Route Evaluation Report
Croatia

EuroVelo 8 – Mediterranean Route

MEDCYCLETOUR Project

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April 27th 2018

Contents

1 Background

This Route Evaluation Report is part of the requirements formulated in the MEDCYCLETOUR application form (Ref. 629, version 3), Work Package 3 on testing. WP3 is coordinated by project partner Friuli Venezia Giulia based on the methodology provided by the European Cyclists' Federation (developed and tested in numerous former EU projects).

Specific for Croatia:
On top of project objective 3.1 – to evaluate and report results of the Mediterranean route – EuroVelo 8 (in particular Croatian part as per scope of this report) this document reports also other activities done along with the evaluation: route definition including consideration of different possibilities, as well as presentation of some sections that are not part of the current EuroVelo 8 route but interesting for further considerations.

1.1 Mission of the project and report objectives

EuroVelo 8 – Mediterranean Route is a long-distance cycle route connecting the whole Mediterranean from Cádiz to Cyprus. It has a coherent and clear theme based on the Mediterranean Sea and culture in this region. The route is open to all types of users (e.g. classic cycle tourists, tourists occasionally cycling during their holiday, sportive / fitness / recreational cyclists, commuters etc.) and it is an excellent product for sport and wellness activity tourism.

The overall objective of the MEDCYCLETOUR project is to use this route as a tool to influence regional and national policies in favour of sustainable and responsible tourism, providing transnational solutions in coastal areas across the Mediterranean. The main outputs will be action plans and policy recommendations (to generate investments in the route conditions improvement); pilot actions (to test the proposed developments); and updated information and promotion related to EuroVelo 8 (to attract visitors). The MEDCYCLETOUR (EuroVelo 8 – Mediterranean Route project) is financed by the Interreg Mediterranean Program and aims to improve the quality of EuroVelo 8 – Mediterranean Route and develop it as a transnational touristic product.

The project will benefit national, regional and local authorities, service providers and, ultimately, cycle tourists. Taking a transnational approach will enable common challenges (e.g. lack of route infrastructure, missing cycling friendly services, weak branding and promotion) to be tackled together and best practices to be shared, thereby avoiding duplication and increasing the effectiveness and positive social, economic and environmental impacts.

The purpose of this route evaluation report is to have clear, up-to-date information about the route and its quality, including mapping, route conditions, services and promotion. The report also aims

to suggest improvements and includes recommendations at which user groups the route should be targeted. It will also provide up-to-date information for the development of promotional tools.

Having in mind that project MedCycleTour includes also objective 3.2 “Action Planning of the Mediterranean route”, this report will mostly stay within evaluation. Improvement ideas and activities could be mentioned shortly but will be worked out more detailed within objective 3.2 and documented within “National action plan for the development of the Mediterranean route for Croatia”, although some of them might shortly be noted also here.
In addition, within activity 2.8 “Development of national web” relevant information about route and services will be provided more detailed.

Specific for Croatia:

On top of this route evaluation report

THIS IS 1ST OFFICIAL AND DETAILED EUROVELO 8 ROUTE DEFINITION IN CROATIA!

Unlike project partners in other countries, Croatia faced additional challenges in this route evaluation. Croatian part of Mediterranean route – EuroVelo 8 had not been defined at the time of project start. Therefore, activities in Croatia included route definition process prior to the project objective 3.1 “route evaluation”. Route definition process included also additional field work to assess various possibilities and check their applicability for the route. For some additional sections (which happened not to be the part of current EuroVelo 8 route) a survey having in mind the same standard as for the finally chosen EuroVelo 8 sections has been done and additional sections are reported in this report. Although not requested within project and task scope, such additional data may be valuable source for current use and future reference for:

1) Offering alternative routings for cyclists if needed/applicable
2) Including some of these sections as possibly preferred official sections in future development of the EuroVelo 8 route
3) Using some sections within future development of national cycle route network outside of the EuroVelo 8 scope

1.2 Organization

Route definition, field work, survey and evaluation has been carried out by project partner 6 – Croatian National Tourist Board with support of project partner 10 - Cluster for Eco-Social Innovation and Development CEDRA. Following persons have been engaged in these activities:

Davorin Belamarić, cyclist with wide experience in different countries, member of Croatian National Cycling Tourism Development Coordination Body, member of NGO Cyclists Union, certified EuroVelo route inspector on ECS standard
Performed tasks: route definition, route survey, evaluation/data analysis, author of this report

Lidija Mišćin, cyclist with over 20 years professional work in tourism and cycling route development, president of Croatian National Cycling Tourism Development Coordination Body, member and one of grounders of NGO Ruralni tandem, certified EuroVelo route inspector on ECS standard
Performed tasks: route definition, route survey

Marko Stančec, passionate cyclist, member of Croatian National Cycling Tourism Development Coordination Body (National EuroVelo coordinator), member of NGO Cyclists Union
Performed tasks: route survey on some sections

1.3 Brief methodological explanations

1.3.1 Different phases of the route evaluation

Route definition and evaluation has been done in following phases:

Phase	Time	Version	Description
1	April/May 2017	Initial	Ideas for possible route sections (including alternatives), based on previous considerations for EuroVelo 8 in Croatia and personal experience of engaged persons
2	June 2017	Reviewed	Included inputs from local stakeholders during input seminars (and follow-up discussions) in all 7 counties along the route in Croatia
3	July 2017 – March 2018	Inspected	Field work done, checked different possibilities, defined route proposal, data collection for inspected sections done, data analysed and evaluated, initial consideration of possible future improvements
4	March - April 2018	Agreed	Proposal presented and agreed with local stake holders during 7 workshops in all 7 counties along the route in Croatia

Following project time line and partner request, project data set had been uploaded to ECF server in January 2018. From January to April 2018 several updates in the route scope have been done:

- Field work and evaluation of further sections (happened not to be the part of the current EuroVelo 8 route)
- Several corrections of collected data
- Slight route updates during workshops in 7 counties with local stake holders (Phase 4 - “final” route agreement)

All these updates are respected in this route evaluation report, however not all of them are updated on the ECF server yet. ECF plans to implement a functionality of data upload / update on the server by summer 2018 and then the data can be completely synchronized.

1.3.2 ECS – European Certification Standard used for this evaluation

ESC is a standard for EuroVelo routes assessment developed and used by ECF. Some basics of this standard needed to understand this evaluation report are briefly explained in following sentences. ECS assesses various route features on a detailed level (every single km) and checks the route suitability for cycling tourists. Cycling tourists are considered on 3 different level: Experienced cyclists, Average cyclists and Demanding cyclists. For these groups different sets of criteria/level should be applied/checked: essential criteria for all cyclists, important criteria for average cyclists and additional criteria for demanding cyclists. Route component and other feature analysis presented in this report refer often to these 3 categories and compliance to them. To be entitled for a certification, every single km of the route should comply to essential criteria and 70% of daily route segments should comply to important criteria. In addition, If the route totally comply to additional and important criteria, it is suitable for more demanding less experienced cyclists as well as for tandems, trailers and road bikes.

It is important to be aware of the ECS standard change during the project. At the time of the project MedCycleTour kick off meeting in Seville in April 2017 actual ECS that had been taught in a training was ECS version from September 2014. In September 2017 ECS triggered a revision of ECS and new, more strict, ECS version has been published on ECF web in April 2018. Several major changes in the new standard:

- Motorized traffic level is considered as one level higher if speed limit is 80 km/h or more
- No single part of daily section allowed for very high level and speed of motorized traffic on essential level (before: 10% of a daily section allowed on essential level)
- No single part of daily section allowed for high level and speed of motorized traffic on important level (before: 10% of a daily section allowed)
- Elevations on a daily section restricted to 500 m on important level (before: no restriction on important level, only 1000 m restriction on essential)
- Bicycle service on every daily section became essential criteria (before: important)

Although route definition and assessment started with old standard, new standard has been already respected in this evaluation report. Information about one of major changes – daily elevation restricted to 500 m on important level – came quite late – on April 19th after all meetings in 7 counties had been finished and the route agreed. Following this change, respecting the fact that many daily sections have elevation >500 m, a daily section structure should be reconsidered. However, this could not have been done now and should be realized in a later route development stage.

On top of sections survey, additional data have been collected (web, information via local stakeholders) to complete the evaluation:

- Availability of public transport possibilities for bikes

- Availability of bike services
- Traffic measurement report Croatia

Note to motorized traffic level data:
Official measurement data is used for the roads where measurement is available. Following ECS advice, an average high cycling season data (April, May, June; September, October) is relevant. Analysing usual traffic level distribution through the year, this is approximately the same level as year average so year average is used in this report.
For sections where no measurement available, traffic counting in 10 min sections has been done by the evaluators during assessment

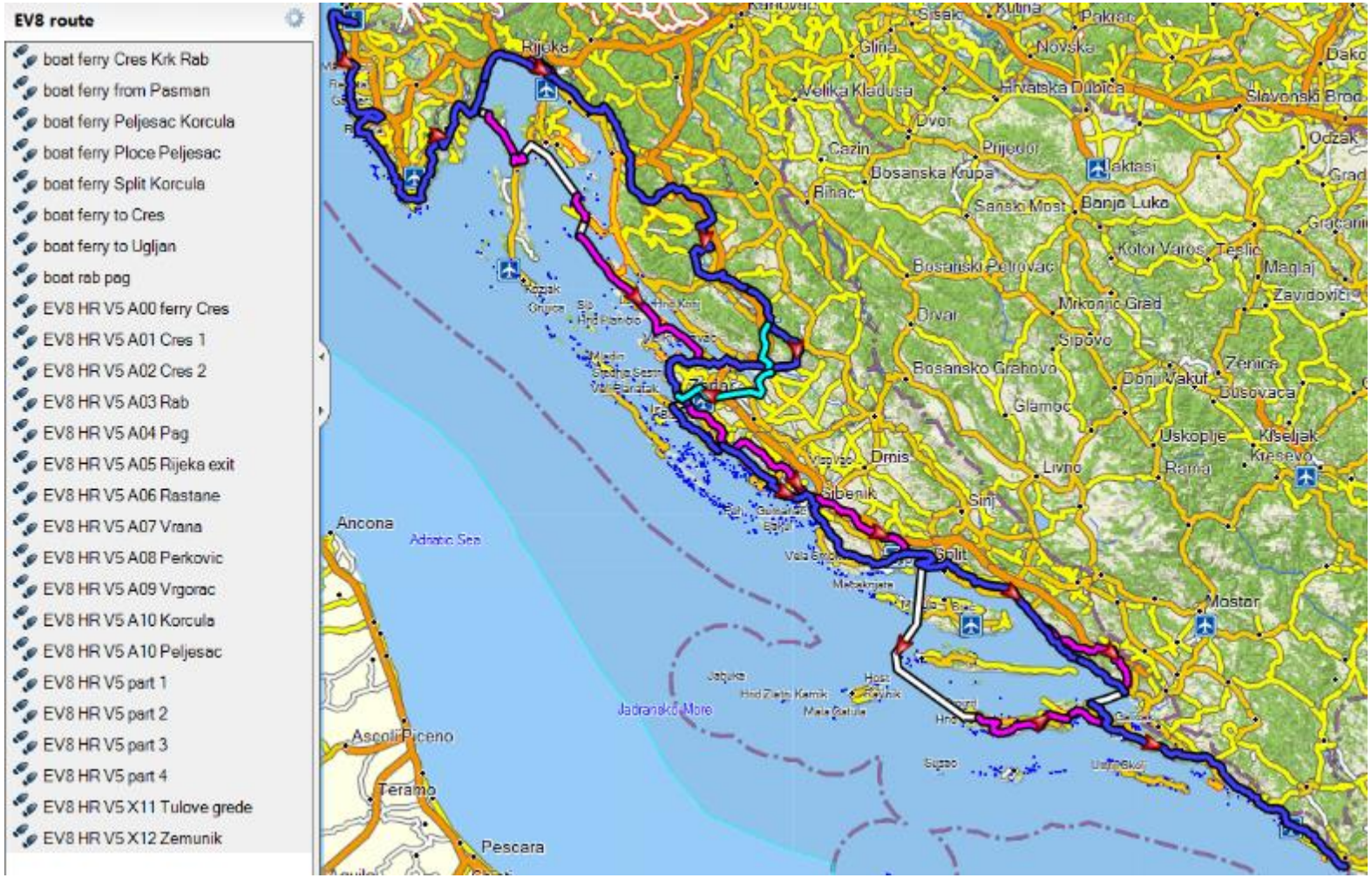
1.3.3 Used tools and equipment, photographs

For the route preparation (tracks to be surveyed) and tracks processing upon field work a program Garmin Base Camp with the map Adria TOPO PRO has been used.
Track and POI recording has been done using Garmin Dakota 20 device

Photographs in this report by Davorin Belamarić and Lidija Mišćin.
In addition, several Google street view screenshots have been used.

1.4 Overview of the sections

Overview of the sections assessed is given on the following map



Legend: EuroVelo 8 route; Alternatives valuable to consider; Alternatives not usable right now; Ferry/Boat

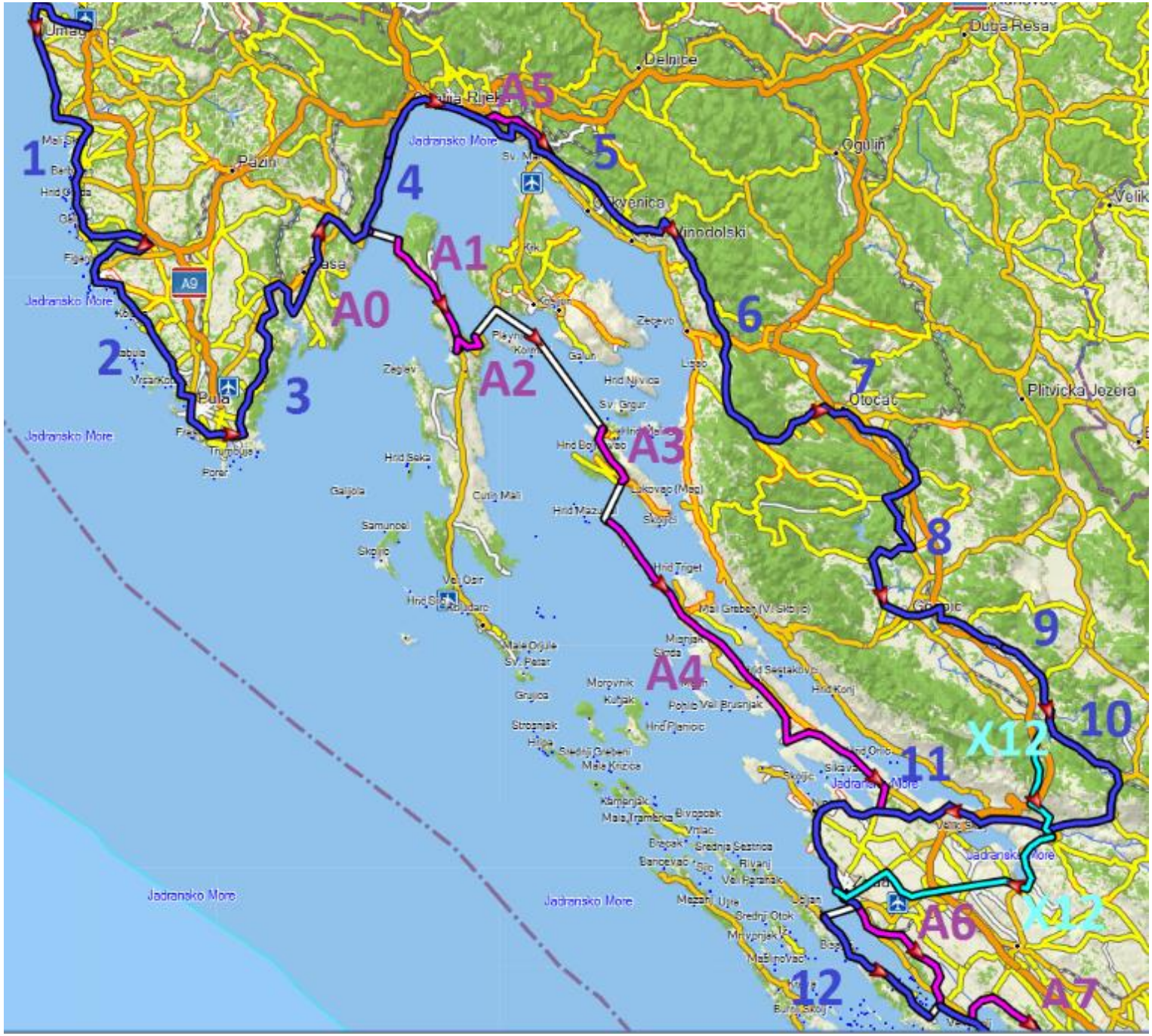
View in Garmin Base Camp program with the map Adria TOPO PRO, tracks recorded with the navigator Garmin Dakota 20

More detailed overview on next pages

Project co-financed by the European Regional Development Fund

Interreg Mediterranean

MEDCYCLETOUR



Project co-financed by the European Regional Development Fund

Overview of assessed and reported sections is given in following tables. All sections are reported in detail in the chapter 6.

Table 1: Main EuroVelo 8 route sections overview

EuroVelo 8 Section no.	Croatian Section no.	Start location	Destination	Length in km	Total ascent in m	Surveying period	Inspector
97	1	border Slovenia	Vrsar	76	640	7/2017	Lidija/Davorin
98	2	Vrsar	Pula	73	485	7/2017 11/2017	Lidija/Davorin Lidija
99	3	Pula	Nedešćina	85	865	11/2017	Lidija
100	4	Nedešćina	Rijeka	59	515	11/2017	Lidija
101	5	Rijeka	Bater	57	1070	7/2017 11/2017	Davorin Lidija
102	6	Bater	Krasno Polje	52	1095	7/2017	Davorin
103	7	Krasno Polje	Gacka River Source	41	185	7/2017	Davorin
104	8	Gacka River Source	Gospić	47	310	7/2017	Davorin
105	9	Gospić	Lovinac	42	35	7/2017	Davorin
106	10	Lovinac	Maslenica	51	270	9/2017	Davorin
107	11	Maslenica	Zadar	60	375	9/2017 2/2018	Davorin Marko
108	12	Zadar	Pakoštane	43	200	7/2017	Davorin
109	13	Pakoštane	Šibenik	48	150	9/2017	Davorin
110	14	Šibenik	Trogir	56	680	10/2017	Davorin
111	15	Trogir	Split	39	295	10/2017	Davorin
112	16	Split	Makarska	75	990	10/2017	Davorin
113	17	Makarska	Ploče/Trpanj	57	400	10/2017	Davorin
114	18	Ploče/Trpanj	Ston	54	630	11/2017	Lidija
115	19	Ston	Dubrovnik	56	1000	11/2017	Lidija
116	20	Dubrovnik	border Montenegro	52	640	11/2017	Lidija
Total				1123	10830		

Table 2: Overview of other assessed ADDITIONAL sections, currently outside of the main EuroVelo 8 scope

Croatian Section no.	Start location	Destination	Alternative via	Comment	Length in km	Total ascent in m	Surveying period	Inspector
A0, A1	Nedešćina	Cres		Island version 19 km overlapping with section 100	48	655	4/2018	Davorin
A2, A3	Cres	Rab/Lun		Island version alternative section	28	520	4/2018	Davorin
A4	Rab/Lun	Povljana		Island version alternative section	54	490	4/2018	Davorin
A4	Povljana	Zadar		Island version 37 km overlapping with section 107	65	320	4/2018	Davorin
A5	Rijeka	Bater	Sv. Kuzam	20 km alternative within section 101	21	350	7/2017	Davorin
A6	Zadar	Pakoštane	Raštane	Alternative to section 108, +13 km overlapping	32	160	9/2017	Davorin
A7	Pakoštane	Šibenik	Vrana	Alternative to section 109, + 6 km overlapping	46	250	9/2017	Davorin
A8	Šibenik	Kaštel Novi	Perković, Primorski Dolac	Alternative to section 110 without overlapping	63	900	9/2017	Davorin
A9	Makarska	Ploče	Vrgorac	Alternative to section 113, 3 km overlapping	60	750	3/2018	Lidija, Davorin
A10	Vela Luka	Korčula/Orebić		Alternative for sections 112, 113	62	600	10/2017	Davorin
A10	Orebić	Potomje		16 km alternative for section 114	18	450	10/2017	Davorin
X11	Lovinac	Obrovac	Tulove Grede	Alternative to section 106	40	400	7/2017	Davorin
X12	Obrovac	Zadar	Zemunik	Alternative to section 107	55	400	7/2017	Davorin

2 Infrastructure

This chapter provides an overview of the infrastructure in general along the route in Croatia. You can find more detailed information per section under chapter 6.

2.1 Existing route infrastructure

This is first official definition and detailed evaluation of the EuroVelo route in Croatia. For such route, that has never been developed before the expectations on infrastructure are not high. However, the initial situation is quite good:

- 96% of the route is perfectly or well ridable
- Only 2% of the route leads on unavoidable roads with very high traffic and 8% high traffic
- 75% of the route is on segments with low, very low or free of traffic, suitable also for demanding users
- Problematic segments are quite distributed over the whole route. Every single improvement of a short critical segment will connect longer quality area
- There are almost no cycling paths – 1% and some combined pedestrian/cycling paths – 5%
- Route is extremely attractive with 120 attractions on the way and almost every 2nd km in average on a highly attractive landscape including national/nature parks and UNESCO sites

To sum it up, a new extremely attractive route is born, already useful for experienced cyclists but not yet suitable for unexperienced and demanding cyclists.

General remarks about route infrastructure

As some aspects of assessment are equal for the whole route, or relevant just for a single section they are mentioned here in general.

EuroVelo signing – it is not existing on the EuroVelo 8 in Croatia at all.

Also national signing is not existing, as it is not defined yet (no regulations). Several counties started with development of local cycling routes and own standard for signing. Such signing is partly present on local routes overlapping with sections 97, 98, 109, 110 and 112. Cycling tourism in Croatia started developing through local round routes in destinations. Existing signs include route number and direction information, mostly in just one direction without indicating next destination, so their applicability for long distance route is very limited.

For almost no present categories “noise dust and smell”, “crime, wild dogs” and “monotonous” see comments in the table following.

Ascents per day is in average 540 m what is not fitting with important criteria added in the new ECS version (max 500 m per day). Information of this change was communicated very late, after daily sections have been defined and agreed with all stake holders. Therefore, for the time being sections remain like this. A new splitting of the route into more daily section to comply with the new standard will be considered during next route development step. By creating web for route users, a flexible daily section creation meeting own fitness and taste will be suggested.

Criteria		1123		Comments
Continuity	Discontinuity/not ridable	3	0,3%	1) Vratnik, section 102 - temporarry bypass via road D23 possible 2) Krvavica, section 112 - temporarry bypass via road D8 possible
	multiple steps	5	0,4%	5 times in total, sections 111,112,113 from 3 up to 80 steps
	Chicane/obstacles/dismount	19	1,7%	several single steps several chicanes against motor bikes several short sections (up to 200m) of pedestrian bridges where dismount is requested
Route components	Cycle paths free	8	1%	
	Other – traffic free	50	5%	
	V.low traffic	475	42%	
	Low traffic	303	27%	
	Moderate traffic	173	15%	
	High traffic	90	8,1%	See detailed specification of every section within section description and in 2.2
	V.high traffic	24	2,1%	See detailed specification of every section within section description and in 2.2
Crossings	Dangerous	25	2%	typically left turns from or to the road with high traffic crossing both lanes. Considerations done for the default route direction.
	V.dangerous	3	0,3%	in addition to „only“ dangerous, low visibility of the crossing and/or high speed/traffic
Surface	Perfectly rideable	955	85%	
	Well rideable	126	11%	

	Moderately rideable	31	2,8%	several sections of unpaved road, usually not concentrated but mixed with well ridable unpaved sections
	Badly rideable	8	0,7%	several sections of unpaved road, usually not concentrated but mixed with well or moderately ridable unpaved sections
Gradients	Cumulative elevation gain [m]		10830	Average 540 per day! in average 9m/km gain and loss per route km = ca 2%
	Cumulative elevation loss [m]		10730	
	Highest (gain+loss)/km [m]		90	90 – only 3 km 80 – only 4 km 60 – only 8 km 50-55 on 24 km
Attractiveness	Attractions	107	10%	average every 10 km! 7 UNESCO sites national parks nature parks significant landscapes small and big cities monuments, museums
	Highly attractive area	473	42%	extremely attractive landscape: almost half of the route
	Noise/dust/smell	17	1,5%	concentrated on two sections: 100 (entrance to Rijeka) 101 (sections after Rijeka through industrial zone)
	Crime/wild dogs	10	0,9%	section 103 - 5 km: warning bears section 104 - 3 km: warning bears section 105 - 2 km: passing close to the mine suspected area
	Monotonous	2	0,2%	just TWO single kilometers of monotonous ride on 1123 km!

= Doesn't meet essential criteria = Doesn't meet important criteria = Doesn't meet additional criteria

2.1.1 Public transport

Public transport on a long-distance cycling route has 3 different important aspects:

1 – to access the route
2 – to move along the route
3 – to skip critical route sections
4 – ferry or ship as an integral part of the Mediterranean route

These aspects are elaborated in separate sections following

2.1.1.1 Public transport to access the route

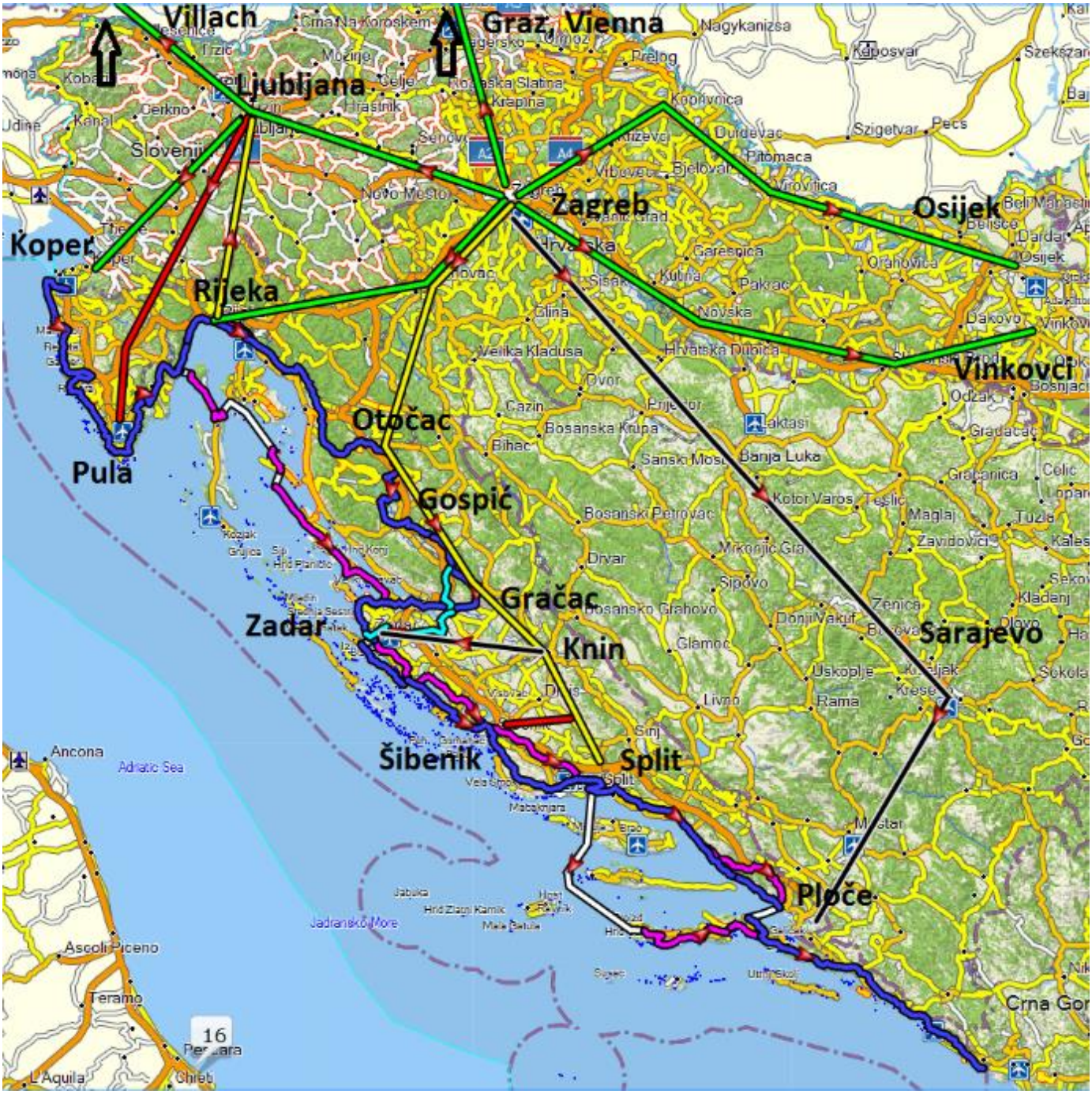
Train

As environmentally aware population, cyclists prefer train for public transportation. Situation in Croatia with trains in general and especially with bike on train is unfortunately not well developed. In addition, Mediterranean configuration is not suitable for a train and there are no trains along the route, except in the flat hinterland section. Number of train stations along the route is quite limited and their connection with the continent also.

Overview of the places of the route accessible by train is given on the map following, and in the table below:

Legend:
Green – all year
Yellow – in the season (April or May – September or October)
Red – not taking bikes
Black – train not operating

Connection	Point on the route	Connected with	trains per day carrying bikes	capacity bikes per day
EV8	Rijeka	Zagreb, Osijek	3 – all year	30
EV8	Koper *	Ljubljana	1 – all year	8
EV8	Split, Gračac, Gospić, Otočac	Zagreb	1 – in the season but could be extended upon demand	10
EV8	Rijeka	Ljubljana	2 – in the season	20
EV8	Šibenik	Zagreb	not taking bikes now	
EV8	Pula	Ljubljana	not taking bikes now	
EV8	Zadar	Zagreb	train not operating now	
EV8	Ploče	Sarajevo, Zagreb	train not operating now	
backbone	Zagreb	Vinkovci	5 – all year	40
backbone	Zagreb	Vienna	1 – all year	20
backbone	Zagreb Ljubljana	Villach	1 – all year + 1 in the season	12 + 12



View in Garmin Base Camp program with the map Adria TOPO PRO, tracks recorded with the navigator Garmin Dakota 20

Conclusion:

Availability of the service bike by train is limited but considering the route that is not yet known, demand is also very limited. Existing capacities are by far not used.

Existing possibilities of the “bike on train” service in the season (green and yellow on the map) are covering 980 km or 87% of the route with the criteria “public transport every 150 km” on essential level.

Once the route is launched and demand increases, train operators could increase offer based on the base (trains, wagons, experience) already existing. They expressed already their willingness to extend the season of the bike on train service for the train Zagreb-Otočac-Knin-Split as soon as higher demand is visible.

Increasing number of trains per day and capacity of bikes could be the next step along with the demand growth. Train operator is already now open to add a bike wagon in case of planned higher demand (e.g. special actions or organized groups). Reservation of a bike place is already now possible or mandatory. This gives an opportunity to track demand and react on it.

Train Zagreb – Vienna with bike wagon carring bikes including tandems and trailers

References:

http://www.slo-zeleznice.si/en/passenger-transport/useful-information/general-terms-and-conditions/taking-your-bike-by-train

http://www.hzpp.hr/en/transportation-of-bicycles?m=378&mp=88

Bus

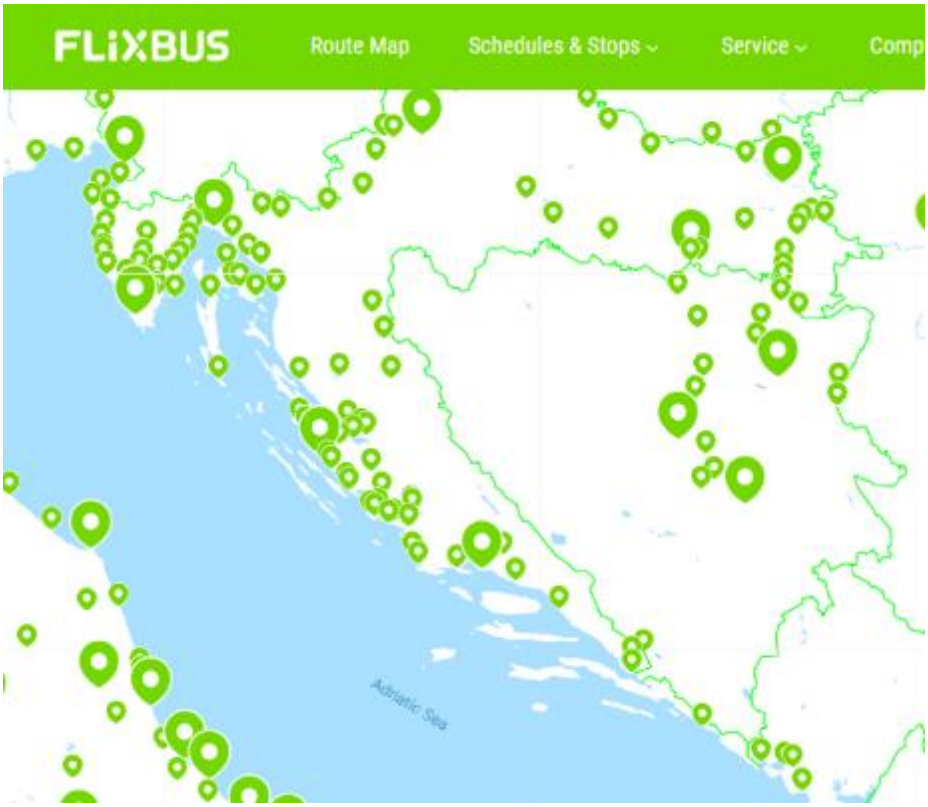
Transfer of bicycles by long distance bus could be practical solution, especially for many destinations where train is not available.

Most of bus operators are willing to take the bike on bus “if there is enough space”. In practice this means following limitations:

- No service in high season (July/August)
- No reservations possible
- No more than 1 or 2 bikes on the same bus

There are already some success stories of bike on bus that are worth to be considered and replicated.

Flixbus is taking bikes on bus on many lines. One bus can take up to 5 bikes on the carrier outside the bus or in the bag as a luggage. Reservation is possible. According to ADFC bike travel analysis, in 2016 Flixbus transferred 85000 bikes growing by 24% from the year before. Croatia is very limited involved in a bike transfer service with just few lines up to Zagreb. However as soon as demand grows it can easily be extended to the coast. Moreover, we’ll contact them and propose it ASAP. They already cover more than enough destinations.



Flixbus map with destinations covered

Autotrans from Rijeka already offers “bike on bus” service on the bike destination island of Brač. This operator from Rijeka serves many intercity lines from Rijeka to Zagreb or along the coast. Having already experience with bikes they could extend their offer to connect EuroVelo 8 locations with the continent or among them.

Autotrans Bike on Bus, Island of Brač

Detailed elaboration of these opportunities will be done within this project MedCycleTour, in particular within the objective 3.2 “Action plan for the development of the Mediterranean route”.

Conclusion: access to the route by bus could be, at the moment efficient solution for single tourists or pairs outside main touristic season (April, May, June, September, October). There is a good potential to improve the situation.

Airplane

Although not environmental friendly solution, airplane is very quick access to the route for distant tourists. Croatian coast is very popular holiday destination. Several international airports are connecting Croatia with all destinations worldwide. Connections are especially frequent during touristic season. Most of airplane companies are maintaining lines with Croatia and most of them are offering a service bike on plane in a range of 50-60€.

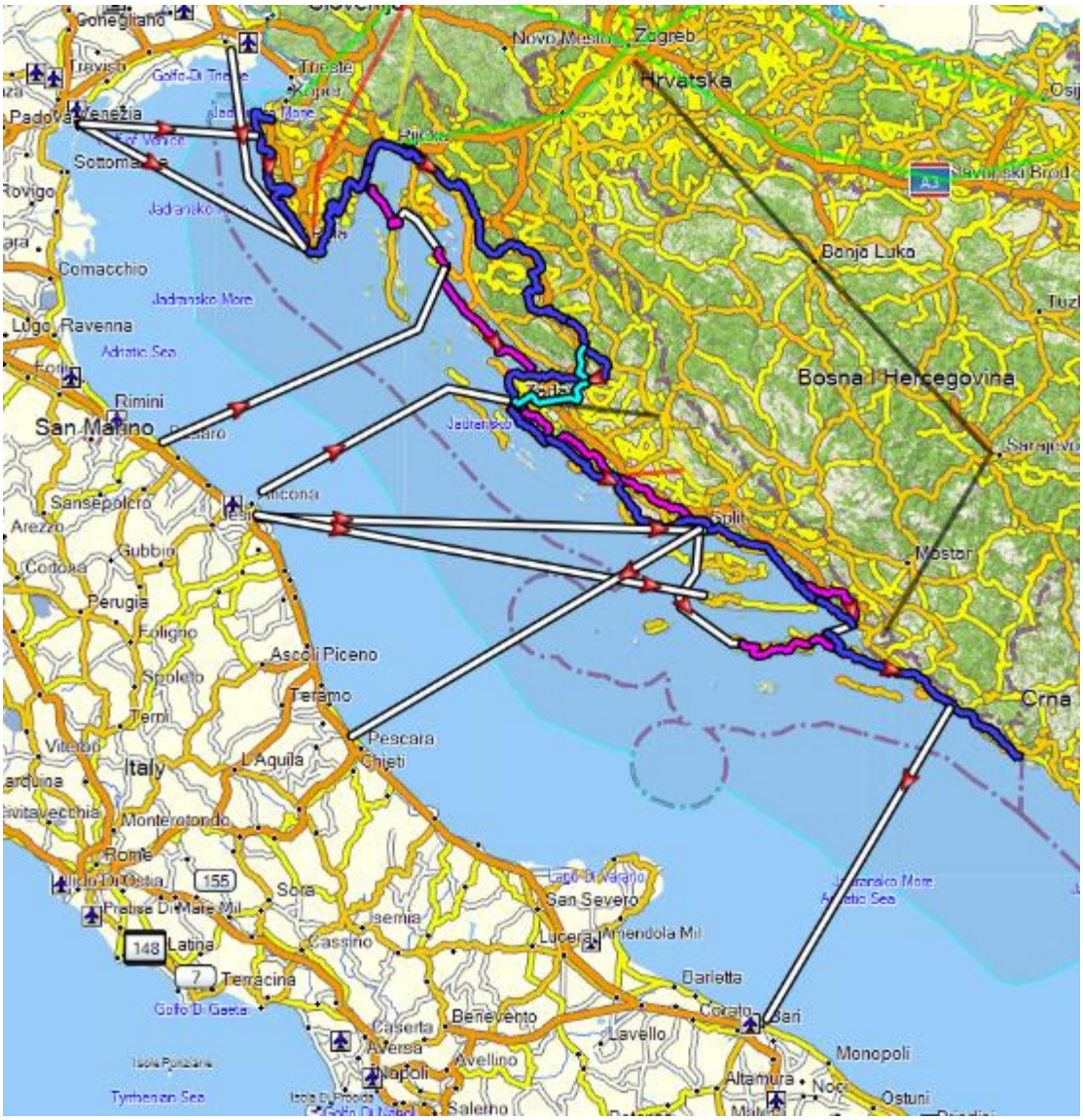
Following international airports are on the EuroVelo 8 route in Croatia or very close to it:
Trieste (Italy)
Pula
Rijeka (Island of Krk)
Zadar
Split
Dubrovnik

Conclusion: efficient solution for guests reaching the route by plane. Some local agencies started offering the service of bike packing or unpacking for a transport with the airplane.

View in Garmin Base Camp program with the map Adria TOPO PRO, tracks recorded with the navigator Garmin Dakota 20

Ferry/Ship

For the purpose of route access Ferries and ships are very practical for Italian tourists. Most of them are operating all year long and every day. All ferries are taking bicycles.



View in Garmin Base Camp program with the map Adria TOPO PRO, tracks recorded with the navigator Garmin Dakota 20

References:

https://www.directferries.com/ferries_from_croatia_to_italy.htm

2.1.1.2 Public transport to move along the route

While moving along the route cyclists may want to use a public transfer to:

- Come back to the starting position where e.g. car is parked, bike hired or return flying ticket booked
- Skip the parts they are less interested in
- Accelerate their moving along the route to catch up with their plans or wishes

For this purpose, a public transport along the route is needed.
Some advanced routes (e.g. Mur route in Austria) have a private operating bus with a trailer for cycles driving every day along the route.
Being still in the beginning phase this route should rely on existing public transportations.

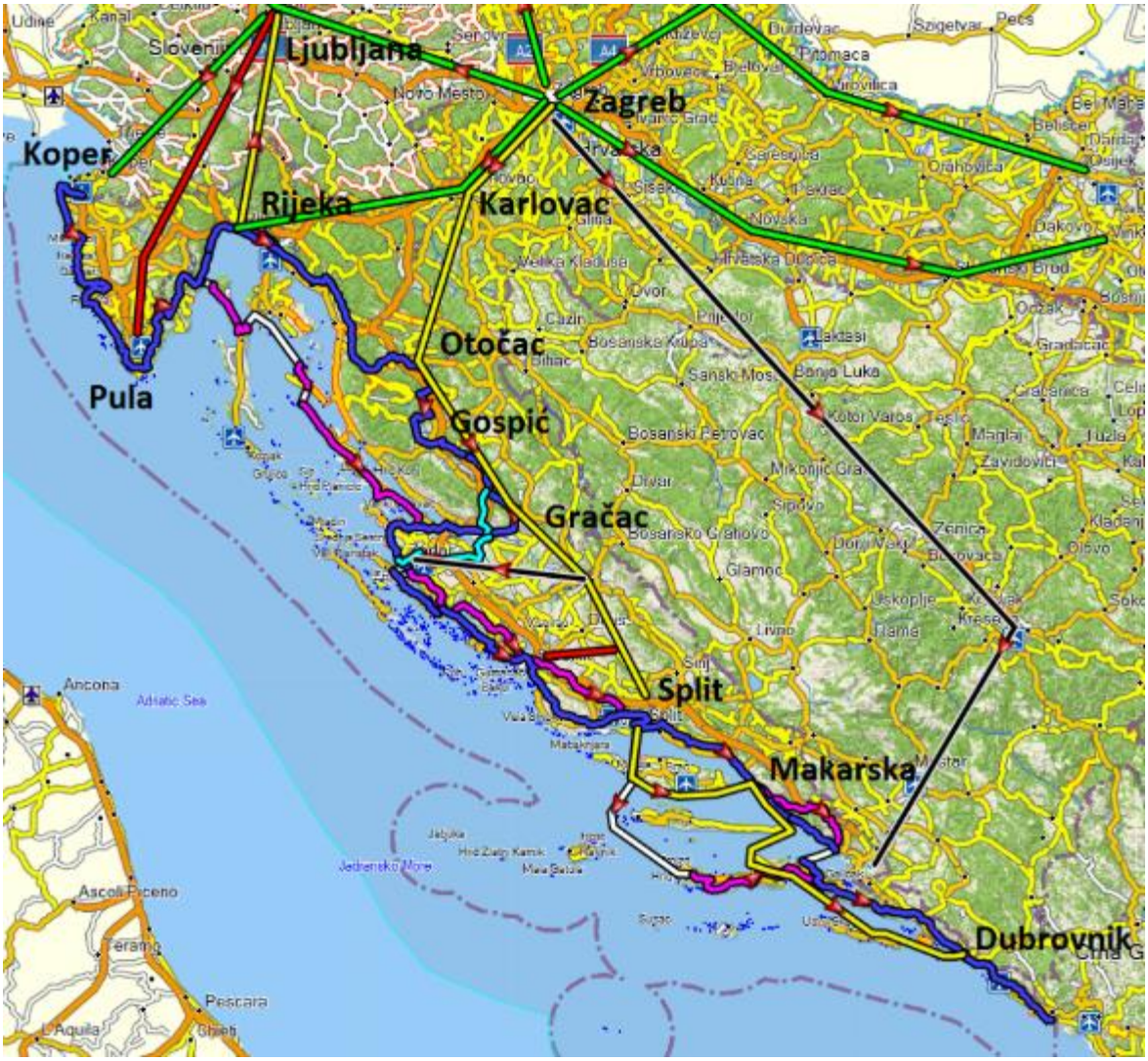
Train
(please refer to the map in previous chapter)
Train connection between Zagreb and Split could be used to move along the route in the season, however this is not very convenient: the train from Split to Zagreb is a night train, passing through the stations in between during night.
Putting back into operation the railroad Zadar – Knin and introducing "bike on train" service for the relation form Šibenik and from Zadar could even more improve this situation

Bus
Already mentioned Flixbus and Autotrans (as well as any other bus carrier having interest) could be good solution as they are already operating along the route or close to it.

Airplane
There are no airplane lines within Croatia for so short distances, however one could fly over Munich 😊

Ferry/Ship
A catamaran line Split – Makarska – Dubrovnik operating from June 1st to September 30th carries bicycles. Price 30€ for the relation Split – Dubrovnik pro person and pro bike.
https://www.krilo.hr/en/

A ferry line along the Croatian coast from Rijeka to Dubrovnik was cancelled in 2014. There are decisions to renew it, however there are still not reliable information if and when it will happen and how this line will be operating. Such line would be very helpful for the cycle tourist transport along the route. Project team will keep observing development with this line and include this information in a National web site for tourists (project objective 2.8. to be completed by the end of 2018).



Conclusion:

Moving along the route by train is possible but not comfortable. Train in the season covers the area from Otočac to Split but not very comfortable (night). Koper, Pula and Rijeka are also covered by train but long detours via Ljubljana, Zagreb or Karlovac must be taken into account.

Bus could be used outside main season for small groups only.

Catamaran covers connections Split – Makarska - Dubrovnik

2.1.1.3 Transport to skip a critical section

Having in mind several critical sections with high or very high traffic, there is a need for a service to transfer bikes over these short distance sections. On some destinations there are cycling tourism agencies offering also such service, e.g. around Ploče where a section of 15 km over coastal main road D8 is unavoidable part of the EuroVelo 8. In developed cycling tourism destinations there are for sure several providers of such service but this should be even more developed having in mind many short critical sections spread almost over the whole route. Even in an ideal situation on the route, such service of short taxi transfer may be needed for cases of delay, bad weather, being sick or tired or having problem with the bicycle. Such service should be developed along the route starting with small private initiatives.

2.1.1.4 Transport by ferry/ship as a part of the route

There are 3 ferry lines that are part of the main route which includes two islands and one peninsula:

Zadar (Gaženica) – Preko (Island of Ugljan) – 15-18 times a day

Tkon (Island of Pašman) – Biograd – 10-13 times a day

Ploče – Trpanj (peninsula Pelješac) – 4-7 times a day

Considering possible alternatives including more islands additional ferry or ship lines are included:

Ferry Bestova – Porozina (Island Cres) – 8-13 times a day

Ferry Merag (island Cres) – Valbiska (island Krk) – 10-13 times a day

Ferry Valbiska (island Krk) – Lopar (island Rab) 2-4 times a day

Ship Rab (island Rab) – Lun (island Pag) – 3 times a week – 3 times a day, only 4-6 bikes but an extra transfer can be ordered upon request (75€ for all passengers)

Ferry Split – Vela Luka (Island Korčula) – 2-4 times a day

Ferry Korčula (island Korčula) – Orebić (peninsula Pelješac) 14-18 times a day

All ferries have practical unlimited capacity for bicycles.

References:
https://www.jadrolinija.hr/en/ferry-croatia
http://www.rapska-plovidba.hr/rab-pag_hr.html

2.2 Critical deficiencies

Critical deficiencies related to the infrastructure contain following aspects:

- Traffic intensity and speed level
- Rideability of the surface or not rideability (discontinuity)
- Steps and other obstacles

Depending on the severance of these deficiencies on every particular kilometre of the route, it will be declared as complained with ECS on essential, important or additional level, or not complained at all.
A table on the next page shows an overview of compliances section by section. Total length of every daily section is distributed among sections that are:

- Complained with ECS on additional level = recommended even for demanding cyclists (green)
- Complained with ECS on important level = recommended for average and experienced cyclists only (orange)
- Complained with ECS on essential level only = recommended only for experienced cyclists (red)
- Not complained with ECS even on essential level (black)

Deficiencies are quite distributed over whole route.
Middle part (Rijeka – Pakoštane, sections 101-108) seems to be the early candidate to develop a compact part of the route complied and certified by ECS

Critical deficiencies related to the public transport
Deficiencies are quite distributed over the whole route.
The most beneficial single improvements would be

- to extend the availability of the train Zagreb – Split to the period from beginning of April to end of October
- to add possibility for taking bikes in the day train Zagreb – Split, at least in the season
- to identify and further develop a network of small private bike carrying taxi transport providers covering whole route.

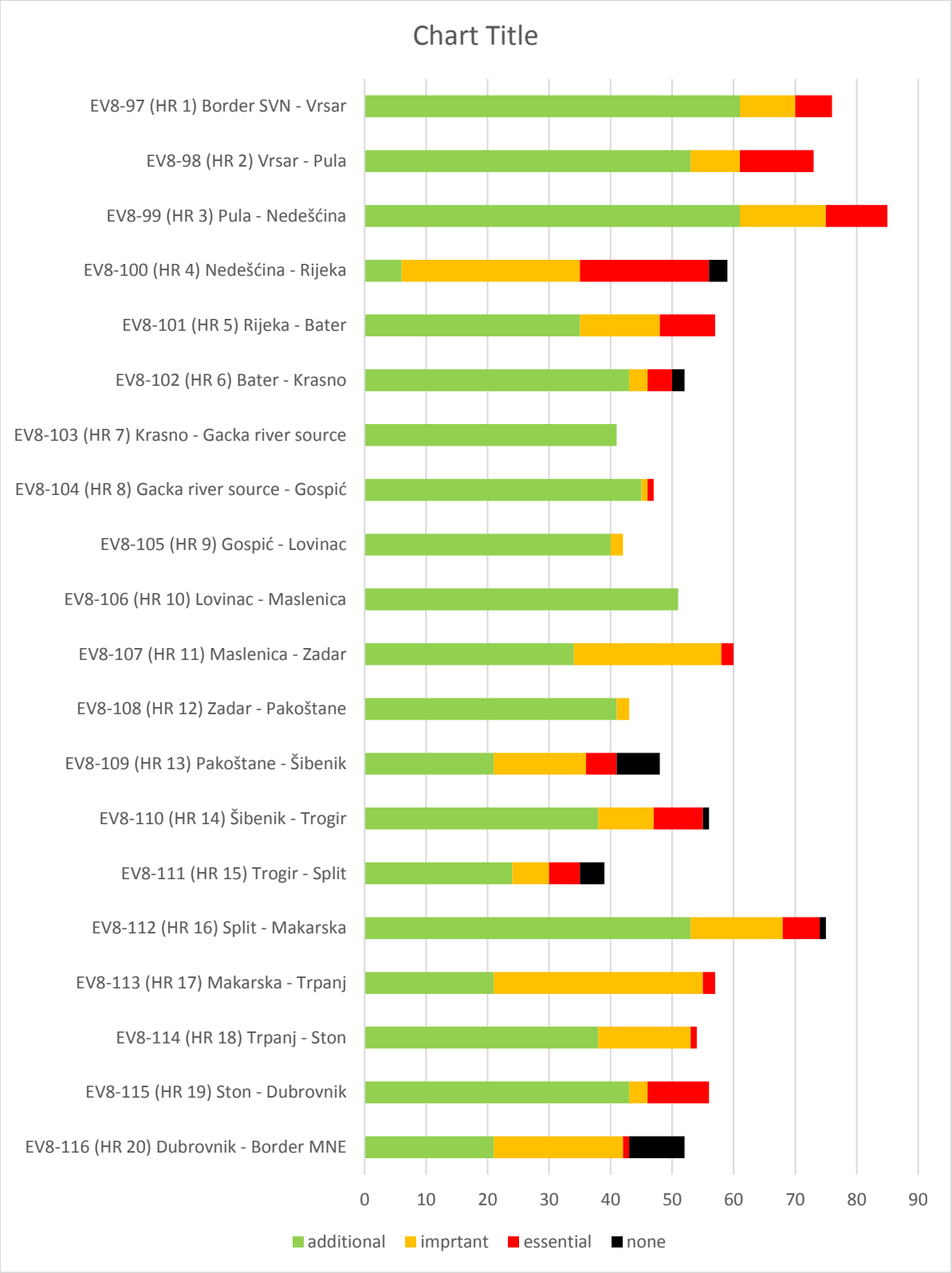


Chart Title
EV8-97 (HR 1) Border SVN - Vrsar
EV8-98 (HR 2) Vrsar - Pula
EV8-99 (HR 3) Pula - Nedešćina
EV8-100 (HR 4) Nedešćina - Rijeka
EV8-101 (HR 5) Rijeka - Bater
EV8-102 (HR 6) Bater - Krasno
EV8-103 (HR 7) Krasno - Gacka river source
EV8-104 (HR 8) Gacka river source - Gospić
EV8-105 (HR 9) Gospić - Lovinac
EV8-106 (HR 10) Lovinac - Maslenica
EV8-107 (HR 11) Maslenica - Zadar
EV8-108 (HR 12) Zadar - Pakoštane
EV8-109 (HR 13) Pakoštane - Šibenik
EV8-110 (HR 14) Šibenik - Trogir
EV8-111 (HR 15) Trogir - Split
EV8-112 (HR 16) Split - Makarska
EV8-113 (HR 17) Makarska - Trpanj
EV8-114 (HR 18) Trpanj - Ston
EV8-115 (HR 19) Ston - Dubrovnik
EV8-116 (HR 20) Dubrovnik - Border MNE
0
10
20
30
40
50
60
70
80
90
additional
imprtant
essential
none

Overview of critical sections with high or very high traffic / speed level is given in the table below.

Moderate traffic/speed level and additional criteria/demanding users are not yet in focus, considering route development start and several problems on essential and important level.
However, some of uncritical sections (or less critical) in sense of current traffic and ECS are still included in this overview due to following reasons:

- Traffic is on the edge. Considering average traffic growth of 7% in last years, these sections could become critical
- There is very high difference between average and summer peek traffic. Although ECS considers main cycling season figures (similar as year average) there are still many cycling tourists which are bounded to the high season so traffic figures for the high season are noted for possible future use

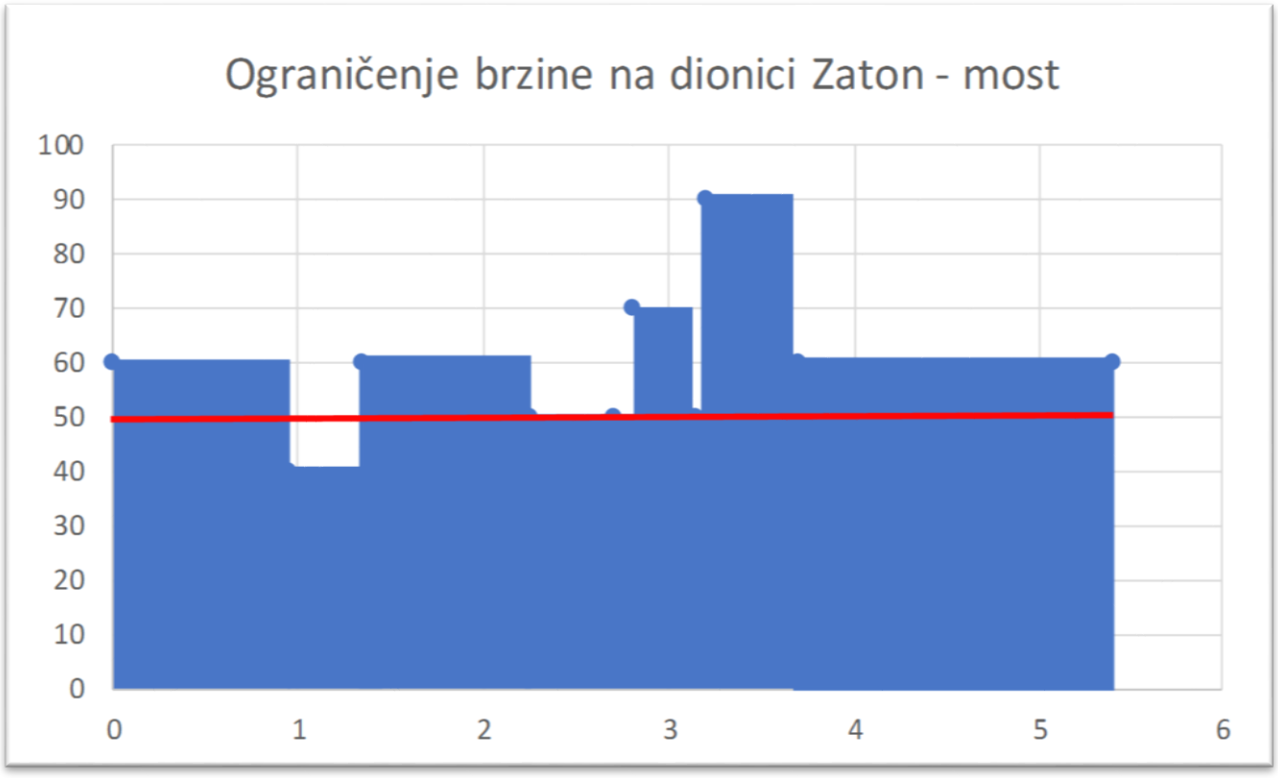
Nr.	Section HR	Road	location	length	Traffic average	Traffic summer	Speed limit (km/h)
1	1	D75	Zambratija	2 km	5000	10000	30-90
2	1	D75	Karigador	3 km	5000	10000	90
3	1	D75	Antenal	3 km	5000	10000	30-70
4	1	D75	Funtana	0,4 km	6500	13500	30-50
5	2	D75	Lim Fjord	6 km	4000	7000	40-60
6	2	Local	Fažana-Valbandon	4 km	5000	10000	40-60
7	2/3	Pula	Through Pula	6 km	5000	10000	50
8	3	D66	Barban-Raša	6 km	3000	4700	50
9	4	D64/D500	Kršan-Vozilići	2 km	4500	6600	60-90
10	4	D66	Medveja-Rijeka	20 km	4300	7600	40-60
11	4/5		Through Rijeka	4 km	10000	10000	50
12	5	D8	Rijeka – Bakar – Križišće	12 km	3700	4600	50-90
13	11	D8	Maslenica	1,5 km	4500	10000	60
14	13	D8	Prosika	2,7 km	5000	10500	90
15	13	D8	Pirovac North	1,7 km	5000	10500	Partly 90
16	13	D8	Pirovac South	1,8 km	5000	10500	Partly 90
17	13	D8	Bridge – Šibenik	1,7 km	15000	23000	90
18	14	D8	Brodarica Grebaštica	5,3 km	5500	11000	1 km 90
19	14	D8	Seget Vranjica	300 m	4600	8900	60
20	14	Trogir	Trogir entrance	1 km	4000	8000	50
21	15	Trogir	Trogir exit	2,5 km	16000	27000	50
22	15	Franje Tuđmana	Kaštel Gomilica Sućurac	2 km	5500	11000	50

23	15	Frane Bulića	Solin	1,3 km	12000	14000	50
24	15	Splitska	Split entrance	600 m	14000	20000	50
25	16	D8	Brela	4 km	5600	11000	50
26	17	D8	Podgora	2,3 km	3500	7000	60
27	17	D8	Živogošće Drvenik	8 km	2900	6200	50-60; 1 km 80
28	17	D8	Grdac Ploče	11 km	2900	5600	40-60
29	18	D414	Dubrava Ston	20 km	1800	3700	14 km 90
30	19	D8	Zaton – Dubrovnik bridge	8 km	8500	15000	40-60, 500m 90
31	20	D8	Dubac	1 km	14000	22000	
32	20	D8	Kupari Zvekovica	8 km	14000	22000	50-60 shortly 90

Data source: Annual traffic counting on Croatian roads 2016, data rounded and in some cases approximated with closest measurement point or interpolated

Road with high traffic between Brodarica and Grebaštica (table row 18) on a section which seems not to be too difficult to widen with a bicycle path

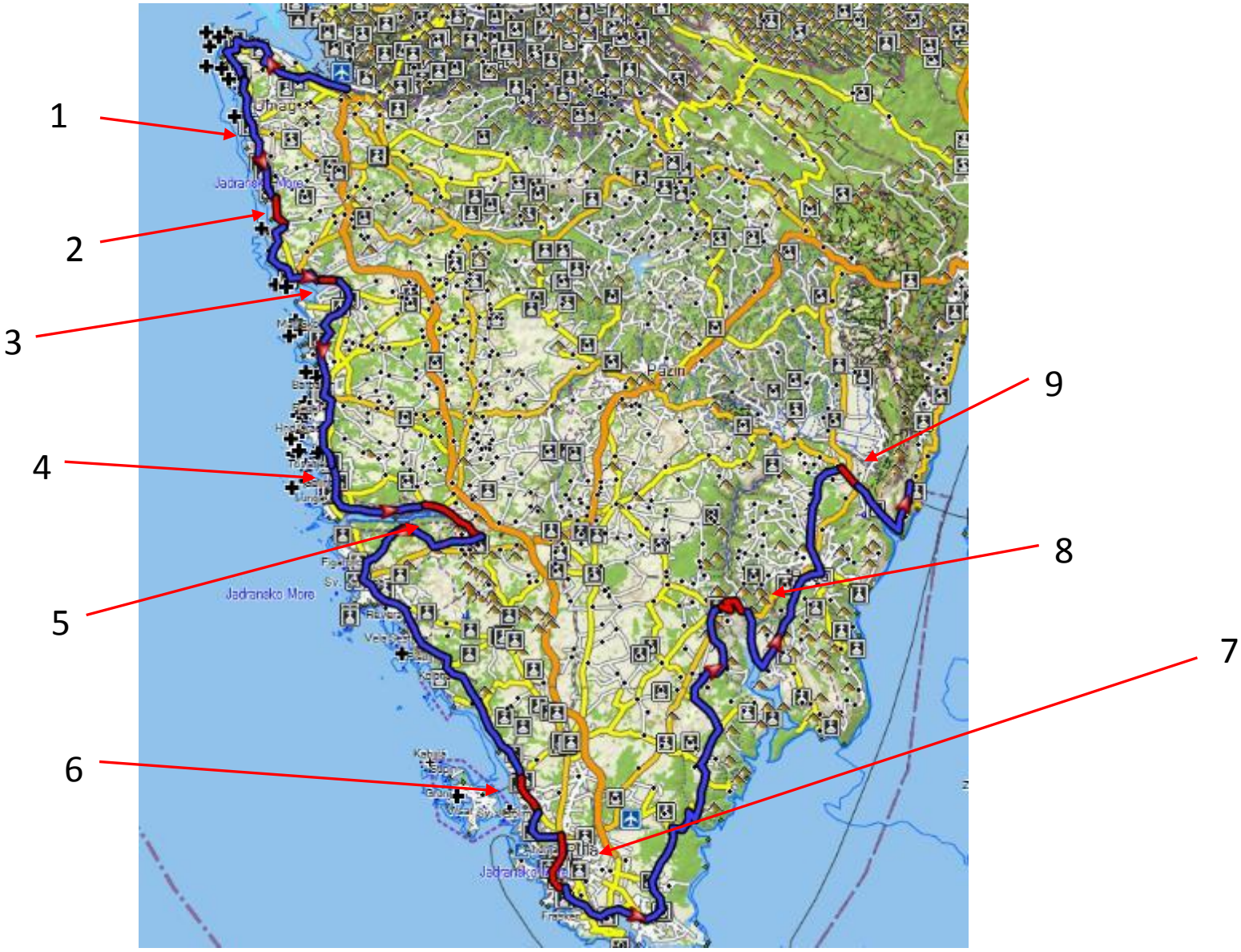
Road with very high traffic close to Dubac (table row 31)
Extension of the road by the bicycle path on such section is extremely expansive



Analysis and modelling of the speed limitation for the section Zaton – Dubrovnik bridge on D8 road (table row 30).

Consistent speed limit on 50 km/h along the whole section would increase travel time of car drivers in ideal case for horrible 58 seconds. In real case even less.

View in Garmin Base Camp program with the map Adria TOPO PRO, tracks recorded with the navigator Garmin Dakota 20



Overview of critical sections with high or very high traffic in Istarska county (rows 1-9 in the table)

Overview of critical sections that are not rideable or badly ridable is given in the table below.

Nr.	Section HR	location	length	Status	Alternatives
1	3	Between Pomer and Medulin	500 m	Badly ridable	Long detour on busy roads
2	6	Vratnik	1700 or 2500 m	Not ridable	Detour via D23 with heavy traffic 2-3 km
3	6	Between Stolac and Oltari	4 out of 6 km	Badly ridable	
4	13	Short sections along Vransko jezero between Drage and Prosika	Several short sections	Badly ridable	Longer on D8 with heavy traffic
5	13	Branch from D8 to Šibenik	400 m	Badly ridable	Longer on D8 with heavy traffic
6	16	Krvavica to Makrska	700 m	Not ridable	Detour via D8 with heavy traffic
7	19	Between Konjevac and Orašac	500 m	Badly ridable	Detour via D8 with heavy traffic

Short badly ridable section along Vransko Jezero (4)

Not ridable section Krvavica to Makarska (6)

Some cyclists will prefer to push the bike along the coast with beautiful view instead of taking a detour including 3 km of road with heavy traffic (5-10000 per day) and 100 m elevation.

A reconstriction of this pedestrian path to be suitable for cyclists is planned.

Multiple steps are 5 times on the route and all of them are concentrated on the route sections 111-113

57 steps close to Podgora on the section 113

3 Services

3.1 Existing services

Overview of the service availability section by section is given in the table below:

Daily section	Km	Accommodation						Food / rest areas		Bike services						
		luxury	Standard	budget	camping	cyclist-friendly	Max distance between accomdation	food on daily section	Max distance for food (km)	repair shops	self-service	spare parts	e-bike charging	rental	helpline	Cycling holiday offers
97	76	8	7	10	8	1	10	27	8	4	0	3	2	5	0	
98	73	3	9	7	4	1	14	14	17	3	0	3	0	3	0	
99	85	1	19	15	1	1	12	17	16	3	0	4	1	2	0	
100	59	11	20	14	3	1	8	23	8	1	0	1	0	2	0	
101	57	1	6	6	1	1	18	13	18	0	0	0	0	0	0	
102	52	0	5	0	0	1	32	4	24	1	0	0	0	1	0	
103	41	0	2	1	0	1	23	5	22	1	0	1	0	1	0	
104	47	0	2	2	0	1	24	6	24	1	0	1	0	2	0	
105	42	0	2	1	0	1	36	1	42	0	0	0	0	0	0	
106	51	0	3	3	0	1	19	4	19	0	0	0	0	0	0	
107	60	13	16	15	13	1	14	20	14	3	1	3	1	8	0	
108	43	2	7	5	3	1	5	8	5	1	0	1	0	2	0	
109	48	1	7	5	7	1	12	7	12	2	0	2	1	2	0	
110	56	1	7	4	3	1	27	14	11	0	0	0	0	1	0	
111	39	0	4	3	1	1	15	5	8	1	0	1	0	1	0	
112	75	4	8	6	5	1	19	20	7	2	0	2	0	3	0	
113	57	5	9	8	7	1	9	10	11	0	0	0	0	0	0	
114	54	0	4	3	1	1	23	6	23	0	0	0	0	1	0	
115	56	3	7	5	3	1	21	10	21	1	0	1	0	1	0	
116	52	1	10	9	3	1	8	15	15	0	0	0	0	0	0	

= Doesn't meet essential criteria = Doesn't meet important criteria = Doesn't meet additional criteria

Accommodation

Croatian coast is well developed touristic area with high capacity for accommodation. Cycling tourism along EuroVelo 8 in Croatia should continuously grow with a very high rate to become a significant share of Croatian tourism on the coast an challenge accommodation capacity. In

addition, cycling tourism top season is outside peek months (July, August) and free capacities for cycling tourists are even higher. There might be some issues where the route passes too long through rural areas: sections 5 and 6. However this area is recognized as touristic interesting and capacities are growing.
Accommodation is available in average on every 5th kilometre of the route what allows flexible arrangement of a daily section. Most of accommodation locations offer a variety of facilities.
A system for cyclists-friendly accommodation certification is established recently in some counties along the route, but there are still not very much objects certified. However, cycling tourists are not new for friendly Croatian hosts ready to help, so in general all accommodation units could be considered as cyclists-friendly.

Food

Various food availability for every taste and budget is available in average every 5th kilometre of the route, however there are some sections with longer distances between supplies. Half of sections comply to the criteria “food available at least every 15 km”. In some rural areas food shops in small settlements should be used as an alternative to restaurants.

Restaurant in Žuljana, peninsula Pelješac

Bike repair/spare parts

14 out of 20 Croatian sections are covered with the bike service now. Whole route is fully complied to the criteria “service at least every 150 km”. Self-service repair bike stations are more and more popular in Croatia so expansion to cover sections without service is a realistic option.

Bike repair station – Makarska riviera

Bike rental

It is available in many destinations developing cycling tourism. Bike rentals are sometimes combined with bike service or even more with agencies offering cycling holiday.

For long-distance routes it is especially interesting feature to rent a bike on one location and give back on another. Such service is not officially communicated/promoted but is available upon request by one agency having subsidiaries on several locations. In addition, distant bike rental offices frequently know each other and cooperate. It is a good base to develop a network of bike rental stations, what has already been suggested during project workshops with stakeholders in all 7 counties along the way.

Considering limited availability/quality to access the carrying own bike on a public transport, availability of bikes for rent could play a key role in development of the EuroVelo 8 in Croatia. Therefore, rental offices should think of offering wider range of bicycles and equipment (different sizes, high quality, bike bags, SPD pedals, service kit, helmets, tandems, trailers, kid bikes).

Mediterranean route is very hilly with 540 m of ascents in average per daily section (sections should be rearranged due to new ECS but the route will still remain hilly). Therefore, use of pedalecs/e-bikes will be very important for this route. According to ADFC analysis 2017, 13% German cycling tourists use pedalec and this share is growing.

E-bike charging

In contrast to e-car charging, e-bike charging doesn't need any special equipment: a power socket 230 V is enough. Considering various types of e-bikes and their chargers, one will not really travel without own charger hoping to find charging station on the way perfectly fit standard of her bike, taking the risk to damage it. Bike recharging takes some time so appropriate places for recharging are ones where bikers anyhow stay: overnight, food, POI-s (museums, etc). Bars and restaurants could easily develop a cyclist friendly feature "charging pedalecs" by providing a 230V power supply to the bike parking place. Additional "stand alone" bike charging stations are nice to have but does not belong to the 1st set of development needs on the route right now.

Helpline

Special service as "helpline for cyclists" is not developed in a structured way. Private taxi service able to carry bikes could be a good solution when available. During the project MedCycleTour, availability of bike taxi service along whole route will be checked in detail within activity 2.8 Development of national EuroVelo 8 web for tourists.

Cycling holiday offers

There are regional tourist agencies offering cycling holiday in every of 7 counties on the way. On top of it there are several national agencies active across more counties. International agencies are also offering cycling holiday in Croatia.

EuroVelo holiday is not offered from agencies yet, as EuroVelo in Croatia is right now in definition phase. Agencies are offering self-invented routes and many of them are partly overlapping with the route EuroVelo.

All agencies are quite flexible and they will for sure be able and interested to include cycling along EuroVelo in their offer. Organizing workshops for agencies (and also some other potential service providers) is also in the scope of the MedCycleTour project.

Rest areas

There are in total 214 resting areas identified along the route, or in average on every 5th kilometre. There are almost no specialized “resting areas for bikers” but “general purpose” resting areas that can be used also for cyclists: city park, resting area along the road or a beach. Sure, one can rest almost everywhere in nature close to the road, but resting areas relevant for this survey have at least a bank to sit on, or in some cases one can additionally (instead) lay on the beach.

On top of ECS data collection standard, for this survey some additional interesting data are collected. Out of noticed 214 resting areas:

- 36 have a toilet
- 59 have drinking water
- 27 have a table
- 40 are in the shadow
- 154 are on the beach

There are for sure much more usable resting areas that are not direct on the route. These data will be collected in next phase.

There are also many good candidates (locations) to build a resting area: nice view, low motorized traffic, shadow

A great “general purpose” resting area on the section 111 close to the beach

Bank in the shadow, shower on the beach – anything better for rest needed?

Peninsula Pelješac

3.2 Planned services

Croatian ministry of tourism supports development of cycling tourism and among other planned activities several bike resting areas are planned.

Planned resting area on the route in Žaborić (daily section 110)

3.3 Critical deficiencies

Priorities for service development are:

1) Self-service bike repair station on 6 sections where no service available
2) Further development of bike rental services
    a. networking of providers to offer “return on another location” service
    b. advanced rental (quality touring bikes, various size, tandem, trailer, bags, toolset, helmet)
3) private taxi service for bikes
4) resting areas on the route sections with long distance between settlements, featuring shadow, rain protection, tables, water and toilet

4 Marketing / Promotion

4.1 Existing promotional tools

The route is 1st time defined and surveyed now, so there are no previously available official web pages or web information. The only available official information so far is a short introduction on the EuroVelo web http://www.eurovelo8.com/countries/croatia
Due to the same reason, there are also no printed materials yet.

Tourist information centres / panels per section*

Daily section	Info centre	Info panel	Comments
97	5	15	
98	2	8	
99	0	2	
100	4	10	
101	3	1	
102	1	2	
103	1	0	
104	1	1	
105	0	0	
106	3	0	
107	5	10	
108	4	3	
109	4	1	
110	3	3	
111	3	3	
112	4	7	
113	3	4	
114	1	1	
115	3	1	
116	2	6	

*Based on the route survey.

General comment for all sections:
Croatian Mediterranean is a highly developed touristic area and has many local tourist boards and other tourist info centres. Usually they are available in every town along the route, in average every 19 km. During route definition process project teams informed tourist board system about EuroVelo 8 development, however there is no printed material available for tourists yet.

Existing tourist info panels still don't include information about EuroVelo 8, but still information about local cycling routes that are partly overlapping with EuroVelo 8 track.
Along with the development of the EuroVelo 8 route, information panels should include this information and in addition special EuroVelo 8 information boards should be created.

4.2 Planned promotional tools

During MedCycleTour project, a National Croatian EuroVelo 8 web site will be developed. Planned deadline is end of 2018 and planned content is commented in the table below. Planned scope for this implementation includes all 20 main sections of the route.

Category	Promotional tool		Comments
Web	National/regional website, including information on:	Information on the route, including a detailed map	Planned for End 2018
		Info on signing	No signing on the route will be available before October 2018. As soon as any section gets signing, the web will be updated to include this information.
		Info on accommodation	Planned for End 2018
		Info on PT connections	Planned for End 2018
		Interactive maps	Planned for End 2018
		POIs	Planned for End 2018
		Accommodation online databases	Special EuroVelo 8 online database is not planned so far. Links to "common purpose" accommodation online data bases will be provided
		PT timetables	A link to official web sites of PT service providers will be included to assure up to date information.
		GPS track downloads	Planned for End 2018
	Overview info about the route on eurovelo.com		Very basic information available now
Print	Guidebook		Should be relatively easy once information for web are

		collected, still no concrete plans.
	Detailed printed map	Should be relatively easy once information for web are collected, still no concrete plans.
Other	Information boards / centres on every daily section	At least one local tourist board is available on every daily section. Once printed information about EuroVelo 8 are available, they will be included in tourist board supply for interested tourists.

= Essential criteria = Important criteria

4.3 Critical deficiencies

1st set of important actions is covered with the MedCycleTour project objectives and includes:

- Creation of web site with detailed information (see above)
- Initial project promotion brochure (international)
- Study tour for journalists
- Presentation of the route on international touristic event (fair)
- Promotion of the route via social networks

On top of it, following deficiencies are considered as 1st priority:

- Route map and/or guide available as a printed version
- Information about the route included in Croatian touristic marketing activities, in particular:
  - Flyers of EuroVelo 8 designed and available in tourist offices on the route
  - Branding of Croatian cycling tourism
  - Representing Croatia on international touristic events
  - National touristic events
- EuroVelo 8 information boards available in touristic centres on the route

5 Organization / Financing

5.1 Existing organizations for development and maintenance

Development
The route is in its pre-developing stage. This project will initiate route development and authorities to develop the route should be also defined during this project MedCycleTour within activity 4.1 “Charter for sustainable cycling tourism development in Mediterranean”.

Maintenance
The route is 91% on public roads, so this part is covered with usual road maintenance.
Remaining 9% is on cycle path, cycle-pedestrian path etc, what is maintained by local authorities.
Signposting is not existing and maintenance of planned future signs should be defined along with their implementation.

5.2 Potential organizations for development and maintenance

Several organizations are to some extend involved in the route development so far and they are possible candidates to take the initiative for the route development in future years:

Croatian national cycling tourism coordination body – organization is established on the initiative of Croatian Ministry of tourism in 2016 following Croatian cycling tourism development action plan. Organization is also a national EruoVelo Coordination for Croatia. Web site: https://cikloturizam.hr/ (basic information will be soon available also in English)

Croatian national tourism board. It is an umbrella organization for Croatian tourism boards system. CNTB is involved in EuroVelo 8 development in Croatia as a project partner on the project MedCycleTour and could keep development activities within some possible follow up projects or other activities out of its portfolio (especially promotion).

CEDRA – Cluster for Eco Social Innovation and Development – is 2nd Croatian partner on this project. Could be engaged in further development through appropriate projects.

5.3 Existing financial resources

Initial financial resource of 280 000 € for the route development came through the project MedCycleTour in the project duration period February 2017 – January 2020.
There are no other specially dedicated financial resources for EuroVelo 8 development planned at the moment, however some activities developing cycling tourism on a county level could support also EuroVelo 8 development. Future financing should be defined along with the future organization setup.

6 Description of the route conditions by section

6.1 Section 97

Section 97 is 76 km long, or 83 km if we include Slovenian part. This section starts in Portorož, 7 km from Slovenian border and ends in Vrsar.
The route mostly follows the coastal line and keeps beautiful view to the sea. It passes through nice small old cities and touristic areas including UNESCO site Euphrasian Basilica in Poreč and westernmost Croatian old lighthouse in Savudrija.

Short after entrance in Croatia, nice greenway with beautiful view on the sea, frequent cyclists route.

Southernmost point in Croatia, old lighthouse in Savudrija

6.1.1 Route infrastructure

EV8-97 (HR 1) Border SVN - Vrsar

Criteria		76		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	0	0%	
	Chicane/obstacles/dismount	1	1%	One Chicane against motor cycles but it can be omitted for tandems and trailers if needed
Route components	Traffic free	29	38%	
	V.low traffic	23	30%	
	Low traffic	10	13%	
	Moderate traffic	8	11%	
	High traffic	6	8%	Several short sections with high traffic with no alternative. Rather uncomfortable than

				dangerous: cyclists in this area are not surprise and car drivers are respecting them. Ongoing actions to improve the situation (further development of cycling infrastructure)
	V.high traffic	0	0%	
Crossings	Dangerous	3	4%	
	V.dangerous	0	0%	
Surface	Perfectly rideable	66	87%	
	Well rideable	10	13%	
	Moderately rideable	0	0%	
	Badly rideable	0	0%	
Gradients	Cumulative elevation gain [m]		640	Daily section setup will be redesigned (plenty of overnight opportunities in Istria)
	Cumulative elevation loss [m]		640	
	Highest (gain+loss)/km [m]		50	
Attractiveness	Attractions	6	8%	Including UNESCO site Poreč, monastery Dajla, old lighthouse in Savudrija, cities Vrsar and Funtana
	Highly attractive area	16	21%	

6.1.2 Critical issues

Several short sections with heavy traffic

3 km of heavy traffic on the route D75 close to Karigador. Alternative route 12 km hinterland unpaved must be checked.

6.2 Section 98

EV8-98 (HR 2) Vrsar - Pula

View over Lim fjord

Section 98 is 73 km long, starts in Vrsar and ends in Pula. The route leads through nice small towns, touristic areas, Lim fjord, nature protection area and ends in city of Pula.

6.2.1 Route infrastructure

Criteria		73		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	0	0%	
	Chicane/obstacles/dismount	1	1%	
Route components	Traffic free	3	4%	
	V.low traffic	40	55%	
	Low traffic	16	22%	
	Moderate traffic	2	3%	
	High traffic	12	16%	Sections with heavy traffic: Lim fjord (no alternative, maybe boat, speed limit 40 km/h) Around Fažana (alternative or cycle lane building could be possible) Entrance to Pula (no good alternative)
	V.high traffic	0	0%	
Crossings	Dangerous	0	0%	
	V.dangerous	0	0%	
Surface	Perfectly rideable	45	62%	
	Well rideable	23	32%	
	Moderately rideable	5	7%	
	Badly rideable	0	0%	
Gradients	Cumulative elevation gain [m]		485	
	Cumulative elevation loss [m]		485	
	Highest (gain+loss)/km [m]		60	
Attractiveness	Attractions	7	10%	Including Rovinj, St. Tomas church, Lim Fjord, Palud orinthologique park, Pula

	Highly attractive area	7	10%	

6.2.2 Critical issues

Heavy traffic around Lim fjord (however speed limit and warning signs)

6.3 Section 99

EV8-99 (HR 3) Pula - Nedešćina

River Mirna valley

Section 99 starts in Pula and leaves the coastal line. It passes through small nice cities in the beautiful Istrian hinterland, 3-5 km away from the coastal line and climbs to 200-300 m elevation and passes along river Raša. The route ends in Nedešćina, small old city on the way offering everything needed for a comfortable overnight stay.

6.3.1 Route infrastructure

Criteria		85		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	0	0%	
	Chicane/obstacles/dismount	0	0%	
Route components	Traffic free	0	0%	

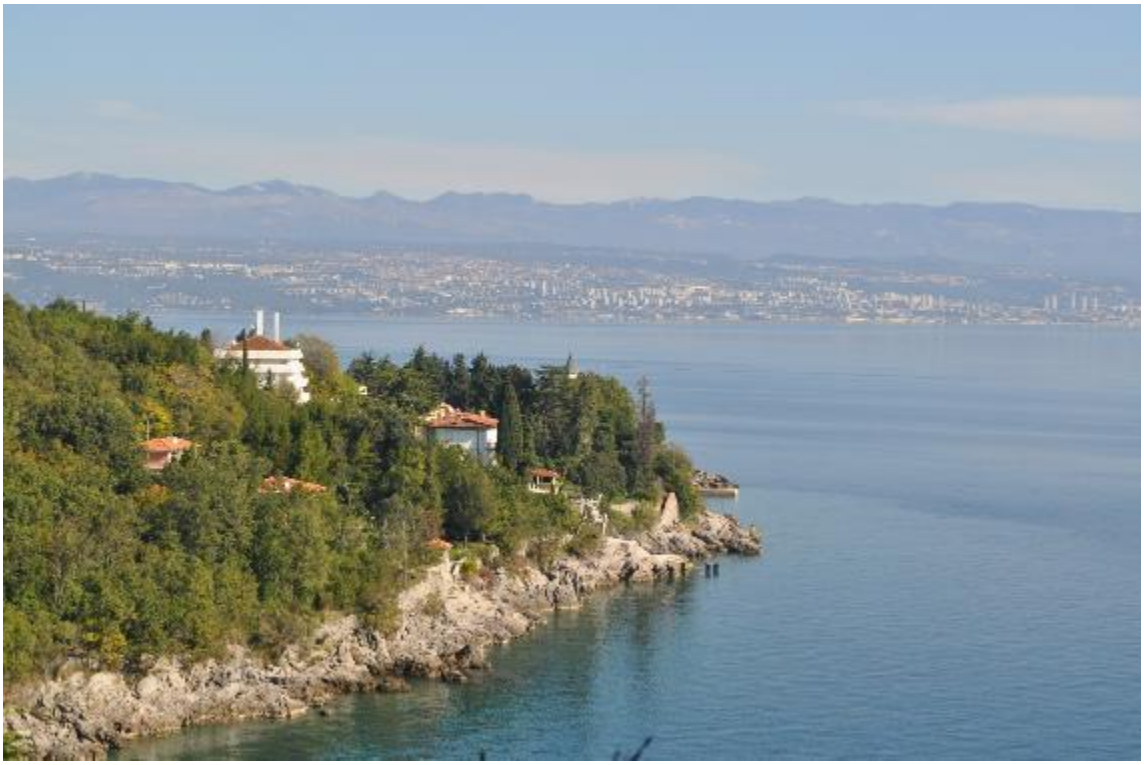
	V.low traffic	23	27%	
	Low traffic	41	48%	
	Moderate traffic	12	14%	
	High traffic	9	11%	D66 section Barban – Raša, road has been reconstructed recently a pedestrian way (not really used very much) is existing partly, maybe can be used
	V.high traffic	0	0%	
Crossings	Dangerous	0	0%	
	V.dangerous	0	0%	
Surface	Perfectly rideable	70	82%	
	Well rideable	12	14%	
	Moderately rideable	2	2%	
	Badly rideable	1	1%	Short section between Pomer and Medulin (km 13 of the section
Gradients	Cumulative elevation gain [m]		865	Daily section setup will be redesigned
	Cumulative elevation loss [m]		565	
	Highest (gain+loss)/km [m]		45	
Attractiveness	Attractions	6	7%	Including Barban, Dubrova, Labin
	Highly attractive area	8	9%	

6.3.2 Critical issues

Section with high traffic between Barban and Raša. Maybe shoulders could be used for cycling – should be checked.

6.4 Section 100

EV8-100 (HR 4) Nedešćina - Rijeka



View on Kvarner bay

Section 100 continues from Nedešćina and comes to the eastern coast of the Istrian peninsula, passing through famous touristic area and old cities, having constant beautiful view to the Kvarner bay and islands from the hight of up to 250 m. The route ends in Rijeka, European city of culture 2018, big interesting city with all logistic need and traffic hub with 3 trains per day carrying bicycles to Zagreb all the year.

6.4.1 Route infrastructure

Criteria		59		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	0	0%	

	Chicane/obstacles/dismount	0	0%	
Route components	Traffic free	0	0%	
	V.low traffic	0	0%	
	Low traffic	6	10%	
	Moderate traffic	29	49%	
	High traffic	21	36%	High traffic starts alredy from Opatija. There are no real alternatives, public transport connection to Rijeka seems to be the only solution before high investments in cycling paths or lanes
	V.high traffic	3	5%	Some sections between Opatija and Rijeka
Crossings	Dangerous	0	0%	
	V.dangerous	0	0%	
Surface	Perfectly rideable	58	98%	
	Well rideable	1	2%	
	Moderately rideable	0	0%	
	Badly rideable	0	0%	
Gradients	Cumulative elevation gain [m]		515	Just a bit above new ECS standard. Daily section setup will be redesigned
	Cumulative elevation loss [m]		815	
	Highest (gain+loss)/km [m]		45	
Attractiveness	Attractions	6	10%	
	Highly attractive area	19	32%	

6.4.2 Critical issues

Section between Opatija and Rijeka with high traffic load

6.5 Section 101

EV8-101 (HR 5) Rijeka - Bater

Wiew to the bay of Bakar

Close to Bater

Section 101 continues from Rijeka and turns to the hinterland but keeps very a beautiful view to the sea (still Kvarner bay and its islands). This is very hilly section which should be reconsidered, especially taking into account the fact of limited overnight capacity in Bater.

6.5.1 Route infrastructure

Criteria		57		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	0	0%	
	Chicane/obstacles/dismount	0	0%	
Route components	Traffic free	0	0%	
	V.low traffic	20	35%	
	Low traffic	15	26%	
	Moderate traffic	13	23%	
	High traffic	9	16%	Exit from Rijeka via Bakar to Križišće. A „micro alternative“ over Sv. Kuzam to Križišće not so nice view could be offered for cyclists preffering less traffic
	V.high traffic	0	0%	
Crossings	Dangerous	3	5%	3 crossings over D8 on the section up to Križišće mentioned above
	V.dangerous	0	0%	
Surface	Perfectly rideable	54	95%	
	Well rideable	3	5%	
	Moderately rideable	0	0%	
	Badly rideable	0	0%	
Gradients	Cumulative elevation gain [m]		1070	Structure of daily sections will be reconsidered

	Cumulative elevation loss [m]		580	
	Highest (gain+loss)/km [m]		40	
Attractiveness	Attractions	7	12%	Including medieval town of Bribir
	Highly attractive area	31	54%	

6.5.2 Critical issues

Sections with High traffic between Rijeka and Križišće

Alternative via Sv. Kuzam

6.6 Section 102

EV8-102 (HR 6) Bater - Krasno

Section 102 continues from Bater climbing through the hinterland but keeps again and again an excellent view to the sea and islands, now from the elevations of up to 1000 m. Route ends in Krasno on 800 m height, giving an excellen refreshment after days on the coast. Krasno is gate to the nature park Velebit and national park Sjeverni velebit.
Route 102 is again hilly and quite rural with limited opportunities for the supply.

6.6.1 Route infrastructure

Criteria		52		Comments
Continuity	Discontinuity/not ridable	2	4%	Short section 1700 m with not rideable gravel, maybe still rideable for experienced cyclists with MTB. Section will be repaired an in the meantime a „micro alternative“ including 3

				km of the road D23 with heavy traffic could be used for experienced cyclists
	multiple steps	0	0%	
	Chicane/obstacles/dismount	0	0%	
Route components	Traffic free	0	0%	
	V.low traffic	47	90%	
	Low traffic	4	8%	
	Moderate traffic	1	2%	
	High traffic	0	0%	
	V.high traffic	0	0%	
Crossings	Dangerous	0	0%	
	V.dangerous	0	0%	
Surface	Perfectly rideable	44	85%	
	Well rideable	0	0%	
	Moderately rideable	2	4%	
	Badly rideable	4	8%	4 out of 6 km of unpaved road (gravel) between Stolac and Oltari. Alternative would be big detour and is not recommended
Gradients	Cumulative elevation gain [m]		1095	Daily section structuree will be reconsidered and redefined
	Cumulative elevation loss [m]		815	
	Highest (gain+loss)/km [m]		90	
Attractiveness	Attractions	2	4%	View points Installation Terrestrial labirints
	Highly attractive area	38	73%	Extremely attractive view: ¾ of daily section

6.6.2 Critical issues

Section of “not rideable” route after crossing the road D23 close to Vratnik: thick layer of not stabilized gravel and bicycle wheel is deeply sinking into it. Just for extreme cyclists without luggage.

6.7 Section 103

EV8-103 (HR 7) Krasno - Gacka river source

Gacka river – Majerovo vrelo – one of sources

Section 103 continues through beautiful refreshing hinterland, passes through beautiful city Otočac, river Gacka valley and ends on the Gacka source (overnight possibility directly on the source). A train connection in Ličko Lešće is very close – it is on the train route Zagreb – Split (see sub section 2.1.1.1). This is a short route (41 km) with less ascents giving an opportunity to take some rest after last two demanding days but fit cyclists can continue 20 km to Perušić – halfway of the route 104 and next day take 104 and 105.
A short detour (3 km) to Kuterevo bear sanctuary is recommended http://visit-lika.com/en/page/kuterevo-bear-sanctuary

6.7.1 Route infrastructure

Criteria		41		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	0	0%	

	Chicane/obstacles/dismount	0	0%	
Route components	Traffic free	1	2%	
	V.low traffic	40	98%	
	Low traffic	0	0%	
	Moderate traffic	0	0%	
	High traffic	0	0%	
	V.high traffic	0	0%	
Crossings	Dangerous	1	2%	
	V.dangerous	0	0%	
Surface	Perfectly rideable	41	100%	
	Well rideable	0	0%	
	Moderately rideable	0	0%	
	Badly rideable	0	0%	
Gradients	Cumulative elevation gain [m]		185	
	Cumulative elevation loss [m]		485	
	Highest (gain+loss)/km [m]		50	
Attractiveness	Attractions	5	12%	Bear sanctuary Kuterevo, Otočac, Gacka river sources
	Highly attractive area	25	61%	

6.7.2 Critical issues

In the area close to the bear sanctuary (section km 10-15) caution for free living bears is needed: not recommended to drive in the night and early in the morning, avoid surprising bears etc. Detailed warning instructions will be provided on cyclist web EuroVelo 8.

6.8 Section 104

EV8-104 (HR 8) Gacka river source - Gospić

Section 104 keeps leading through beautiful hinterland landscape: fields, meadows, rivers, woods, mountains. Route passes through small city Perušić (supply, overnight, train) and ends in Gospić – main town of the county (stil train Zagreb – Split)

Jezero (lake) Kruščica close to Perušić

6.8.1 Route infrastructure

Criteria		47		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	0	0%	
	Chicane/obstacles/dismount	0	0%	
Route components	Traffic free	0	0%	

	V.low traffic	32	68%	
	Low traffic	13	28%	
	Moderate traffic	1	2%	
	High traffic	1	2%	Very short sections on D50 close to Janjče and through Gospić – low traffic and speed limit
	V.high traffic	0	0%	
Crossings	Dangerous	0	0%	
	V.dangerous	0	0%	
Surface	Perfectly rideable	46	98%	
	Well rideable	1	2%	
	Moderately rideable	0	0%	
	Badly rideable	0	0%	
Gradients	Cumulative elevation gain [m]		310	
	Cumulative elevation loss [m]		220	
	Highest (gain+loss)/km [m]		60	
Attractiveness	Attractions	6	13%	Samograd, Grabovača cave park, Churches, Nikola Tesla museum, Gospić
	Highly attractive area	32	68%	

6.8.2 Critical issues

In the area close to Janjče (section km 5-8) caution for free living bears is needed: not recommended to drive in the night and early in the morning, avoid surprising bears etc. Detailed warning instructions will be provided on cyclist web EuroVelo 8.

6.9 Section 105

EV8-105 (HR 9) Gospić - Lovinac

Section 105 continues through county of Lika. Fit cyclists could extend this section from the middle of 104 or to Gračac on 106. Section ends in Lovinac (still train Zagreb – Split) and there is no supply between Gospić and Lovinac (42 km) at all. There are some people living in the village Mogorić (half way) and one could get some water from them.

6.9.1 Route infrastructure

Criteria		42		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	0	0%	
	Chicane/obstacles/dismount	0	0%	
Route components	Traffic free	0	0%	

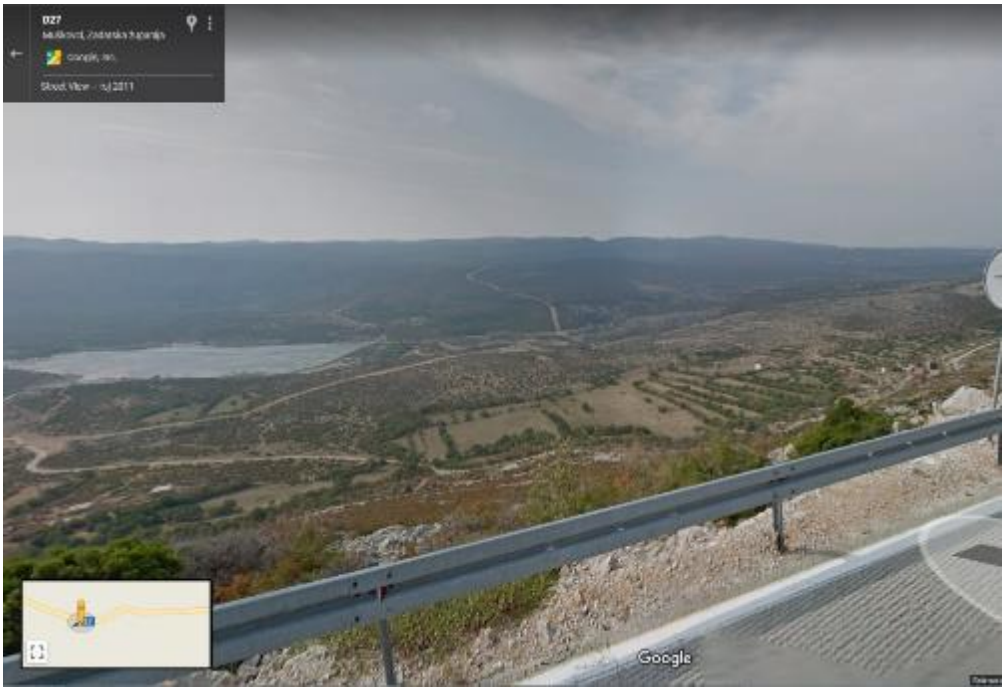
	V.low traffic	42	100%	
	Low traffic	0	0%	
	Moderate traffic	0	0%	
	High traffic	0	0%	
	V.high traffic	0	0%	
Crossings	Dangerous	0	0%	
	V.dangerous	0	0%	
Surface	Perfectly rideable	33	79%	
	Well rideable	7	17%	
	Moderately rideable	2	5%	
	Badly rideable	0	0%	
Gradients	Cumulative elevation gain [m]		35	
	Cumulative elevation loss [m]		15	
	Highest (gain+loss)/km [m]		5	
Attractiveness	Attractions	2	5%	
	Highly attractive area	19	45%	

6.9.2 Critical issues

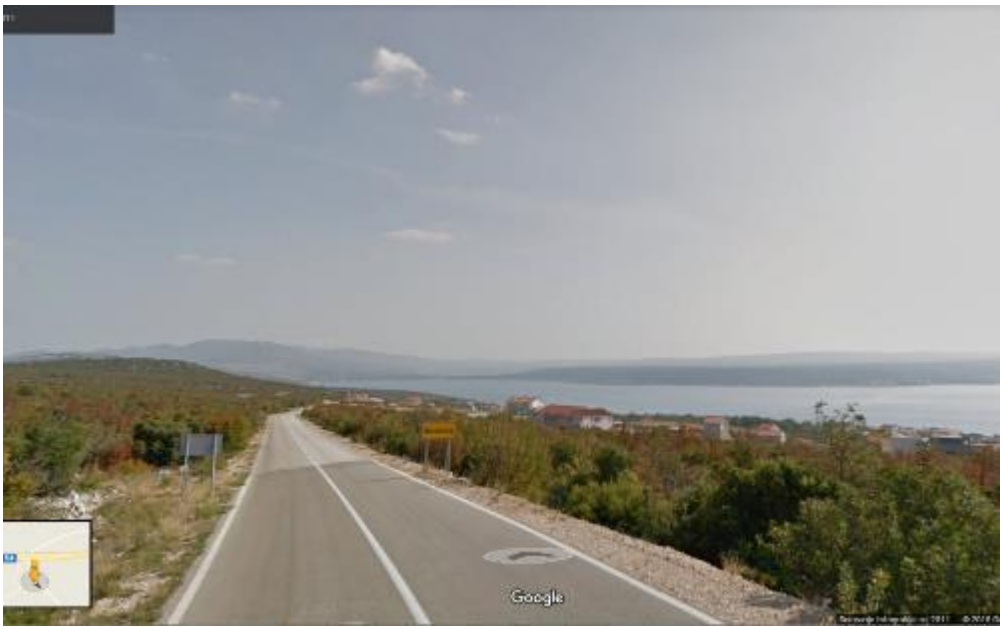
The route passes close to the area suspected for mines – section kilometre 10 and 11.
Cyclists should be warned not to leave the road in this part of the section.

6.10 Section 106

EV8-106 (HR 10) Lovinac - Maslenica



View over river Zrmanja valley



View on Novigradsko more (sea)

Section 106 continues through Lika from Lovinac via Gračac (supply, overnight, last connection to the train Zagreb – Split) and turns back to the sea. It uses national roads 50, 27 and 54 but

with limited speed and low traffic. Route features extremely beautiful view (84%) on mountains, sea and river Zrmanja valley.

6.10.1 Route infrastructure

Criteria		51		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	0	0%	
	Chicane/obstacles/dismount	0	0%	
Route components	Traffic free	0	0%	
	V.low traffic	2	4%	
	Low traffic	49	96%	
	Moderate traffic	0	0%	
	High traffic	0	0%	
	V.high traffic	0	0%	
Crossings	Dangerous	0	0%	
	V.dangerous	0	0%	
Surface	Perfectly rideable	51	100%	
	Well rideable	0	0%	
	Moderately rideable	0	0%	
	Badly rideable	0	0%	
Gradients	Cumulative elevation gain [m]		270	
	Cumulative elevation loss [m]		850	
	Highest (gain+loss)/km [m]		45	
Attractiveness	Attractions	13	25%	River Zrmanja reserve Gračac Old Roman road
	Highly attractive area	43	84%	

6.11 Section 107

EV8-107 (HR 11) Maslenica - Zadar

Old city Nin

Section 107 continues from Maslenica avoiding main road with heavy traffic. It passes through several small settlements, several developed touristic centres and old city Nin. Route ends in Zadar.

6.11.1 Route infrastructure

Criteria		60		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	0	0%	
	Chicane/obstacles/dismount	2	3%	Dismount on the bridge in Nin Dismount on the bridge in Zadar
Route components	Traffic free	6	10%	
	V.low traffic	32	53%	

	Low traffic	4	7%	
	Moderate traffic	16	27%	
	High traffic	2	3%	Short section on D8 short after Maslenica
	V.high traffic	0	0%	
Crossings	Dangerous	0	0%	
	V.dangerous	1	2%	Turn left and crossing D8
Surface	Perfectly rideable	59	98%	
	Well rideable	1	2%	
	Moderately rideable	0	0%	
	Badly rideable	0	0%	
Gradients	Cumulative elevation gain [m]		375	
	Cumulative elevation loss [m]		375	
	Highest (gain+loss)/km [m]		55	
Attractiveness	Attractions	2	3%	
	Highly attractive area	38	63%	

6.11.2 Critical issues

Very dangerous crossing: turn left to D8 (15000 vehicles per day)

6.12 Section 108

EV8-108 (HR 12) Zadar - Pakoštane

The route continues from Zadar and takes a ferry from Ferry port Zadar-Gaženica to Preko on the island Ugljan. Route passes through many small nice towns and villages on the island Ugljan and Pašman (connected by the bridge) using main island road with low traffic or when possible local island roads with very low traffic. The route turns back to the shore again by ferry from Tkon (island Pašman) to Biograd and continues to Pakoštane.
An alternative to avoid ferries would be to follow the shore line to Sukošan and then over hinterland – Debeljak – Gornje Raštane to Sv. Flip i Jakov.
Route infrastructure

Zadar

6.12.1 Route infrastructure

Criteria		43		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	0	0%	
	Chicane/obstacles/dismount	0	0%	
Route components	Traffic free	0	0%	
	V.low traffic	23	53%	
	Low traffic	18	42%	
	Moderate traffic	2	5%	
	High traffic	0	0%	
	V.high traffic	0	0%	
Crossings	Dangerous	1	2%	Kali: crossing main coastal road turning left, low visibility
	V.dangerous	0	0%	
Surface	Perfectly rideable	33	77%	
	Well rideable	10	23%	
	Moderately rideable	0	0%	
	Badly rideable	0	0%	
Gradients	Cumulative elevation gain [m]		200	
	Cumulative elevation loss [m]		200	
	Highest (gain+loss)/km [m]		30	
Attractiveness	Attractions	2	5%	
	Highly attractive area	19	44%	

6.13 Section 109

EV8-109 (HR 13) Pakoštane - Šibenik

Section 109 is continues from Pakoštane along Vransko Lake – nature park. After the lake the route follows the shore and passes through several small settlements and touristic centres. Route includes 4 short sections (2 km) of high traffic and one short section of very high traffic (1700m). Route ends in Šibenik, UNESCO site.

6.13.1 Route infrastructure

Route infrastructure

Criteria		48		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	0	0%	

	Chicane/obstacles/dismount	2	4%	Narrow passage 2 times when entering and leaving the main road
Route components	Traffic free	0	0%	
	V.low traffic	24	50%	
	Low traffic	8	17%	
	Moderate traffic	6	13%	
	High traffic	3	6%	Several sections on D8 main coastal road – see section 2.2 for details. An alternative for the whole route in hinterland can be offered, but last section (from bridge to Šibenik) still stays. To avoid it, additional detour would be needed.
	V.high traffic	7	15%	
Crossings	Dangerous	1	2%	Crossing D8 at Prosika
	V.dangerous	0	0%	
Surface	Perfectly rideable	36	75%	
	Well rideable	3	6%	
	Moderately rideable	7	15%	Sections of unpaved road close to Vransko Lake
	Badly rideable	2	4%	One short section close to Vransko Lake One short section before bridge
Gradients	Cumulative elevation gain [m]		150	
	Cumulative elevation loss [m]		150	
	Highest (gain+loss)/km [m]		20	
Attractiveness	Attractions	2	4%	Vransko jezero (lake) – nature park Šibenik – UNESCO
	Highly attractive area	18	38%	

6.13.2 Critical issues

Sections of (very) high traffic

Narrow passage when leaving from main road to the local one

Sections of badly ridable road

6.14 Section 110

EV8-110 (HR 14) Šibenik - Trogir

View over islands around Šibenik

Section 10 continues from Šibenik 12 km along the shore, partly using main road with high traffic. After Grebaštica the route goes in hinterland, climbing up to 300 m height, passing through small sattlements coming back to the coastal line in Seget Vranjica. From then following the coast through touristic villages and marina up to Trogir, UNESCO site.

Cyclists on the road close to Gustirna

6.14.1 Route infrastructure

Criteria		56		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	0	0%	
	Chicane/obstacles/dismount	3	5%	Several obstacles or dismoutn needs when passing through touristic villages between Seget Vranjica and Trogir
Route components	Traffic free	0	0%	
	V.low traffic	41	73%	
	Low traffic	2	4%	
	Moderate traffic	4	7%	
	High traffic	8	14%	Section on D8 between Brodarica and Grebaštica
	V.high traffic	1	2%	Entrance to Trogir 800m, very high and slow traffic
Crossings	Dangerous	1	2%	
	V.dangerous	1	2%	Crossing D8 next to Seget Vranjica, bad visibility
Surface	Perfectly rideable	48	86%	
	Well rideable	6	11%	
	Moderately rideable	2	4%	
	Badly rideable	0	0%	
Gradients	Cumulative elevation gain [m]		680	Sections will be redefined, however this could stay (previous 7 were 35-375 m)
	Cumulative elevation loss [m]		680	
	Highest (gain+loss)/km [m]		55	
Attractiveness	Attractions	3	5%	Monuments in hinterland Trogir – UNESCO site
	Highly attractive area	17	30%	

6.14.2 Critical issues


High traffic: D8 between Brodarica and Grebaštica; road through Trogir (+ dangerous holes)

Very dangerous crossing road D8 close to Seget Vranjica

Obstacles between touristic villages Trogir – Seget Vranjica

6.15 Section 111

EV8-111 (HR 15) Trogir - Split

Section 111 connects two UNESCO cities Trogir and Split. Moreover, the route passess through Kaštela (= castles, 7 small old cities) along the coast. On top of it, beautiful see view and visiting of old Roman ruins of Salona on the way. Section is very short to give more time for sightseeing and enjoying. The only entrance to Split confiremd to ECS is long and beautiful way around park Marjan. A shortcut for 9 km will be offered but includes 800 m of pushing the bike through pedestrian zone.

Salona, old Roman city is on the way from Trogir to Split

6.15.1 Route infrastructure

Criteria		39		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	1	3%	5 steps in Kaštela, alternative would be longer detour over the road with high traffic
	Chicane/obstacles/dismount	1	3%	Short dismount if passing through Salona

Route components	Traffic free	9	23%	
	V.low traffic	16	41%	
	Low traffic	2	5%	
	Moderate traffic	4	10%	
	High traffic	4	10%	2 km from Kaštel Gomilica to Kaštel Sućurac Wide sidewalk (2-3 m) is available. Cycle path on it is planned 1 km don Frane Bulića, Solin
	V.high traffic	4	10%	Exit Trogir – 3 km Entrance Split – 600m
Crossings	Dangerous	4	10%	
	V.dangerous	0	0%	
Surface	Perfectly rideable	25	64%	
	Well rideable	13	33%	
	Moderately rideable	1	3%	
	Badly rideable	0	0%	
Gradients	Cumulative elevation gain [m]		295	
	Cumulative elevation loss [m]		295	
	Highest (gain+loss)/km [m]		40	
Attractiveness	Attractions	7	18%	Trogir – UNESCO Split – UNESCO Kaštela – several locations Salona – 2 locations
	Highly attractive area	9	23%	

6.15.2 Critical issues

Kaštela: 5 stairs to access the road

Split – Splitska street – 600 m of very high traffic

Kaštel Gomilica: road with high traffic and two wide sidewalks

6.16 Section 112

EV8-112 (HR 16) Split - Makarska

Section 112 continues from Split along the coast until Stobreč and then turns twice to hinterland to avoid the main coastal road D8: 1st time via Žrnovnica Srinjine and Tugare to Omiš and 2nd time along river Cetina, Kućice and Slime to Brela. From Brela on, route is again following the shore, using local roads and paths and combines pedestrian/cyclist zones.

6.16.1 Route infrastructure

Criteria		75		Comments
Continuity	Discontinuity/not ridable	1	1%	Krvavica – long detour via D8 with high traffic possible as an alternative
	multiple steps	2	3%	Once 3 steps Once 7 steps Both short before Promajina

	Chicane/obstacles/dismount	6	8%	Several cases of border between street and pedestrian/cyclist zone to prevent mopeds entering the area One discontinuity: 150 m riding not allowed
Route components	Traffic free	9	12%	Combined pedestrian/cyclists zone
	V.low traffic	32	43%	
	Low traffic	22	29%	
	Moderate traffic	8	11%	Žrnovnica – Srinjine
	High traffic	4	5%	4 km on D8 before Brela
	V.high traffic	0	0%	
Crossings	Dangerous	0	0%	
	V.dangerous	0	0%	
Surface	Perfectly rideable	66	88%	
	Well rideable	7	9%	
	Moderately rideable	1	1%	
	Badly rideable	0	0%	
Gradients	Cumulative elevation gain [m]		990	To be rearranged
	Cumulative elevation loss [m]		990	
	Highest (gain+loss)/km [m]		60	
Attractiveness	Attractions	4	5%	Significant landscape Cetina Ethno collection Tugare Omiš
	Highly attractive area	49	65%	Extremely attractive view: sea, mountains, river, islands

6.16.2 Critical issues

D8 4 km from junction to Brela – high traffic

700 m of not ridable section between Krvavica and Makarska. A detour including 3 km of road with heavy traffic (5-10000) and 100 m elevation is possible alternative.

Chicanes on Makarska Riviera

6.17 Section 113

EV8-113 (HR 17) Makarska – Trpanj

Makarska riviera: still mountains, see and island view
Short section of pedestrian-cycilst path along the main road connecting two settlements

Bačinska jezera (lakes) close to Ploče, view from D8 road

Section 113 continues from Makarska along the coast. This section includes one short (3 km) and two long (8km, 14 km) parts on the main coastal road D8 but with moderate traffic only.
From Ploče a ferry to Trpanj (peninsula Pelješac) should be taken.

6.17.1 Route infrastructure

Criteria		57		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	2	4%	2 times on the section short before and short after Podgora, 57 resp. 52 steps
	Chicane/obstacles/dismount	2	4%	Chicanes 2 times short before Tučepi
Route components	Traffic free	7	12%	
	V.low traffic	24	42%	
	Low traffic	0	0%	

	Moderate traffic	25	44%	3 sections on D8 (3, 8, 14 km) with 2800 units/day, in July/August up to 6000 Detour over Vrgorac is possible Pick up service is available
	High traffic	1	2%	One of mentioned section above contains 1 km with 80 km/h speed limit
	V.high traffic	0	0%	
Crossings	Dangerous	0	0%	
	V.dangerous	0	0%	
Surface	Perfectly rideable	46	81%	
	Well rideable	5	9%	
	Moderately rideable	6	11%	2 km park after Makarska 3 km before Igrane 1 km before Drvenik
	Badly rideable	0	0%	
Gradients	Cumulative elevation gain [m]		400	
	Cumulative elevation loss [m]		400	
	Highest (gain+loss)/km [m]		50	
Attractiveness	Attractions	7	12%	Churches, monastery Baćinska jezera Ploče
	Highly attractive area	23	40%	Mountains, sea, islands

6.17.2 Critical issues

Multiple steps after Podgora: 57 quite steep 52 and relative easy
for both cases a detour including additional 1 km of main road D8 is possible

6.18 Section 114

EV8-114 (HR 18) Trpanj - Ston

Section 114 leads over peninsula Pelješac with great landscapes (sea, inslands, wineyards, …) interesting small settlements, fields and great wine. Route ends in small city Ston.

6.18.1 Route infrastructure

Criteria		54		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	0	0%	
	Chicane/obstacles/dismount	0	0%	
Route components	Traffic free	0	0%	
	V.low traffic	0	0%	
	Low traffic	38	70%	
	Moderate traffic	15	28%	Quite long on the main peninsula road D414 with <2000 units/day but often speed limit on 90 km/h
	High traffic	1	2%	One short sectionn close to Potomije with >2000 units/day and 90 km/h
	V.high traffic	0	0%	
Crossings	Dangerous	3	6%	Several junctions on the main peninsula road Tunnel with limited quality of light
	V.dangerous	0	0%	
Surface	Perfectly rideable	46	85%	
	Well rideable	8	15%	
	Moderately rideable	0	0%	
	Badly rideable	0	0%	
Gradients	Cumulative elevation gain [m]		630	Section structure to be reconsidered
	Cumulative elevation loss [m]		630	
	Highest (gain+loss)/km [m]		80	
Attractiveness	Attractions	10	19%	Trpanj

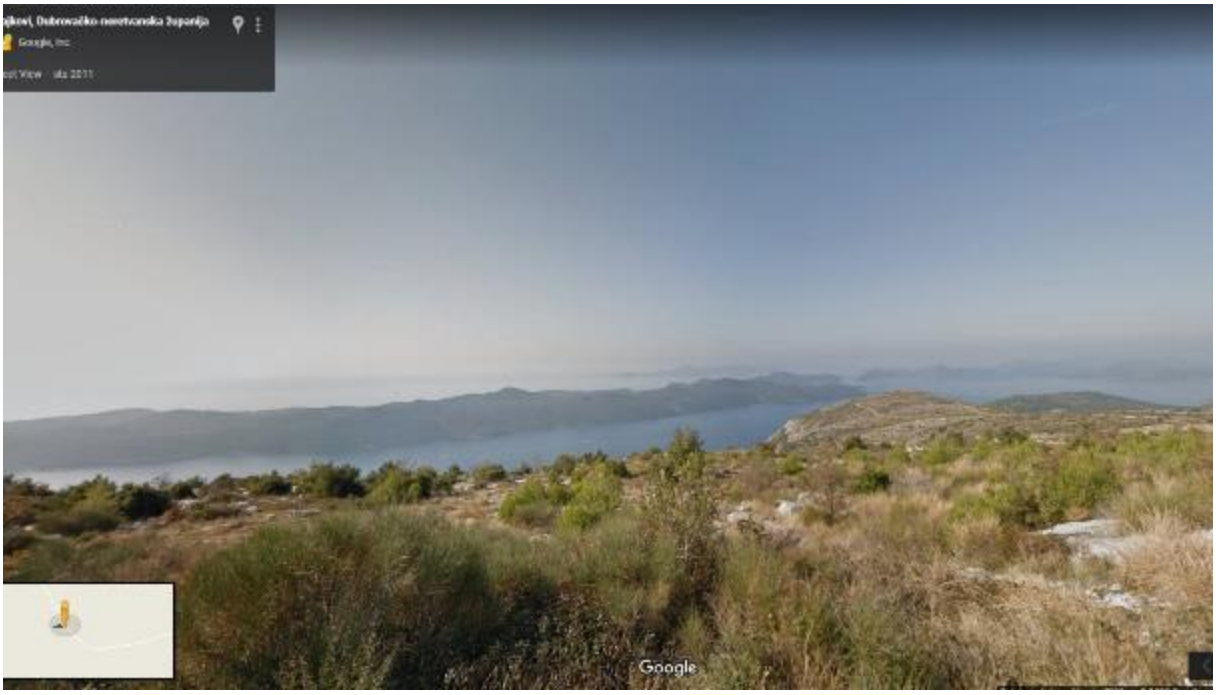
				Kuna Pelješka terraced vineyards wine-cellars Ston
	Highly attractive area	22	41%	

6.18.2 Critical issues

Dingač tunnel, length 400 m, still some cars, but weak light in the tunnel

6.19 Section 115

EV8-115 (HR 19) Ston - Dubrovnik



View over Elaphit island group on the way to Dubrovnik

Section 115 continues from Ston to Dubrovnik. To avoid the coastal busy road D8 as much as possible the route climbs in the hinterland keeping great view over the sea and Elaphiti island group. This is demanding mountainous section, pedelecs are recommended, the section could be split in two staying overnight in Slano. Last short part of the section is on the road with unavoidable high traffic.

6.19.1 Route infrastructure

Criteria		56		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	0	0%	

	Chicane/obstacles/dismount	0	0%	
Route components	Traffic free	0	0%	
	V.low traffic	10	18%	
	Low traffic	35	63%	
	Moderate traffic	2	4%	Entrance in Dubrovnik
	High traffic	9	16%	from Zaton to Dubrovnik
	V.high traffic	0	0%	
Crossings	Dangerous	3	5%	
	V.dangerous	1	2%	junction to D8 road in Zaton - high traffic and bad visibility
Surface	Perfectly rideable	41	73%	
	Well rideable	13	23%	
	Moderately rideable	1	2%	
	Badly rideable	1	2%	
Gradients	Cumulative elevation gain [m]		1000	Will be split in two sections to adapt to new ECS
	Cumulative elevation loss [m]		1000	
	Highest (gain+loss)/km [m]		50	
Attractiveness	Attractions	6	11%	Doli Trnovo Majkovi Trsteno – aboretum Rijeka Dubrovačka (significant landscape) Dubrovnik
	Highly attractive area	23	41%	

6.19.2 Critical issues

Critical crossing in Zaton: left turn with low visibility

Section from Zaton to Dubrovnik bridge with high traffic

6.20 Section 116

EV8-116 (HR 20) Dubrovnik - Border MNE

Last view before leaving Croatia

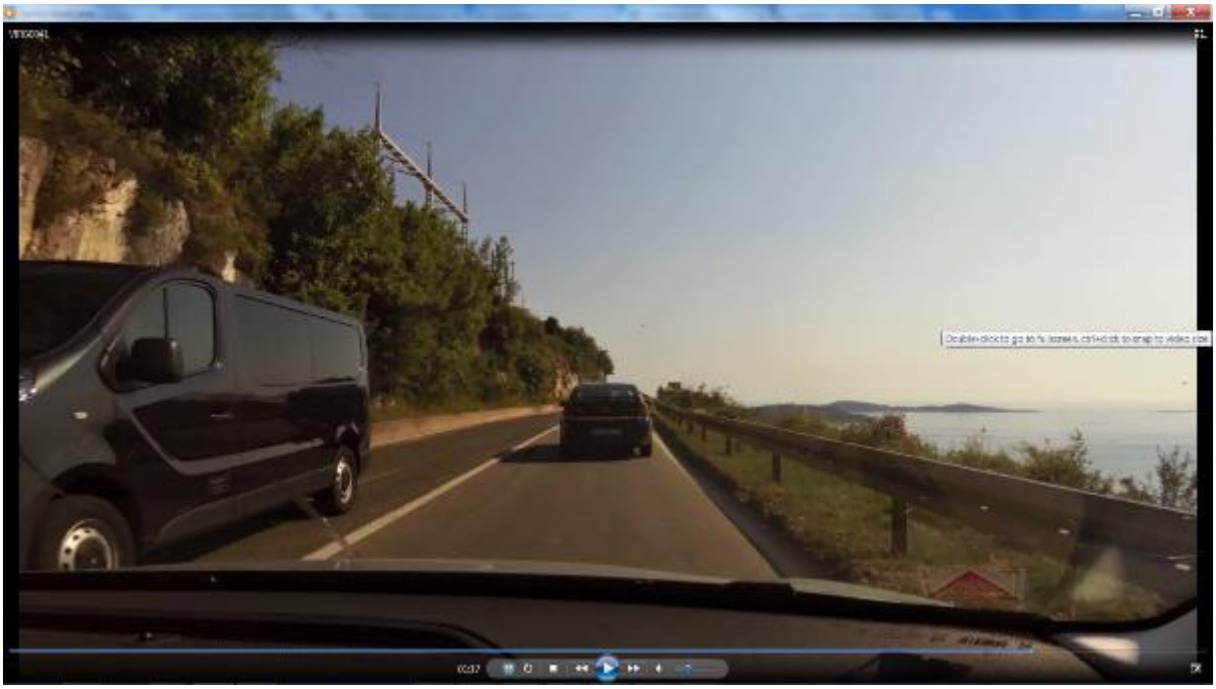
Section 116 is continuing from Dubrovnik entering main coastal road D8 in Dubac. A detour via Čelopeci is done to avoid a oart of D8. The route is again on D8 from Srebreno to Zvekovica – this is the worst single part of EuroVelo 8 in Croatia with 9 km of very high traffic.

6.20.1 Route infrastructure

Criteria		52		Comments
Continuity	Discontinuity/not ridable	0	0%	
	multiple steps	0	0%	
	Chicane/obstacles/dismount	1	2%	Junction to D8 in Dubac
Route components	Traffic free	0	0%	
	V.low traffic	4	8%	

	Low traffic	20	38%	
	Moderate traffic	18	35%	
	High traffic	1	2%	Short part in Zvekovica
	V.high traffic	9	17%	D8 from Slano to Zvekovica, 15000 units per day
Crossings	Dangerous	5	10%	
	V.dangerous	0	0%	
Surface	Perfectly rideable	47	90%	
	Well rideable	3	6%	
	Moderately rideable	2	4%	
	Badly rideable	0	0%	
Gradients	Cumulative elevation gain [m]		640	To be adjusted to new ECS
	Cumulative elevation loss [m]		540	
	Highest (gain+loss)/km [m]		55	
Attractiveness	Attractions	4	8%	Cavtat Old railroad „ćiro“ Pridvorje (churches) Ljuta (old mills)
	Highly attractive area	17	33%	

6.20.2 Critical issues



D8 – very high traffic between Slano and Zvekovica

Junction to D8 in Dubac – barrier

7 Summary

- *New route is born : 1st official definition of EuroVelo 8 route in Croatia*
- *Highly attractive route with great landscape and many attractions including 7 UNESCO sites, natioanl and nature parks, nature reserves and significant landscapes, culture and history heritage*
- *Route combining shore line, islands and hinterland*
- *Route is already useful for experienced cyclists – quite close to ECS before current change*
- *Several short sections of high and very hihg traffic, especially in June/July*
- *Great availability of accomodation and food*
- *Limited availability of public transport*
- *Several alternatives to avoid (reduce) traffic are offered*
- *Development of the route is starting now: improvements in future years are expected*
- *Future changes in the track are possible to optimize the quality*

8 Appendix

References/additional materials

- GPX tracks of evaluated routes
- Traffic measurement report Croatia 2016 http://www.hrvatske-ceste.hr/UserDocsImages/Promet%20i%20sigurnost/Brojenje%20prometa%202016/Brojenje%20prometa%20na%20cestama%20Republike%20Hrvatske%20godine%202016.pdf
- ECS – European certification standard – old version (short and long manual) and new version (only short version available so far)