

WP 3.9 Usage monitoring pilots

Regione Autonoma Friuli Venezia Giulia

EV8 Usage monitoring in Friuli Venezia Giulia

Deliverable 3.9 Feasibility Study and Final Report

FINAL REPORT



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EV8 Usage monitoring in Friuli Venezia Giulia



Title:	EV8 Usage Monitoring in Friuli Venezia Giulia	
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	DIREZIONE CENTRALE INFRASTRUTTURE e TERRITORIO	

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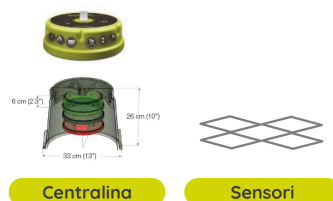
Overview, objectives and target groups

Country:	ITALY - ITH
Region:	Friuli Venezia Giulia Region - ITH4
Short Description	<p>The usage monitoring pilot consists of two parts: permanent counters and surveys. Four bicycle (two also pedestrian) counters were installed in January 2020. In parallel interviews were planned at the counters' locations. The interview includes questions about the cyclists and their trips along the EV8 route in Friuli Venezia Giulia.</p> <p>The Covid-19 pandemics forced to change the survey plan, replacing interviews with an online questionnaire.</p>
Operator	<p>Regione Autonoma Friuli Venezia Giulia and its in-house company FVG Strade. The development of the pilot was in charge of the Region FVG, Central Direction for Infrastructures.</p> <p>After the initial installment phase, the counters - as part of the infrastructure - are in the process of being transferred to FVG Strade, the regional in-house company in charge of building and of the maintenance of the regional cycle network infrastructure.</p>
Objectives	To have a first picture of the current users (number and characteristics) on stretches of the route, either developed and under development, to prove the potential of the entire route.
Target groups	<p>The target of the monitoring are the user groups defined in the EV Guidance on usage monitoring document:</p> <ul style="list-style-type: none"> • recreational cyclists • utilitarian cyclists <p>as measured and interviewed in rural, suburban and urban areas.</p>
Cost and benefits	<p>The tender had a value of €24.590 for installment design, purchase, installment of 4 counters, delivering of the counters' data, training of the personnel, one replacement of the batteries. The winner signed a contract with the Region (CUP D29G17000400007; CIG YEC297F8E2) for a value of €24.221,15, installed two counters equipped to measure pedestrian traffic as well, and provided a public webpage to communicate the basic data.</p> <p>The yearly operational cost the Region will pay from 2021 for the 4 counters is estimated at €5.560 + VAT as external cost, in addition to the internal/in-house company staff cost.</p> <p>The benefits are the data generated by the counters, that will be used to support better planning and to estimate the route value.</p>

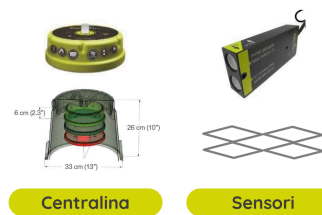
Detailed description and implementation

Introduction	<p>Quantitative and qualitative data were collected (numbers of users provided by the automatic counters, and information on the characteristics of the users provided by the answers to the online questionnaire).</p> <p>The result gives a first picture of the current users.</p>
Detailed description of counters' locations and of the equipment	<p>Counters:</p> <p>Four permanent (h24/365 days) bicycle counters and two combined bicycle and pedestrian counters provided by Eco-counter were installed in mid January 2020, and placed one in each of the 4 daily sections of EV8 route.</p> <p>The locations are (see below an overview map and more detailed maps):</p> <ol style="list-style-type: none"> 1) Lignano Sabbiadoro: (suburban/rural area) 2) Cervignano (suburban area) 3) Grado (suburban/rural area) 4) Trieste: (urban/suburban area)  <p>The equipment is:</p> <p>two Eco-Combo Multi that count cyclists with inductive loops technology and pedestrians with additional pyroelectric technology (detects the body temperature), with waterproof and dustproof standards IP68 for cyclists, IP66 for pedestrians; and two Eco-Combo Zelt that count only cyclists with the same technology.</p> <p>All counters are equipped with a modem that send data to a server daily and alerts in case of counter failure, and are fed by batteries (1 year).</p> <p>The data collected are: passages by time (every 15 minutes is the most granular), direction. The counters can be managed (and their data accessed) via a cloud solution called Eco-visio, password protected.</p>

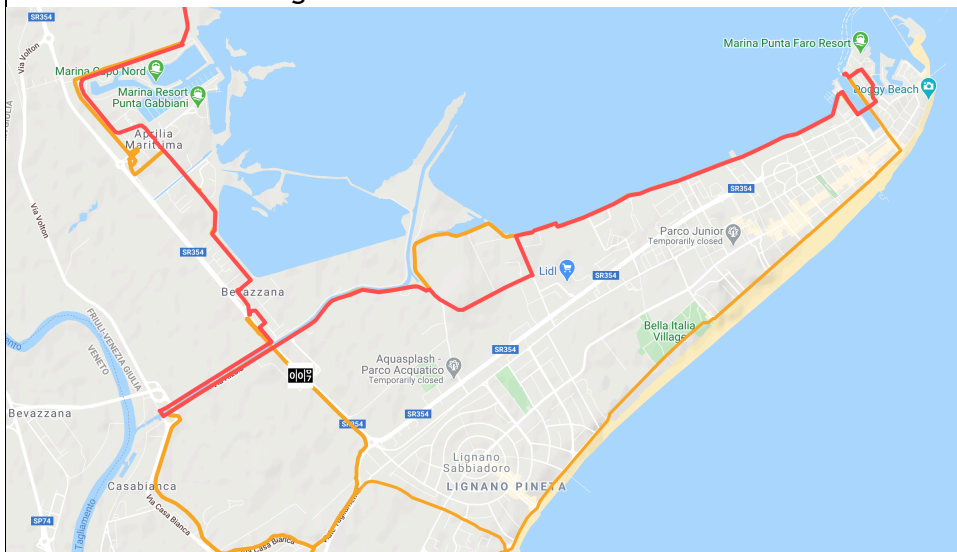
Eco-Combo Zelt



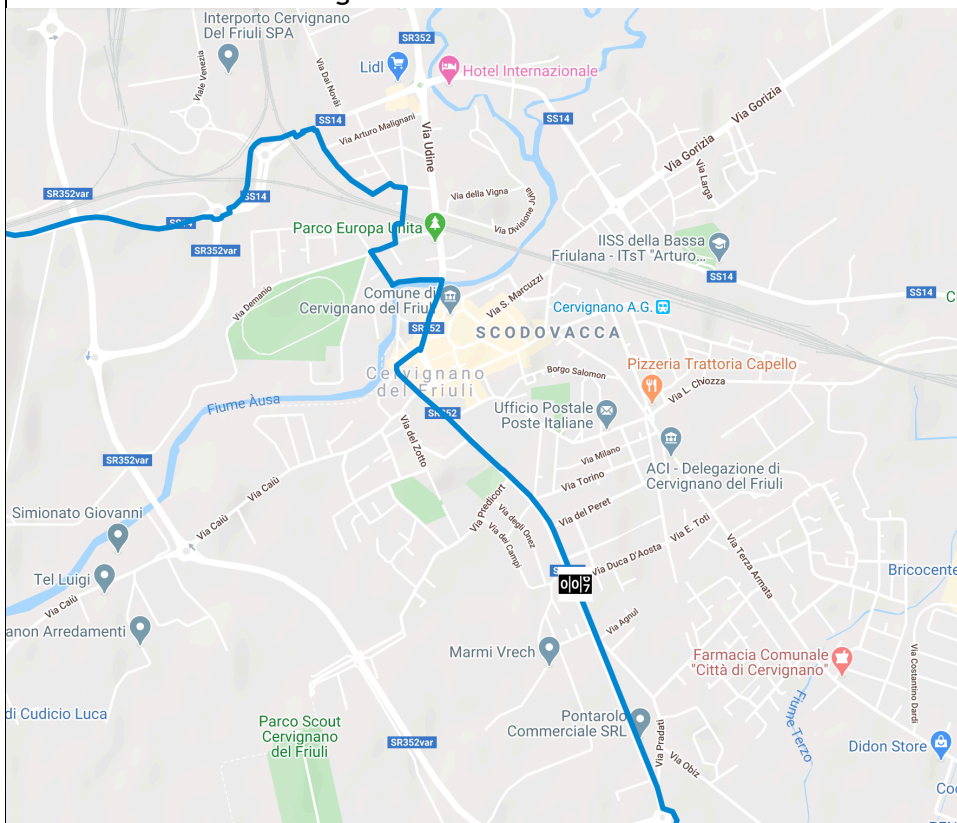
Eco-Combo MULTI



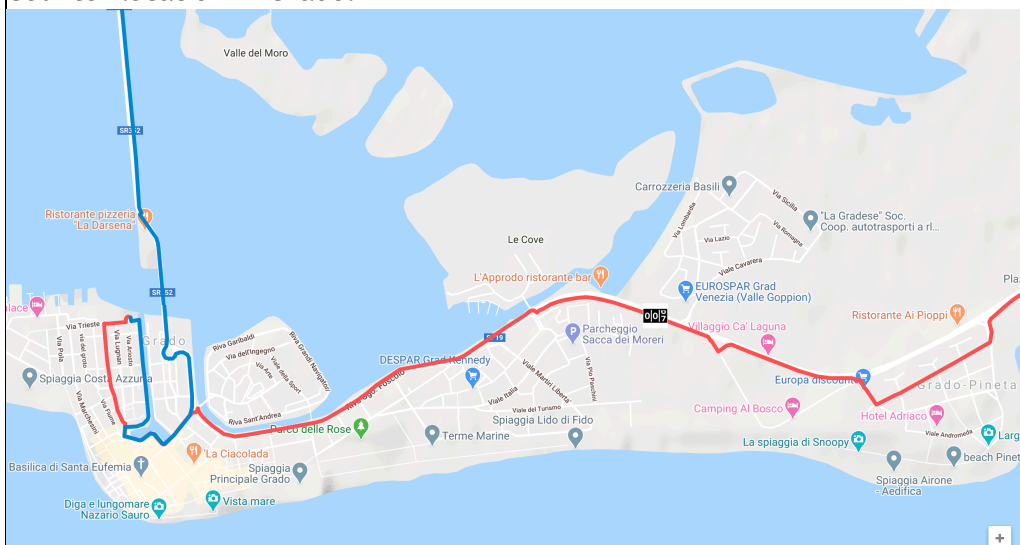
Counter location in Lignano Sabbiadoro:



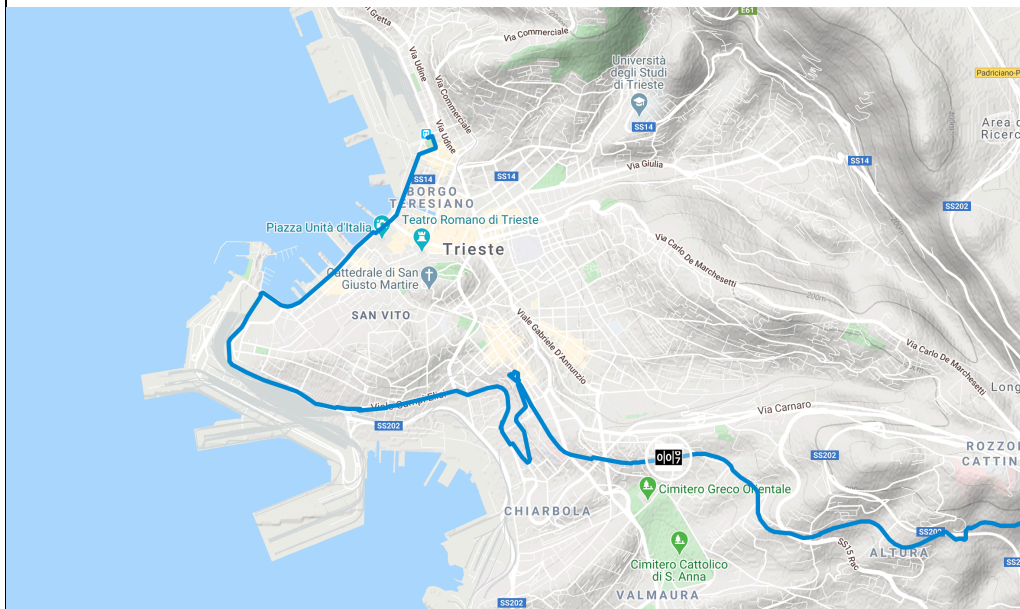
Counter location in Cervignano:



Counter location in Grado:



Counter location in Trieste:



Cervignano del Friuli - Y2H19121605



Grado - Y2H19121604



Lignano - Y2H19121606



Trieste - Y2H19121607



The width of the monitored paths is:

Lignano Sabbiadoro: 2,30 m total

Cervignano: 2,20 m cycle path

Grado: 2,50 m cycle path

Trieste: 2,40 cycle path; 4,4 m total, including the pedestrian path.



Detailed description of the surveys

Surveys

Interreg Mediterranean MEDCYCLETOUT
Project co-financed by the European Regional Development Fund

EUROVELO 8 CICLOVIA MEDITERRANEA
*Required

Regione Friuli Venezia Giulia - Indagine sugli utenti della ciclovia EV8 FVG 2

Contabili presso il quale si svolge l'intervista *

- ☐ Cervignano
- ☐ Grado
- ☐ Lignano
- ☐ Trieste

The survey/interviews (questions on the cyclists and on the ongoing trip) with the goal to estimate the current economic value of the route were planned at the counters' locations for 2 days per location in Spring 2020, the first cycling season available after the counters' installment.

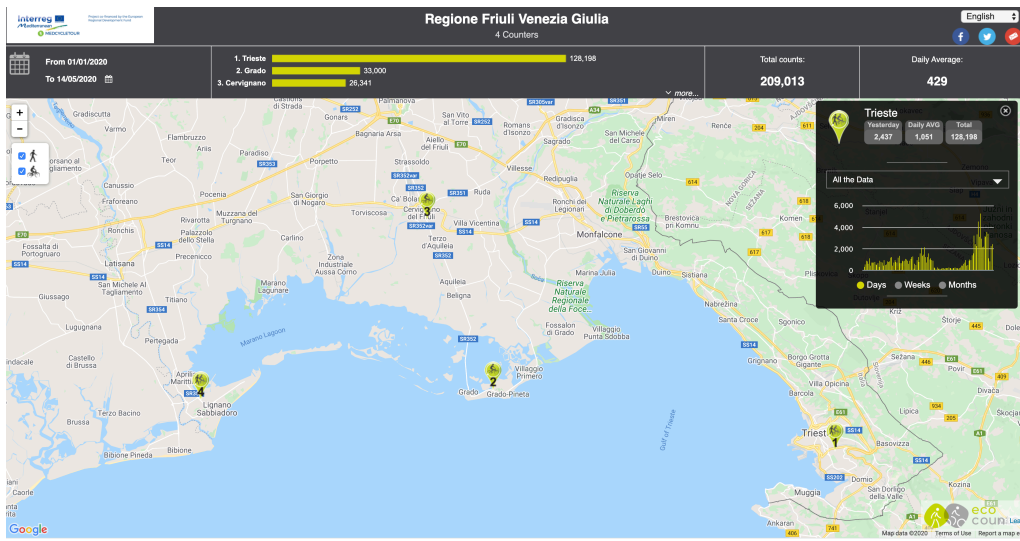
A questionnaire was prepared as [online form](#) to be filled in by on-site interviewers.

But the Covid-19 disrupted the plan.

Therefore, in May 2020 the Region decided to distribute an [online questionnaire via internet](#) replicating for EV8 FVG2 the template used along the other international cycle route Ciclovia Alpe Adria Radweg (CAAR FVG 1) developed in the regional territory, with the aim to gather comparable data at least at regional level. That questionnaire had the main goal to evaluate the users' satisfaction about the available services along the CAAR. Detailed info on the survey and the analysis of the results are presented in the Annex.

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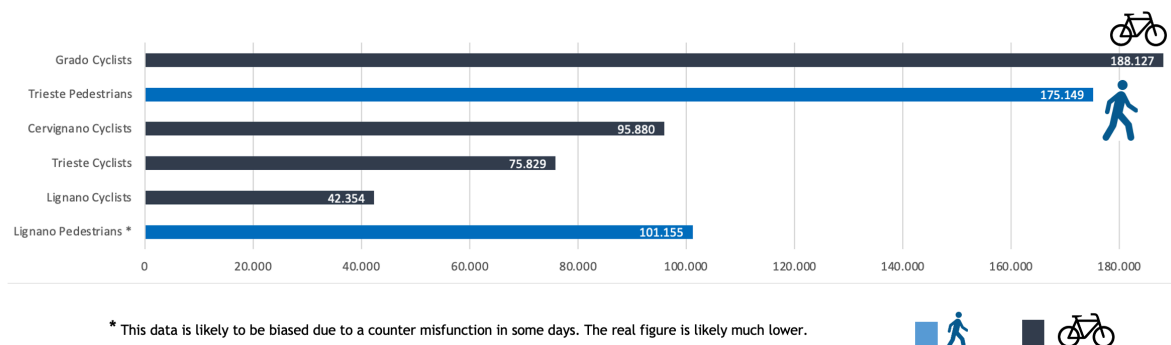
Data processing and presentation

Data	<p>The collected data are the result of public investment and are not put on sale by the public authorities who own them. In general the public administrations provide open (raw) data free of charge to stimulate data analysis/research and new services.</p> <p>Via the counters' provider cloud platform called Eco-Visio (password protected), the complete raw data can be downloaded in a single csv file or can be accessed and analyzed using the provided charts facilities online.</p>
Data processing	<p>Following the methodology outlined in the ECF EV guidelines for monitoring, Alea coop (consultant of Region FVG) processed the data of the counters provided by Region FVG, and the data collected with the online questionnaire disseminated by the Region FVG.</p> <p>The data were downloaded from the counters' Eco-Visio online platform. where also a data analysis function was used to generate charts and graphics, and to highlight the peak days.</p>
Data presentation	<p>Counters data</p> <p>Basic counters data are presented in a public page made available by the Eco-Counter online platform and linked in the Regional webpage dedicated to the Medcycletour project. It is planned to add in this page the visualization of additional 4 counters (cyclists+pedestrians) positioned along other regional routes.</p>  <p>Data reports should be released on a regular basis (for instance, yearly).</p> <p>The analysis of the first counters' data available (of the first months since their installment) and of the surveys are presented in the next chapters (data reports).</p>

Counters data report

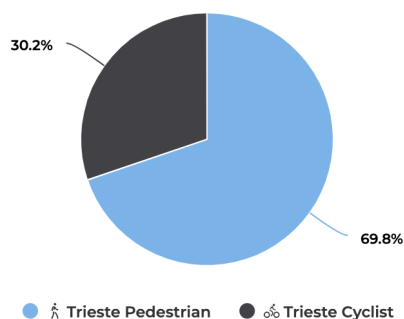
Data since the counters were installed (14-15th January) to 17th August 2020

Total passages in the four sites: pedestrians and cyclists



Even though pedestrians are being counted in half of the sites, they apparently represent a very relevant share in the period considered, especially due to the very high figures at the Trieste site. Actually it is likely that most of the pedestrian figures in Lignano are not correct due to a counter malfunction (checking ongoing), as shown below in another graph. Therefore the Lignano pedestrian data will not be taken into consideration.

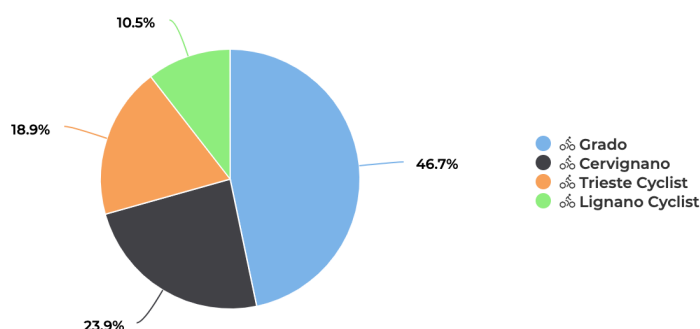
Shares of pedestrians and cyclists in Trieste



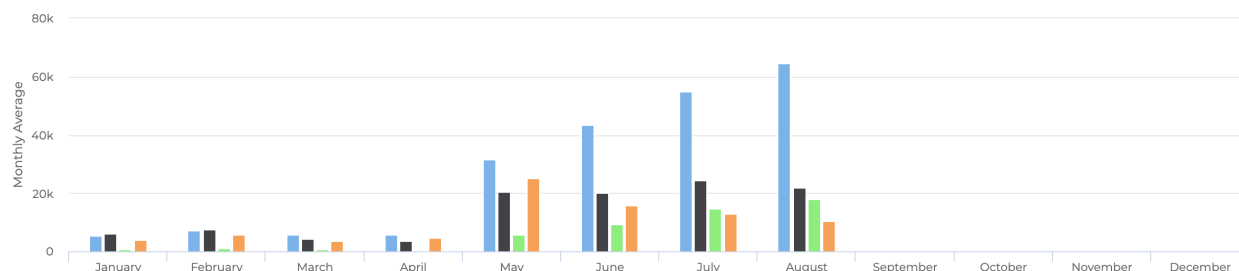
No doubts the figure of pedestrians is correct in Trieste, where also those walking on the cycle path are correctly detected as pedestrians by the counter.



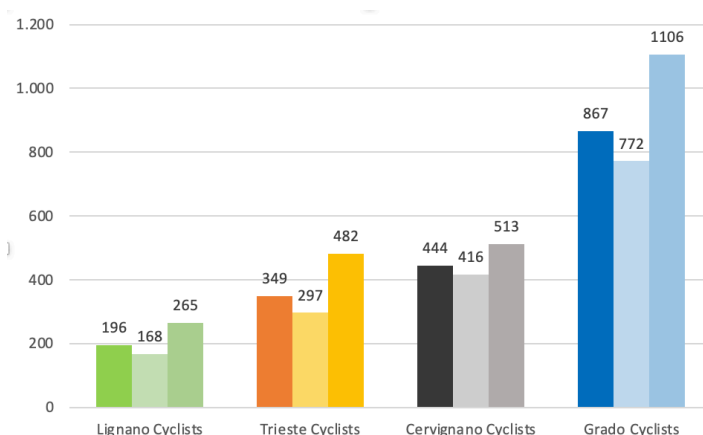
Distribution of all counted cyclists in the four sites



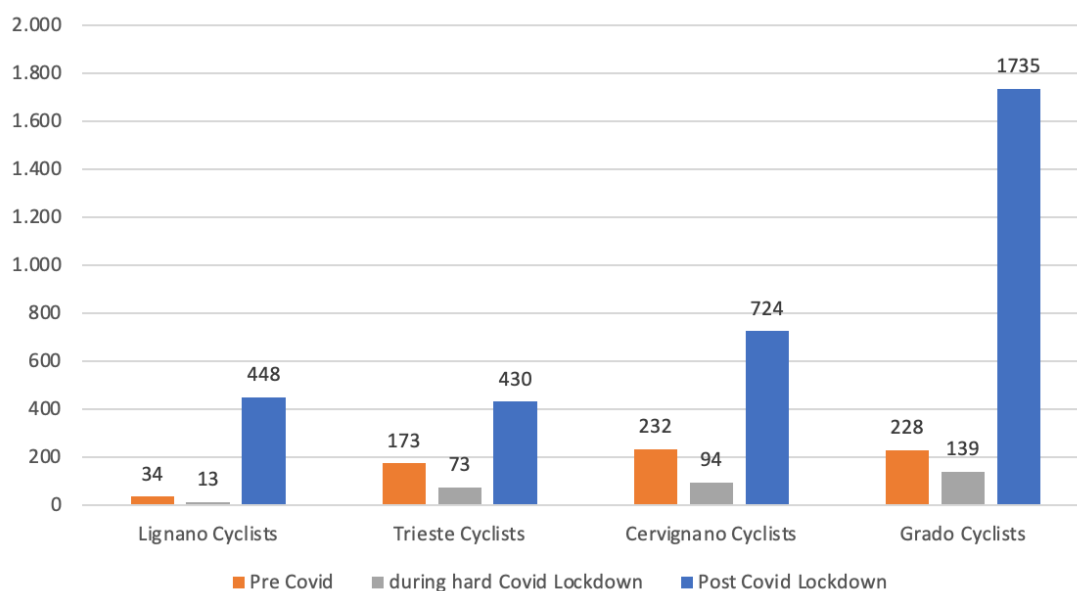
Monthly average cyclists per site



Daily average: all days / weekdays / weekends per site



Cyclists: daily average pre/during/post Covid-19 lockdown*

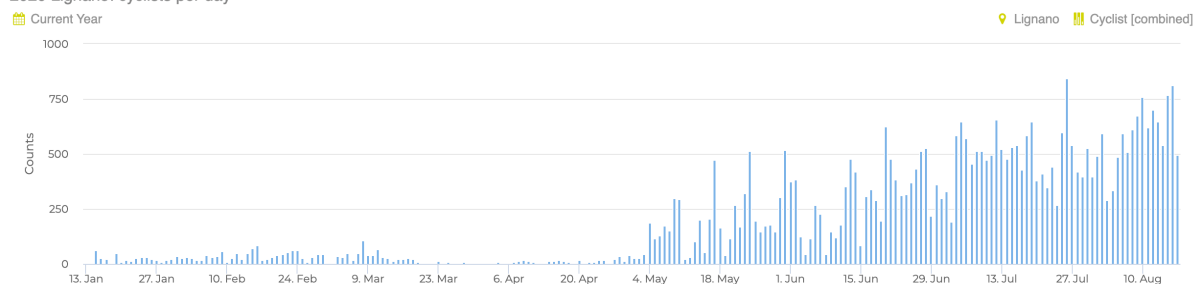


*This diagram shows the difference between the daily average cyclists in three time periods: before Covid-19 lockdown (since the counters were installed on 14-15/01/2020 to 08/03/2020); during the hard lockdown from 09/03/2020 to 26/04/2020; since free movement was fully restored country-wide up to when the current report was finalized (03/06/2020 to 20/08/2020). The time period of softer lockdowns between 27/04/2020 and 02/06/2020 was not considered as different regional rules make comparison difficult.

2020 Time series of cyclists in all sites:

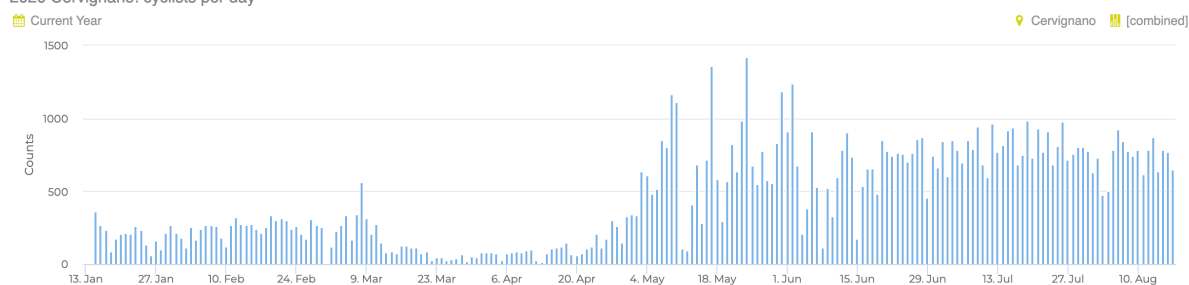
in Lignano Sabbiadoro

2020 Lignano: cyclists per day



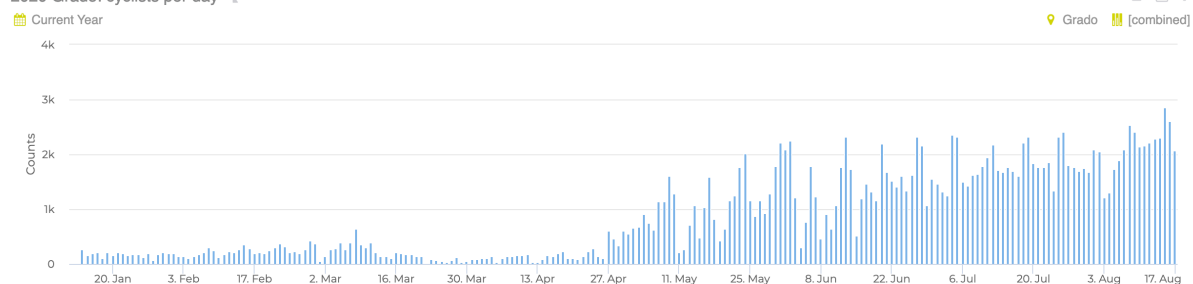
Cervignano

2020 Cervignano: cyclists per day



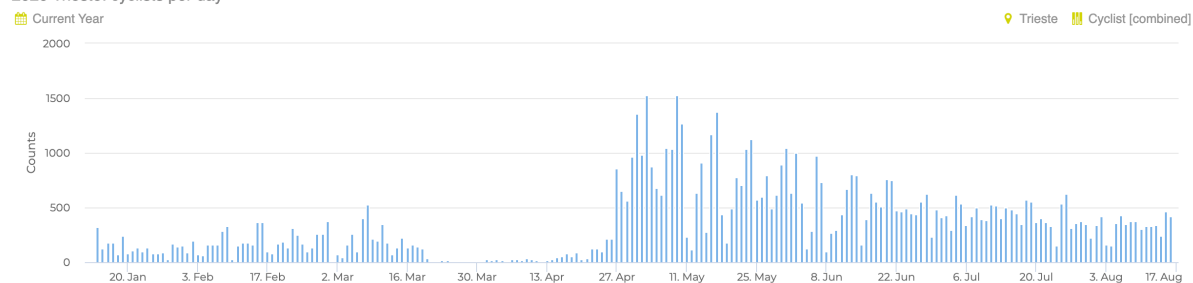
in Grado

2020 Grado: cyclists per day



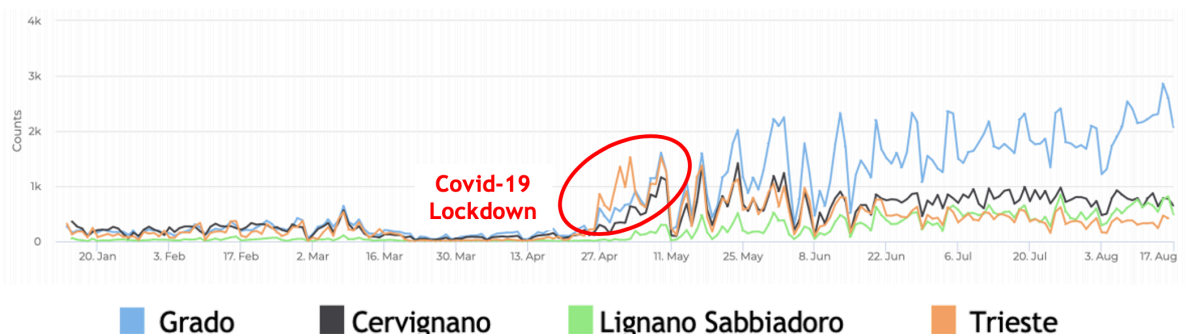
in Trieste

2020 Trieste: cyclists per day



During the Covid-19 lockdown cycling was not totally dismissed in Cervignano and Grado as it delivered utilitarian/essential mobility as well, while it went closer to zero in the Trieste site, where recreational cycling seems to prevail.

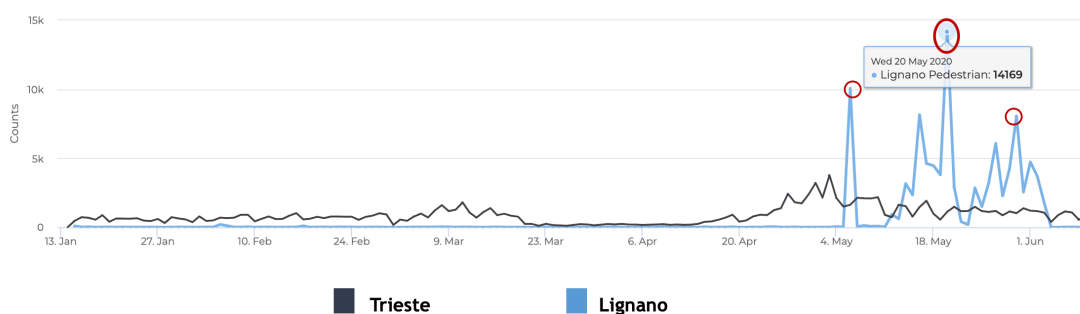
2020 time series data: cyclists



After the Covid-19 lockdown, we can notice that higher levels of cycling restarted in Trieste a week earlier than in the other sites and an anticipation of the cyclists' peak day. These figures mirror the national and regional Covid-19 emergency ruling: on 9/3 a national lockdown started, which restricted people movements; on 27/4 a regional ruling allowed physical activity farer than 500 m from home, within the municipality; on 4/5 a ruling allowed physical activity also beyond the municipality, within the region. On 3/6 free mobility was restored country-wide. Trieste has more than 200.000 inhabitants: a small fraction of them flocking to cycle or walk to the only greenway of the city made the difference versus the other counting sites especially between 27/4 and 4/5.

2020 time series data: pedestrians

Pedestrians in Trieste and in Lignano: unrealistic Lignano data



There is a strange peak on the 6th of May 2020 in Lignano: more than 10.000 pedestrian passages are reported in that day but the figure seems unlikely and may be a fake. That figure results also in a bias of the overall numbers of Lignano: the real pedestrian passages and the total is likely to be much lower.

Hourly profile of cyclists in the four sites

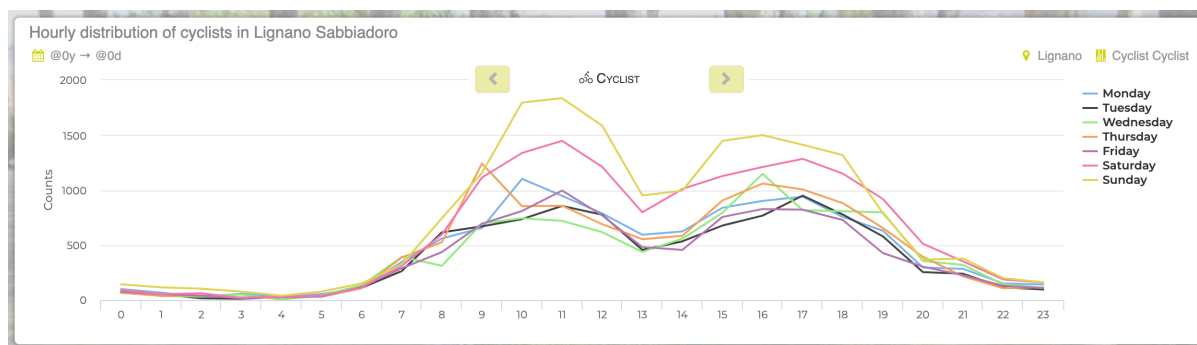
In the monitored period the busiest days are in weekends. The hourly distribution of cyclists in weekdays does not show high peaks and the limited peaks that can be seen are late in the morning and in the afternoon. Commuting cycling seems very limited in Trieste and Lignano,

while it may be higher in Cervignano and Grado. Given this hourly profile, the most significant utilitarian cycling may be that with shopping purpose. In weekdays the Trieste

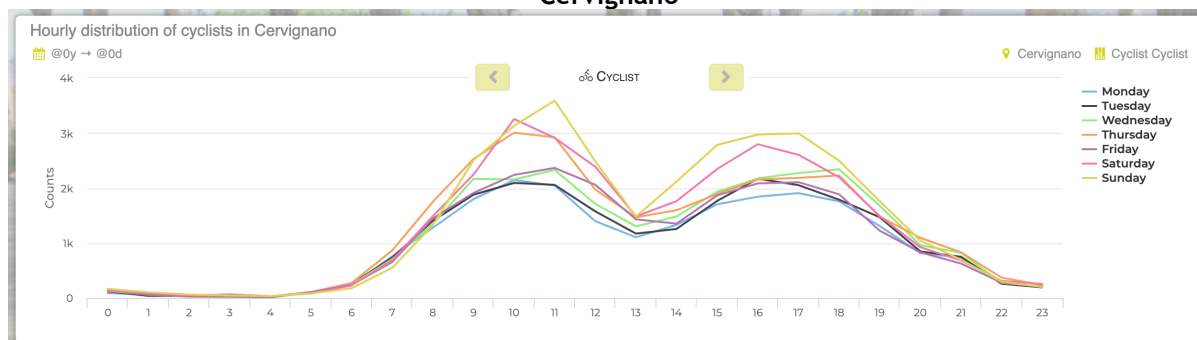
weekdays hourly profile has the higher peak in the afternoon, which is typical of recreational use but can also be related to shopping.

It will be interesting to check whether this ratio will remain in the next months. It can be a confirmation that the infrastructure monitored is used overall more for recreational than for utilitarian mobility.

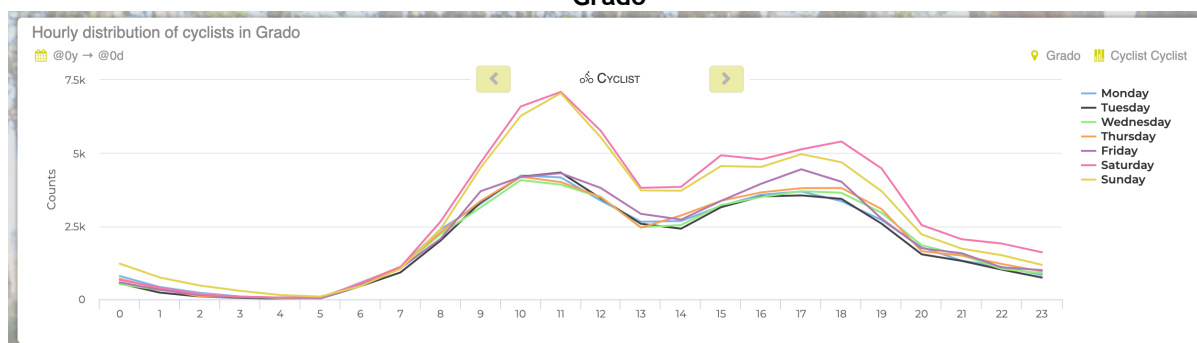
Lignano Sabbiadoro



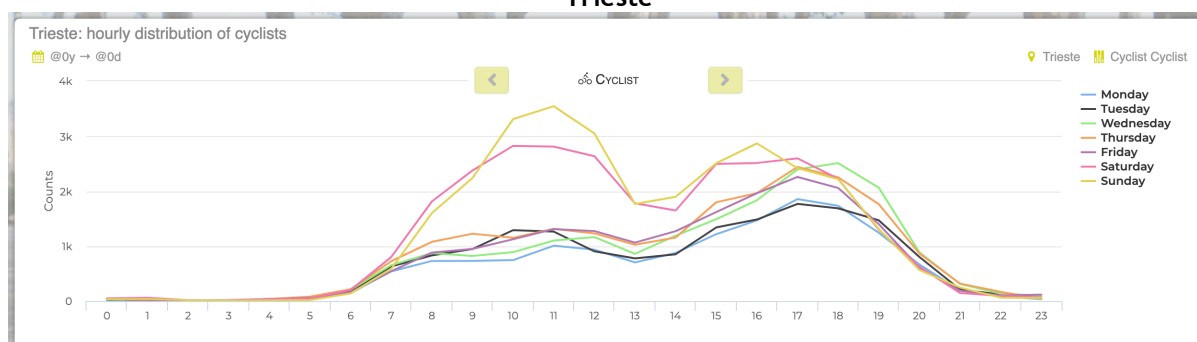
Cervignano



Grado



Trieste



Evaluation

Overall evaluation: did the pilot meet the original objectives?	<p>The first part of the pilot (counters) met the original objectives of having a permanent quantitative monitoring of the users along the EV8 route, with a counter placed in each of the four daily sections.</p> <p>The second part of the pilot (field surveys) was disrupted by the Covid-19 pandemic and could not be run as planned. An alternative online survey replaced the planned field survey.</p>
The developed actions are here evaluated from two main perspectives: competitiveness and sustainability.	
1. Competitiveness: methodology, coherence, competitiveness	
Methodology	<p>Counters</p> <p>The placement of counters along the cycling route was chosen based on the pilot double requirement of having a counter per each daily section and to cover all types of areas (urban, suburban, rural), in addition to the requirement of finding locations where all the necessary permissions to place a counter could be obtained in a reasonably short time. In two locations it was decided to count pedestrians as well as cyclists: in Lignano because there is a shared cycle pedestrian path; in Trieste because the two paths, for cyclists and pedestrians, are close in parallel and there is a mixed use de facto.</p> <p>The analysis of the data during the first year of operation will confirm or not the usage profile that is typical in the selected areas (urban, suburban, rural). At the moment there are not enough proper data to make such an evaluation as the counters were installed in mid January 2020, just shortly before the Covid-19 pandemic outbreak that disrupted the usual mobility habits and patterns of the local population due also to restrictions defined by law, canceled all tourism activities, and affected heavily cycling excursions as well.</p> <p>Surveys</p> <p>A questionnaire for on-site interviews was defined according to ECF Guidelines on Common Core Questions for EuroVelo User Surveys with the intention to run field surveys in Spring 2020 - the first available cycling season after the counters were installed - at the counters sites. To collect the data an online form was prepared for the interviewers in the field, to be filled in using a tablet or a smartphone.</p>

	<p>Unfortunately, the Covid-19 pandemic disrupted the plan: stopping people on the road to make an interview was not possible.</p> <p>A request was sent ECF at the end of April to check the possibility to run a different survey, such as an online survey.</p> <p>In mid May 2020 the Region decided to distribute a questionnaire via internet replicating for EV8 FVG2 the same survey template used along another other international cycle route, the Ciclovía Alpe Adria Radweg (CAAR FVG 1), to gather comparable data at regional level. That questionnaire has the main goal to evaluate the users' satisfaction about the available services along the CAAR. The questionnaire was built using the EuSurvey service.</p>
Coherence	<p>Counters</p> <p>The chosen types of counters have the characteristics required to gain permanent and regular data (they are permanent and have a failure alert feature) to have a first image of the current use of the EV8 infrastructure and to start a regular usage monitoring to improve the planning of the cycle network routes and to raise knowledge about the cyclists, with a higher specific interest for cycle-tourists. The locations of the counters reflects this goal.</p> <p>Survey</p> <p>The questionnaire via internet described above was chosen to collect data comparable with those of a previous survey on the main international cycle route existing in the region. Some questions in that questionnaire will collect part of the information required by the EV data observatory. In the future, field interviews should be run using the questionnaire prepared for EV8 usage monitoring in order to gather the answers to the common core questions for EV user surveys.</p> <p>Performance indicator for the counters can be 1) the number of days the data are generated per year, that is the percentage of regular operation, and 2) the percentage of correct data. For the surveys: 1) the number of respondents, both online for the online questionnaire, and on-site for the interviews; 2) the number of surveys per time period (for instance one per year). Finally, for both: one annual report combining the two data, quantitative and qualitative, to give insight knowledge of regional cycling use.</p>
Competitiveness	<p>Counters</p> <p>Permanent counters are more efficient than any alternative when The solution adopted was cost-effective as it was selected by a public tender complying with the requirements of supplies to public bodies.</p>

	<p>Survey An online survey was the only viable alternative in the Covid-19 pandemic context.</p>
<p>2. Sustainability: environmental, social, financial, organizational</p>	
<p>Environmental and social sustainability</p>	<p>Counters The counters require a very minimal environmental damage, mainly due to the lithium-ion batteries to be replaced and treated as a polluting garbage. The counters are robust and long-lasting: they are waterproof (IP68 the counters of cyclists, IP66 the counters of pedestrians) and have 12 months long batteries.</p>
<p>Financial sustainability</p>	<p>The future running cost for the counters (1.390 + VAT per counter/year) would be completely covered by Region Friuli Venezia Giulia (public funding).</p>
<p>Organizational sustainability</p>	<p>Counters The counters do not require to be grid connected and the batteries have a duration of minimum 12 months. Each counter has a modem that sends the data every day to the online platform where they can be accessed. An alert would inform the counters' administrator in case a counter stops from collecting data within maximum two days. Reports can be exported from the online platform.</p>

Lessons learned and perspectives

Do more (what would you repeat or do more of from the current pilot?)	Add more permanent counters, especially in urban areas. Do more types of surveys. Do more data analysis.
Do less (what would you do differently from the current pilot?)	
Stop doing (what would you avoid repeating from the current pilot?)	On a short term there won't be the need to repeat a market search.
Start doing (what new aspect would you introduce?)	Start temporary counting with mobile equipments to decide where to install new permanent counters. Add an onsite screen showing the data to the public, to be used as a marketing and promotional tool where the route is more developed.

ANNEX

Questionario di gradimento EuroVelo8 FVG2 tratto Cervignano - Grado - Monfalcone

La Regione Autonoma Friuli Venezia Giulia, tramite la piattaforma EUSurvey, ha somministrato un questionario di gradimento per testare le impressioni dei ciclisti che hanno percorso il tratto Cervignano - Grado - Monfalcone della ciclovía FVG2, inserita nel tracciato EuroVelo8 e oggetto del progetto MedCycleTour che collega tutta la costa del Mediterraneo dalla Spagna a Cipro.

La coincidenza con il periodo dell'emergenza sanitaria non ha consentito lo svolgimento di interviste in loco e ciò ha inevitabilmente limitato il bacino di persone coinvolte nell'indagine. Dalle risposte ricevute emergono comunque dati interessanti per tratteggiare l'andamento del cicloturismo in questo tratto.

Come sede di partenza per il tragitto in bicicletta il 33% degli intervistati ha scelto Cervignano del Friuli (raggiunta con auto, treno e bici), seguita da Grado, Trieste, Aquileia, Udine e Monfalcone. Le località di partenza sono state raggiunte dai cicloturisti in prevalenza con l'utilizzo dell'automobile (38,9%) seguita dalla bicicletta (33,3%) e dai mezzi del trasporto pubblico locale che consentono il trasporto di biciclette (barca/aliscafo, treno, autobus 27,8%).

I viaggi considerati, vista anche la lunghezza del tragitto da percorrere in bicicletta, non hanno superato la giornata dividendosi fra viaggi di mezza giornata (44,4%) e viaggi di una giornata (55,6%).

La motivazione che ha portato i ciclisti a compiere questo tragitto è nella quasi totalità dei casi (66,6%) una ciclo-vacanza cioè un'esperienza in cui pedalare è stato il movente principale. Nel resto dei casi i ciclisti si trovavano in vacanza (11%) o hanno utilizzato la ciclovía per spostarsi nei dintorni del Comune di residenza (11%). La tipologia delle biciclette utilizzate nel tragitto è in prevalenza mountain bike (38,89%), seguita dalle bici da viaggio (trekking bike) con il 33,3%, dalle bici di città (11,1%) e, in un unico caso, da una bici elettrica.

I ciclisti provengono prevalentemente dalla città di Trieste (50%) seguita da Udine (22,2%) e da Cividale del Friuli, Gemona del Friuli, Monfalcone e Tarvisio.

Le valutazioni qualitative sui servizi offerti lungo la ciclovía risultano spesso incomplete e/o limitate a un giudizio positivo sulla disponibilità della segnaletica e di fontanelle per l'acqua potabile.