

EKONERG

Energy Research and Environmental Protection Institute



Utilization of LNG as a marine and road traffic fuel in Northern Adriatic ports

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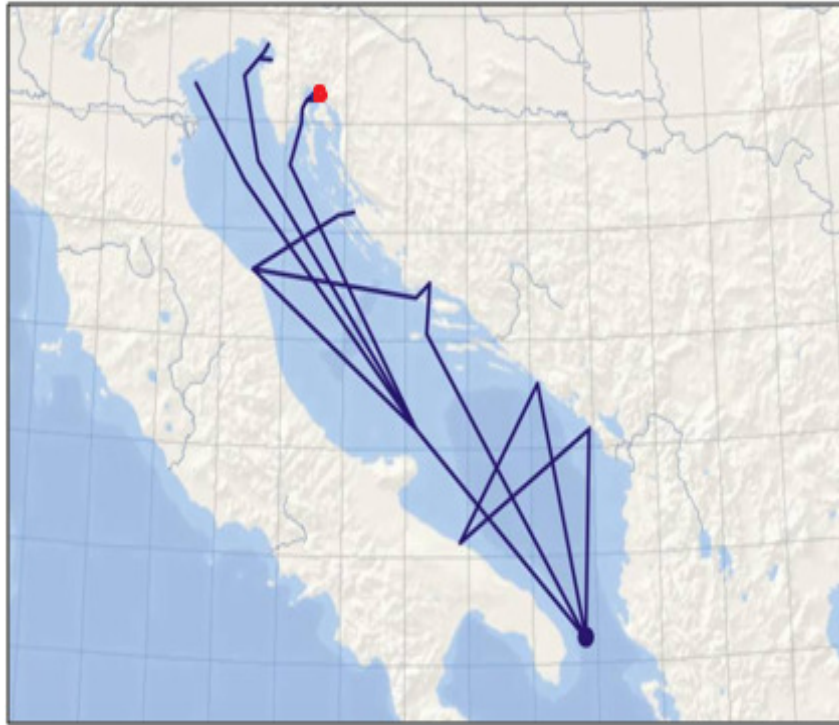
Co-financed by the European Union
Trans-European Transport Network (TEN-T)

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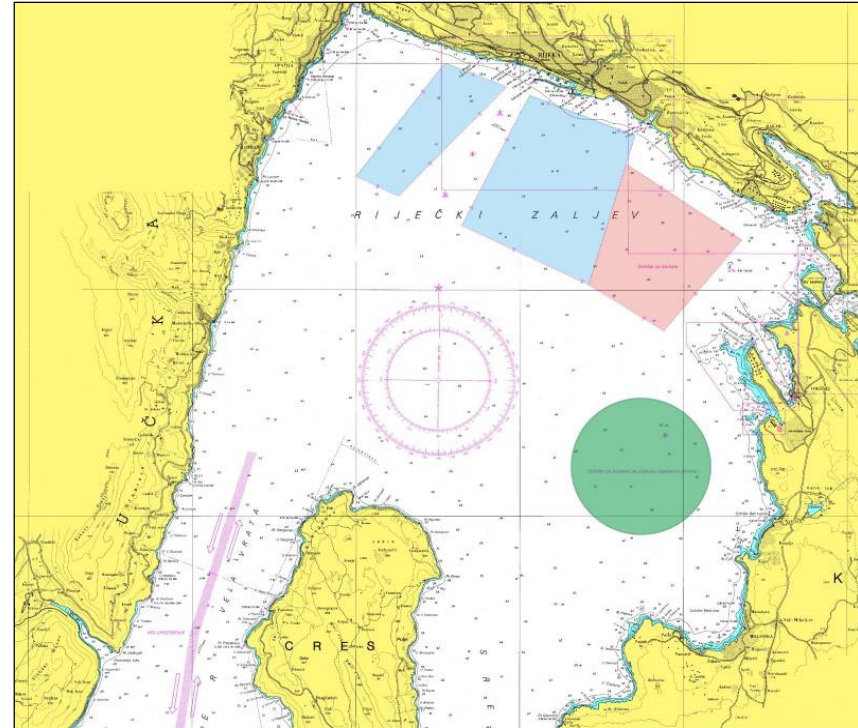
- The Port of Rijeka location and included terminals
- Bunkering demand assessment in port of Rijeka
- Bunkering supply chain in port of Rijeka

The Port of Rijeka location and included terminals

The Adriatic Sea main shipping routes

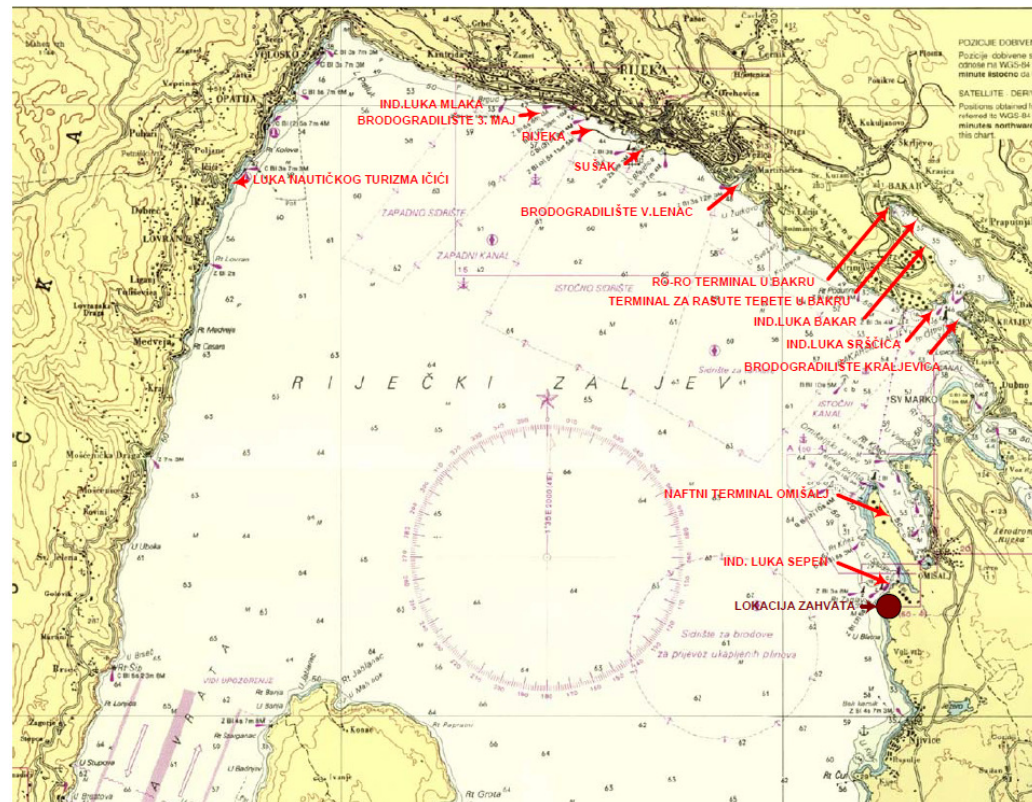


The Rijeka Bay and the Vela Vrata strait



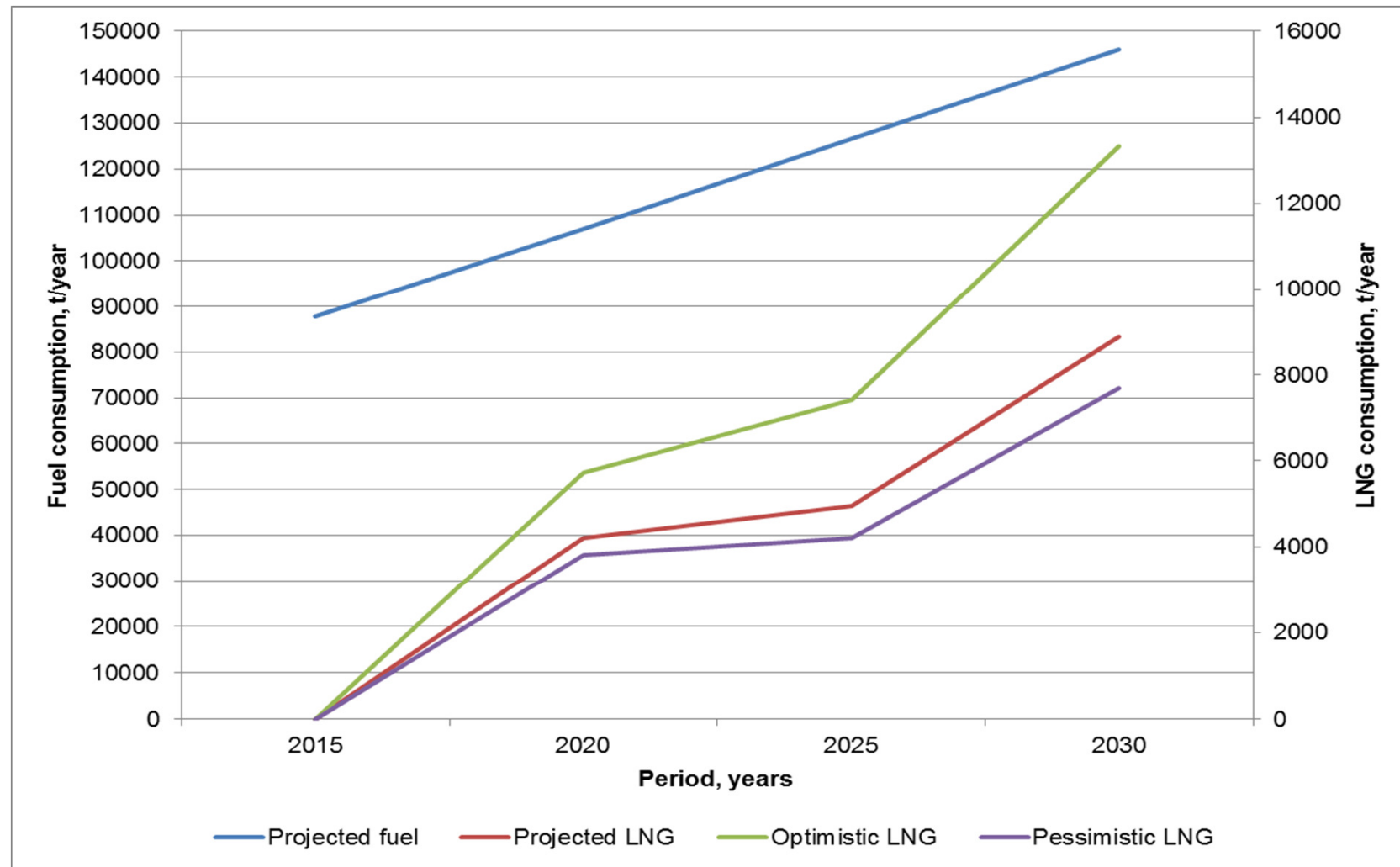
Terminals

- **Port of Rijeka** (passenger traffic, conventional general cargo and bulk cargo)
- **Sušak** (container terminal, conventional general cargo, bulk cargo and wood)
- **Bakar** (bulk cargo and ro-ro terminal)
- **Raša** (livestock and wood terminal)
- **Omišalj** (oil terminal)

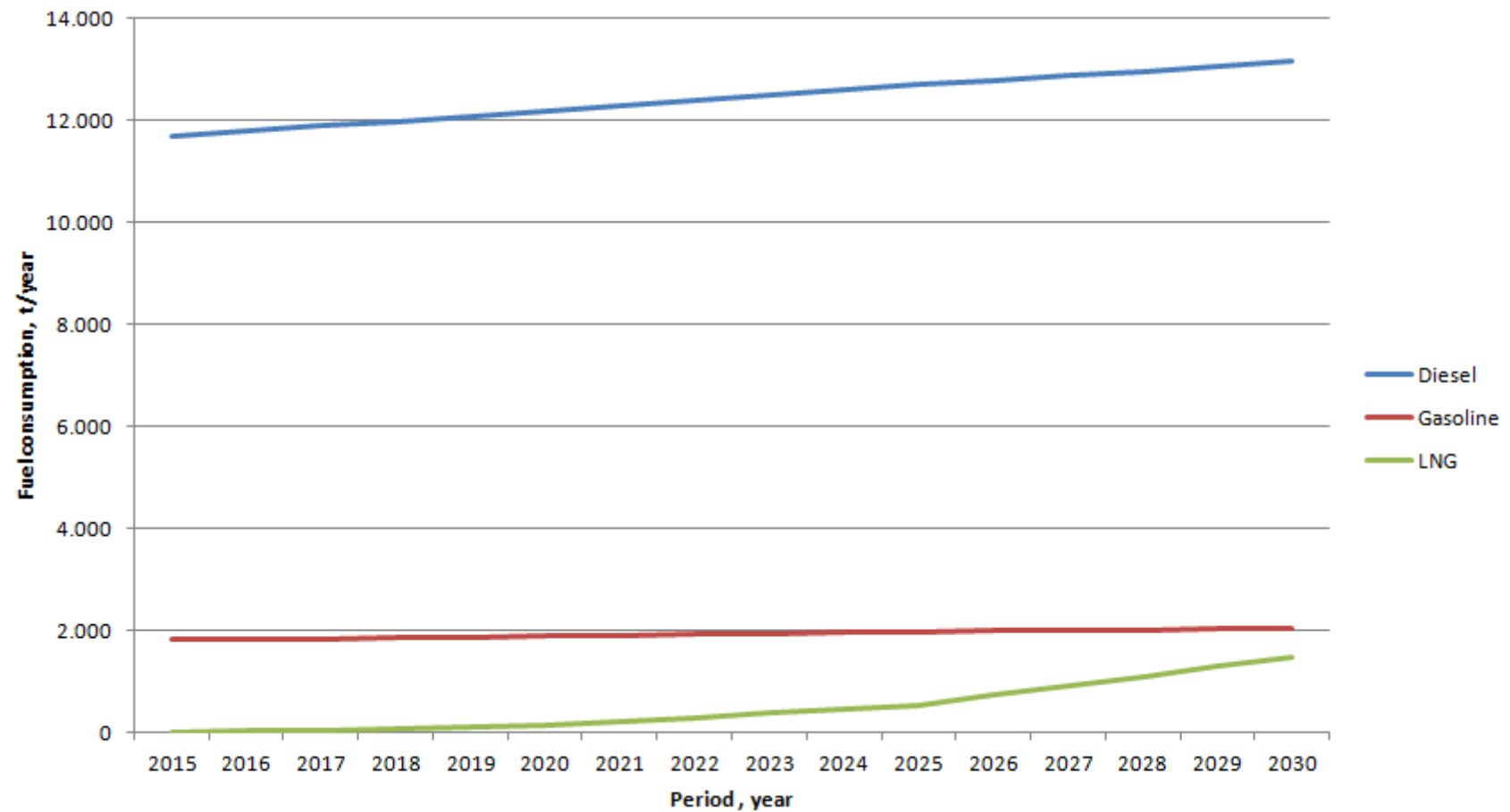


Bunkering demand assessment in port of Rijeka

Marine transport



Road transport

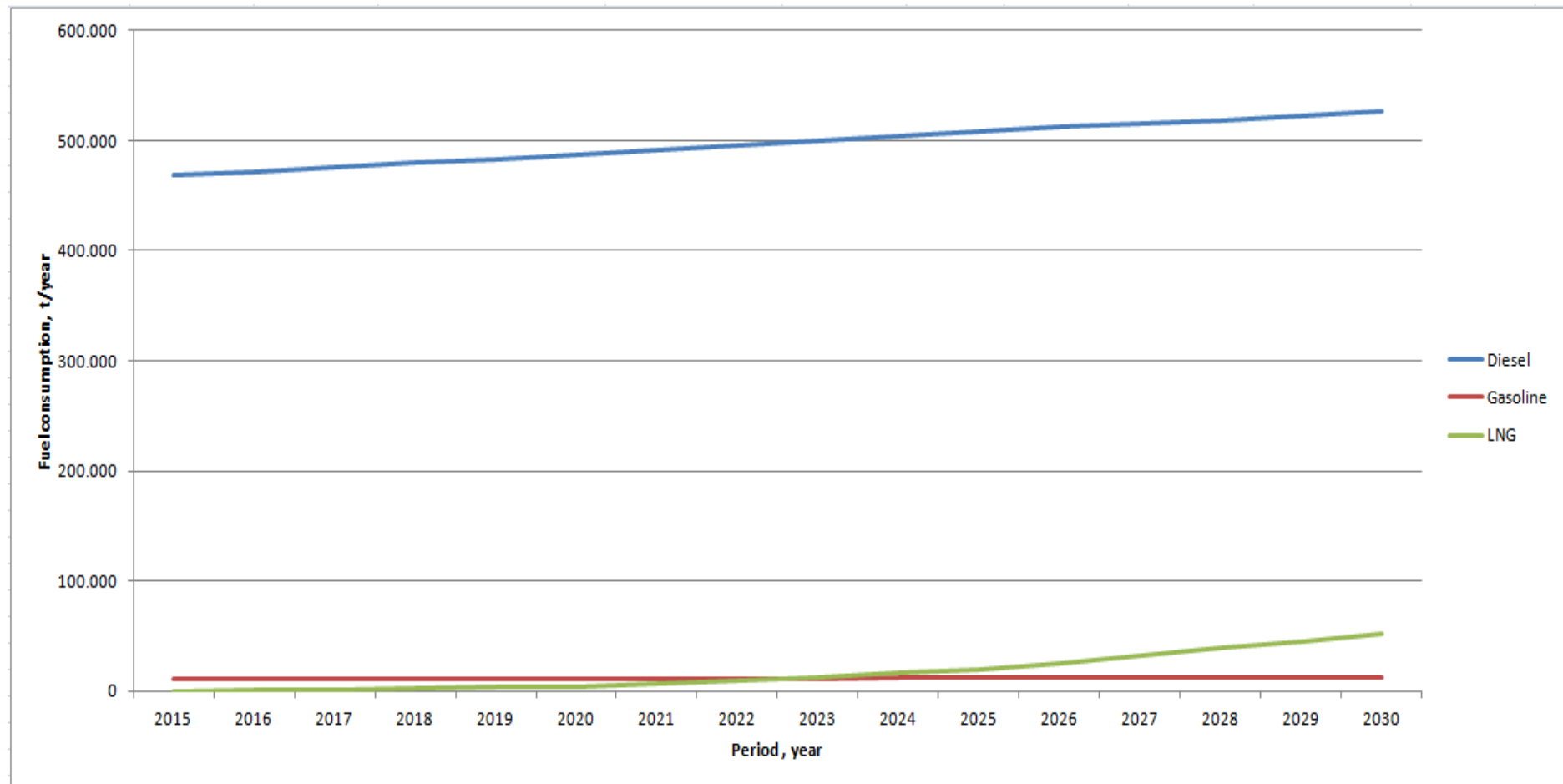


Total LNG demand

- Cumulative LNG consumption of maritime and road transport in Rijeka:

Item	Unit	2015	2020	2025	2030
Maritime transport	t/year	0	4,191	4,953	8,891
Road transport	t/year	0	267	936	2,367
Total	t/year	0	4,458	5,889	11,258

Road transport - Croatia



Bunkering supply chain in port of Rijeka

Marine transport

- Number of vessels with LNG propulsion in 2030 with overall LNG consumption for each vessel type:

Vessel type	LNG vessels penetration rate	Number of calls at ports	Number of vessels with LNG propulsion	LNG consumption
-	-	-	-	t/a
Container vessels	0.030	512	10	2,174.65
Passenger vessels	0.111	339	38	1,113.62
Cruiser vessels	0.074	51	4	3,434.93
Tankers/bulk carriers	0.067	141	10	2,167.63
Average/Total	0.07	1042	61	8,890.82

Road transport

- Total number of single-fuel and dual-fuel engines from 2015 to 2030:

Item	Units	2015	2020	2025	2030
Total LNG consumption	t/year	0.00	267.00	936.00	2,367.00
Storage capacity	m ³	60.00	60.00	60.00	60.00
Number of fillings	-	0	10	34	87
Single-fuel engines consumption	t/year	0.00	178.00	624.00	1,578.00
Dual-fuel engines consumption	t/year	0.00	89.00	312.00	789.00
Number of single-fuel engines	-	0	492	1,725	4,362
Number of dual-fuel engines	-	0	808	2,834	7,167
Total number of vehicles	-	0	1,301	4,559	11,529

Technical solutions and preliminary storage location

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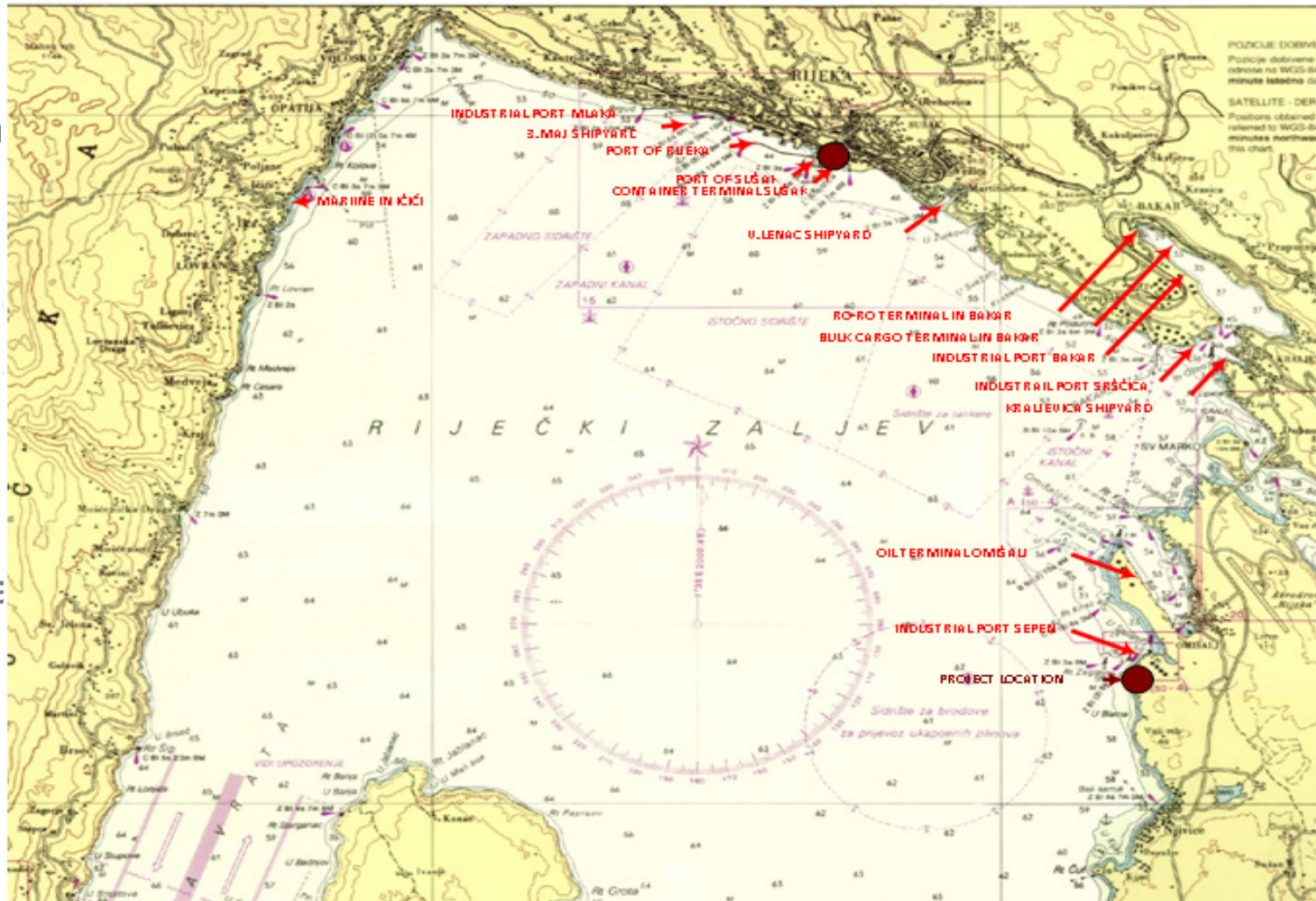
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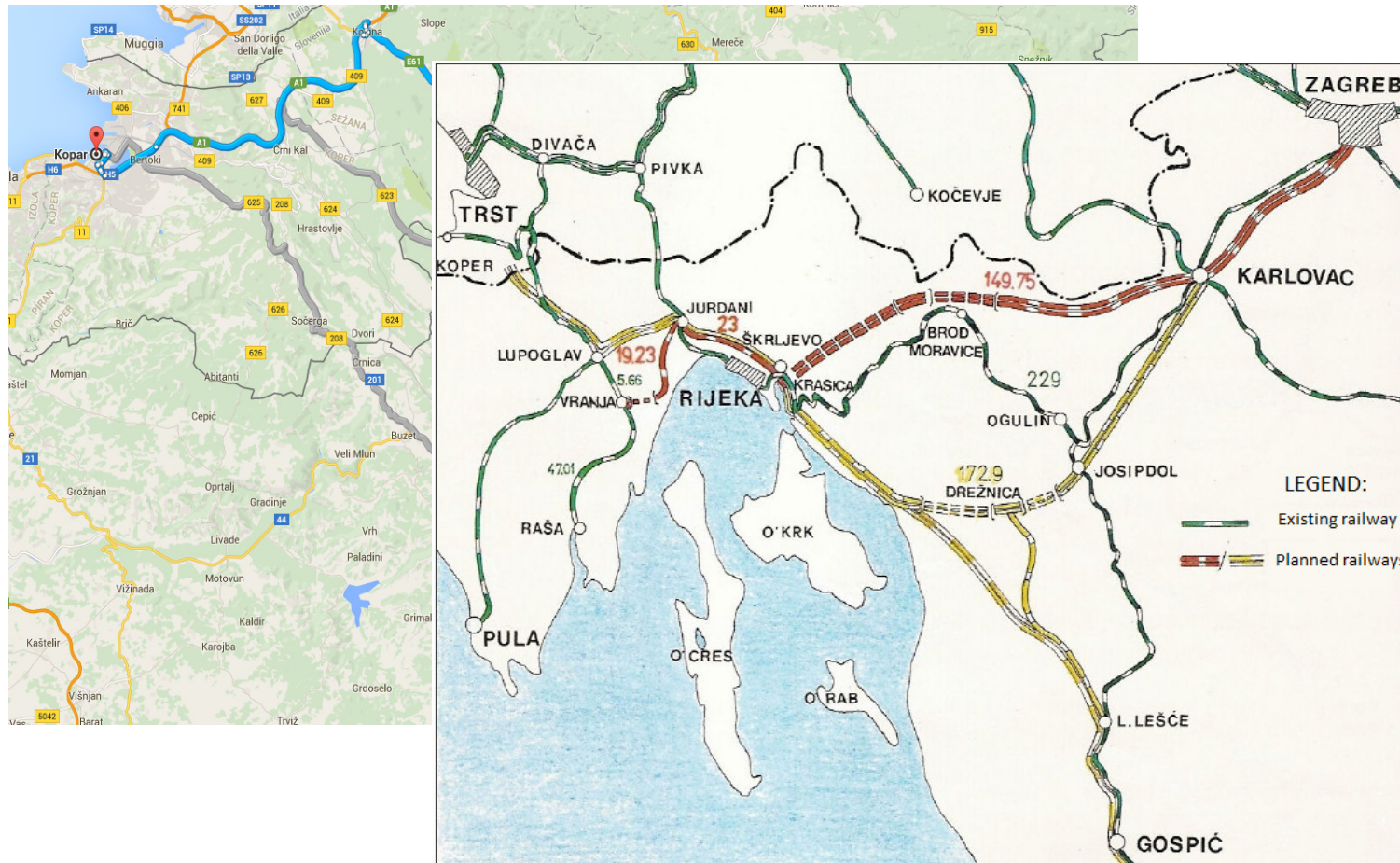
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Ports connectivity



Thank you

