to achieve a more sustainable modal share of tourist migration to these destinations, measures of local transport policy alone will not be enough. The national transport policy should start developing public transport and support it much strongly than was the case in the previous 20 years.

(Translated by Terry Troy Jackson)

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TRAJNOSTNA MOBILNOST V SLOVENSKEM DELU JULIJSKIH ALP

Povzetek

Prispevek govori o urejanju prometa v slovenskem delu Julijskih Alp. Čeprav so prometne obremenitve cest v gorskih območjih praviloma mnogo nižje kot v urbanih, nižinskih pokrajinah, se negativne posledice prometnega obremenjevanja kažejo tudi v gorskih območjih. Ta imajo navadno precej nižje nosilne sposobnosti, v primeru slovenskih Julijskih Alp pa gre v veliki meri tudi za edini narodni park v Sloveniji. Triglavski narodni park privabi vsako leto veliko obiskovalcev in pogosto se zgodi, da so območja, ki sodijo med najbolj občutljiva, tudi območja množičnega obiska.

V alpske doline, na prelaze, k jezerom obiskovalci še vedno najraje zahajajo z avtom in v poletnih viških sezona promet povzroča zastoje, obremenjevanje s hrupom in prahom, prihaja pa tudi do konfliktov med lastniki parcel in obiskovalci, nemalokrat tudi med obiskovalci samimi. Zato so v nekaterih alpskih občinah začeli urejati promet, ga tudi umirjati ter preusmerjati. V primerjavi z nekaterimi območji v drugih alpskih državah smo v Sloveniji s prakso urejanja in umirjanja prometa v zaostanku, vseeno pa se ta praksa na različnih območjih postopno uveljavlja na različne načine.

V dolini Planice je občina Kranjska Gora že konec 90-ih let prejšnjega stoletja začela z omejevanjem prometa in promet se je od planiških skakalnic naprej v kasnejših letih precej zmanjšal. V dolini Vrata so začeli z načrtom umirjanja, ki pa na izvedbo še čaka. Gradnja kolesarske steze Treh dežel, ki se je začela leta 1998, je Dolini prinesla kakovostno kolesarsko povezavo od Mojstrane do Rateč in naprej v Kanalsko dolino, kar je pomembna pridobitev, ki trajnostno mobilnost povezuje tudi s preživljanjem prostega časa in s turizmom. Urejanje prometa v Kranjski Gori je že vrsto let povezano tudi z občino Bovec, saj obe

občini zagotavljata javni promet prek prelaza Vršič v poletni sezoni ter skrbita za urejeno parkiranje na vrhu tega najvišjega slovenskega prelaza. Na Bovškem so leta 1995 od države dobili koncesijo za pobiranje parkirnine na Mangrski cesti, ki je namenjena delovanju lokalne zadruga, v letu 2012 so jo preimenovali v ekološko takso. Čeprav pri pobiranju takse ne gre za omejevanje prometa, pa gre posledično za urejanje parkirnih mest ob najvišji cesti v Sloveniji, ne smemo pa zanemariti niti finančnega vira za lokalno zadrugo, ki ga prinaša del pobrane parkirnine.

V Bohinju se že vrsto let ukvarjajo s prometnimi težavami v poletni sezoni, ko enodnevni turizem v okolici jezera povzroča obilo prometnih problemov. V zadnjih letih so se teh problemov lotili z urejenimi parkirišči in posebno ponudbo za goste, ki ostanejo več dni (kartica Gost Bohinja), izvirna ideja prireditve spomladanski Zeleni vikend pa povečuje ozaveščenost gostov in tudi turističnih ponudnikov. V letu 2011 so odprli kolesarsko stezo od Bohinjske Bistrice do jezera in naprej v zgornjo dolino. S tem so povečali kolesarski obisk od Bohinjske Bistrice po dolini navzgor, kar je tudi dolgoročni cilj prometnega načrtovanja v Bohinju.

Kljub nezanemarljivem napredku na področju urejanja trajnostne mobilnosti v zadnjih letih v vseh treh občinah, je v Julijskih Alpah še vedno precej prometnih ureditev, ki niso v skladu s trajnostno mobilnostjo. Zato bo v prihodnje zelo pomembno vztrajati na načrtu umirjanja prometa v Julijskih Alpah, ki so ga sprejele vse tri občine ter pri njem sodelovale. Pomembno je, da se vanj vključi vsaj še območje Pokljuke ter Bleda, ki je edini slovenski kraj v omrežju Alpskih biserov – mreži naselij, katerim je trajnostna mobilnost kot dodana vrednost v turistični ponudbi glavni prepoznavni znak.