Interreg

EUROPEAN UNION

Danube Transnational Programme

DIONYSUS

Integrating Danube Region into Smart & Sustainable Intermodal Transport Chains

Existing infrastructure & the investment needs at DR ports level for River Cruise Industry [IWT/Road/Rail] Analysis of the existing infrastructure & the investment needs at DR ports level for River Cruise Industry

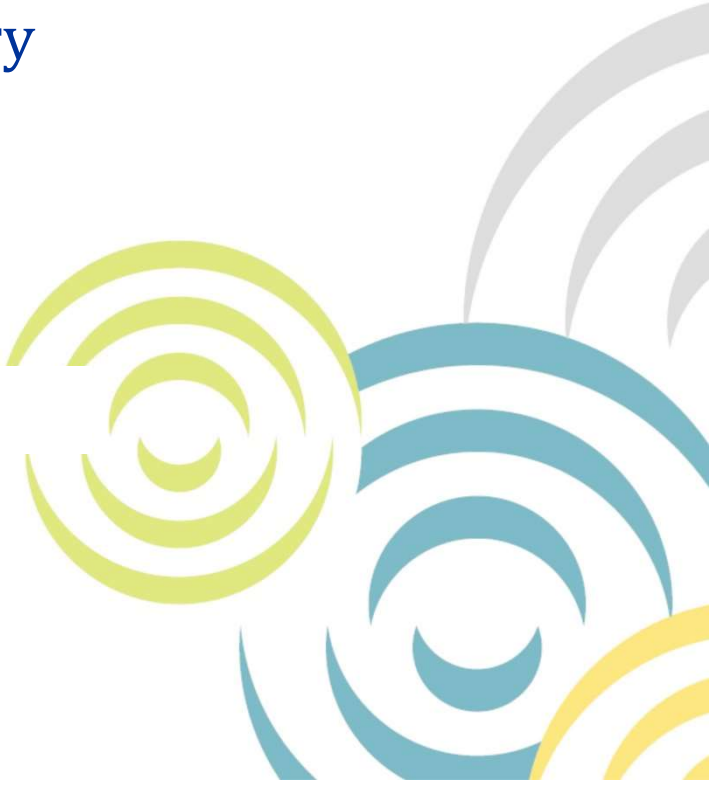
Summary Report

Version 3.0

31/12/2021

Final

DIONYSUS Summary Report



Project co-funded by European Union Funds (ERDF, IPA, ENI)

Document History

Version	Date	Authorised
1		PDR

Contributing Authors

Name	Organisation	Email
Daniel Jarnea	MPAC	djarnea@constantza-port.ro
Doru Mihai	MPAC	dmihai@constantza-port.ro
Cristiana Dima	MPAC	cdima@constantza-port.ro
Ana Stoican	MPAC	astoican@constantza-port.ro
Laura Geacu	MPAC	lgeacu@constantza-port.ro
Mihaela Andrei	MPAC	mandrei@constantza-port.ro
Iustin Obreja	MPAC	Iustin.obreja@constantza-port.ro
Sorin Horovei	MPAC	shorovei@constantza-port.ro
Victor Doicescu	MPAC	vsdoicescu@constantza-port.ro
PP experts	All DIONYSUS partners of the countries presented	

Table of Contents

1. Table of Figures

Figures' details are explained on the page containing it.

2. Table of Tables

Tables are explained on the page containing it.

3. Abbreviations

Abbreviation	Explanation
IWT	Inland water transport
RCI	river cruise industry
DR	Danube region

4. Scope of the document

This report aims to investigate the infrastructure needs and the related investment needs required to serve the operations of the river cruise industry in a sustainable and efficient way.

These needs will refer to factors such as safety of operations, barrier-free accessibility of berthing infrastructure, installations to ensure environmental protection such as waste collection facilities, security and connectivity to the adjoining road and public transit infrastructure. The infrastructure investment needs shall follow a long-term industry development strategy which mitigates the accumulation of the river cruise services at destinations of main interest and shall foster a more balanced infrastructure use by the river cruise industry.

The identification of the needs and the corresponding required investment will be done in close cooperation with the stakeholders of the river cruise industry, as well as the waterway and port administrations responsible for the river cruise terminals and will result in national country reports.

This summary report provides an overview for the entire Danube corridor.

A. AUSTRIA

5. Presentation of the river cruise industry context of the area served by the Austrian ports (regional context)

In Austria the ports are industrial ports and sometimes ports also offer port cruises with smaller vessels.

In the four Austrian Public Ports (Linz, Enns, Krems, Vienna) where port services including cargo handling is offered, also River Cruise Vessels can stop and moor. Normally River Cruise Vessels only use these ports for winter time – without hotel operations. During winter time those vessels use the port for their revisions and preparation for the next season.

5.1 Port activity related to cruise industry

There are no port activities in Austria related to cruise industry. River Cruise Vessels only use the port for wintertime as mentioned.

5.2 Regional context of cruise industry

Inland navigation on the Austrian Danube is of high economic importance. It contributes significantly to the regional economy. Especially river cruises enjoy growing numbers of passengers, ships and berthing – a development that poses challenges for the environment and local residents. If shore power units are missing at the berths, diesel generators are employed for the supply of the electronic equipment on resting cruise

vessels. In order to reduce noise emission and pollution levels at highly frequented hot spots and to take the steady growth of the shipping sector into account with modern infrastructural solutions, a contemporary energy concept is needed.

Guideline planning for shore power supply

Particularly in agglomerations and environmentally sensitive areas an efficient and ecologically viable energy supply of the shipping sector is essential in order to boost sustainably the business location as well as the competitiveness and environmental performance of the waterway as mode of transport.

In the Federal Republic of Germany, in towns such as Würzburg, Regensburg and Passau, the implementation of state-of-the-art systems for shore-side energy supply has begun – with the objective to offer the best possible service for the user. These initiatives can serve also as a foundation for the Austrian Danube.

viadonau supports this modernization project and coordinates on behalf of the BMVIT (since the beginning of 2020: BMK, Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology) the development of a guideline planning across federal states for the installation and operation of shore power units along the Austrian Danube. The coordination with the responsible stakeholders of the federal states Upper Austria, Lower Austria and Vienna happens within the framework of working group meetings. Thus, all parties (grid operators, power suppliers, berth operators as well as representatives of the federal states) benefit from the exchange of experience and know-how across federal states. Due to the involvement of Bavarian stakeholders into this guideline planning, consistent standards across borders shall be ensured.

The guideline planning, coordinated by viadonau, covers the technical specification of shore power units, cost-efficiency studies as well as the development of a primarily organizational concept (incl. access and charging system).

The planning work completed at the end of 2019 intended to ensure a uniform and clear shore power system on the Austrian Danube and serves as a basis for the subsequent construction and operation of shore power facilities. viadonau's work is dedicated to the implementation of shore power supply for commercial cargo vessels at public berths - the first pilot projects are currently being developed and implemented.

Pilot sites include selected public berths in Linz, Wildungsmauer (Lower Austria) and Vienna. These modern mooring places are supported by the EU project "Fairway works! in the Rhine-Danube Corridor " with a co-financing rate of 40%. The implementation of shore power supply at landing sites for river cruise vessels is carried out by the future operators in the concerned federal states. These actors are coordinated by the nominated coordinators in the respective

offices of the federal state governments. The supra-regional coordination is carried out by viadonau further on.

Source: https://www.viadonau.org/en/infrastructure/shore-power-for-inland-vessels

6. Overview of the current situation of infrastructure serving river cruise industry related to ports in Austria

Public federal mooring sites

Within the scope of the tasks of the federal waterway administration, viadonau is also entrusted with the construction and maintenance of public mooring facilities owned by the state. Along the Austrian section of the Danube, there are currently more than 120 public federal mooring sites available for commercial and leisure navigation (including waiting areas in the area of locks and mooring sites for damaged vehicles).

In the course of an assessment of the condition of the mooring fixtures at public mooring sites, it was found that some facilities no longer meet the current technical requirements and need renovation. Based on these findings, a priority ranking was drawn up with regard to the renovation of existing public federal mooring sites. In addition to these necessary renovation measures, the targeted upgrading of mooring facilities in particularly important locations / metropolitan areas along the Austrian Danube was investigated (e.g. equipping with mooring piles, shore power connection, car jetties).

Since spring 2018 the renovation of the following mooring sites has been completed:

- Jochenstein waiting area (river-km 2204.8 right bank)
- Sailer (river-km 2080.0 left bank)
- Langgries (river-km 2071.7 right bank)
- Loiben (river-km 2006.4 left bank)
- Petronell (river-km 1889.6 right bank)
- Hainburg (river-km 1883.9 right bank)
- Thebener Straßl (river-km 1879.0 right bank)

The following mooring facilities **are currently being renovated** or structurally upgraded:

- Untere Donaulände Linz (river-km 2133.9 right bank, removal of the existing bollards, new construction of 16 bollards)

- Trockengutlände Linz Mitte (river-km 2129.1 right bank, construction of mooring piles, landings stages for the ship's crew and car jetty, preparation for supplying shore power)

- Small craft mooring at Wildungsmauer (river-km 1894.9 right bank, expansion for use by cargo shipping, construction of mooring piles, landings stages for the ship's crew and car jetty, preparation for supplying shore power)

In order to further improve the quality of public federal mooring sites for commercial navigation, viadonau's medium-term goal is to offer cargo shipping the option to use shore power and selected services for supply and disposal. In addition to this, the feasibility of a digital booking system for public mooring sites for commercial shipping is currently being examined as part of the Danube waterway digitization campaign.

Source:
https://www.viadonau.org/en/infrastructure/operations-on-land/oeffentliche-bundeslaenden

Physical upgrading & shore power Linz (2021/22)
Framework conditions before
- Bollard
- Sloping shoring

Framework conditions afterwards (Completion August 2021)
- Row of dolphins
- Bridges (shipping crews, cars)

Next step (mid of 2022)
Shore power system (400V) for 16 A, 32 A, 63 A

Pilot phase Shore power operation – Framework conditions

- 3 pilot sites in Linz, Wildungsmauer & Vienna
- Open access to public berths for all vessel operators
- Prohibition of using on-board systems to generate electricity (inclusive Supervision regulation)
- Testing of an operating scenario that is as low-threshold as possible for the period of the pilot phase -> Experience and knowledge for long-term operation
- Clear communication of the terms of use to vessel operators including ongoing support and feedback loops

Pilot phase shore power operation – Sites / Timeframe

- Pilot operation on 3 sites on the Austrian Danube (planned completion dates for shore power systems included)
  O Trockengüterlände Linz Mitte - Q2 2022
  O Wildungsmauer - Q4 2022
  O Wien Brigittenau II - Q2 2023
- Duration of Pilot phase: Q3 2022 – Q4 2024 (30 months)

Pilot phase shore power operation – Evaluation criteria
- Technical feasibility
- Legal feasibility
- Cost and economy
- Compliance Shore power obligation
- Sector acceptance (frequency of use, amount of electricity sold, survey)
- Quality of service
- Susceptibility to failure, fault frequency

• Suitable for area-wide use

6.1 River cruise dedicated terminals

In Austria the ports are industrial ports and no passenger ports.

6.2 Other port facilities also used as passenger berths

In the four Austrian Public Ports (Linz, Enns, Krems, Vienna) where port services including cargo handling is offered, also River Cruise Vessels can stop and moor. Normally River Cruise Vessels only use these ports for winter time – without hotel operations. During winter time those vessels use the port for their revisions and preparation for the next season. Sometimes also ports offer port cruises with smaller vessels.

6.3 Existing infrastructure connecting the port within the regional cruise industry

The Guideline planning for shore power supply in Austria is viadonau responsibility, as previously mentioned.

In Upper Austria there is an existing implementation of an **Environmental protection project**. In the next one to two years (2022/2023), the landing stages of the Danube cruise ships in Linz and Engelhartszell will be equipped with shore power.

In total, LINZ AG is to have nine landing stages (pontoons) - six in Linz and three in Engelhartszell - equipped with shore power systems. The investment volume is 4.6 million Euros. The project is funded by the Climate Protection Ministry and the Energy department of the state of Upper Austria. The energy department of the state of Upper Austria promotes concrete implementation through additional state funding from low-voltage lines in Linz and Engelhartszell, which are handled through the local communities.

The corresponding resolutions in the two municipalities have already been taken. The preparatory work is in progress and construction is scheduled to start after the approval process has been completed in 2022.

An overview of the new planned shore power systems

With the planned shore power systems, all cabin or cruise ships operating in Linz and Engelhartszell can be supplied. The supply of the cabin ships with shore power requires the installation of shore power systems directly on the landing stages (Pontoons) also the construction of appropriate transformer stations near the landing stages. In Engelhartszell, three new transformer stations are being built for the implementation of the shore power project, four stations are currently planned in Linz.

Source:

https://www.markus-achleitner.at/wp-content/uploads/2021/09/Linz-Engelhartszell-Landstrom-fuer-Donau-Kreuzfahrtschiffe-in-Sicht.pdf

Beside the Guideline planning for shore power supply in Austria by viadonau, Ennshafen is working on the upgrading infrastructure with regard to shore power supply in Ennshafen port.

Planning activities for upgrading the existing infrastructure have already been started and the final vision will be, to supply the river cruise industry during wintertime with on shore power supply.

B. SLOVAKIA

5. Presentation of the river cruise industry context of the area served by the Slovakian ports (regional context)

Main tourist spots on the upper part of the Danube for past decades have been Passau, Vienna, and Budapest. Bratislava joined during 1990s but not as primary night in the city.

Bratislava passenger port has not undergone any major reconstruction during past 20 years. Passenger water transport activities are currently less developed compared to other geographically close ports on the Danube (e.g., Vienna or Budapest). The starting base is so low that even a small growth would lead to the multiplication of baseline performance. Still, the existing potential for growth can only transfer itself into real demand once the conditions for real supply materialize.

In 2017, passenger water transport in Slovakia reached the level of 502 thousand persons. Most of this volume was associated with the passenger port of Bratislava. Most of this performance is related to cruise cabin ships sailing through Slovakia with short landings in Bratislava. Their share in the total number of landings is up to 77% (i.e. almost 400 thousand persons). Apart from these cruises, only 121 thousand passengers were transported on inland waterways. It is a combination of very limited regular water transport line between Bratislava and Vienna and limited tourism activities.

The activities related to passenger water transport in other Slovak ports, such as Komárno or Štúrovo, or cruises on various water reservoirs, are marginal in size.

Slight increase in number of ladings and number of passengers transported followed until 2020 when whole river cruise industry has been hit by outbreak of COVID-19. Between 2019 and 2020 number of landings decreased by 80%, number of transported passengers by 90 in all three Slovak public ports – Bratislava, Komárno and Štúrovo.

Landing positions are owned by multiple private operators that have middle-term contracts (few years usually) with cruise agencies and cruise vessels operators. Standard port call contains exchange of basic information with dispatching centre (Transport authority) but landing positions are fixed in advance for operators.

Most typical activity that follows disembarkation is the walking tour (1,5 hour) in downtown or bus + walking tour (3 hours) with local guide. Mostly they do not include any entrances (few exceptions – historical monuments, food tasting). Some cruise agencies offer bike tours as well and so-called "POST-COMMUNIST TOUR DE BRATISLAVA" . Ships that stay all day in Bratislava usually offer (as afternoon optional activity) home hosted coffee and cake, visit to Schlosshof (castle in Austria) or Červený kameň castle (Little carpathian region). Transports are done by locals' buses or in some specific cases by river cruise companies´ partners. Some cruise ships offer performances of local artist or lectures on various topic done by locals on board.

Figure 1: Schlosshof / Austria (foto: www.schlosshof.at)

Figure 2: Castle Červený kameň (foto: www.bratislavskykraj.sk)

Figure 1: POST-COMMUNIST TOUR DE BRATISLAVA (FOTO: www.welcometobratislava.eu)

6. Overview of the current situation of infrastructure serving river cruise industry related to ports

6.1. River cruise dedicated terminals

The terminal building, located in passenger port in the very centre of Bratislava is in very bad condition, gives very bad impression to passengers that need to enter it. The restrooms are in the basement and are not barrier-free. Fortunately, most of passengers do not need to enter the building as they are meeting their guides just outside of the ship on riverbank. Passenger terminal is privately owned.

Figure 4: Passenger terminal Bratislava

6.2. Other port facilities also used as passenger berths

Berthing positions (land) are owned by Public ports, JSC – state owned port authority. Pontoons (and other relevant physical equipment) are privately owned and rent, mostly just for the river vessels in Bratislava. Exits from pontoons aim directly on sidewalk and promenade along the river. Passengers are not required to use any other facilities. According to EU legislation and thanks to Schengen system no additional formalities are required. Tourist may disembark without passing through the terminal itself.

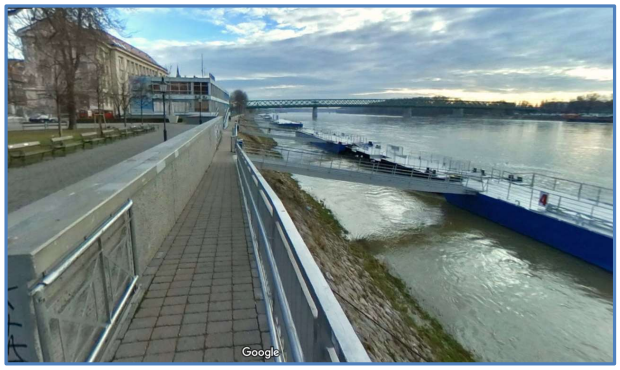


Figure 5: Passenger port - berthing positions (foto: Google Maps)

6.3. Existing infrastructure connecting the port within the regional cruise industry

Port of Bratislava is directly in the very centre of the city. With further parts of the city, the passenger port is connected by public transportation (tram and/or buses). TAXI gathering place is also nearby. Not many tourist programs are in place. Some of agencies offer voluntary trip to the region where they can observe post-communist rural way of life. These services vary according to season and current cooperation between particular agencies and local businesses.

From point of view of regional tourism: there is much more to offer (wine and agricultural tours, visit of modern art gallery Danubiana etc) but feedback from the cruise companies to local partners is that they do not want to stay to long in Bratislava, as they have much better facilities of ship operation (access

for cars of food suppliers, waste, and sewerage management etc.) in other ports.

The feedback on the local tourism services is usually very good (what can be proved by fact, that some companies use the local partners from Bratislava as well as suppliers of the operation in Vienna or even Budapest, so the most significant weakness are not the local services but the poor and old infrastructure of the port.

Figure 6: tourist train (foto: www.blavacik.sk)

C. HUNGARY

5. Presentation of the river cruise industry context of the area served by the Hungarian ports (regional context)

The most attractive, most viewed areas tourists visit in Hungary by the river are the Budapest Region and the Dunakanyar (Danube Bend). Besides, with some service provider companies passengers can ship to Komárom, Esztergom, Kalocsa and Mohács as well.

On Hungarian IWW currently there are mostly holiday and tourist travel, while commuting is only in a small extent. Inland passenger sector realized a million increase in passenger numbers in the turn of the millennium, then between 2001 and 2005, traffic decreased to a third. According to KSH (Központi Statisztikai Hivatal – Hungarian Central Statistical Office) the share of waterborne passenger transport is very low compared to other modes.

1. Table Domestic IWW passenger transport

	Number of passengers (thousand)	Passenger kilometre (million)
2018	683	9
2019	684	8
2020	556	6

Source: self-edited based on KSH (HCSO)

5.1. Port activity related to river cruise industry

The largest owner and operator of passenger ports is MAHART PassNave Kft. with 53 ports in Hungary (30 in Budapest), but there are other smaller and bigger owners service providers too.

MAHART PassNave Kft. operates the following ports in Budapest: Akadémia,

Akadémia 3, Boráros tér, Dráva 2, Garam 1, Margitsziget 2 (uszoda), Margitsziget Szabadtéri Színpad, Nemzetközi 1, 2, 3, 4, 5, 6, 7, 8 and 9, Parlament, Szent István park 1 and 2, Vigadó 1, 1/A, 2, 3, 3/A, 4, 5, 5/A and 6 on the Pest side, and Bem tér 1 and 2, Batthyány tér 1 and 2 on the Buda side. Centre of MAHART International station is located between Lánchíd and Erzsébet-híd on the Pest side. International hydrofoils are accomodated at the Pest side of Erzsébet-híd. Besides Budapest, the following passenger ports are owned and operated by MAHART PassNave Kft: Baja, Dömös, Esztergom 1, 2 and 3, Kalocsa 1 and 2, Komárom, Komárom 1, Komárom Monostori Erőd, Mohács, Nagymaros, Solt, Százhalombatta, Szentendre 1 and belváros, Vác, Verőce, Visegrád 1, 2, 3 and Zebegény. BKK had 20 pontoons operating, whilst Európa Csoport has 20 also.

5.2. Regional context of the cruise industry

20-25 years ago, travel agencies provided group travel. In the recent decades, market has totally changed. Individual passengers are more flexible, and they are seeking for programs, events, attractions aboard and in the destination cities as well.

All hotel ships stop in Budapest, but several companies change passengers in the Dunakanyar (Danube Bend), stopping in Komárom, providing a sightseeing tour by bus for visitors and take their guests boarding in Esztergom or Visegrád. Furthermore, under Budapest, Kalocsa provides exciting folklore programs for thousands of tourists

In the pre-coronavirus era, RCI soared across the continent: in 2019, more than 1.6 million hotel guests travelled in European waters. 1 Currently there are more than 52,000 cruise ship beds on the continent, which means that the annual traffic of cities along the waterways could be dropped by hundreds of thousands of people with the arrival of cabin boats. Budapest is one of the best-selling cities for the travel audience of hotel ships (many of them are overseas). Experts count on 3,200-3,500 moorings in Budapest per year, which means roughly 420-450 thousand passenger arrivals.

This year, the number of hotel ships arriving in Hungarian waters may reach 60-70% of the 2019 traffic. Unless another wave of the epicemic intervenes, this season will be longer than usual as shipping companies are now likely to try to meet renewed passenger demands.

Nationwide, from Komárom to Mohács, MAHART is prepared to receive cruise ships. In addition to the existing services in Budapest (e.g. refueling, small watercraft, selective garbage collection, shore-side electricity), a sewage tanker will be installed soon to deposit waste

[1] A rajtvonalnál állnak a Budapestet programozó szállodahajók - Turizmus.com

from ships. It is also possible to wash the ships and replenish the supplies (loading), as well as to change passengers in Budapest, all of which generate serious commercial and tourist traffic in the city.

Despite the closure of the quays, in addition to freight trucks, tourist buses can also go to hotel boats so that passengers do not have to walk hundreds of meters to start sightseeing programs. Although, two port points are now out of service due to the renovation of the Chain Bridge, new ones have been put into operation instead. Currently, there are more than 10 ports in Budapest ready for receiving hotel ships.

Cruise ships are ready to begin their journey in Europe, and there is a huge demand for this way of travel, especially from Germany. Due to the uncertainties, most of the ships moved from the Danube to the Rhine, because the domestic regulatory conditions were clear there, while on the Danube a lot of coordination between the countries is necessary.

The fact that the first two hotel ships arrived in Budapest with a very high load of 75 and 85% shows interest. The Hungarian service providers (buses, tour guides) are ready to receive tourists. Passengers of Sváda Office typically spend 1.5-2 days in Hungary – and, depending on their destionation, besides the capital, they also organize programs in Esztergom, Kalocsa and Mohács.

For the time being, there is a lot of uncertainty about epidemiological rules, and they do not even know what the EU Green Card will be used / suitable for – so it would be important to get legal help from those responsible to interpret the provisions.

Transport in Budapest can be a challenge in organizing sightseeing programs: If travel agencies cannot take their guests to the Castle or the Citadel due to parking restrictions, if the Chain Bridge and the lower quay are closed from motorized traffic and due to metro replacement, roads are impassable, then what to show tourists? Even though they get a wonderful image film about the city, it is very unpleasant not to be able to watch many of the sights they saw in it.

It would be very important for the resumption of tourism that as long as there is no alternative way to get bus groups to these locations, this option should remain.

The most beautiful mooring option is in Budapest. Overseas passengers typically stay in Budapest for a day and a half, but as passengers are often exchanged here, many visitors still spend a few days in the city before and after their departure.

Passenger ports are in downtown. Passengers almost do not have to get out of the boat, and what they see is breath-taking. If they get out, they can still discover a lot on foot. As boat tourists typically belong to the senior age group, this wonderful downtown environment is a huge advantage over other European cities.

After arriving to the city centre of Budapest, visitors can explore the downtown and its major attractions:

- on foot,
- by bike
- by e-roller
- by public transportation
- or with tour bus companies

What to see in Budapest?

- Hungarian Parliament
- Buda Castle (Halászbástya, National Gallery, Széchenyi Library, Matthias Church)
- Saint Stephen's Basicila
- Shoes on the Danube Bank
- Sziklakórház (Hospital in the Rock Nuclear Bunker Museum)
- Hősök Tere (Heroes' Square), Városliget (Citypark), Museum of Fine Arts, Széchenyi Spa, Andrássy út, Opera House, House of Terror Museum
- Váci utca, Vörösmarty tér
- Jánoshegy
- National Museum, Liberty Bridge, Gellért Hill / Citadel
- Szimpla Kert
- Great Synagogue and Jewish District

What to see in other cities with passenger ports?

Komárom

- Monostori erőd (Fort Monostor)

Esztergom

- Basilica
- Castle Museum
- Víziváros (Watertown)
- Széchenyi Square
- Szenttamás.

Visegrád

- Castle
- King Mathias Museum
- Pálinka Museum
- Kálvária Chapel
- Szent János Church

Szentendre

- Skanzen
- Main Square
- Old Town
- ArtMill
- Belgrád Cathedral
- Orthodox Church

Kalocsa

- folklore programs
- Assumption Cathedral
- St. Joseph Church
- Paprika Museum

Mohács

- Busójárás (Busó-walking), masked end-of-winter carnival

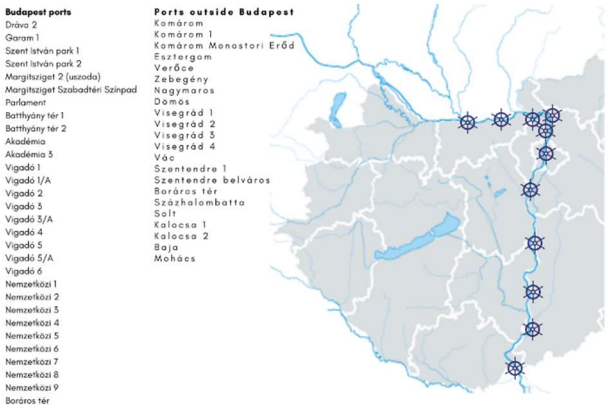
6. Overview of the current situation of infrastructure serving river cruise industry related to Hungarian ports

Regarding the infrastructure in the capital, the scarcity of bus parking capacities is a difficulty when launching sightseeing programs. It is also an inconvenience that in case of full operation, up to two or three ships can stand side by side at one pontoon, and since these ships are not compatible with each other, passengers can only land on stairs and ramps.

6.1. River cruise dedicated terminals

The largest owner and operator of passenger ports is MAHART PassNave Kft. with 53 ports in Hungary (30 in Budapest), as presented on the map below.

2. Figure Danube ports owned and operated by MAHART Passnave Kft.



Source: self-edited based on mahartports.hu

There has been widespread infrastructural investments in 5 ports in the Dunakanyar (Danube Bend): Komárom, Esztergom, Zebegény, Dömös, Visegrád completed by MAHART PassNave Kft. The project was cofunded by the Cohesion Fund and the Ministry of Innovation and Technology in the frame of Integrated Transport Operational Programme. The strategic goal of the project has been to improve the conditions of passenger transport logistics in the Danube Bend area, to increase the standard of service for both international hotel ships and scheduled excursion and hydrofoil ships.
New pontoons and bridges were installed in the ports, the port area was arranged, the station building was renoveted in Komárom and a new service unit providing a complete infrastructure was settled in Esztergom, thus facilitating the development of tourism in the affected settlements.
In Komárom, a new 40-meter floating equipment has been installed, the surrounding areas have been arranged, and the port is now suitable for the full service of hotel ships by parking lots and service rooms. In Esztergom, the ruined buildings were demolished and the port is now prepared for events created on the site. The environment here is also greened, equipped with bicycle storage and new street furniture. In Zebegény, the investment was supplemented by dredging and the construction of a road for pedestrians, so that the settlement could join the boat traffic on the Danube Bend.

In Nagymaros (Dömösi átkelés – Dömös crossing) the port linked to the train traffic also required a footpath and new infrastructure. In Visegrád the already existing capacities have been expanded. The riverbend is also deepened here, so that in addition to scheduled services, hotel ships can also moor.

6.2. Other port facilities also used as passenger berths

Port of Komárom is equipped for freight transport. International hotel ships can moor here as well. However, in Komárom there is another passenger port: Monostori erőd (Fort Monostor), which is a tourist attraction, war museum.
Port of Mohács is dedicated for the administration of border-crossing ships when enter or leave Hungary on the Danube. Acceptable level of services and infrastructure to receive international ships have not been constructed here yet.

6.3. Existing infrastructure connecting the port within the regional cruise industry

Passenger ports are located in the centre of Budapest. Passengers hardly do not have to leave the boat to discover the most spectacular parts of the capital, its riverside. Once they arrived, they can still explore a lot by walk, which is a great advantage compared to other European cities, as cruise ship tourists mostly in the senior age group. Upon arrival, they can

choose from many options how they would like to explore the city:

- on foot,
- by shared bike (key providers: MOL Bubi, Donkey Republic, Berguson, Yellow Zebra)
- by e-roller (service providers: Bird, Lime, Tier)
- by public transportation (BKK – Centre for Budapest Transport)
- or with tour bus companies (BigBus, City Sightseeing etc.)
- and on boat

Budapest cruise programs[2]

- Budapest Evening Sightseeing Cruise
  - 1 hour tour, tour guide or audio guide, food and drink, welcome drink
  - Pass by: Margaret Bridge, Buda Castle, Hungarian Parliament Building, Pesti Vigado, Castle Garden, Gellert Hill/Citadel, Bálna
- Budapest Danube River Sightseeing Night Cruise by Legenda City Cruises
  - 1h tour, glass of champagne, light refreshments, food
  - Pass by: Danube River, Buda Castle, Elisabeth Bridge, Gellert Hill, Liberty Bridge (Szabadsag hid), Budapest University of Technology and Economics, Bálna, Szechenyi Lanchid (Chain Bridge), Matthias Church, Hungarian Parliament Building, Margaret Bridge
- Evening Cruise on the Danube with Optional Drinks
  - 1.5-2 h tour, drinks, live music enter
  - Pass by: Szechenyi Lanchid, Buda Castle/Varhegy, Matthias Church, Halaszbastya, Gellert Hill, Hungarian Parliament Building, Margaret Bridge, St. Gellert Thermal Bath and Swimming Pool, Bálna, Müpa Budapest
- Further services to name a few examples[3]
  - Water Transfer (vízitaxi)
  - Riverside Nightclubs
  - Bachelor & Bachelorette Parties
  - Sun Boat Trip
  - Engagements & Weddings
  - trip to Szentendre
  - trip to Visegrád and Esztergom

Standing boats:

- A38 is one of the largest clubs in Budapest, there are several floors with different genres of music and various programs
- Kossuth is a museum boat
- Kassa is used to be a Danube-marine cruiser, now a theatre operates aboard
- (planned: Zoltán Gőzös will provide a passenger shipping exhibition)

[2] THE 15 BEST Things to Do in Budapest - 2021 (with Photos) - Tripadvisor

[3] Services | Dunarama

D. CROATIA

5. Presentation of the river cruise industry context of the area served by the Croatian ports (regional context)

Since the not-so-early adoption of river cruising as means of touristic transportation services, Croatian well-positioned geographic location comes at top given the fact that Croatia lies on Danube corridor with its three main rivers. In today's global market share, almost half of the river cruise industry is covered by cruises on the Danube, the Rhine, the Rhine-Main-Danube Canal, and Dutch waterways.

Croatia's inland waterways include, respectively the river Sava (rkm 210+800 – rkm 594+000), river Drava (rkm 0+000 – rkm 70+000) and river Danube (rkm 1295+500 – rkm 1433+100). The European Agreement on Main Inland Waterways of International Importance, which Croatia has signed and ratified, has incorporated the waterways of the Sava, Drava and Danube Rivers and the future Danube-Sava Canal in the network of European inland waterways, and the ports in Osijek, Vukovar, Slavonski Brod and Sisak in the network of ports open to the international traffic. The Kupa river (rkm 0+000 – rkm 5+900), a right tributary of the Sava, forms a natural border between north-west Croatia and southeast Slovenia.

It is 297 kilometres long with its border part having a length of 118 km and the rest located in Croatia. The River Kupa is navigable only from the mouth in the Sava River to the mouth of the Odra into the Kupa (about 5 kilometres). A section of the Sava River upstream from Galdovo and the Kupa River upstream from the mouth of the River Odra is used exclusively for transport which serves for

gravel exploitation and the maintenance of ferryboats connecting the settlements on the opposite river banks.

Cruising typically involves passenger travel on specially customized passenger ships for pleasure voyages on the sea, rivers and lakes with calls at several ports and, typically, return to the port of departure. It can be divided on cabotage, or coastal sailing exclusively within the territorial waters of the home country, and international cruises, or voyages with calls at ports of several, or at least two countries.

Croatia has its natural and cultural resources as its most exceptional assets, which are practically speaking a direct prerequisite for the development of cruise tourism. The true river cruising power of Danube lies on the basis that it is one of the most important European rivers which is practically always navigable. The Sava and the Drava Rivers are an excellent basis for further development of cruising tourism as they pass through numerous cities of interest for tourists, nature parks and other protected natural areas, and important monuments and cultural sites. Construction of the Danube-Sava canal could further contribute to the attractiveness of inland navigation.

Of the existing inland waterways in Croatia, the Danube offers the best conditions for sailing. The navigability of the Drava is lower due to large annual fluctuations in its water level, and the Sava, despite being the longest river in Croatia, has the worst conditions for navigation. In the 1990s, due to the ongoing war, inland navigation was almost completely stopped and started to recover only in early 1999.

Internal waterways in Croatia are under the jurisdiction of Ministry of the sea, transport and infrastructure, while the port authorities of Vukovar, Osijek, Sisak and Slavonski Brod are regulating bodies of ports and port affairs. The Port Authority of Vukovar is responsible for public ports on the Danube, the Port Authority of Osijek for ports on the Drava River, while the jurisdiction over the ports on the Sava River is divided between the Port Authorities of Sisak and Slavonski Brod. Port authorities also have the jurisdiction over the issuance of operation licences for ports and docks, as well as over county ports and docks. Regarding the plans for the future multi-purpose canal, jurisdiction will belong to the Ministry of the sea, transport and infrastructure.

Since 2002, the data on cruise ship traffic in Croatia have been officially monitored and published by the National Bureau of Statistics. However, no systematic statistical monitoring of passenger traffic or the number of ships calls on Croatian rivers has been carried out yet. The information given in the paper has been obtained from the port authorities managing the port areas on Croatian rivers.

On the Danube, there are four docks or so-called passenger terminals: Batina, Aljmaš, Vukovar and Ilok. Batina, Aljmaš and Ilok have floating docks, while Vukovar has the busiest and best equipped port, located on the well-kept bank in the city centre. The dock facilities are located on a converted ship, with a restaurant on its deck and a multimedia hall in the belowdecks used for the reception and customs control of passengers and information about Croatia's tourism potentials.

The full capacity of the Danube waterway in Croatia has not yet been reached. Cruises on the Danube are a welcome boost to the development of continental tourism, especially in the eastern part of Croatia, which still suffers great consequences of the war aggression.

In 2002 the Port Authority of Vukovar started with the construction of passenger ports, i.e., public ports for passenger traffic in Vukovar and Ilok. The terminals have the necessary infrastructure (water, electricity, gas connections). There has been some great interest in the docking of passenger ships that have the tendency to dock multiple times a week in Vukovar during the touristic season which lasts from late March to late October. These are luxury ships governed by foreign shipping companies with its passengers being mostly from the United States, Germany and other, more developed European countries, who often sail on the route Hungary - Romania and vice versa. At its passenger ports in Vukovar and Ilok, the Port of Vukovar Authority offers services for the supply of passenger vessels with drinking water and electricity, and enables the reception of waste from passenger vessels.

The Danube River is the most important river for inland navigation in Croatia due to its natural characteristics of the coastal area that allows navigation to the largest river ships throughout the year. The location has a special significance in relation to the international one's transport corridors. Vukovar is located on Corridor VII and is close to Corridor Vc (Budapest -Osijek – Sarajevo -Ploče).

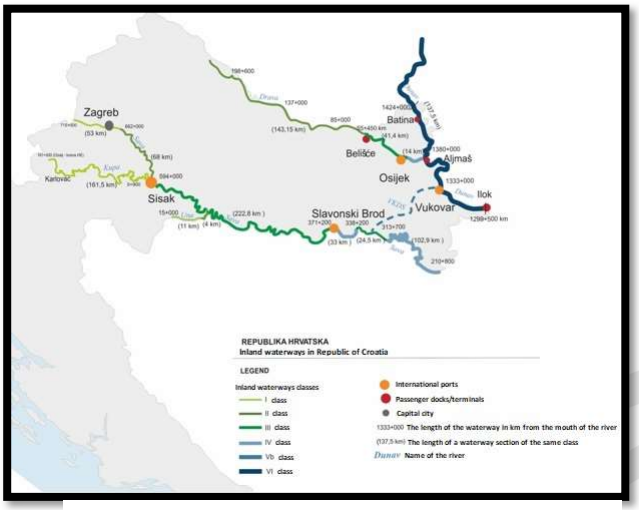


Figure 3 Croatia's inland waterways

Source 1 https://povezanahrvatska.eu/projekti/razvoj-sustava-obiljezavanja-vodnih-putova-republike-hrvatske/

Cruising is one of the types of nautical tourism that are certainly more represented in Croatia at sea, but in the last couple of years, there is some significant growth on rivers, which is usually referred to as river cruising. Cruising tourism involves cruising passenger ships for a tourist sailing experience, most often in a package with a visit to a number of attractive destinations on the mainland. The ship is the primary destination tourist stays, and onshore destinations are secondary. Passengers from the boat in the destination are referred to as one-day visitors. If nautical tourism takes place in the inland waters of only one country it is called domestic cruising and if it is in the inland waters of several countries, it is called international cruising which can take place by sea, rivers and lakes.

Round trips can be classified according to duration - short and long. Short trips last up to 21 days (usually 7 or 14 days), and long trips last more than 21 days to several months while excursions are considered as trips lasting less than 24 hours. As for cruising in Croatia, it is important to mention that it takes place mostly at sea, but lately it has also been developing on the rivers of continental Croatia with an emphasis on the Danube. 90% of navigation takes place there, while the remaining 10% of traffic takes place on the river Drava. It is certainly worth mentioning the efforts of port authorities on the Sava River for their construction projects which include passenger ports that will contribute to the development of this type of tourism on Sava. Due to limitations in navigability of the Sava there are now only up to 2-3 cruisers annually.

Multi-day river cruises in international traffic, popularly called river cruising, has in the last few years experienced a real "boom" both in Europe and in Croatia. Cruising is by definition a planned staying on a larger vessel with help from a professional crew. Cruise trips are based on a pre-made itinerary with a predetermined route plan for docking in different ports/ cities/ states. In Europe, there are over 1 million passengers annually that sail in river cruises.

The development of river cruises in Croatia began with the construction of the first passenger ports in Vukovar and Ilok. Serious numbers of river cruisers docking on the Danube have been recorded since 2004, when the port of Vukovar docked 57 river cruisers. From then until today, passenger ports on the Drava and the Danube record continuous growth, with exceptions on the Drava River during extremely low water levels such as 2018. This exceptional trend in the development of a new form of tourism in the region has been recognized by the Osijek-Baranja County whose initiative in 2013/2014 resulted in building two new ports on the Danube, one in Batina and one in Aljmaš.

On a total of 137 km of the Danube waterway through the territory of the Republic of Croatia there are four arranged passenger ports suited for the reception of river cruisers. It can be concluded that there are certain infrastructural preconditions required for the development of river cruises, which Croatia currently doesn't have, but certainly could.

Croatia is included in river cruise programs mainly in the lower Danube basin, downstream of Budapest. Programs mostly start from the embarkation port of Budapest or Vienna all the way to the Black Sea and on average last 11-13 days. The program includes a tour of 5-6 countries: Austria, Hungary, Croatia, Serbia, Romania and Bulgaria. Before entering Croatia, passengers sailing from Hungary, have to

go through the passenger revision part which takes place in Mohács which is necessary when leaving the Schengen border.

In passenger ports on inland waters, in 2018, a total of 367 rivers docked cruisers with 51,385 passengers. The fact that Croatia also follows the growth trends of this type of tourism is shown by the data that in 2019, 559 docks were recorded in all 5 passenger docks. Overall, 527 river cruisers docked at the Danube passenger ports and 32 in Osijek on the Drava. From the information above it is concluded that river cruises in Croatia are the tourist product with the highest growth rate. Stated figures do not include occasional dockings at passenger ports on the Sava due to a small number of docks of only 2-3 throughout the year.

Percentage increase in river cruisers on arrival at the destination cannot be calculated because from 2018 there is no data on the number of individual arrivals of river cruisers. Precisely for this reason, the real number that insinuates real growth is the increase in the number of passengers in the destination who came on river cruisers.

The trend shows that there was an overall increase of the numbers recorded at all ports on the Danube River flow. After the port infrastructure was built in Batina and Aljmaš, the first recorded dockings happened in 2015. Passenger port in Batina averages about 30-40 dockings and is mainly used for disembarking passengers in downstream navigation, that is, boarding passengers in upstream navigation.

6. Overview of the current situation of infrastructure serving river cruise industry related to ports

Table 1 Port of Vukovar's terminal specifications

Port and Terminal Name	Location (km no.)	Terminal capacity	Quay length or No. of simultaneous ships	Statistics (no. of passengers passed on 2017,2018,2019 vs. 2020)	Activity during pandemic [% from normal]
Passenger terminal Vukovar	rkm 1333 + 000 right bank of Danube River	1x berth	75,20m 1x steel floating facility and 3x vessels	Avg. 36,082 Vs. 706	1.95%
Passenger terminal Ilok	rkm 1298 + 680 right bank of the Danube	1x berth	57,22m 1x steel floating facility and 2x vessels	Avg. 7,577 Vs. 0	0%
Passenger terminal Batina	rkm 1425 + 500 right bank of the Danube	1x berth	14,53m 1x steel floating facility and 1x vessel	Avg. 5,380 Vs. 600	11%
Passenger terminal Aljmaš	rkm 1380 + 200 right bank of the Danube	1x berth	14,53m 1x steel floating facility and 1x vessel	Avg. 5,794 Vs. 0	0%

6.1. River cruise dedicated terminals

This subchapter will review the existing port facilities that are currently used in RCI.
Despite having only, a limited number of berthing facilities, Croatian river cruising has had a pretty uptrend going over the last years, each year topping the last one. Last year proved to be special in all of the industries and all over the world with not knowing what the next day will bring. On March 16th 2020 official decisions were made on temporary suspension of passenger ports in Vukovar, Ilok, Batina and Aljmaš. Almost like all the other sectors in country, a forceful stop was made due to fear of spreading of COVID-19 and everything was put on hold.
On the July 10th 2020, the Port of Vukovar Authority published a document which stated "Since the decision made on March 16th, related to special circumstances that endanger the lives and health of citizens within the competence of the National Civil Protection Headquarters of the Republic of Croatia, the decision made on March 16th was repealed." This way, things were slowly starting to move forward, but in no way any other usual year could conquer. Borders were still semi closed and rather selective, but the Croatian population were decisive to take whatever they can in what's left of the ongoing season of 2020. 2021 went fairly better despite not knowing the outcome of the touristic season as well as situation with any kind of cross-border or travelling activities up until mid-June 2021. Some segments in the overall picture started to recover while some stagnated.

PASSENGER TERMINAL IN VUKOVAR

Passenger dock Vukovar is located on the rkm 1333 + 000 right bank of Danube River. Among the other cargo handling terminals, Vukovar has also a dedicated passenger terminal with the main purpose of berthing passenger vessels.
The embankment is entirely done, and the bank type is classified as "sloped". The passenger terminal in Vukovar port is actually a type of pontoon – floating facility made of steel. Pontoon classifies as one berth, but the actual capacity, or the number of vessels permitted on this berth accounts for 4 vessels (the floating facility + 3 vessels).
The overall length of the floating facility is 75,20 meters long and the maximum width of 10,00 meters. Additional services

Figure 4 Aerial view of passenger dock location in Vukovar

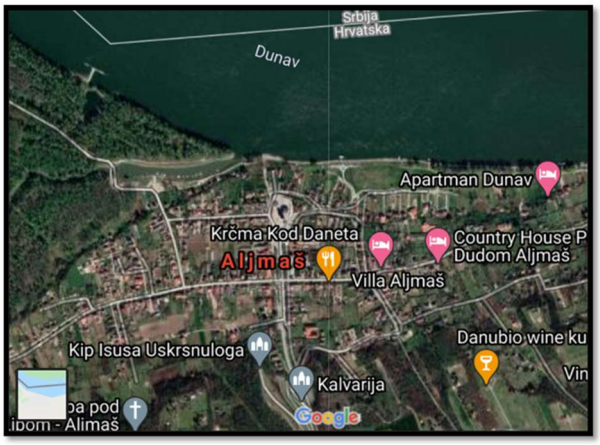
Source 2 http://luv.hr/

which are offered at the passenger terminal include fresh water supply, electricity and waste disposal.
One of the many great things regarding Vukovar port and its overall impact on the river cruising industry definitely has to be the offer of supplying groceries and other products for the needs of the ship's restaurant which is practically speaking an exclusive offer.

PASSENGER TERMINAL ILOK

Passenger dock in Ilok is located on the rkm 1298 + 680 right bank of the Danube also goes under the management of Port of Vukovar Authority as well as the ports Aljmaš and Batina. Ilok's passenger dock is made similarly to the one made in Vukovar.
The embankment is entirely done and the bank type is sloped. The passenger dock is as well a pontoon type of floating facility made of steel. There is one berth that can accommodate 3 vessels (the floating facility + 2 vessels).

Figure 5 Aerial view of passenger dock location in Ilok



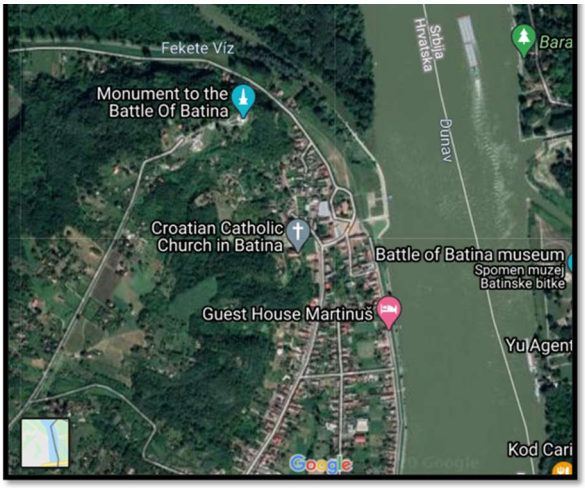
Source 4 http://luv.hr/

The length of the facility is 57,22 meters and the width is 7,93 meters. Additional services which are offered at the passenger terminal include fresh water supply, electricity and waste disposal.

PASSENGER DOCK BATINA

Passenger dock Batina is located on the rkm 1425 + 500 right bank of Danube River. The purpose of the dock is berthing of passenger vessels across the overall length of only 14,53 meters and width of 8,02 meters. The permitted number of vessels on a berth is 2 vessels (floating facility and one vessel) Similar to the embankments of Ilok and Vukovar, Batina's shore is an embankment and sloped. Dock is built from a pontoon – floating facility made to facilitate the usual embarkation and disembarkation without the need for an immobile concrete object. Additional services at the passenger terminal include water supply, electrical supply and waste disposal.

Figure 6 Aerial view of passenger dock location in Batina



Source 3 http://luv.hr/

PASSENGER DOCK ALJMAŠ

Positioned on the rkm 1380 + 200 right bank of Danube, passenger dock Aljmaš offers similar services and the exact same specifications dedicated f or accommodating smaller passenger ships on their way along the Danube River flow.
Embankment stretches behind the pontoon and the sloped bank type. Pontoon is 14,53

Figure 7 Aerial view of passenger dock location in Aljmaš

Source 5 http://luv.hr/

meters long and 8,02 meters wide. The permitted number of vessels on a berth is 2 vessels (floating facility and one vessel). Services offered include water supply, electrical supply and waste disposal.

6.2. Other port facilities also used as passenger berths

Apart from the use of pontoons instead of using concrete wharfs, piers or docks, there are no other port facilities except for the docked river ship that serves as an entrance point for all river cruise industry passengers that want to step out in the city of Vukovar. The pontoons are there because the water level oscillation happens and dock structure needs to have a certain level of flexibility. The ship moored at the passenger dock in Vukovar serves its purpose as a terminal and a gateway which safely directs passengers on shore. The Port Authority has provided a special facility at the passenger dock in Vukovar, which is used for the purpose of entry border control.

During the year 2020, for precautionary reasons, of all the audit stakeholders, only the agent has had contact with the crew. The shipping agent entered the vessel and had taken all the necessary documentation and passports from the ship's crew and submitted them to the competent services (border police, customs captaincy) for further processing.
Disinfection barriers have been set up at the docks in the corridors where passengers exit and enter the docks. Dock employees regularly measured their body temperature. After each docking, the Vukovar Port Authority disinfected the entire dock.
The development of a protocol for the introduction of measures to prevent the spread of COVID-19 virus and the

Figure 8 Passenger dock in Vukovar

Source 6 Port Authority Vukovar internal archive

promotion of the Republic of Croatia as a safe tourist destination is in the process of updating with every major global news or policy that seems to affect the travelling procedures.

6.3. Existing infrastructure connecting the port within the regional cruise industry

All of the existing infrastructure elements in Croatian ports within the Danube region are usable but are definitely not on European levels regarding the overall appearance factor. Croatian ports are serving their purpose but are more of an improvised docking points in comparison to the more developed countries and ports in the central Europe. However, due to not-so-distant war situation in Croatia and total halt on any kind of progress within the tourist services sphere, it can be concluded that ports are definitely moving in an upward direction last couple of decades. Infrastructural needs seem to be met while the existing port

facilities seem to be more than sufficient. Great work on keeping the industry afloat and constantly searching for improvements and investments have to be attributed to the Vukovar Port Authority's efforts.
More about pending investments and investment strategies mostly from the National Transport Strategy Masterplan will be mentioned in following paragraphs.

E. SERBIA

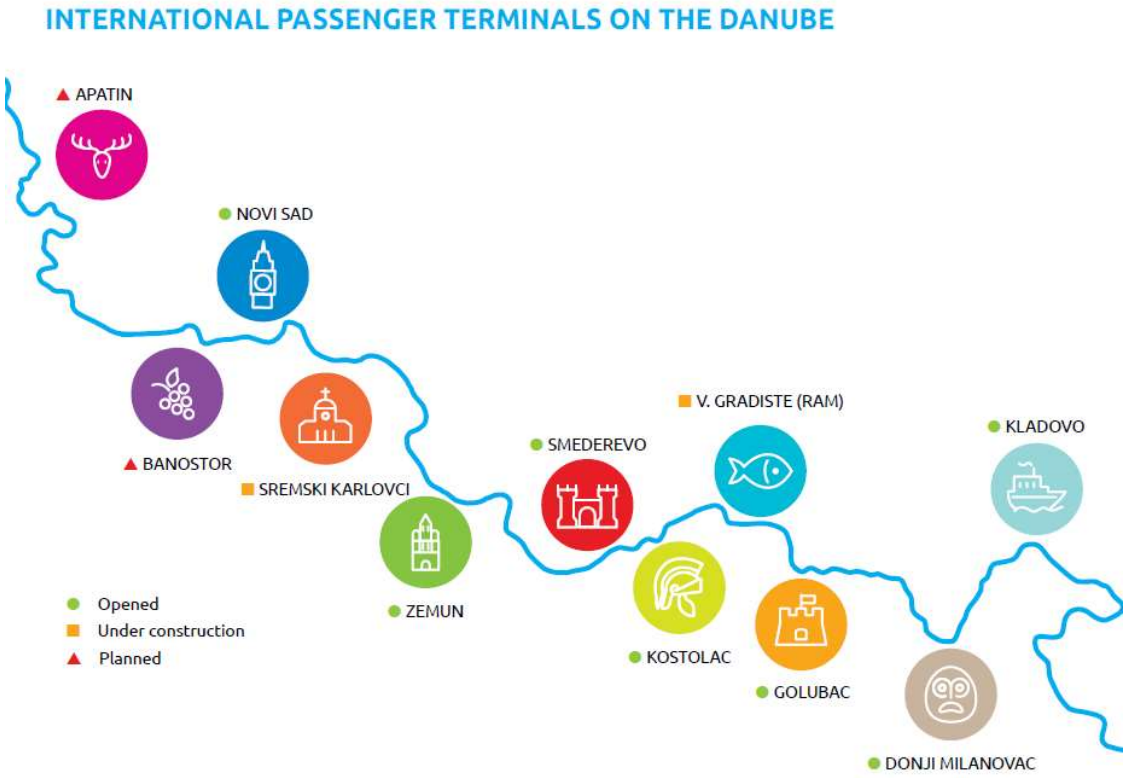
5. Presentation of the river cruise industry context of the area served by the Serbian ports (regional context)

On IPTs in the Republic of Serbia, port operators perform port services of embarkation and disembarkation of passengers and reception and dispatch of cruisers. These activities envisage communication with tour operators and shipping agents in the planning phase. It is important to mention that the schedule for nautical season is prepared in advance usually in November, for the next year. This activity is done in order to optimize the capacities of IPTs, to enable further communication during the performance of port activities and to enable coordination with border controls, border police, harbour's masters offices etc.

Port operators also communicate with the local tourist service providers (bus operators for example). In the scope of their activities, port operators take care of safety of passengers and vessels, supply of the vessels with drinking water, disposal of the household waste.

When it comes to regional touristic context, the largest share of the market relates to multi-day cruises on inland waterways through several countries. Typically, cruisers, sail and berth in ports at night, and make sightseeing tours during the day. The main goal is to maximize the passengers' stay at a particular destination.

Bearing this in mind, IPTs should provide safe and efficient stay at a particular destination. It also is important to stress that service on cruisers is often „all inclusive", so the special attention should be paid to the organized and individual tours and visits to the main touristic attractions and non-board services.



6. Overview of the current situation of infrastructure serving river cruise industry related to Serbian ports

6.1 River cruise dedicated terminals

Currently, six passenger terminals are in use for RCI in the Republic of Serbia: Belgrade, Novi Sad, Donji Milanovac, Golubac, Smederevo and Kladovo. Some basic data on their locations, capacity and statistics are given in the table below. All IPTs (International passenger terminals) are open for the international and domestic traffic.

Port and Terminal Name	Location (km no.)	Statistics (no. of port calls passed on 2017, 2018, 2019 vs. 2020)
Belgrade	River Sava rkm 0+750 right bank	2017 – 539 2018 - 587 2019 - 753 2020 – 7
Novi Sad	River Danube rkm 1255, left bank	2017 – 333 2018 - 349 2019 - 429

		2020 – 5
Donji Milanovac	River Danube rkm 990, right bank	2017 – 112 2018 - 143 2019 - 249 2020 – 2
Golubac	River Danube rkm 1040, right bank	2018 – 44 2019 - 95 2020 – 1
Smederevo	River Danube rkm 1116, right bank	2018, 2019, 2020 -0
Kladovo	River Danube rkm 933, right bank	2018, 2019, 2020 - 0

International passenger terminal in Belgrade

Figure 9. IPT in Belgrade

International passenger terminal in Belgrade is located on the right bank of the Sava river, and it has capacity for simultaneous berthing of 6 vessels.

In 2006, port operator Luka Beograd a.d. (Port of Belgrade jsc) invested in construction of modern technically and technologically improved docking facility.

Since the facility is declared as permanent border crossing, offices of the Border police and Customs are hosted in the terminal, while the Harbour master's office is located on shore nearby.

Excellent location at the immediate city centre is ideal starting point for sightseeing the capital of Serbia, a city of great history, culture and charm.

International passenger terminals in Novi Sad

Figure 10. IPT in Novi Sad - DP World Novi Sad docking facility

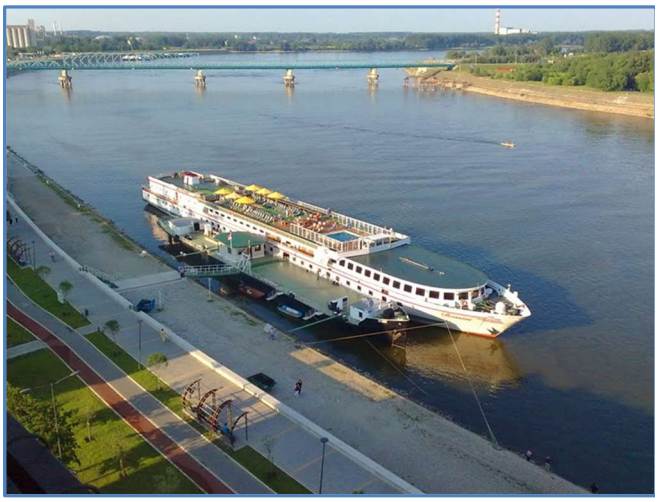


Figure 11. IPT in Novi Sad - Brodokomers NS docking facility

As a second largest city in the Republic of Serbia laid on shores of the Danube river, with the rich cultural heritage and tourist offer, **Novi Sad** promptly responded to the demands of the RCI. Throughout the years three docking facilities have found its place by the sloped quay of the city's main promenade. All three facilities are declared as border crossing for the waterborne traffic with the presence of the border crossing police and customs officers.

First one is positioned on the left bank of the Danube river on the approximate rkm 1254+800, and is operated by the jsc DP World Novi Sad (ex Port of Novi Sad). The dock is 30m long and has a capacity of simultaneous berthing of two vessels. Port operator plans reconstruction of the facility in 2021, in order to provide conditions for delivering better quality services to passengers and ships.

Second one is positioned on the left bank of the Danube river, approximately 200 meters downstream of the first one. It is operated by the company Brodokomerc NS. More than 10 years ago, an old barge was reconstructed in the 70 meters long docking facility with capacity of simultaneous berthing of two vessels.

The third one is positioned on the left bank of the Danube river, upstream of the beforementioned two docks, on the approximate rkm 1255+200. The dock is 30m long and has a capacity of simultaneous berthing of two vessels. It is operated by the public utility company Gradsko zelenilo.

International passenger terminal in Donji Milanovac

Figure 5. IPT in Donji Milanovac

Opening of the new visitor centre on the archaeological cite Lepenski vir in 2011 rapidly increased interest of RCI in IPT Donji Milanovac.

Old 70 meters long barge was converted to the passenger dock and positioned on the right bank of the river Danube (rkm 990), alongside the city quay. It enables simultaneous berthing of two passenger ships.

Port operator is Public utility company "Komunalac" from Donji Milanovac, and with the appropriate announcement (by shipping agents) customs and border police officers are available for border crossing procedure.

The most visible example of the impact of new tourist destinations opening for the RCI is maybe in Donji Milanovac. Since the Golubac fortress IPT started to work, number of passenger ships dockings in

nearby Donji Milanovac almost doubled. Such positive effect causes quick adjustment of development plans. However, port area is declared alongside the 170 meters of the sloped quay, which leaves enough space for the extension of the docking facility planned by the port operator.

International passenger terminal in Golubac

Figure 6. IPT in Golubac

Golubac fortress is a cultural property of exceptional importance. Positioned at the entrance into the Iron Gate (Đerdap) gorge, at the same time it represents the entry point into Djerdap National Park.

Passenger dock is located on the right bank of the river Danube on the approximate rkm 1040, near the visitor centre. Facility is 42m long and has a capacity of simultaneous berthing of two vessels.

Port operator is state/municipality owned company "Tvrđava Golubački grad", and with the appropriate announcement (by shipping agents) customs and border police officers are available for border crossing procedure.

Increasing demand for docking of Serbian flagged ships for day cruise as well as private boats and yachts, resulted in opening of small dock for this purpose.

All international traffic remains at the main dock. There is enough space for possible extension of the docking facility in line with the demand. However, since tourists are coming from the shoreside as well, dock extension is limited with the capacity of the fortress.

International passenger terminal in Smederevo

Figure 12. IPT in Smederevo

Smederevo is industrial city but also has the strong cultural heritage. City's fortress laid along the Danube bank represents one of the largest medieval fortresses in Europe and the ultimate reach of the Serbian military architectural skill of the time.

In 2017, an old barge was adapted to the passenger dock and positioned on the right bank of the river Danube (approximate rkm 1116), alongside the city quay in the immediate vicinity of the fortress and city centre. It enables simultaneous berthing of two passenger ships.

Port operator is consortium of companies "Emporio team" from Belgrade and "Đerdap usluge" from Kladovo.

Although no cruiser port calls were noted in recent years, it is expected that IPT will reach its potential with the relocation of the cargo port and cargo railway station now positioned between IPT and fortress.

International passenger terminal in Kladovo

Figure 13. IPT in Kladovo

Kladovo is a small city located on the right bank of the river Danube, downstream of the Hydroelectric power plant Đerdap I and opposite to the Romanian city Turnu Severin.

In 2017, an old barge was adapted to the passenger dock and positioned alongside the city quay (approximate rkm 933) in the immediate vicinity of the city centre, between two hotels and the city beach. It enables simultaneous berthing of two passenger ships.

Port operator is consortium of companies "Emporio team" from Belgrade and "Đerdap usluge" from Kladovo.

Facility is declared as border crossing for the waterborne traffic and border police and customs office are stationed nearby. With the appropriate announcement they are available for border crossing procedure.

No cruise ships port calls were noted on this IPT since opening as well. On the other hand, in June 2019 liner service between Kladovo and Turnu Severin was established by the port operator in coordination with local authorities in Serbia and Romania. Passenger ship Horizont had three departures per day and completed 2019 nautical season with more than 6000 passengers transferred. Unfortunately, due to the pandemic this service stopped in 2020.

6.2. Other port facilities also used as passenger berths

In the Republic of Serbia all international passenger transport is performed in IPTs.

Exception from this are port calls on two borders crossings, in Bezdan and Veliko Gradište, but without the disembarking of the passengers.

Border crossings in Bezdan and Veliko Gradište are state border for domestic and foreign flags transiting vessels crossing and it is open 24/7.

In previous years Agency recorded approx. less than five port calls of cruise ships per year on these border crossings.

On the other hand, local governments have the possibility of setting up floating docks for small vessels for the purposes of domestic liner services. Port calls of foreign vessels is not allowed on these facilities, due to the obligation to conduct border control for domestic and foreign vessels in international traffic.

6.3. Existing infrastructure connecting the port within the regional cruise industry

IPTs in Belgrade, Novi Sad and Smederevo are located in the vicinity of E75 highway and airport "Nikola Tesla".

The rest of the IPTs are well connected with the regional roads.

When it comes to concept of the tours, in Novi Sad and Golubac, sightseeing is organized „on foot" (Golubac fortress is located next to the IPT, in Novi Sad IPT is located near the city center). In Belgrade, tourist bus is picking up the passengers on the IPT and drives them to the attractions in the city center.

Also, from Donji Milanovac and Golubac, passengers are going by bus, via regional road, to the Archaeological site "Lepenski Vir". Another example of this kind of tour is excursion from IPT in Novi Sad to the near small town Sremski Karlovci.

From all above mentioned, it can be concluded that the existing transport infrastructure is used for short distance tours and it satisfies the current needs of the passengers.

F. BULGARIA

5. Presentation of the river cruise industry context of the area served by the ports (regional context)

The Bulgarian section of the Danube River stretches from km 845,650 to km 374,100, with a total length of 471,55 km. Within its boundaries currently there are 39 inland ports and port terminals, 16 of which are ports of national importance, 20 are regional and 3 are defined as special purpose ports. The management of the infrastructure of ports of national importance is entrusted to the BPICo by the Ministry of Transport, Information Technology and Communications. Ports of regional importance are predominantly with municipal ownership (most of them managed through concession agreements) and private. Navigation in the Bulgarian section is regulated by the EAMA. The main ports used for RCI in the country are briefly described in the table below.

Location	KM	№ of berths
Vidin	791.300 - 789.900	4
Lom	742.500 – 742.000	1
Oryahovo	679.500 – 679.000	1
Somovit	607.550	1
Nikopol	597.550 - 597.450	1
Svishtov	554.730-553.670	1
Ruse	495.980 - 493.800	4
Tutrakan	432.670	1
Silistra	375.870 – 375.000	3

Table 1: Main ports for passenger ships in Bulgaria

The Bulgarian section of the river is part of the so-called Lower Danube (km 931 - km 0), which is less popular as a tourist destination within the RCI, compared to the Upper (km 2414 to km 1791) and the Middle Danube (km 1791 to km 931). This is mainly due to the higher popularity of tourist sites in Germany, Austria, Slovakia and Hungary, and the fact that it could take up to 15 days to travel to the Delta, whereas tourists usually find shorter cruises to be more appealing.

Within Bulgarian territory the Danube River is predominantly used by foreign cruise ships with tourists from all continents. The most represented nations are the USA, followed by Japan and some European countries. A significant part of the visitors come from countries like Canada, New Zealand, Australia and China. The majority of tourists are within the 65+ age group. Tourists are mostly interested in visiting religious and historic sites as well as sites from the recent totalitarian period. There are approximately 180 cruise ships that are operating along the Danube River in its Bulgarian section.

5.1. Port activity related to cruise industry

Over the last five years the development of RCI in Bulgaria has been following a tendency of stable growth in terms of number of ship visits and tourists. The global spread of the COVID-19 pandemic drastically changed that trend. Throughout 2020 there were numerous accidents involving massive spread of the virus among passengers of cruise ships in many places around the world, which led to authorities imposing prolonged quarantines on vessels. This caused a significant decline in the interest in RCI. Furthermore, at some point governments of all European countries imposed restrictions on traveling which greatly hindered tourist activities.

These global trends had an impact on Bulgarian RCI too. The table below shows the number of passengers that visited Bulgarian RCI ports from 2017 to 2020. There is an additional focus on how statistics from 2020 compared to those from previous years.

The tendency for a dramatic decline was also observed in the number of ships visiting Bulgarian Danube ports.

While conducting our research we discovered that during the current year there was a slight recovery in the activity within the RCI in Bulgaria and in the Lower Danube section as a whole compared to 2020. The first cruise ship for the year "NESTROY" arrived in Ruse on June 25th. This means that the active season was significantly delayed, compared to previous years, when it used to start in March or April. "NESTROY" sails under the flag of Switzerland. The 9 days cruise starts in Vienna and goes all the way to the Delta. The first passengers were mainly Austrian citizens. In Ruse they visited the popular local tourist site - the Rock-hewn Churches of Ivanovo. On the way back the passengers took a flight home from Bucharest. The second cruise that visited Ruse this year was conducted by the ship "BOLERO", which started its journey from Passau, Germany, and was moored at the port of Ruse on June 27th on its way to the Black Sea. The number of cruise ships that visited Ruse up until August 18th was **28**, with the overall number of tourists being **2988**. Most of the trips were cancelled or rescheduled for 2022.

In a statement to the media Capt. Ivan Zhekov, head of the River Supervision – Ruse Directorate of the EAMA, noted that the Agency is forecasting the overall number of cruise ships and tourists that visit Ruse to be slightly higher by the end of the season compared to 2020. Nevertheless, the overall activity is expected to remain significantly lower in comparison to the period prior to the pandemic.

By the beginning of July approximately 300 tourists on five cruise ships have visited Vidin region. Most of them were German citizens. They paid a visit to the Belogradchik Rocks, the Magura cave (23 km away from the town of Belogradchik) and an opera concert held in the town of Belogradchik. All of the visitors had been vaccinated against COVID-19. According to representatives of the Belogradchik municipality a total number of 60 cruise ships is expected to visit the Port of Vidin during the year with the average number of tourists on a single ship being around 120.

River cruises in the Bulgarian section of the Danube River

Currently in Bulgaria there is no regular passenger transport on the Danube River. During the summer season small passenger ships powered by solar energy sail across the Danube between Silistra and the Romanian port of Chiciu, which services the neighboring Romanian town Calarasi. Short excursions on a small 6-person boat, owned by a local hotel, can also be carried out upon preliminary request.

Since 2015 short excursions and local exploratory cruises are being carried out on the small ship "Ruschuk", which has a capacity of 66 passengers. It offers trips from the city center of Ruse to Danube Bridge 1 (Giurgiu) and other nearby sites.

Short tourist trips are carried out by a boat with a capacity of 8 people along the Danube from Vidin.

The historical steamship Radetski, which is considered to be the only sailing museum on the Balkan peninsula, was renewed and re-opened for visitors in 2020. It is located at the Kozloduy port. Due to COVID-19 the trips on Radetski were completely cancelled during 2020, but currently are available with disinfection being carried out twice a day.

During the period prior to 2015, river cruises with a final destination in Bulgarian ports had the main share of all the trips but in the last 5 years they decreased in comparison to cruises, where Bulgaria is an intermediate stop. The greatest share of Danube cruises lasts from 9 to 25 days. Most common starting point is Passau with a final destination usually being Ukraine.

The main Bulgarian companies that provide services for the river cruise industry on the Danube are Balkan Tours and Dunav Tours Hotels, as Balkan Tours serves mainly American companies. In 2021 Dunav Tours Cruises EAD remains the only Bulgarian company which offers river cruises on the Danube River on its own ships. Most of these are not carried out in the Bulgarian section of the river. There is a large number of tour operators and agents on the Bulgarian market that offer cruises on the Danube River, but only as intermediaries for foreign ships. Some of them are *Top Travels*, *Via Travel*, *Ocean Travel*, *Glamour and Joy* and *Maris Travel*.

Dunav Tours Cruises EAD operates river cruises with five motor ships – "ELEGANT LADY", "ADORA", "ARIANA", "RUSE PRESTIGE" and "SOFIA".

Figure 1: Cruise ship "ADORA"

source: http://dunavtours.art.bg/ship.php?s=6

Figure 2: Cruise ship "ARIANA"

source: http://dunavtours.art.bg/ship.php?s=5

Some of the more popular foreign cruise companies that offer programmes in the Bulgarian section of the Danube are:

AmaWaterways

The company is among the strongest on the market of European cruises. Its flotilla has been awarded the title of "Best Ships for European River Cruises" by the Berlitz Guide. In its catalogs there are two programmes with Bulgaria as a destination - "Gems of Southeast Europe" and "The Great Danube Cruise" at prices from 2399 Euro to 6198 Euro for 14 days. The company also organises wine cruises in Europe but Bulgaria is not included in their programmes.
https://www.amawaterways.com/

Riviera Travel

Founded in 1984, Riviera Travel is one of the UK's leading river cruise lines. Currently the activities featured in its catalogue include one trip to Bulgaria – "Budapest to The Black Sea River Cruise" at a price of 3302 euro. The cruise starts at the Hungarian capital, lasts for 15 days, includes 16 visits and tours and also offers Covid Cancellation protection.
https://www.rivieratravel.co.uk/river-cruises/budapest-to-black-sea

Tauck World Discovery

The company organizes journeys across 7 continents, in over 100 destinations and to 70+ countries. It was included in Travel + Leisure's "World's Best" list for 23 consecutive years. It offers a Danube cruise programme that includes visiting Bulgaria – "Budapest to the Black Sea". It lasts for 13 days with the ship visiting the cities of Budapest, Bucharest, Ruse, Constanta, Pecs and Belgrade.
https://www.tauck.co.uk/tours/budapest-to-black-sea-river-cruise?tcd=rlx2022

Uniworld River Cruises

This is the first and so far the only river cruise company that offers trips aboard floating boutique hotels - each with a unique design. Two of its programmes are also aimed at the Bulgarian section of the Danube: "Accents from Eastern Europe" and "Portraits from Eastern Europe" at prices from 7799 Euro to 20 499 Euro for a 19-day cruise.
https://www.uniworld.com/eu/river-cruise/central-europe/danube

Viking Cruises

The world's leading company also operates two programmes with the landing of the Bulgarian Danube ports: "Journey to Eastern Europe" and "European Transition".
https://www.vikingcruises.co.uk/

Globus

One of the largest and most experienced tour operators in the world. Most of its cruises are operated by Avalon Waterways. The programme from Budapest to Bucharest includes a stop in Vidin with a visit to the fortress Baba Vida and an excursion to the Belogradchik rocks. The programme "North Sea - Black Sea" (from Amsterdam to Istanbul) offers a trip from Ruse to Veliko Tarnovo and Arbanassi.
https://www.avalonwaterways.com/river-cruises/danube-river/

CROISIEUROPE

The company offers 9-day cruises on the line Tulcea - Sulina - Crisan - Oltenita - Bucharest - Ruse - The Iron Gates - Belgrade - Novi Sad - Osijek - Mohacs – Budapest at prices from 1629 Euro to 1905 Euro.
https://www.croisieurope.travel/en/

Thurgau travel

Offers 15-day cruises to the Danube Delta
https://www.thurgautravel.ch/

Phoenix Reisen
Offers river cruises from Passau to the Danube Delta.
Phoenix Reisen suspended its entire fleet's passenger shipping operations (riverboats and ocean liners) by cancelling voyages with pre-scheduled departures between March 15 and September 23, 2020. All Phoenix Reisen river cruises (Europe, Asia, Egypt) leaving between March 15 and September 24 were cancelled. All affected bookings received 110% refunds transferred as FCC (future cruise credit) with rebooking.
https://www.phoenixreisen.com/

GTA Touristics
The company offers 10 and 15-day cruises from Passau to the Danube Delta.
https://www.gta-sky-ways.at/

Lueftner Cruises
The leading tour operator in offering river cruises on the European river network over 30 years has 4 own ships and charters 3 other ships which transport about 25,000 tourists a year. The company offers 16-day Danube Delta cruise (Germany, Austria, Hungary, Slovakia, Serbia, Croatia, Bulgaria and Romania).
https://www.lueftner-cruises.com/en.html

Nicko Cruises
The company operates cruises to Germany, Austria, Hungary, Serbia and Romania. It offers over 10 different cruise programs on the Danube on its own motor ships “BOLERO”, “BELVEDERE” and “NIKO VISION”.
https://www.nicko-cruises.de/

5.2. Regional context of cruise industry

The amazing nature, combined with the cultural and historical heritage, is a natural trademark of tourism in the Danube region. Two thirds of Europe's large predator populations, including bears, lynxes and wolves are concentrated in the Danube region. In the Lower Danube ancient sturgeons are also found, including the largest freshwater fish in the world - the Beluga. Unfortunately, statistics show that the loss of biodiversity here, as in other parts of Europe, continues mainly due to the methods used in intensive agriculture, artificial plantations with atypical tree species, poaching, industrial pollution, inconsistent transport infrastructure, artificial correction of natural riverbeds and blockage of the river flow. The loss of natural resources is a loss of tourist and economic potential, so all plans for the development of the Danube region, including shipping on the river, must not harm nature.

The Danube region in Bulgaria has great tourism potential but remains relatively underdeveloped and unpopular both among locals and foreigners, compared to sea and mountain tourism. There are over 70 national and nature parks along rivers, and more than 1000 areas included as protected in the European Natura 2000 network. There are also two biosphere reserves in the Danube region, part of the UNESCO World Natural Heritage - the River Delta and the Srebarna Nature Reserve.

With a total of 21 % of the country’s territory and 16 % of the population, the Danube tourist region is the largest among all nine tourist sections in Bulgaria (In 2015 the government divided the country’s territory into 9 tourist

regions in order to achieve more efficient and purposeful management). It spreads over 11 districts and 67 municipalities. The city of Ruse has been designated as the seat of the Management organization of the region.

The main specialization of this region and its unique competitive advantage as a tourist destination is in the field of cultural and cruise tourism, and among the extended specialization are also historical, river, adventure and eco, urban entertainment and shopping, wine and culinary, religious and pilgrimage tourism. Most tourist sites however receive little attention by cruise ship passengers, mainly due to poor organization and advertising, and partial infrastructure deficiencies. This especially concerns sites that are located near towns and villages, situated further from the river. Visitors generally prefer sightseeing in the cities where ships stop by.

Below are listed some of the more popular tourist sites of the Danube region in Bulgaria, as well as the most common modes of transport used to reach them.

6. Overview of the current situation of infrastructure serving river cruise industry related to Bulgarian ports

Transport accessibility of Bulgarian ports on the Danube River can be assessed as generally good, especially in regard to the road transport network, which is in fact the most common mode of transportation used throughout the country, tourism industry included. As a whole Bulgarian ports have relatively good railroad connections as well.

One of the main issues concerning port connectivity, remains the lack of any civil airports in close proximity to river ports with Sofia and Varna remaining the only available options for passenger flights.

6.1. River cruise dedicated terminals

The geographical location and GPS coordinates of the currently active ports for public transport along the Bulgarian Danube coastline, which offer passenger services, are presented in the following images and links.

The Port of Vidin provides pontoon services to ships for domestic and international navigation like water, electricity, and fuel and oil supply, mooring services, embarkment and disembarkment of passengers, mail services as well as treatment and disposal of waste, generated during voyages. Pontoon № 4 - **port terminal for public transport "Vidin – center“** - km. 790,300 – is intended for stay and supply of self-propelled and passenger ships and it allows for up to two ships to stay on board at a time.

https://www.google.bg/maps/place/43%C2%B058'59.8%22N+22%C2%B052'40.6%22E/@43.9832718,22.876862,488m/data=!3m2!1e3!4b1!4m5!3m4!1s0x0:0x0!8m2!3d43.9832718!4d22.8779563?hl=en

Figure 17: Port of Vidin

The Public Transport Port with National Importance Nikopol is intended for passenger services as well as mooring services and food and electricity supply. It is situated between 597,550 km and 597,450 km. It has 1 ship place at the 597,500 km., which is equipped with a pontoon, designated for the stay of self-propelled ships when performing entry-exit border controls and passenger service activities. It allows to tie up to three (3) ships on board in one row.

https://www.google.bg/maps/place/43%C2%B042'20.4%22N+24%C2%B053'28.6%22E/@43.7056711,24.8899626,980m/data=!3m2!1e3!4b1!4m5!3m4!1s0x0:0x0!8m2!3d43.7056711!4d24.891264?hl=en

Figure 18: Port of Nikopol

The port terminal Ruse Center, part of the Public Transport Port of National Importance Ruse, provides mooring services, embarkment and disembarkment of passengers, and electricity supply. It hosts the Ship Place № 2 at 498,700 km and it is 110 m. long. It is equipped with a pontoon, designated for the stay and bunkering (fuel, lubrication materials, water) of self-propelled ships when performing entry-exit border controls and passenger service activities. The terminal has the capacity to tie up to three (3) passenger ships on board in one row or up to four (4) self-propelled ships on board in one row. It is not convenient for parking of busses.

https://www.google.bg/maps/place/43%C2%B050'52.2%22N+25%C2%B056'41.3%22E/@43.8476974,25.9458225,291m/data=!3m1!1e3!4m5!3m4!1s0x0:0x0!8m2!3d43.847845!4d25.944813?hl=en

Figure 19: Port Terminal Ruse Center

Ship place meant for the servicing of passengers – Dunav Tours Pontoon is situated at 494,800 km. and is designated for servicing of passengers when performing entry-exit border controls. It also provides stay and water supply services. It is allowed to tie up to three (3) passenger ships on board in one row, and it is mandatory to provide conditions for servicing disabled passengers on each ship. It is forbidden to anchor when standing.

https://www.google.bg/maps/place/43%C2%B051'14.3%22N+25%C2%B057'01.6%22E/@43.8534194,25.9533338,977m/data=!3m1!1e3!4m5!3m4!1s0x0:0x0!8m2!3d43.853961!4d25.950437?hl=en

Figure 20: Dunav Tours Pontoon

Port for public transport of regional importance "Pristis", operated by Balkan Tours **hosts the Ship Place № 9** –at 494,620 km. and is 135 m long – designated for servicing of passengers when performing entry-exit border controls. It also provides stay and water supply. It is allowed to tie up to four (4) passenger ships on board in one row with a total width of up to 50 m and it is mandatory to provide conditions for servicing disabled passengers on each ship. In the absence of passenger ships, the pontoon is allowed to moor up to 4 (four) self-propelled ships on board in one row.

https://www.google.bg/maps/place/43%C2%B051'17.3%22N+25%C2%B057'05.1%22E/@43.854812,25.9492193,977m/data=!3m2!1e3!4b1!4m5!3m4!1s0x0:0x0!8m2!3d43.854812!4d25.951408?hl=en

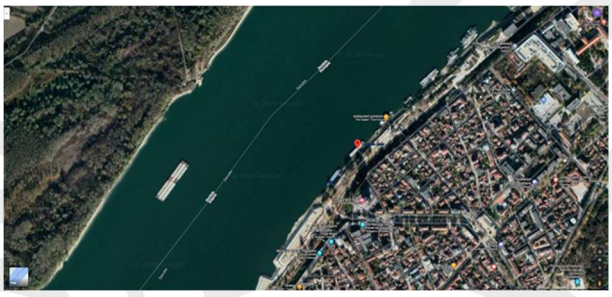


Figure 21: Port Pristis, operated by Balkan Tours

Public Transport Port with Regional Importance „East Point“ , Silistra, is

meant for passengers servicing and also provides food, water, electricity, and fuel and oil supply. It is situated between 375,870 km. and 375,640 km. It has 1 ship place at 375,800 km with a length of 140 meters. It is equipped with **pontoon "Draster"** for the stay of passenger ships. Tying up of up to three (3) ships on board is allowed.

https://www.google.bg/maps/place/44%C2%B007'21.5%22N+27%C2%B015'39.8%22E/@44.1218101,27.2604143,578m/data=!3m1!1e3!4m5!3m4!1s0x0:0x0!8m2!3d44.122649!4d27.261043?hl=en

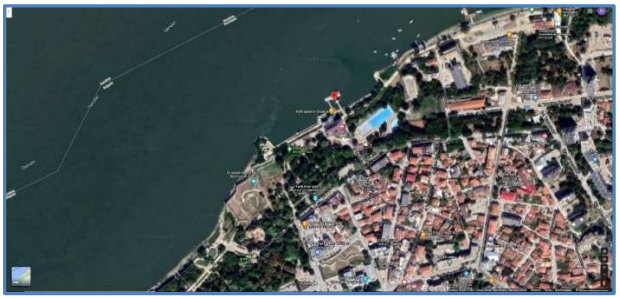


Figure 22: Port East Point, Silistra

Currently there are no effective and coherent tax, commercial, administrative or any other incentives to support and promote RCI on a government level.

6.2. Other port facilities also used as passenger berths

Below are described ports and terminals in the Bulgarian section of the Danube River that are unexclusively used for berthing passenger vessels and provide other services as well.

The Public Transportation Port of Lom provides mooring services, water, electricity, and fuel and oil supply services, embarkment and disembarkment of passengers, cargo and mail services as well as treatment and disposal of waste, generated during voyages. It has two pontoons: Pontoon № 1, situated at 742,600 km and allowing for 2 ships to be on board, as well as Pontoon №2, situated at 742,750 km, which allows for up to three ships to be on board.

https://www.google.bg/maps/place/43%C2%B049'59.5%22N+23%C2%B013'57.7%22E/@43.833186,23.2305083,978m/data=!3m2!1e3!4b1!4m5!3m4!1s0x0:0x0!8m2!3d43.833186!4d23.232697?hl=en

Figure 23 – Port of Lom

The Public Transportation Port of Oryahovo provides cargo services (ro-ro cargo included), embarkment and disembarkment of passengers, water and electricity supply for ships, and treatment and disposal of waste, generated during voyages. It hosts Pontoon № at 678,050 km. which is meant for the stay of self-propelled ships and allows for up to 2 ships to be on board at the same time.

https://www.google.bg/maps/place/43%C2%B044'28.6%22N+23%C2%B057'46.4%22E/@43.741272,23.9606923,979m/data=!3m2!1e3!4b1!4m5!3m4!1s0x0:0x0!8m2!3d43.741272!4d23.962881?hl=en

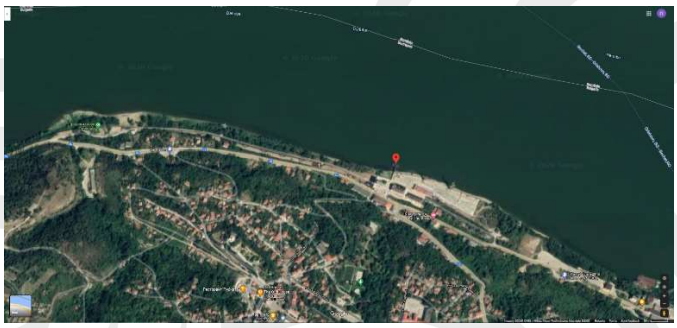


Figure 24: Port of Oryahovo

The port terminal Somovit, part of the Public Transport Port of National Importance Ruse, provides cargo services, mooring services, embarkment and disembarkment of passengers, food, electricity and fuel supply, and treatment and disposal of waste, generated during voyages. It hosts the Ship Place № 1 at the 607,550 km with a length of 100 m. Ship Place № 1 is equipped with a pontoon, designated for the stay of self-propelled ships when performing entry-exit border controls and passenger service activities. It allows to tie up to four (4) ships on board in one row.

https://www.google.bg/maps/place/43%C2%B041'26.2%22N+24%C2%B046'16.3%22E/@43.6901193,24.7714948,583m/data=!3m1!1e3!4m5!3m4!1s0x0:0x0!8m2!3d43.690598!4d24.771186?hl=en

Figure 25: Port terminal Somovit

The port terminal Svishtov, part of the Public Transport Port of National Importance Ruse, provides mooring services, cargo services (including loading, unloading and storage), passenger services, water, electricity and food supply, as well as treatment and disposal of waste, generated during voyages. It hosts Ship Place № 6 at 553,950 km with a length of 80 m. It is equipped with a pontoon, designated for servicing passengers and ships when performing entry-exit border controls and passenger service activities. It allows to tie up to four (4) ships on board in one row.

https://www.google.bg/maps/place/43%C2%B037'23.6%22N+25%C2%B020'49.9%22E/@43.6232134,25.3464161,491m/data=!3m2!1e3!4b1!4m5!3m4!1s0x0:0x0!8m2!3d43.6232134!4d25.3471899?hl=en

Figure 26: Port Terminal Svishtov

The port terminal Tutrakan, part of Public Transport Port of National Importance Ruse, provides mooring and cargo services, passenger services, and electricity, water and food supply. It hosts Ship Place №2 at 432,670 km and is 135 m long. It is equipped with a pontoon for the stay and supply of passenger ships and self-propelled ships, as well as for servicing passengers. The tie up of up to four (4) ships on board in one row is allowed.

https://www.google.bg/maps/place/44%C2%B003'07.3%22N+26%C2%B036'39.7%22E/@44.0522231,26.6098578,410m/data=!3m1!1e3!4m5!3m4!1s0x0:0x0!8m2!3d44.052022!4d26.611033?hl=en

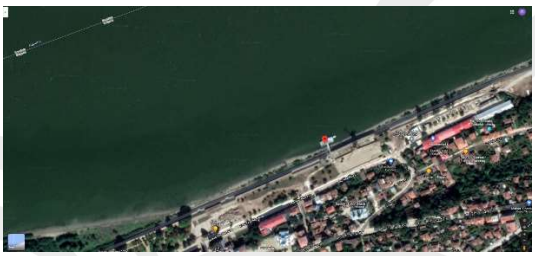


Figure 27: Port Terminal Tutrakan

All the above mentioned ports are authorized to provide passenger services and at the same time they offer access to people with disabilities and their respective assistance.

In the past several years there has been a tendency towards modernization and digitalization of Bulgarian ports. Bulgaria is in fact one of the leading European countries when it comes to digitalization of port services. The River Information Service Center in Ruse was founded in 2015. The BULRIS system, developed by the BPIC is a communications network in accordance with all technical guidelines for the planning, implementation, and operational use of RIS with the aim to provide efficient and safe navigation in the internal waterways.

In almost every European country along the Danube River there are water level control facilities, that make the river

navigable throughout the year. In the Bulgarian section however, there is no such infrastructure and when waters drop low in some areas of the river, especially during the summer, navigation becomes impossible. Another existing problems for unimpeded navigation are sand, gravel and silt deposits, that occur naturally in the river basin. In the past three years the EASMDR has been carrying out active dredging activities in the most critical parts of the Bulgarian section of the river.

6.3 Existing infrastructure connecting the port within the regional cruise industry

Generally, Bulgaria has a relatively well-developed transport infrastructure. The main reasons for inconveniences related to transportation of goods and people are poor maintenance and the lack of coherent and effective policies and funding.

Roads are the most common mean of transportation in the country with the RIA being the institution which manages this type of infrastructure on a national level. A vignette fee is to be paid in order to use roads in Bulgaria. The total length of the routes from the national road network is 19 877 km. There are several types of roads in Bulgaria – motorways, first, second, third and fourth class roads (containing respectively I, II, III and IV as part of their names). Brief information is given in the table below.

As shown in the table there are currently seven motorways in Bulgaria: “TRAKIA” (Sofia – Burgas, 100% completed), “HEMUS” (Sofia – Varna, 41.87%

Table 5: Roads in Bulgaria

	Motorways	First class	Second class	Third class	Fourth class
Number	7	9	44	150	256
Total length	816 km	2975 km	4035 km	6400 km	5651 km

completed), “STRUMA” (Sofia – Kulata, 79.07% completed), “MARITSA” (Road junction Orizovo – border crossing point Kapitan Andreevo, 100% completed), “BLACK SEA” (Varna – Burgas, 7.77% completed), “EUROPE” (Sofia – border crossing point Kalotina, 25.38% completed) and “RUSE – VELIKO TARNOVO” (Ruse – Veliko Tarnovo, construction has not started yet). “HEMUS” and “RUSE – VELIKO TARNOVO” are the ones that are of greatest importance for RCI, but unfortunately their construction either has not started yet or is at a relatively early stage. As a whole road infrastructure is significantly

less developed in the Danube Region of the country compared to the southern parts, and this is a major obstruction for growth in cruise tourism. In addition, some tourist sites are only to be reached via roads of lower quality (second, third and fourth class). The railway network in Bulgaria is managed by the NRIC. It is well-developed, reliable and cheap which is why it is commonly used by certain types of tourists – mainly students and pensioners. However, most routes are poorly maintained, and a great number of trains are near the end of their service life. Traveling by train is significantly slower and this why it is not perfectly suitable for cruise tourism, where the periods for stay in different cities are limited. Below is a map of all the railways in Bulgaria.

Transport infrastructure outside port cities

To illustrate the overall condition of transport infrastructure outside ports in Bulgaria we have chosen to present the road and railroad networks in the area of two large port cities – Vidin and Ruse (administrative centers of the respective provinces), and two small port towns – Nikopol and Tutrakan. Third and fourth class roads are not specifically mentioned due to their high number, which makes listing them too laborious, and the fact of their lower quality which makes them less popular and predominantly used by locals. Nevertheless, those roads are visible in the provided maps.

The city of Vidin

Vidin is in a great deal isolated from the most used road routes due to its remoteness from the leading economic centers in the country and the fact that the main flow of international traffic passes through other regions with border crossings. Otherwise, the port city is relatively well-connected with the region. The most important roads are Road I-1 (runs between the New Europe Bridge, at the Danube border with Romania, and the village of Kulata, at the border crossing to Greece, and also coincides with European route E79), Road II-12 (from Vidin to the village of Bregovo, at the border crossing with Serbia) and Road II-14 (from Vidin to the village of Vrashka Chuka, at the border crossing to Serbia).

The railway station in Vidin is located in the city center. There are public transport stops near it and the intercity bus station is also in close proximity. The building of the railway station is considered a monument of culture. From Vidin trains head south to the capital of the country – Sofia, and east to Varna.

The town of Nikopol

Nikopol is a small town with a population of just over 3 600. The main roads are Road II-34 (from Nikopol to the village of Koilovtsi) and Road II-52 (from Nikopol to the village of Pirgovo). There is no train station in Nikopol but the one in the village of Cherkovitsa is located just 6 km away. From there trains are heading south where they join the main railway route from Sofia to Varna.

The city of Ruse

Ruse has well-developed infrastructure connections with the region. The more important roads are Road I-2 (from Ruse to Varna, this road coincides with European route E70), Road I-5 (from Ruse to the village of Makaza, at the border crossing with Greece, coincides with European route E85), Road II-21 (from Ruse to the village of Kalipetrovo), Road II-23 (from Ruse to the town of Dulovo) and Road II-52. There is an existing project for a motorway that will connect

the cities of Ruse and Veliko Tarnovo, which would be of great benefit for cruise tourism, due to the large number of tourist sites in the area of Veliko Tarnovo. However, the construction of the motorway has not started yet.

Ruse is the first Bulgarian city to have a railway transport with the first one being established in 1866. There are routes connecting Ruse with Varna and with the railway yard in the town Gorna Oryahovitsa from where there are connections with all the major railroads in the country.

The town of Tutrakan

The infrastructure connecting Tutrakan with the region is not particularly diverse. There are only two major roads starting form or passing through the town – Road II-21 and Road II-49 (from Tutrakan to the city of Targovishte).

There is no train station in Tutrakan. The nearest ones are in Ruse and in Silistra, located respectively 62 km and 64 km away, which makes railway transport practically unusable in this area.

G. UKRAINE

5. Presentation of the river cruise industry context of the area served by the ports (regional context)

5.1 Port activity related to cruise

The river cruise industry of the Ukrainian Danube region is represented by the seaports of Reni, Izmail, and Ust-Dunaisk, which are branches of SE “USPA”, founded in 2013. Each of these ports has terminals and other facilities for passenger cruise ships to provide river cruises.

Port of Reni

Since the establishment of the State Enterprise "Ukrainian Sea Ports Authority" in 2013 until now, there have been no passenger ships to the seaport of Reni.

The staff of the Sea Station was dismissed, and it was decided to transfer the building of the Sea Station to the balance of the Reni Territorial Community.

Port of Izmail

The Izmail seaport provides a full range of services for servicing ships and passengers. During the cruise season, the MS “Diana”- a passenger motor ship, with

a capacity of up to 80 passengers, departs from the seaport of Izail once a week for Romania, with Ukrainian passengers on board, and once a week, Romanian tourists arrive on the same ship.

Port of Ust - Dunaisk

The Ust-Dunaisk seaport includes the **Vilkovo port`s point**, which receives and serves river cruise passenger ships and river-sea passenger ships.

The decrease in the intensity of cruise ship operations in the seaport of Ust-Dunaisk in 2014 was caused by the situation in Eastern Ukraine. In the period 2017-2019, the number of passenger cruises increased. Due to the announcement of quarantine measures due to the global coronavirus pandemic in 2020, all passenger cruise ship calls were cancelled.

Cruises of the following tourist companies are carried out to Vilkovo: - Austrian - Phoenix Reisen and GTA-SKY-WAYS; - Ukrainian “Chervona Ruta”. During the visit to the town of Vilkove, foreign tourists are provided with excursion services, as organized by the agencies for tourism and passenger transportation “Trans Cruise” PJSC Ukrainian Danube Shipping Company and LLC “Chervona Ruta”.

5.2 Regional context of cruise industry

UKRAINE

The main tourist attractions of the Danube region of Ukraine are the **wetlands of the Danube biosphere reserve "Danube floodplains"** inscribed in 1991 on the UNESCO World Heritage List, **historical and cultural monuments of Izmail,** Bilhorod - Dnistoskyi fortress Akkerman (the second biggest in the World), - UNESCO heritage (see figure below), beautiful Vilkovo town – "Ukrainian Venice" and 150 km from the Danube delta – cultural and historical capital of the South of Ukraine – Odessa.

6. Overview of the current situation of infrastructure serving river cruise industry related to Ukrainian ports

6.1. River cruise dedicated terminals

Port of Reni

Infrastructure objects of the passenger terminal of the Reni passenger station:

- the building of the passenger seaport Reni (Fig. 1) is a three-storey building with a total area of 7941.0 m2. It was built in 1972, partially renovated in 2016 and is currently in need of renovation and modernization.

Figure 1. Passenger terminal of Reni seaport

Source: https://bessarabiainform.com/2019/10/renijskij-filial-ampu-gotov-peredat-zdanie-morvokzala-gorodu-peregovory-uzhe-vedutsya

- pontoon of the passenger seaport Reni (Fig. 2). Total number - 1, length - 68.0 m, width - 9.0 m, draft - 2.0 m.

Figure 2. Pontoon of Reni ports passenger terminal

Source: SE "USPA"

Terminal capacity 80,000.00 passengers per year (passenger station capacity)

Port of Izmail

On the basis of the passenger complex of the Izmail Sea Station all conditions are created for proper and efficient transportation, boarding / disembarking and servicing of passengers and cruise ships. Izmail seaport (Fig. 3) - the most modern in the Ukrainian part of the Danube.

Infrastructure objects of the passenger terminal of the Izmail passenger seaport:

- pontoons. Total number - 8 pieces, length - 32.8 m, width - 8.2 m, board height - 2.2 m. During 2019-2020, the pontoons were overhauled;

- the building of the Izmail passenger seaport - a three-storey building with a total area of 5121.9 m2. In 2019, the seaport was completely renovated.

The passenger terminal is equipped with all engineering networks, namely: water supply, drainage, power supply, heating, automatic fire alarm and evacuation systems. All these services are in satisfactory technical condition.

The design capacity of the passenger complex according to the Form of the passenger checkpoint "Izmail Sea Commercial Port" is 200 people per day.

Figure 3. Izmail passenger terminal

Source: https://cfts.org.ua/news/2021/06/09/v_kontse_iyunya_iz_izmailskogo_porta_startuet_kruiznaya_liniya_65233

The building of the sea station is equipped with the following facilities for the disabled: on the ground floor there is a separate restroom for people with disabilities; entrance-exit is equipped with special ramps for wheelchairs.

The ships are supplied with electricity from five ship's columns located on the embankment of the seaport. The power supply of the columns is made from RSh-0.4 kV of the seaport from AB-0.4 kV (200 A) by cable line VVG-4x95 - the total allowable load of connection to the ship's columns is 100 kW.

Port of Ust-Dunaisk

The Ust-Dunaisk seaport includes the ilkovo port, which receives and serves river cruise passenger ships and river-sea passenger ships. For reception of cruise passenger vessels the hydraulic structure of floating berths with shore communication is used, which consists of 2 sections of floating pontoons PRP-52, two bridges - ladders, shore protection, two shore mooring devices.

The building is in satisfactory condition, can accommodate 2 vessels at the same time, which become a lag, see Fig.4.

Figure 4. Ust-Dunaisk port, Vilkove port

Sourse: SE “USPA”

The port of Vilkove is capable of accepting passenger ships 125 m long, 16 m wide, with a draft of up to 4 m, and a passenger capacity of up to 220 passengers. The capacity of the Vilkove seaport is 10,000 passengers per year, the possibility of simultaneous reception of up to 550 passengers.

6.2. Other port facilities also used as passenger berths

There are no other port facilities that are also used as passenger berths.

6.3. Existing infrastructure connecting the port within the regional cruise industry

Ports of Reni and Izmail

Part of the M-15 highway, the Odessa-Izmail-Reni highway to Bucharest, and

the E-87 highway, which runs through Reni to the border with Moldova, require only current maintenance.

The 63-kilometer section of the R-33 national road from Izmail to Reni has been repaired and is currently in good technical condition.

Port of Ust-Dunaisk

The passenger terminal of the port of Ust-Dunaisk is located in the city of Vilkove, which has a road connection with other cities of the DR. Highway T-16-07 "Izmail - Kiliya - Vilkove" connects it with Izmail and Kiliya.

H. MOLDOVA

5. Presentation of the river cruise industry context of the area served by the ports (regional context)

5.1 Port activity related to cruise industry

On the territory of the Republic of Moldova, there are two free flowing inland waterways (the Dniester and Prut rivers), which, in accordance with the European Agreement on Main Waterways of International Importance (AGN), are classified as waterways of international importance (Figure 1):

- the Prut river, from the mouth to Ungheni;

- the Dniester river from the port of Belgorod-Dnestrovsky (Ukraine) to the port of Tighina.

There are two Moldovan ports of international importance on the banks of these rivers:

1) the port of Giurgiulesti (133 km), on the Danube River / the mouth of the Prut River (active);

2) the port of Bender (228.0 km) on the Dniester River (destroyed during the Transnistrian military conflict).

The passenger port of Giurgiulesti opened on March 17, 2009. Thus, the Republic of Moldova became a maritime country, which increased its geopolitical status and improved the country's image abroad.

In addition, on March 17, the first sea passenger flight on the route Giurgiulesti-Istanbul-Giurgiulesti took place. However, due to weak demand, the route with regular or seasonal traffic was not formed.

It should be noted that the main feature of the modern domestic cruise tourism

market is the almost complete absence of demand from Moldovan tourists for domestic cruises. To this should be added the absence of a program for the development of the transport component of the river cruise industry. After unsuccessful attempts to revive the domestic cruise fleet, Moldovan tourists reoriented themselves mainly to European cruises offered by world cruise companies.

Currently, in the domestic market of tourist services, despite the existing potential, there are no companies with serious intentions to develop river cruise tourism in Moldova. This is due to high investment risks and poor marketing activities of travel companies. One of the solutions to the problem is the promotion by national tourist operators of cruises on the Danube, organized by well-known European companies.

In March 2008, the Government of the Republic of Moldova approved a concept for the development of water transport, which defines the main criteria for its development, as well as the goals and methods of state regulation in this area. However, this concept has not been fully implemented in the part that relates to the development of the river cruise industry.

Figure 1: River ports of the Republic of Moldova

5.2 Regional context of cruise industry

Currently, the greatest potential for the development of river cruises is in the city of Vadul-lui-Voda, located on the right bank of the Dniester River and in close proximity to the capital of the country, the city of Chisinau.

The Dniester River today is navigable only in certain areas, due to the shallowing and non-performance of channel hydraulic engineering works to maintain guaranteed depths in order to ensure the safety of navigation. The shallowing occurs due to the transfer of problems of

river exploitation with Ukraine, which systematically uses the upper reaches of the river for hydrotechnical purposes, without properly coordinating these projects with the Republic of Moldova.

In this regard, water transport is operated with a very low productivity compared to the 80s of the last century, when water transport was used to transport goods and passengers along the Dniester River from the port of Bender and the point of Olenesti to the port of Belgorod-Dnestrovsky, after which the goods were transshipped to sea vessels were transported by sea routes.

Currently, there are two river ports in the Republic of Moldova engaged in passenger transportation on the Dniester River:

- Bendery river port (southern current);

- Rybnitsa river port (northern current).

The existing river ports are a complex of structures that, on the whole, do not meet the high safety requirements for organizing passenger transportation, and are both physically and morally obsolete. Therefore, it is important not only to reconstruct them, but also to design a new port that meets all international standards.

6. Overview of the current situation of infrastructure serving river cruise industry related to ports

6.1 River cruise dedicated terminals

At the moment, in the Republic of Moldova, the only operating terminal that meets modern requirements for river cruises is located in the passenger port of Giurgiulesti (Figure 2).

The capacity of the passenger terminal is about 300 passengers per day. It is capable of receiving only one motor ship.

Giurgiulesti Passenger Port is relatively small compared to other European ports, it is the only access of the Republic of Moldova to the sea and enjoys a strategic location on the border with Ukraine and Romania.

Figure 2: Passenger terminal in the port of Giurgiulesti

6.2 Other port facilities also used as passenger berths

At the moment, there are no other operating passenger terminals in the Republic of Moldova.

6.3 Existing infrastructure connecting the port within the regional cruise industry

The existing road infrastructure (Figure 3) provides a reliable connection of the ports on the Danube and Dniester rivers with the hinterland, with the capital and major cities of the country. This provides good conditions for the development of the river cruise industry.

Moreover, the existing infrastructure provides tourists with convenient transport links in the direction of the Black Sea region (Odessa); Iasi (Carpathian direction); the Danube region (Braila, Galati), the east - with Kiev, as well as the northern direction (the Baltic states and Poland).

Transport links in these directions are provided by the following highways:

E 583 (Roman-Iași-Balți-Mogo-Podolisk-Jitomir);

E 584 (Poltava-Kirovograd-Chișinau-Galați-Slobozia);

E 56 (Viena-Suceava-Iași-Chișinau-Odesa-Rostov Don).

The development of these transport corridors will create conditions for the reliable and effective development of trade and tourism links in such directions as Odessa-Chisinau-Budapest, Kiev-Chisinau-Bucharest.

Figure 3: Modern road transport network of the Republic of Moldova

7. Overview of the investment needs of RCI

7.1. Factors that contribute to the development of river cruise industry in a sustainable and efficient way

The main factors contributing to the development of river cruise infrastructure on Danube in a sustainable and efficient way identified by the analyzed countries are:

	Identified factors	AT	SK	HU	HR	RS	BG	MD	UA
1	Availability of the necessary infrastructure							X	X
2	Developed industries related to tourism (trade and catering, passenger transport);				X				X
3	Availability of interesting objects of cultural and historical heritage and recreational potential			X				X	X
4	Availability of information resources for promoting tourist destinations			X					X
5	The possibility of integrating cruises with other types of tourism								X
6	Proper legislation to encourage RCI development					X			
7	Availability of strategical framework are essential for the determination of institutional roles and Action plan should follow with targeted activities, responsible institutions, and due dates.					X			
8	Major efforts from the public side are put in projects of the infrastructure development					X			
9	Modern solutions for environmental protection and ecology issues, such as further extension of possibilities for	X			X	X	X	X	

	Identified factors	AT	SK	HU	HR	RS	BG	MD	UA
	waste disposal from cruise ships, appropriate electricity supply, alternative fuels etc.								
10	Communication with stakeholders and receiving their feedback. Keep stakeholders informed about ongoing projects, present the results and receive feedback on possible problems (organising regular yearly consultations and workshops with all relevant parties (shipping agents, port operators, tour operators, local authorities, etc.).					X			
11	The fact that some of berthing positions (pontoons and equipment) are owned by Austrian operators stimulates the number of landings and visitations directing Bratislava.		X						
12	Having a standardized, long-term strategy defining the existing pontoons and port places, where to locate/relocate them, how many of them are needed, how to design them, what to look like, how they must be equipped.			X					
13	Reconsidering the roles of certain ports (freight / passenger ports) and their connection with cities and to optimize synergies between cities and their ports. The way ports are embedded into cities' lives depends on what to show and how to introduce ourselves to international tourists. Certain berth places shall be redesigned, modernized (Budapest), while others shall have different or even less functions focusing only on cargo (Komárom), while others shall be installed in the center in order			X					

	Identified factors	AT	SK	HU	HR	RS	BG	MD	UA
	international cruise ships not to avoid them (Győr).								
14	Reconsidering the purpose of berthing ships by opening their boards for restaurants, ice-cream bars, pubs, cafés.			X					
15	Improving and expanding currently available port services. All passenger ports should provide water and electricity and more should be prepared for waste disposal. Green port in Baja is not exploited			X					
16	Modernizing the fleet.			X			X		
17	Modernizing and digitalizing the monitoring and controlling system and administration of Schengen border-crossing cruise ships.			X					
18	Being prepared to receive bigger cruise ships and more often. By deepening the bend of Danube to a standard 2.5 m, the river becomes navigable throughout the year.			X					
19	Creating the value chain concept of cruise tourism. A value chain is a set of activities that a firm operating in a specific industry performs in order to deliver a valuable product (i.e., good and/or service) for the market. Classification of value chain within the river cruise industry encompasses: passengers, distribution channels, cruise lines, cruise destinations, expanded value chains of cruise terminals and port reception facilities, ground transportation, local				X				

	Identified factors	AT	SK	HU	HR	RS	BG	MD	UA
	communities and heritage, activities, attractions and sites.								
20	New health protocol due to pandemic The implementation of the new health protocol, imposed everywhere in the field of tourism, concerns increased hygiene requirements related to the provision of standards in common areas, as well as other internal rules in terms of professional policy of companies. In this regard, clients are focused on cruise tourism programmes that offer health and wellness services provided on board of the ship in order to meet the specific tourists' needs for new experiences safely.						X		
21	Affordability of the services							X	

7.2. Identified needs for new investments within port area

This subchapter presents the needs for the development of RCI and the related investments/developments required to meet them, **within the port area**.

A. Austria
viadonau supports this modernization project and coordinates on behalf of the BMVIT (since the beginning of 2020: BMK, Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology) the development of a guideline planning across federal states for the installation and operation of shore power units along the Austrian Danube.
B. Slovakia
Passenger terminal main building should be modernized. Building gives very bad impression to passengers that need to enter it. It is described in more details in chapter 6.1. Building is owned by private entity involved in tourism; this promises positive development of the case in near future. This is identified as waste of commercial potential of the terminal- as it should be natural place where to buy souvenirs before getting back on board an as well first information point after disembarkation. In past years municipality questions esthetical aspects of berthing equipment in place (pontoons, bridges, berths, and ropes). Offering these locations for business purposes is however one of main reasons and duties of the owner established by the law. As long as floating facility meets all requirements given by the legislation (especially from the security point of view) operator has the right to operate it in place.
C. Hungary
It is essential for operating appropriate berths to reap the benefits of growing turnover of hotel shipping[4]. For the safe mooring of large ships, passenger exchange, receiving connecting road vehicles (buses, taxis, supply trucks), ports with a wide range of needs, of the right size and infrastructure are necessary. In Hungary, there are only a few private companies that seek to be limited to do their utmost to serve ships. The port operators – in addition to the safe mooring facility – provide shore-side electricity, drinking water supply, waste disposal and the possibility of loading new goods for ships. It is important to improve and expand currently available port services. As presented above in the *7.1 Table*, several ports cannot provide water and electricity, not to mention the possibility of waste disposal. All passenger ports should provide water and electricity and more ports should be prepared for waste disposal. Green port in Baja is not exploited. These facilities were constructed to receive oil, waste, sewage water. RCI companies shall be informed they have the possibility to deposit waste processed on board an environmentally sustainable and secure way. City of Győr does not have a passenger port to receive international cruise ships, however the downtown of Győr is worth visiting and smaller private berths are built in the central river section.

[4] National Navigation Strategy p25

A dam to be constructed at Gönyű (Győr-Gönyű is a national public freight port already) will make possible for passenger vessels to navigate into Győr downtown. The dam is supposed to be constructed in 2 years, it will allow for longer passenger ships, excursion, sightseeing boats to navigate into the city centre. Furthermore, flow will lead to such a navigable port area, Gönyű shall not to be dredging as frequently as recently.

D. Croatia

Investments in ports are planned in the area under the jurisdiction of the Vukovar Port Authority.

It is important to point out the growing passenger traffic in the port of Osijek, and in order to ensure adequate infrastructure and passenger transport services in the previous period, the investment in the passenger port of Osijek was undertaken and completed. The specificity of the area under the management of the Port of Osijek is a significant number of sports ports, and in the next ten years it is planned to further improve and expand the infrastructure of sports ports.

In the next ten-year period, it is possible to open new passenger ports, but this will depend on the needs and justification of such requirements in the area of competence of the Port of Osijek. At the time of drafting this Medium-Term Plan, there are no more detailed plans for the construction and opening of additional passenger docks, but the Spatial Plan of Osijek-Baranja County envisages the reconstruction of docks in the municipalities of Belišće and Donji Miholjac.

Ports/ Terminals	**Investment projects needed within port area**	**Estimated value/ Value**	**Time horizon/ Status**	**Financing source/ Other details**
Vukovar	Expansion of the existing port for passenger ships in **Vukovar** This project envisages the formation of a berth for mooring passenger ships in parallel with the existing coastal fortification. There is no permanent mooring of vessels at the passenger port, only transhipment of passengers. This project does not envisage construction works, nor obtaining a building permit, since the pontoon and all its equipment are not subject to the Construction Act. The project of expanding the passenger port is closely related to the project of Hrvatske vode "Regulation of the right bank of the Danube from rkm 1333 + 000			

	to rkm 1331 + 000 and urban planning of the city of Vukovar".			
Vucedol	Construction of a new passenger port Vučedol within the project "Archaeological Park Vučedol" New passenger port Vučedol is planned on the right bank of the river Danube at rkm 1328 + 000, directly in front of the Museum of Vučedol Culture. It is necessary to ensure a simple and safe berth and the entry and departure of tourist and excursion boats without the possibility of a permanent berth. The formation of a pontoon pier measuring 12x4 m in parallel with the existing coastal fortification is planned. Project-technical documentation for the construction of the port of Vučedol was prepared in 2019.			Operational Program Competitiveness and Cohesion 2014-2020 (the study finalised in 2019)
Vukovar	Construction of a communal and passenger port on the Island of Sports in Vukovar The project of building a communal and passenger port on the Island of Sports in Vukovar continues with the project of Hrvatske vode "Arrangement and flood protection of the Island of Sports in Vukovar" which carried out construction work on the arrangement of the coastal fortification. Three separate pontoons will be built for the communal port, on which a berth for 80 vessels will be provided. A pontoon will be set up for the passenger port to accommodate smaller ships.			
Ilok	Construction of a passenger dock in **Ilok** According to medium term plans by the port authority, financial resources are already			

	envisaged for the upcoming year regarding the preparation of documentation for the construction of the dock in port of Ilok. The docking infrastructure has to be upgraded due to wear and tear over the past years.			
Batina	Construction of a communal port in **Batina** Building a communal port on the right bank of the Danube River from rkm 1425 + 400 to rkm 1425 + 300, downstream from the existing passenger port in the settlement of Batina. The municipal port would provide new berths for a minimum of 40 boats and vessels for sports and leisure up to 6 m in length, and 10 berths for boats and vessels up to 10 m in length. Documentation for the needs of the technical supervisory body responsible for supervising the construction of the floating facility. In addition to the project-technical documentation, the project also envisages the construction of a pontoon marina and its installation on the location and execution of construction works.		2021 - 2031	
Port of Osijek	Planned investment of the City of Osijek in the project "Water tram on the river Drava" which aims to introduce passenger transport on the Drava River from rkm 16 + 400 to rkm 24 + 200, or from Zeleno polje near Vrbik Barracks to Pampas. The water tram, as a functional and tourist attraction, would connect the banks of the Drava with the river, and as part of the project, the construction of nine passenger ports and the			

	purchase of an electric water tram are planned. The exact locations of the docks should be determined in the coming period using the project-technical documentation.			

E. Serbia

The Strategy on waterborne transport development of the Republic of Serbia, 2015 – 2025 defined tentative network of IPTs, suitable for further elaboration through the spatial planning and technical documentation.

Strategy foreseen development of the following **16 passenger terminals** for RCI: **Apatin,** Bačka Palanka, Novi Sad, **Sremski Karlovci**, Belgrade, Smederevo, **Kostolac, Veliko Gradište (Ram**), Golubac, Lepenski Vir, Donji Milanovac, Kladovo, Neogtin, Šabac, Sremska Mitrovica and Kanjiza,

Ports/ Terminals	**Investment projects needed within port area**	**Estimated value/ Value**	**Time horizon/ Status**	**Financing source/ Other details**
Zemun Terminal	**No need.** **Works completed.** Government has declared the port area in 2014. 		**2018 – 2020** **First cruises:** **2022** **Status: Port operator selection**	Municipality prepared technical documentation, while PGA has obtained construction permit in 2018. Jointly financed by Ministry of tourism, PGA and Municipality of Zemun,
Kostolac (Viminacium) Terminal	**No need.** **Works completed.** In 2021, the Government of Serbia, upon the initiative of PGA, declared port area in Kostolac, on the right bank of the river Danube at approximate rkm 1095.		**The port operator was selected in 2021 First cruises: 2022**	Ministry of tourism financed the procurement and reconstruction of the 70 meters long barge into the passenger dock. PGA has invested into works on dock positioning with steel pilings as well as additional works on the equipment of the IPT in 2021.

				
Veliko Gradište (Ram) Terminal	**No need.** **Works completed.** In 2019 Government has determined port area along the right bank of the river Danube at approximate rkm 1078.		**The port operator to be selected in 2022 First cruises: 2023**	Ministry of tourism has financed procurement of the 70 meters long barge adapted to the passenger dock. PGA is financing infrastructure works on dock positioning with steel pilings as well as additional works on the equipment of the IPT.
Apatin Terminal	**No need.** **Works completed.** In 2020 PGA has prepared part of the technical documentation necessary for the determination of the port area at the left bank of the river Danube at approximate rkm 1401+400,			Local authorities prepared corresponding spatial planning documentation. Financially supported by the Ministry of tourism, local authority has completed reconstruction of the facility. Steel pilings and the access bridge were repaired, along with new dock made of steel.
Sremski Karlovci **Terminal**	**On going.** In 2017, Government declared the port area of IPT in Sremski Karlovci on the right bank of the river Danube at approximate rkm 1244.		PGA has selected Public utility company "Belilo" for the port operator	Local authority with the financial support of the Ministry of tourism started with construction of the IPT. Access road has been completed as well as 42 meters long floating part of the dock. Positioning of the dock with steel pilings and construction of the

				access bridge are going to be completed in the following period
Banoštor Terminal	**Ongoing.**			Local authorities in Banoštor prepared corresponding spatial planning documentation. Technical documentation is also being prepared.
	Apatin, Bačka Palanka, Novi Sad, **Sremski Karlovci**, Belgrade, Smederevo, **Kostolac, Veliko Gradište (Ram**), Golubac, Lepenski Vir, Donji Milanovac, Kladovo, Neogtin, Šabac, Sremska Mitrovica and Kanjiza,			

F. Bulgaria

As a positive trend, in the past four years river cruises have been generating an ever-increasing number of passengers in the Bulgarian river ports like Vidin, Ruse and Lom. The Rein, Main and Danube rivers which give vessels the opportunity to navigate throughout the whole route from Amsterdam/Rotterdam in the Netherlands to Bulgaria, Romania and even Ukraine are undoubtedly the most important cruise transport waterway. Bulgaria currently has a good connection with the river cruises, including with the largest operator - Viking River Cruises.

The proper selection of ports on a given route is a guarantee for increasing the number of cruise trips. For most customers, the cruise includes two stages – arrival to / departure from the base port and the cruise trip itself.

Base ports must have a well-developed transport infrastructure, allowing the establishment of easy connections and accessible service from other transport modes. Most often, the ports of large cities are preferred, as the cities are a major tourist destination, but can also be gateway cruise ports, which are a suitable starting point for the implementation of various activities and excursions to the main tourist destination on the land area.

In the observable future Bulgarian river ports will remain facilities of secondary importance, because of the absence of large cities, airports or convenient transport infrastructure in proximity. At the most of the Bulgarian river ports there is no suitable specialized superstructure, which is preferred by large cruise companies for mooring and staying during the tourist programme.

G. Ukraine

Ports	Investment projects needed within port area	Estimated value	Time horizon/ Status	Financing source/Other details
Port of Reni	No need	0	-	-
Port of Izmail	1. Construction of a modern parking lot for small vessels (marinas) and organizing regular water transport on the Izmail-Tulcea			- grant funds of the European Union under the joint operational program "Romania-Ukraine 2014-2020" - Izmail Seaport Development Plan
Port of Ust-Dunaisk	1.Arrangement of a passenger checkpoint at the Kiliya port of the Ust- Dunaisk seaport at 47 km of the Danube. (Provision of regular passenger service between Kiliya (Ukraine) and Kiliya-Veki (Romania).	€ 862,000		
	2. Reconstruction of the passenger sea station Vilkove on 19 km of the Danube river and carrying out overhaul of the floating berth with the shore connection	€ 862,000		
H. Moldova				
At the moment, due to the weak demand for river cruises, there is no additional investment in the territory of the passenger port of Giurgiulesti.				

7.3. Identified needs for new investments within the area served by the ports

This subchapter includes info regarding the needs for the development of RCI (if they exist) and the related investments/developments required to meet them, at regional port level.

B. Slovakia
Needs: There are three most significant factors hindering development and extension of river cruise industry are:

- access for vehicles
- waste management
- ownership setting

Along berthing positions in passenger ports there is promenade, sidewalks and cycling route. Access of vehicles is prohibited. This unfortunately causes discomfort of tourist, since busses can´t arrive directly to vessels as it is in Vienna or Budapest, for example. Tourist buses are therefore forced to wait in nearby streets and corners, what causes traffic jams and discomfort of citizens of Bratislava. To tackle this problem, access of buses must be made possible and respective road infrastructure must be developed.

The fact that arriving passengers disembark directly to promenade and park, there are no waste management facilities available. Owners and/or tenants of berthing positions are obliged to accept communal waste, facility cars are restricted to access the area what might sometimes cause tension among citizens, tenant and vessel crew. For abovementioned reasons, vessel operators prefer waste disposal in Budapest or Vienna since these ports are better equipped for waste management (direct access, modern facilities). To tackle this problem, access for facility vehicles must be allowed and municipality must allow to build respective infrastructure dedicated to waste management or at least modern garbage can stands.

Passenger ports in Bratislava is, unlike ports in neighbouring capital cities, not owned by public/municipal entity. Land is owned by state-owned joint-stock company, berthing positions are leased, physical infrastructure and berthing equipment is owned by operators. On the top, municipality has neither share nor financial or any other benefit directly from river cruise industry. This is caused also by current settings of taxes and redistribution of income imposed by the legislation. To tackle this problem, municipality must be involved more in supporting tourist industry and attracting tourist to enjoy what Bratislava offers the same way they do in other capital cities.

Revitalization of surrounding of the berthing positions would also increase the positive image from the tourist's perspective.

C. Hungary

There are several direct or indirect tools to develop the entire industry and inland navigation. First is to be prepared to receive bigger cruise ships and more often. By deepening the bend of Danube to a standard 2.5 m, the river becomes navigable throughout the year.

D. Croatia

n/a

E. Serbia

Needs:

IPTs are constructed in a way to provide easy access to tourist sites, i.e. they are located very close to them. In that context, further focus should be on the **construction and maintenance of local roads** which are leading to the site and on the improving of accessibility the- **new parking spaces, ramps for people with disability, marking of tourist attractions, construction of visitor centers, promotion of sites** etc.

F. Bulgaria

Needs:

The description of the parameters and the condition of the Bulgarian ports demonstrates that the National Ports System of the Republic of Bulgaria currently has a dense network of Black Sea and Danube River ports.

However, most of the Bulgarian ports were built at the beginning of the last century, insufficiently maintained and with deteriorated technical condition. The main problems for the development of ports are related to the lack of sufficient investments for maintenance and development of the port infrastructure in the previous years, obsolete basic mechanical facilities and transshipment facilities and poor condition of the quays.

For a large part of the public river ports there are various factors that limit their functionality, namely:

- In terms of the future development of the cruise tourism and passenger transport, the connection of the Danube ports to air transport is of utmost importance. In Bulgaria, the Danube ports are in a disadvantageous position as the closest national airports - Varna and Sofia are at a considerable distance from them. Bucharest Airport could be used as an alternative for visitors of Ruse (the two cities are approximately 75 km apart) but crossing the border could cause complications and delays due to the COVID-19 pandemic.
- Generally, from an infrastructure perspective, Bulgarian ports do not fully comply with European quality standards, which demonstrates the need for an adequate state policy, highlighting these as strategic objectives. In terms of passenger capacity, the greatest opportunities lie within the Public Transport Port of National Importance - Ruse, due to the existence of large number of passenger ports and ferry terminals.
- Waste (household waste) from cruise ships can be disposed only in Ruse and Vidin ports. At Bulgarian ports it is still difficult to collect separately and dispose bio waste products.
- The depth before the quays of many ports / terminals is insufficient and due to this there are limitations to the draft/size of ships entering the port. Deepening the area in front of the pier over the design values of the existing structures is impossible and practically requires the building of an entirely new construction.
- The port facilities built in the early part of the last century and the port terminals in Ruse, Svishtov, Lom, Oryahovo and Tutrakan are within the premises of the central part of the towns which creates certain problems related to the environmental issues and also from architectural - construction nature. Finding the right formula and balance of state and municipal interests with the public need for new and greener urban environment requires rethinking the concept of forms for use of these territories.
- The existing features of most of the port infrastructure (quay and logistics, transshipment handling and storage facilities) do not comply with the characteristics of individual vehicles, types of freight and demands on technology in their processing and storage.

G. Ukraine (Danube Ukrainian ports)

Needs:

The needs and corresponding necessary investments are determined by SE "USPA" in close cooperation with the stakeholders of the river cruise industry.

At present, tourists from cruise ships entering the ports of the Ukrainian Danube region visit Odessa and the Ackerman Fortress (the second largest in the world) by bus, which is much less comfortable than visiting the port of Odessa and the port of Bilhorod-Dnistrovskyi by the sea cruise ship.

Unfortunately, in August 2021, due to the negative impact of the Covid 19 pandemic, the last river-sea cruise ship "Princess of the Dnieper", which provided 12th days cruise on the Kiev-Odessa-Fetesti route (Romania), was sold and left Ukraine.

Area	Investment projects needed outside Danube ports area	Estimated value	Time horizon/ Status	Financing source/Other details
Port of Odessa	Passenger complex of the Odessa seaport is defined as a public-private partnership project: Concession of the Passenger complex in the seaport of Odessa (property of SE "USPA") - 2023	n/a	Feasibility study by private to determine if development is needed	Order of the Ministry of Infrastructure of Ukraine from 01.12.2020 № 805 "On approval of the list of state-owned objects of transport that can be transferred to concession during 2020 - 2023", as well as the Order of the Cabinet of Ministers of Ukraine from 16.01.2020 № 1581-R "On approval of the list of priority investment projects for the state until 2023"
Port of Bilhorod-Dnistovskyi	Receive river-sea cruise ships to berth №7 (auxiliary berth for naval vessels, has a length of 78 meters) Bilhorod-Dnistrovskyi seaport on the following indicators: · safety of operation (separate section without the presence of transshipment equipment), barrier-free accessibility of the mooring infrastructure,	€ 920,000		

	safety and communication with the adjacent road infrastructure. • use of port facilities and infrastructure outside the port area, which should combine the port with tourist destinations. - expected result is to ensure the arrival of river-sea cruise ships into the Bilhorod-Dnistovskyi port in order to visit the Ackerman Fortress and other historical and cultural sites of Bessarabia.			

H. Moldova
For the successful development of the river cruise industry in the passenger port of Giurgiulesti, investments are needed to rehabilitate the road infrastructure, as well as develop hotel services, especially in the city of Cahul. Currently, the most relevant investments are being made in the rehabilitation of the Chisinau-Giurgiulesti highway The ongoing projects include the rehabilitation of the following sections of the dogogi: - M3 Road, Cimislia bypass (new construction, Works Estimated cost - 11.5 mil. EURO); - M3 Road, Chisinau to Porumbrei (rehabilitation, Works Estimated cost - 0.7 mil.EURO); - M3 Road Cimislia to Comrat (rehabilitation, Design and Works Estimated cost - 18.3 mil.EURO).

7.4. Integrated vision for the new investments and their benefits

This must include info regarding the existing integrated plan/strategy of the investments or a vision regarding these initiatives and their benefits to the community either is related to business, social and other level.

B. SLOVAKIA

Project: Feasibility study for the Modernization of public port of Bratislava

Duration: 08/2021-12/2023

The main goal of the project is to prepare a feasibility study that will assess the possibilities of modernization and construction of the public port of Bratislava for both of its integral parts – cargo port and passenger port. The study also includes the identification of infrastructure technologies that are the most suitable for the public port of Bratislava in terms of current security and cost-effectiveness requirements.

The main elements for which they will be assessed are in particular: port walls and nautical equipment, earth slopes with equipment, constructions of mooring elements and a port basin. The feasibility study is internally divided into 3 parts:

- Technical study
- CBA - Cost-benefit analysis
- Environmental impact assessment

C. HUNGARY

To rebuild inland navigation system regarding the river cruise industry in Hungary, the following elements are mentioned in the National Navigation Strategy (2012)[5]:

- hotel ships on the Danube
- excursion boats on the Danube (and Tisza and Balaton)
- ships for urban transport in Budapest
- ports for international hotel ships on the Danube
- ports for inland daily excursion boats on the Danube (and Tisza and Balaton)
- ports for urban transport ships in Budapest
- ship reconstruction, spare parts supply
- fuel and water supply
- providing electricity
- oily bilge, sewage disposal and handling
- waste disposal and handling
- excursion bus connections to hotel ships

Development of a new MAHART Holding

- establishment of professional administration
- structuring activities: each activity is management, physical and clear definition of the limits of its competence
- business plan based on the above

[5] National Navigation Strategy p11-12

- organization formation
- preparation for listing on stock exchange
- long-range, complex provision of logistics and freight services at the central port base – on departure even with leased assets
- data provided by the corporate controlling system are considered the composition of the asset capacities, the mode of operation, the based on the requirements of efficient operation planning
- restart of ship construction and reconstruction
- integrated corporate governance and management information based on it, system creation and operation
- portfolio formation: to perform well-defined functional activities subsidiaries are worth setting up
- establishment of long-term port operation positions on the Danube and along the Tisza section – ports suitable for both passenger and freight transport
- construction of service facilities for hotel ships
- use of modern shipping technologies to increase market share

To improve IWW tourism and increase RCI turnover nation-wide, it is important to make other cities besides Budapest more attractive. There are trips to Kalocsa and Mohács already, but very few; they shall be put onto the mental map of tourists.

Regarding Budapest and its challenges on over tourism, the Strategy recommends[6] relocating Csepel Freeport below the M0 ring, onto the right bank of Danube. The area of the Freeport mostly could be developed as a dockland – like in several Western European waterfront cities. The current Csepel port could be transformed into a high-end institutional, touristic, cultural and partially residential area. The Freeport can be converted into an international passenger port that meets all requirements, for which most of the necessary infrastructure (built shores, utilities, roads, car parks) are already available, the area only needs renovation and modernization.

Traffic congestion of buses carrying hotel ship passengers to the city would be significantly smaller than today's freight traffic.[7] Furthermore, due to the modernization of HÉV (suburban railway), the city centre would be accessible in 10 minutes. For the conversion of existing warehouse buildings into hotels, office buildings or residential buildings – there are many foreign examples (in river ports for instance Vienna, Frankfurt, Cologne, Düsseldorf, Strasbourg, Amsterdam, London, Hamburg etc.)

Since the Strategy suggests an extra long-term transformation and regarding the fact that the current downtown pontoons are unattractive and often uncomfortable, it is

[6] National Navigation Strategy p26

[7] National Navigation Strategy p27

recommended to consider the above-mentioned modernization of downtown passenger mooring places.

D. CROATIA

By following the proposed investments from the National Transport Strategy document, a lot of work could be done in the growing field of river cruise industry. Croatian ports on Danube (and Drava as a Danube's confluence) have a lot of potential, and while these investments could potentially propel the industry further, one has to also mention that these investments would drastically impact the community through business, social and other levels. Advantages become endless as more and more entities could be included in the river cruise industry value chain

In addition to building these proposed docks, in the next ten years there may be a need to open and build additional docks on the Danube, in smaller municipalities. The launch of the investment will depend on the actual requests for the opening of passenger ports that municipalities will eventually send to the Vukovar Port Authority, but also on the real needs for additional passenger ports. The opening of new docks is largely related to the construction of the multi-purpose Danube-Sava canal - as part of the project itself, the construction of some docks (Vinkovci, Cerna) is planned.

E. SERBIA

In September 2021, PGA has signed Memorandum of Understanding (MoU) in the field of nautical tourism in inland waterways with Ministry of Trade of Tourism and Telecommunications. The Memorandum will improve the economic environment and encourage further investments in the development of tourism and water transport. With this memorandum the visibility of Serbian nautical potential will grow and enriched by cultural sights and natural attractions that will be present more closely to domestic and foreign tourists.

The production of nautical/river tourism in Serbia is now on discrepancy with the current needs of the tourist market. Nautical tourism is a development opportunity for Serbia, whose great potential is reflected in the network of rivers of almost 1,600 km in length and the Danube.

Due to the development of these potentials, the MoU will contribute to stimulating investment activity. Also, Memorandum will greatly improve nautical tourism in Serbia mostly in area of construction and opening of new international passenger terminals and the increasing of visibility and accessibility of the nautical potentials.

In the upcoming period, in the scope of MoU, PGA and Ministry will work intensively on planning and improving the tourist infrastructure. International passenger terminals are an important segment of passenger water transport and will complete the nautical offer of the Republic of Serbia, and the cooperation will enable to realize those projects more efficiently, since new IPTs will contribute to the development of local governments and will increase total revenues from tourism in Serbia. The activities of PGA will be focused on the planning of capital and priority projects and their implementation.

F. BULGARIA

In Bulgaria, there are no specialised credit or grant programmes that focus specifically on the development of the local cruise industry. However, projects related to the development of tourism along the river, as well as those for the development of ports and river transport, are funded on a competitive basis by the Interreg IV-A and Interreg V-A Romania – Bulgaria and the Danube Transnational Programme.

In the Operational Programmes "Regions in growth" 2014-2020 and **"Development of the regions" 2021-2027** there are measures for financial support related to infrastructure of tourist sites and attractions in the Bulgarian Danube region.

According to the analyses of the **Programme Transport Connectivity 2021 – 2027** the main risks for navigation on the Danube are the unsatisfactory parameters of the waterway and the poor navigation conditions (fog, low water levels, etc.), and the process of improving the parameters of the fairway and increasing the safety of navigation on the Danube River of the Republic of Bulgaria has not been completed so far.

Under the Programme Transport Connectivity there are investments planned for the development of information systems which will upgrade the existing ones. There is also funding for supply of multifunctional vessels, modernization and construction of facilities for improving transport safety and environmental protection, including port facilities for safe, efficient and secure inland waterway and sea transport.

Charging infrastructure for alternative fuels in the ports of national importance needs to be built, which will contribute to the reduction of pollution from shipping and to the better protection of the environment.

Construction of facilities against flooding of Ruse-West terminal, reconstruction of Lom terminal, reconstruction of port facilities for ballast operations are planned to be executed within the programme period.

Funds for improving navigation on the Danube River are also planned to be financed by the **Connecting Europe Facility (CEF)**.

Investments for sustainable urban mobility under the **Operational programme "Development of the regions" 2021-2027** include improving the connections between the integrated urban transport, intercity bus transport, rail transport, air transport, inland waterway and maritime transport.

For the improvement of the transport connectivity between Bulgaria and Romania, the **Romania-Bulgaria CBC programme 2021-2027** envisages to implement a strategic project for preparation of a pre-investment study for utilization of the potential of the Danube River by construction of new bridge facilities and port infrastructure to support the interaction of the functional zones on the north-south axis and the development of the territories on both sides of the border through the connection between the regions and social cohesion, as well as the creation of the necessary preconditions for the development of economic activity.

Additional transport connections across the Danube could be provided by the construction of new bridge facilities or ferryboat links improvement. The planned

investments related to shipping improvement and Danube transport connections development (construction of bridges and port terminals) will contribute to the implementation of the recommendation.

Within the **Strategy of sustainable tourism development in Bulgaria 2014 - 2030** the possibilities for development of regular lines of attraction ships between the Black Sea countries Bulgaria, Ukraine, Russia, Romania and Georgia are considered. The Strategy also focuses on investments in cruise ships on the Danube, development of special transnational products along the river and combined tours Rhine-Main-Danube.

G. UKRAINE

The State Property Fund of Ukraine announced the beginning of the privatization procedure of the ports of Ust-Dunaisk and Bilhorod-Dnistrovskyi (Odessa region) in late 2021 and early 2022. The auction for the privatization of these ports will take place in the fourth quarter of 2021. The issue of investment in the above ports can be considered after determining the winners of the tenders.

At present, the procedure of transfer to the concession of the port of Izmail is being worked out.

H. MOLDOVA

The potential for the development of river cruises in Vadul lui Voda is enormous. Throughout the entire Dniester, there are many picturesque landscapes that can potentially attract both foreign tourists and citizens of the republic. Being in close proximity to the capital of Moldova, this recreation area is accessible and attractive even for a short vacation.

The development of inland waterway transport will ensure its formation as a stable and functional transport industry. Travel and shipping companies will have a basis for further improving the quality of services provided. The efficiency of their work will increase and there will be a need to implement the priority interests of the development of the economy of the Republic of Moldova, as well as the priorities of the inland waterway transport sector.

The increase in demand for water transport services on inland waterways will occur, first of all, due to efficient shipping companies, which will create conditions for loyal competition at the level of both domestic and international water transport. Improving efficiency and

The profitability of shipping companies, ports and other actors involved in inland waterway transport will enhance the potential of the industry and facilitate the process of renewing fixed assets.

The implementation of this project will allow:

a) to ensure an inflow of investments in the organization of tourism in the territory of Vadul lui Voda (municipality of Chisinau)

b) to increase the level of safety in the provision of services in the transport area on inland waterways;

c) to open new directions of tourist routes;

d) to improve the efficiency of management and coordination of water routes;

e) to improve the level of quality of services provided in the field of water transport.

Today, for the development of navigation at least to the city of Vadul-lui-Voda, it is necessary to deepen the channel and deepen the fairway. This will make it possible for ships to communicate with major ports in Ukraine, Romania, Bulgaria, Russia and Turkey.

The creation of a centralized departure point for passengers from the city of Vadul-lui-Voda will lead to a greater variety of tourist routes, as well as increase the comfort of various excursion tours along the Dniester River. The introduction of new routes will allow the development of tourism business in the territory of this resort area, which confirms the economic feasibility of construction.

On the Dniester River, in the future, while ensuring navigability, tourist voyages will be carried out to the Black Sea resorts in Sergeevka and Zatoka (Ukraine). This is also facilitated by the agreements signed between Moldova and Ukraine, which are the legal basis allowing Moldovan economic agents operating ships to freely direct their ships to the inland waterways of Ukraine.

However, the use of river vessels is complicated by water discharges through dams. The water level in the channels of the Dniester and Prut is minimal, however, in various emergency situations, it rises sharply and significantly. Meanwhile, the channeling of the fairway will make it possible to painlessly use this type of transport throughout the year (the Dniester freezes for a short time).

Due to the low water level, it is proposed to deepen the fairway along the entire length of the Dniester from the Dubossary hydroelectric power station to the Black Sea.

In addition to deepening the fairway, the coastline along the entire city of Vadul-lui-Voda should also be strengthened.

In order to develop tourist traffic, it is proposed to modernize passenger ships in order to increase their comfort level, create infrastructure and improve the quality of services provided on board. It is planned to develop cruise ships with a small number of passengers, but with increased comfort, passenger lines between settlements and replacement of outdated ships.

Since the water level is subject to seasonal fluctuations, floating berths - landing stages, landing platforms at different levels and special ladders should be used on the aprons.

The construction of the berth should be implemented in such a way as to accommodate various excursion and pleasure boats, including long-distance ones.

At the moment in the Republic of Moldova there are various projects for the development of infrastructural formations. The river terminal in the city of Vadul-lui-Voda will be an excellent way for the development of both transport routes and a tourist zone, which in turn will have a beneficial effect on the entire economy of the country.

Currently, economic agents in the field of water transport provide passenger transportation services (pleasure navigation) in the area of the Vadul-lui-Voda recreation area. The Dniester Park and Vadul-lui-Voda recreation area is an indisputable tourist

heritage of Moldova, but it is not used according to its high potential. In recent years, tourist cruises along the Dniester began to gain popularity, however, in this regard, the question of the possibility of using additional shipping facilities with a small displacement has become acute. For the development of this tourism business, it is necessary to build a berth for small cruise ships, as well as the construction of a river station complex for the convenience of passengers and attracting additional tourists.

One of the features of the zone is clean air. Vadul-lui-Voda has a very peculiar and oxygen-rich air. The presence of a large number of green spaces, the flowing water of the river contributes to its purification. Thanks to the air currents, the concentration of oxygen in the air is high enough, which contributes to the strengthening of health and comfortable rest.

The development of the resort zone of the National Park of Recreation and Tourism, located on the banks of the Dniester River, will allow more tourists to see beautiful landscapes on both banks of the river, but first of all, this park, which is a balneological park, will continue the existence of the sanatorium-therapeutic zone of Chisinau municipality.

For the development of the river cruise industry, the passenger port of Giurgiulesti has practically all the necessary infrastructure and procedures related to international tourism. However, in the context of international integration of the tourism business, it is necessary to take into account the increasing role of the state in the formation of cruise shipping for the socio-economic development of the Danube region. Its development forms the sphere of employment and the creation of new jobs. Public authorities should pay attention to the high degree of economic development of cruise shipping in the world. It should be borne in mind that this area of activity differs not only in economic significance, but also in social priorities.

State and municipal authorities, tourist operators, and the port administration should participate in the formation of the port's tourist image.

Projects related to the development of RCI along the Danube can be successfully implemented by joint efforts of tourism companies from the Republic of Moldova and the countries of the European Union, subject to state support in solving some organizational problems.

Uncertainty associated with the development of the pandemic can only delay the implementation of tourist cruises for some time, but will not negatively affect their demand.

In the future, after the economic recovery in 2022, the implementation of river cruises on the Danube from the port of Giurgiulesti can be successfully carried out.

8. Best practices regarding port facilities and its integration within RCI and regional transport strategy

This chapter aims to bring to the attention of project partners some **success stories in RCI**, which we will further call good practice models. Under certain conditions these good practice models deliver information and solutions that can identify, improve or inspire the development needs of RCI within DR.

The business models standing as good practice will show what type of investments, measures or any other modalities of action can be used in order to improve RCI activities and bring more benefits on every level.

Success Story: Awake the Danube (Serbia)

Within its competences, PGA is engaged in other promotion activities of RCI. One of those is certainly the project "Awake the Danube".

The Port Governance Agency of the Republic of Serbia, in cooperation with UN Development Programme (UNDP) started in 2017 the project under the prominent name – Awake the Danube, which reflects the firm intention of its creators.

The idea and goal of the project are strictly focused on the quality and safe development of domestic scheduled service and cruising on international passenger terminals on the Danube.

In other words, let us be the Danube and its shores and generously share it with all lovers of natural wonders intertwined with rich history.

Formally, the project's ambition is to support the promotion of nautical transport and tourism of the Upper and Lower Danube Region of Serbia, connecting all most significant towns into unique whole, as well as to contribute to the development of towns of this region which will be inscribed on the tourist map of Europe.

The first phase of the project, in which we awakened the shores in Smederevo, Donji Milanovac, Kladovo, Golubac and Veliko Gradiste – was successfully finished and it gave us the wind in the back for the second phase. During the project activities, international passenger terminals were opened in Smederevo, Kladovo and Gloubac. The plan of the Agency in the coming period, is to open the international passenger terminal in Veliko Gradiste (Ram), Zemun and Kostolac as well.

In 2019, the Port Governance Agency continued to work independently on the project, the goal was to restore the splendour of the Danube coast and its potentials in five more towns of the Upper and Middle Danube Region in Serbia, which are the following: Novi Sad, Zemun, Sremski Karlovci, Banostor and Apatin.

The aim of the project was to make the trip extremely comfortable for all future tourists who choose to sail the Danube, and make the set of sites and activities in the towns lying on the bank of this magnificent river accessible and numerous. In this manner we emphasize the unbreakable connection between towns and the Danube and increase their further potential.

Within the project "Awake the Danube", the Port Governance Agency supplemented and published a brochure of the same name.

The updated brochure included, in addition to the existing ones, three new locations on the Danube - Apatin ("Town of Alas"), Banoštor ("Village with two suns") and Kostolac ("Home of miners and Roman legionaries").

Apart from interesting historical facts, legends, gastronomic recommendations and cultural heritage of the municipalities that lie on the Danube, readers can find in the publication a story about the Roman heritage in Serbia - the Roman Limes - and learn more about the seven fortresses on the Danube.

Readers can find the brochure in electronic format on the website of Port Governance Agency: https://www.aul.gov.rs/en/bulletin

Figure 14. Brochure „Awake the Danube"

Success story: International Passenger Terminal in Golubac (Serbia – Austria)

In 2011 the Republic of Serbia declared it the "Golubac Fortress" Tourist Area, for which the infrastructure was provided and the fortress itself reconstructed through the project "Reconstruction of Golubac Fortress", financed from IPA funds for 2011 and 2016. Together with the Austrian Development Agency the EU invested some EUR8 million in the reconstruction project.

Apart from the reconstruction, the project included extensive archaeological research, which led to new discoveries that will complement the existing knowledge about the history of this medieval fort.

Nine towers and nine ramparts have been reconstructed. Also, a palace of some 600 square meters of floor space was built. Extensive archaeological research was conducted both inside and outside the Fortress. Walking paths and stairs have also been built, allowing visitors to reach all parts of the Fortress.

The Visitor Centre, with over 960 square meters of floor space, hosts a permanent exhibit dedicated to the Fortress, a cafeteria, a souvenir shop and the premises of the Association *Tvrđava Golubački grad*, which manages the complex.

The project included the construction of a 150-metre tunnel and a 760-metre ring road. The tunnel is 10.45 meters wide and 6.26 meters high and has since the commissioning allowed the traffic to be relocated from the Fortress after 90 years.

The construction works on supporting infrastructure were also completed, ensuring a steady supply of water and electricity. A park was built in the area between the Visitor Centre and the Fortress, as well as a parking lot for visitors.

Figure 15. The Golubac Fortress after the reconstruction

The Fortress is fitted out with modern presentation equipment. A special multimedia presentation of the Fortress was also designed and made available for visitors to watch in the palace and on the towers. On the other side of the Fortress, there are walking paths with a number of marked viewpoints.

Also, managing the Fortress is a complex task that needs to be carried out responsibly. This is why the association was given expert support to increase its capacity for efficient and sustainable management of the complex. Strategic and planning documentation was drafted, while the management and staff of the enterprise went through training.

Complex was open for public in 2018 and consist of Fortress, Archaeological park, Visitor centre and IPT.

Figure 16. IPT in Golubac seen from the fortress

Even during the reconstruction, the Golubac Fortress caught the attention of tourists from around the world, attracting around 65,000 and 86,000 visitors in 2017 and 2018.

During that time, the great interest and potential for cruisers is noted. Bearing in mind the growing interest of tourists and the location of the fortress, in parallel with the reconstruction of the fortress, Serbian Ministry of trade, tourism and telecommunication made investments in the construction of the infrastructure (docking facility) of future IPT. In accordance with that, PGA declared port area in Golubac and successfully launched Public call for the port operator. „Golubačka tvrđava" was chosen to perform port activities on IPT in Golubac.

In first year, 2018, without any bigger promotion, PGA recorded 44 port calls in Golubac. In 2019, IPT in Golubac doubled the number of port calls- 95. This year, despite the pandemic, by 1st of October 43 port calls were recorded in Golubac. It is also important to mention that, during the 2020, when river passenger traffic was stopped, Golubac Fortress was one of the most popular attractions for domestic tourists.

Success stories: Hungary.

As mentioned above, inner city ports and pontoons are not equipped with water and electricity supply and waste disposal facilities in Budapest. Still, bilge water, sewage and waste disposal are solved by the green port in front of the Budapest University of Technology and Economics.

The green port operates a mobile boat that collects waste from any vessels and hotel ships mooring at inner city pontoons. This helps international cruise ships and excursion boats to keep their schedule. They do not need to moor physically at the green port, they are supplied by the waste and bilge water collector mobile boat that provides other services too.

Additionally, the green port (also called Zöld Sziget - Green Island) is powered by solar panels.8 Moored to the facility, ships can refuel on site, pick up fresh water and dispose of sewage, used engine oil, or frying oil. Before, huge vessels have so far gotten rid of pollutants completely uncontrollably.

Success story: Croatia.

This best practice example derives from the need to ensure an added level of security to the ports to minimize possibilities of theft or damages to the property in ports and harbours.

Ports open to public traffic in Croatia are not fenced like marinas for example and in most locations, they are located in the towns' centre hence open to everyone, so the majority of the ports have a night watchman or sometimes even security personnel. Aside from covering ports with adequate lightning ports could move a step further by introducing security cameras or a CCTV system.

Video cameras are useful tools for monitoring and recording incidents that occur within the system's capability range. Video camera recordings provide a window into an event that may have occurred after the fact. Monitoring with a video camera also allows one to see what is going on in real-time. The cameras are monitored from the operations centre and provide 24-hour coverage protecting the port area from damage arising from any variety of hazards, losses or threats which is evident especially during the summer season when some tourist destinations have three or even four times the number of people than the locals during the winter.

Long term goal could be to be broadening the camera's capabilities

[8] Zöld Sziget a Dunán (welovebudapest.com)

by enabling visitors to see real-time monitoring via an app.

The port authorities, as administrative bodies, carry out all administrative and inspection work related to sea safety in the Republic of Croatia in accordance with their legal rights and duties. This best practice allows all ports and port authorities to add an extra layer of security for their users.

Because we're talking about video surveillance here, in accordance with identity protection laws and GDPR, this type of protection should be taken seriously so that it isn't abused, so care should be taken to comply with all legal regulations for this type of protection.

Given that the majority of Croatian port managing authorities operate with relatively limited and mostly outdated equipment and programs, the need for digitalization and automation of certain tasks in their respective management, video surveillance offers a solution for protecting property while also acting as a preventative measure by discouraging potential theft and obliteration. This practice could be applied in all ports and harbours.

Success story: Cross-border cooperation between Danube countries: Ukraine and Romania

From the spring of 2021, the only currently cross-border cruise on the Danube for Ukrainian tourists will depart from the **seaport of Izmail.**

The cruise was created by the Romanian shipowner Marius Krivcunenko with the help of his **ship DIANA for 80 passengers**.

In 2019, at the 1st International Tourism Forum, the Izmail Investment Promotion Bureau of the Izmail City Council and the Association of Management of Tourist Destinations of the Danube Delta (Romania) signed a cooperation agreement.

The first point of the route is Izmail - the "capital of the Ukrainian Danube" with the historic neighborhood "Fortress", many surviving buildings of the Romanian period, restaurants with authentic cuisine, local flavor, wine cellars cultivating gastronomic and wine traditions of the Ukrainian Danube.

The second day is fully occupied with visiting Odessa and getting acquainted with its sights, the benefit, the condition of the route connecting Izmail and South Palmyra, allows you to do it with maximum comfort.

After getting acquainted with the history and architectural masterpieces of Odessa, guests are treated to traditional dishes of Ukrainian cuisine in a colourful restaurant in the national style.

On the third day in the program - a trip to Vilkovo and the Black Sea coast.

Routes from Izmail to Romania.

The first route passes through the mouth of St. George. Guests are introduced to the pristine nature of the Romanian Delta, the Sakalin Nature Reserve, given the opportunity to visit the Black Sea coast and visit Tulcea.

The second route covers another Romanian mouth of the Danube - Sulina, a town of the same name with an unusual history and mysterious historical monuments, the mysterious LETEA FOREST, an excursion to Tulcea and a walk through the canals and lakes of the Romanian delta.

During the cruise, tourists travel exclusively by water - on modern small boats.

This enhances the impression of visiting picturesque corners of nature. It is no coincidence that the biosphere reserve of the Romanian Danube Delta, called the "paradise for birds and fish", is a UNESCO World Heritage Site and ranks third in the world in terms of biodiversity.

Thus, the "Delta Symphony" is gaining popularity due to two characteristics - maximum comfort for passengers and saturation of tourist routes.

According to the schedule, MS Diana will run from Romania to Ukraine until the beginning of November.