

Designing Liberland

How to Build an Autonomous City

Porcupine Freedom Festival | June 25, 2021

Tim Brochu

Host of **AN**ARCHITECTURE podcast

Principal and Manager of **adra** ARCHITECTURE LLC

Tim Brochu

anarchitecturepodcast.com



adra ARCHITECTURE LLC

Tim Brochu, Principal and Manager ME | NH | MA Licensed Architect

Architectural design services for residential, commercial, and healthcare clients in Maine, New Hampshire, and Massachusetts.

ANARCHITECTURE podcast the built environment of a stateless society

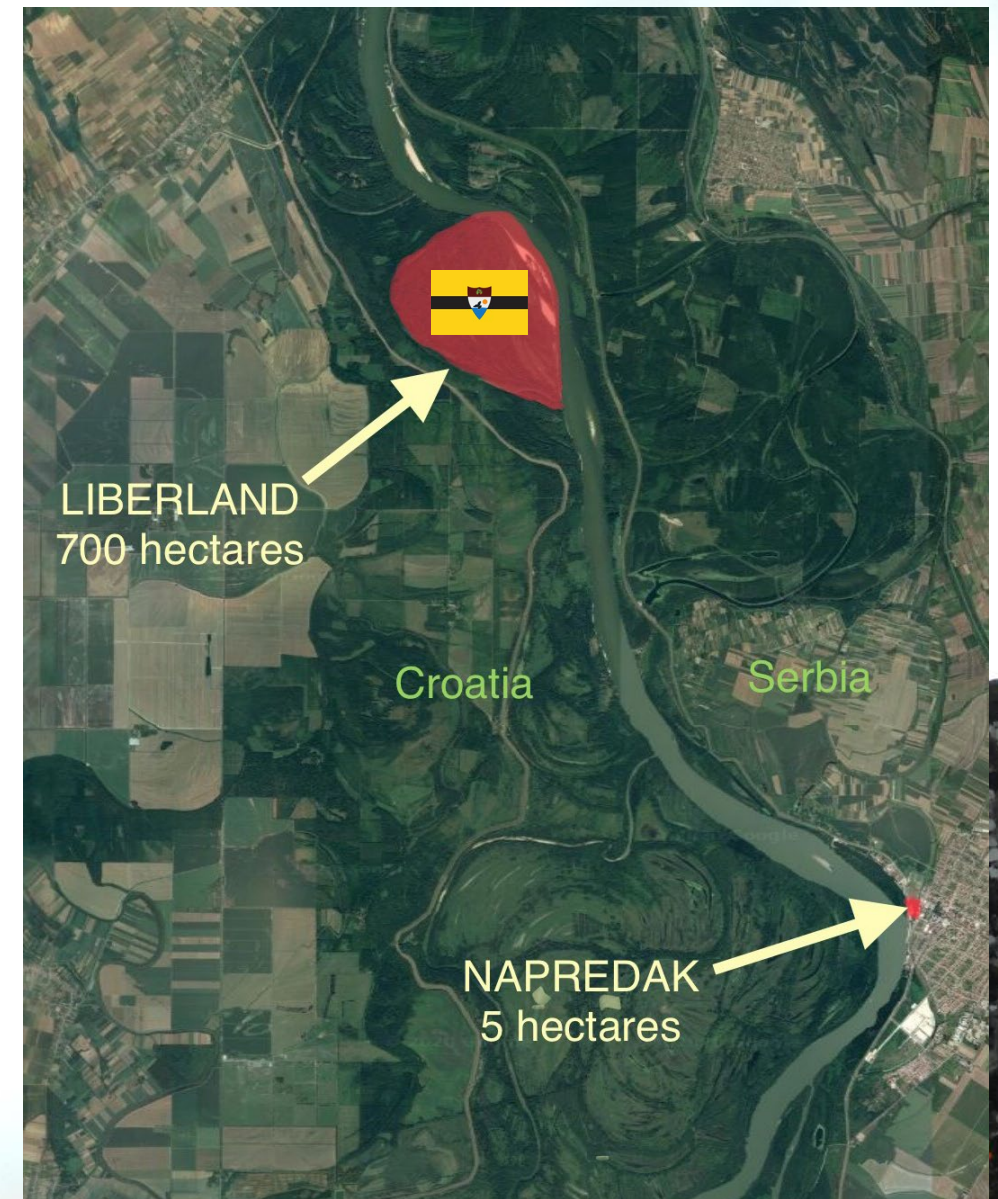
anarchism architecture infrastructure urbanism economy community

Exploring non-governmental approaches to the development of buildings, neighborhoods, cities, public space, infrastructure, and transportation.

Tim Brochu

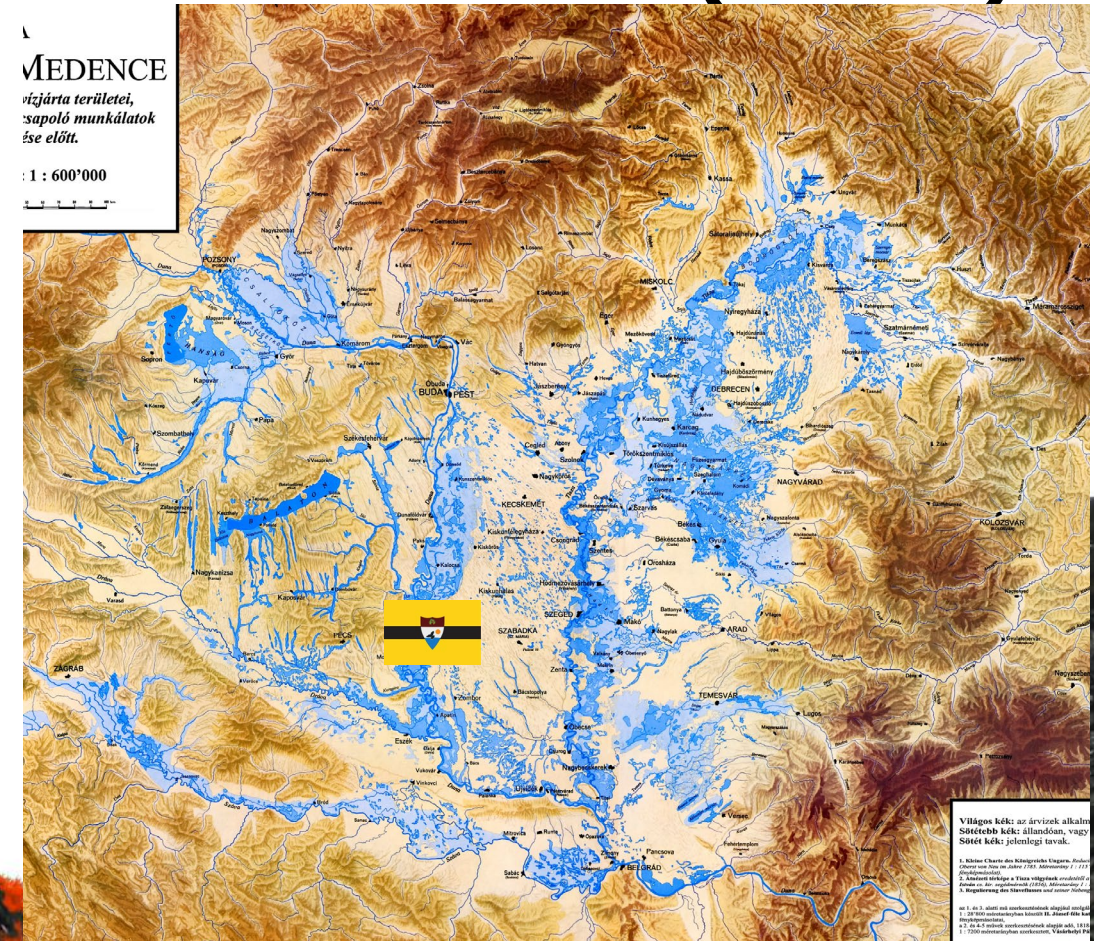
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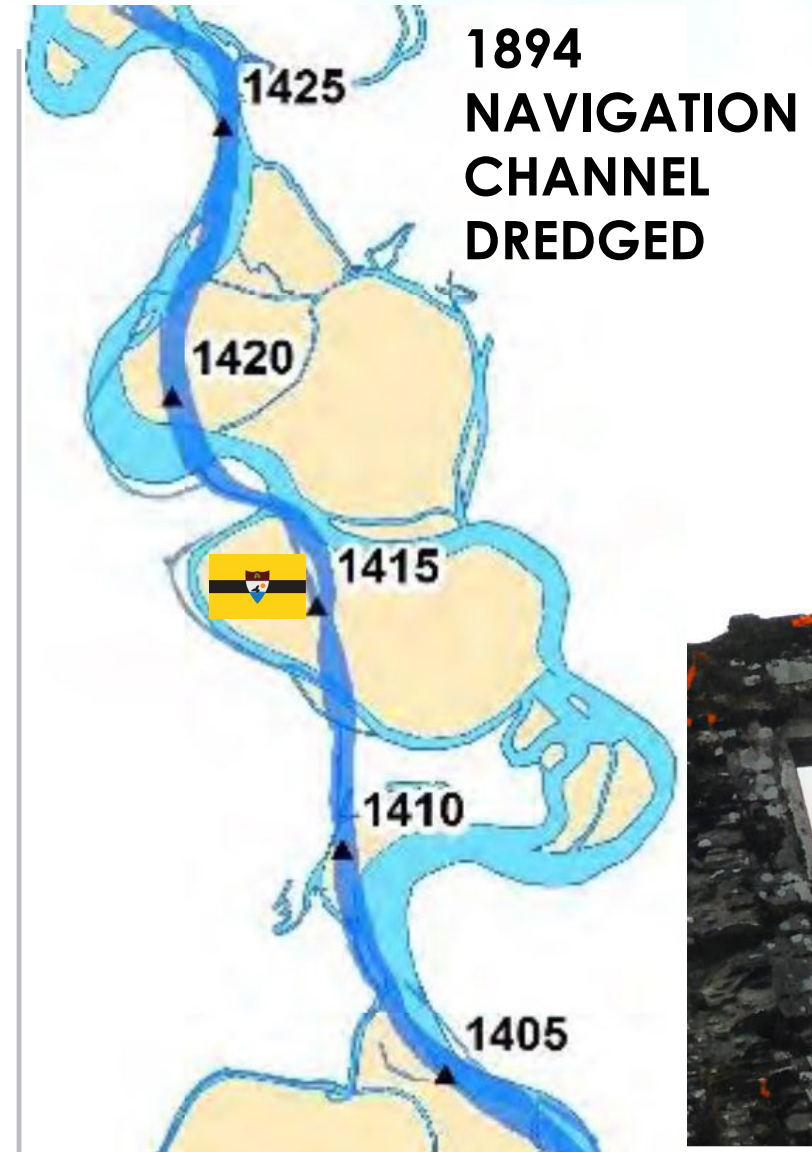
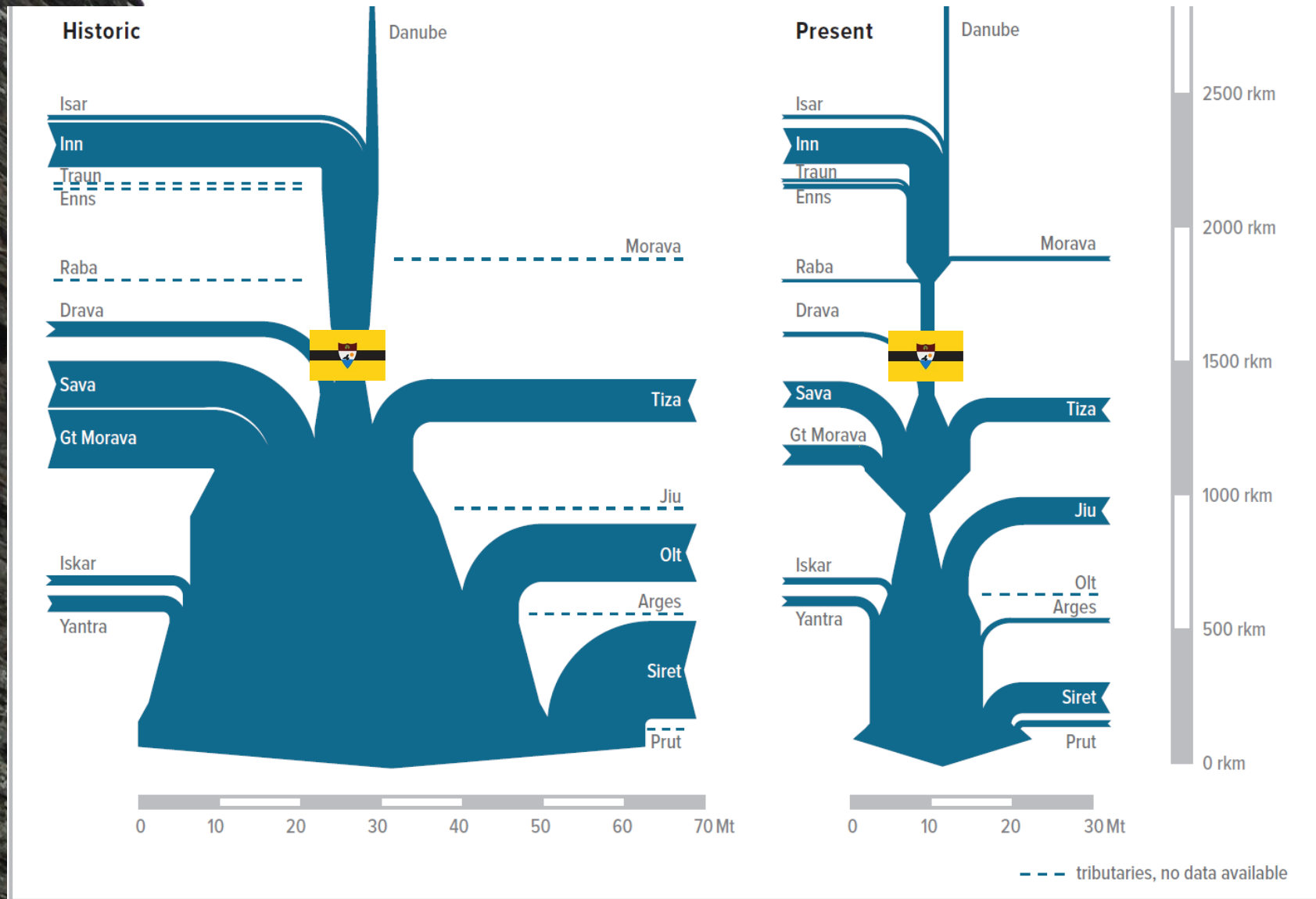




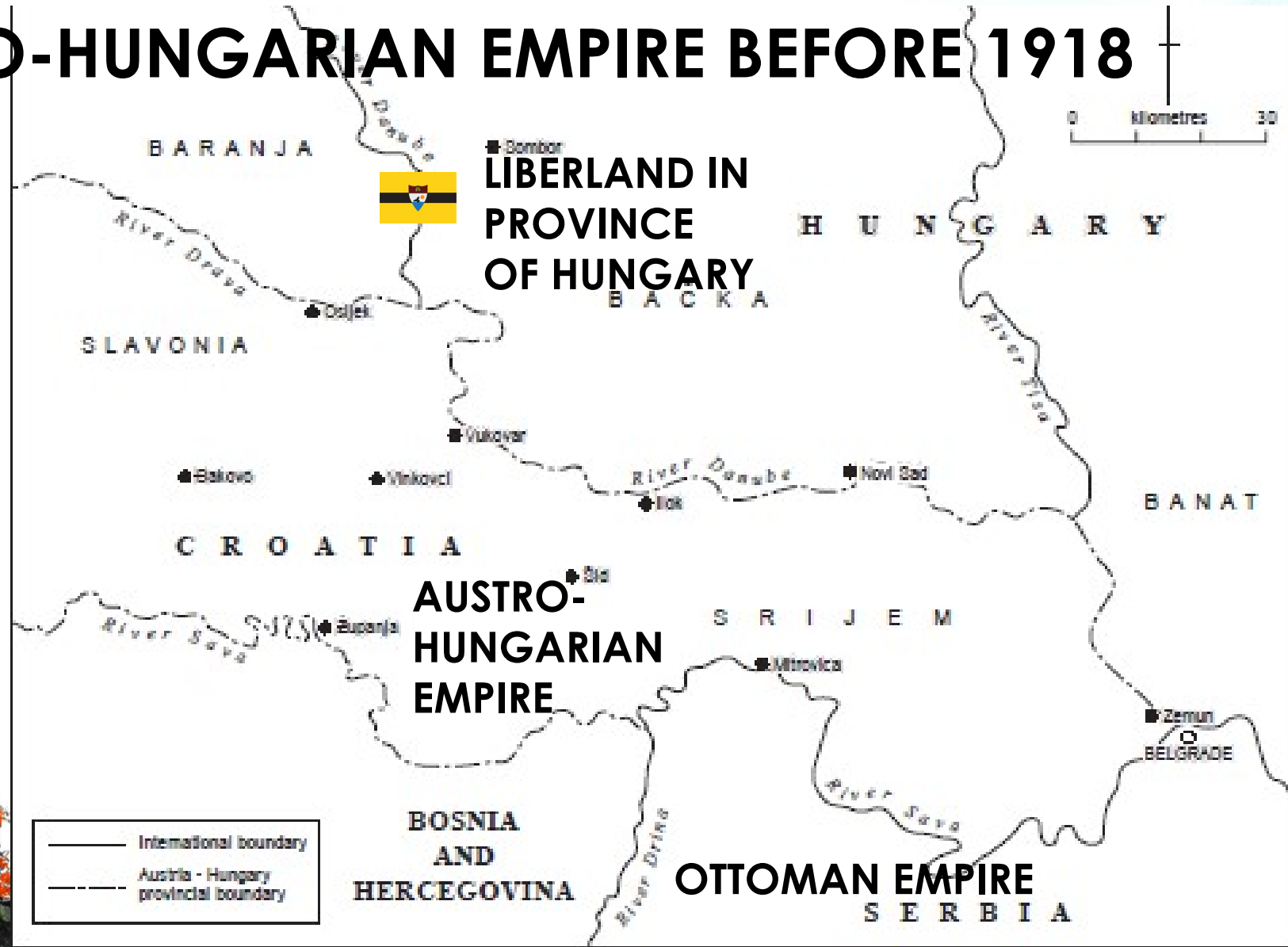
FLOOD ZONES (1800'S)



HYDROLOGICAL HISTORY



AUSTRO-HUNGARIAN EMPIRE BEFORE 1918



YUGOSLAVIA PRE-1992 & POST-1992

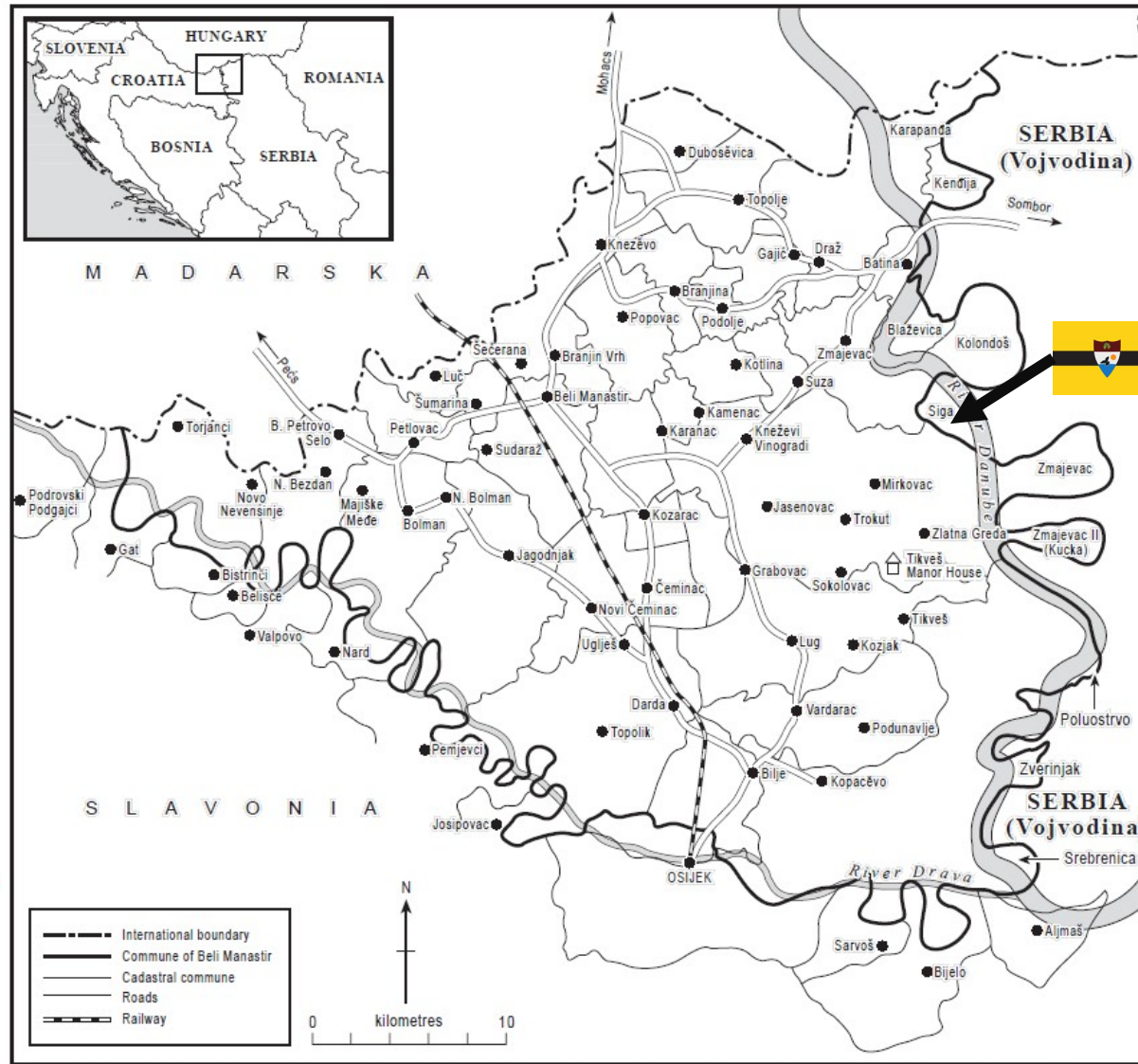


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CADASTRAL MAP OF BELI MANASTIR (CROATIA)



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CADASTRAL MAP OF BELI MANASTIR (CROATIA)



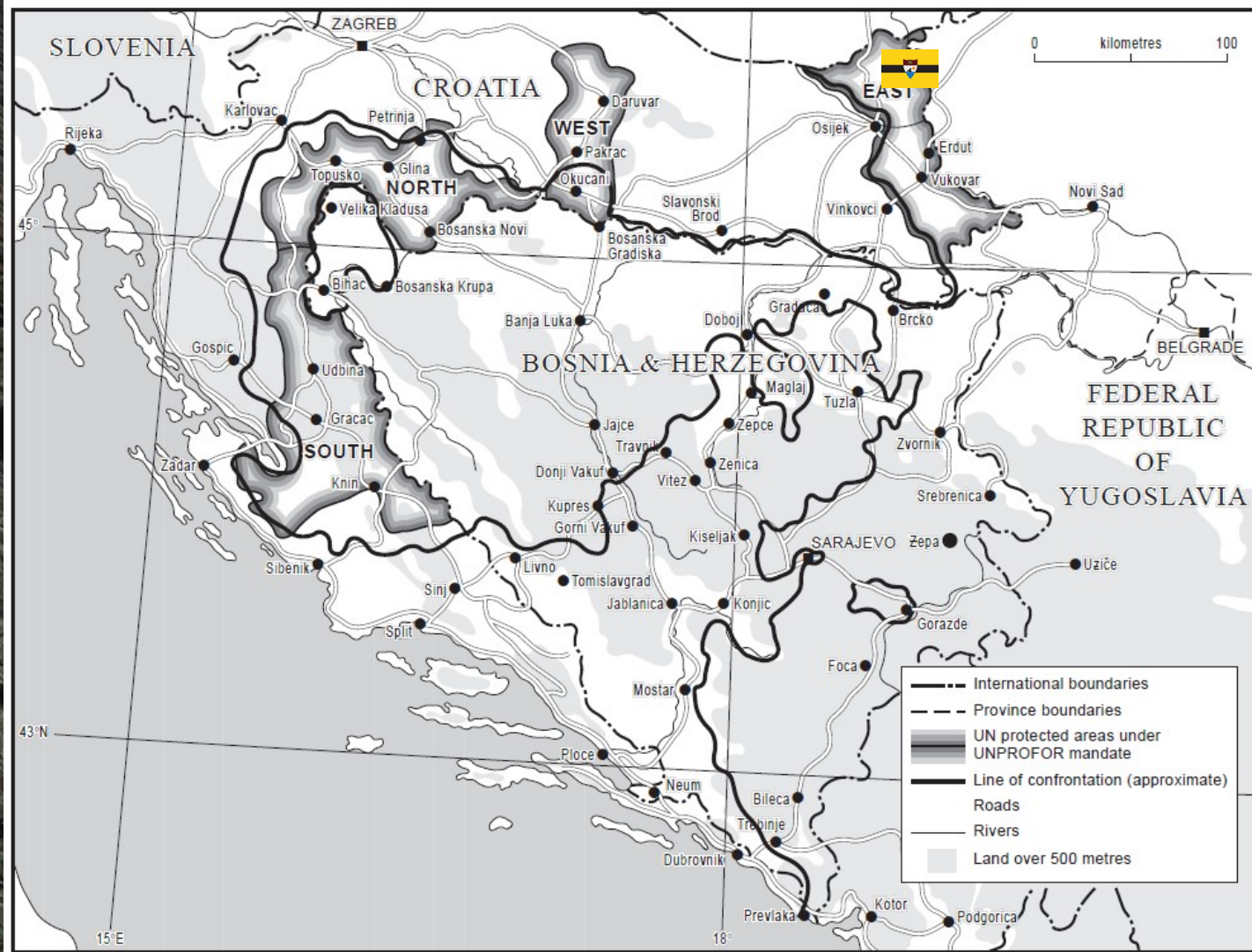
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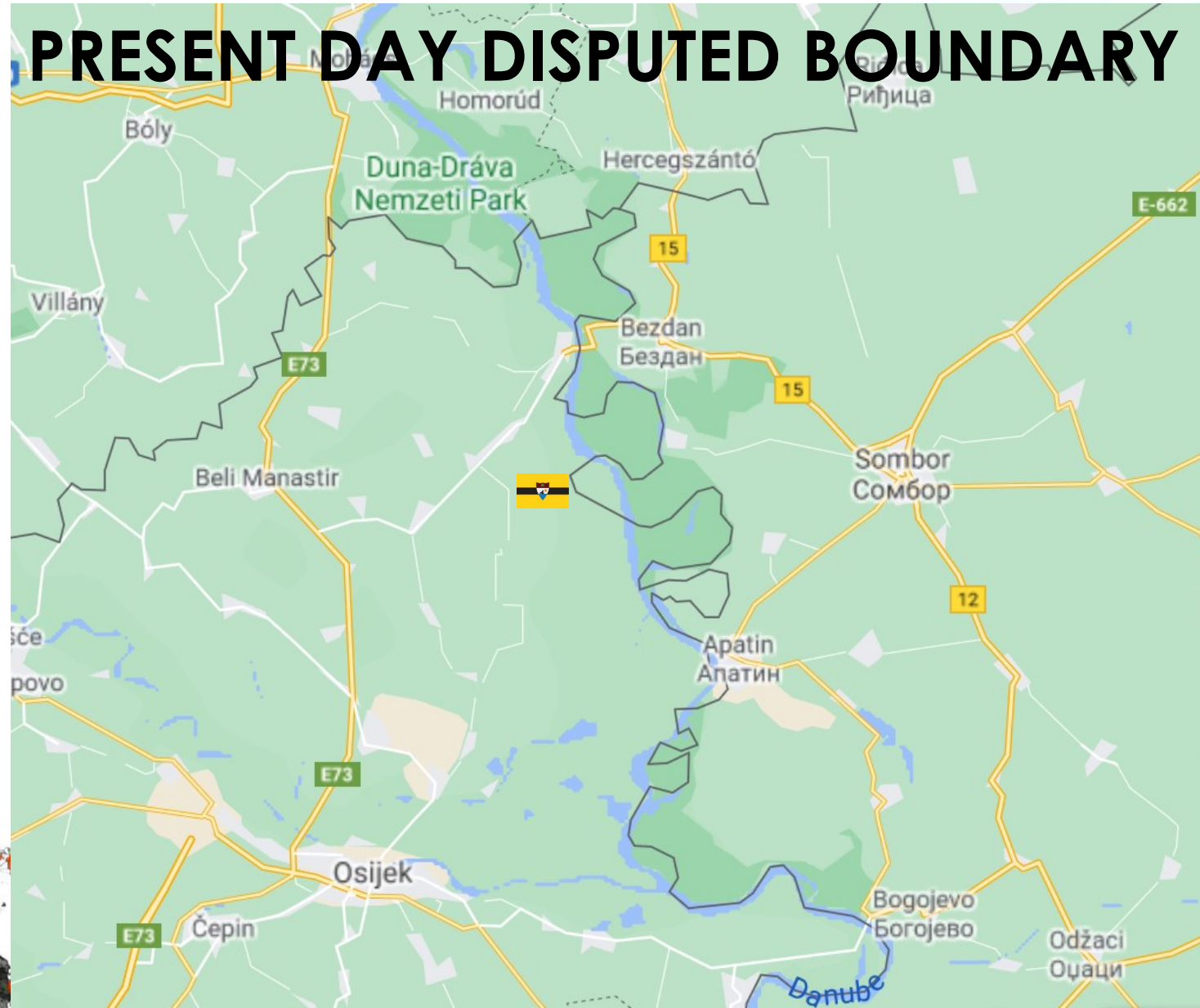
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YUGOSLAV WARS – 1990'S



PRESENT DAY DISPUTED BOUNDARY



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SATURDAY, MAY 16 AT 7:00AM

LIBERLAND DESIGN COMPETITION 2020

**register at
design.ll.land**

GLOBAL DESIGN COMPETITION

[instructions](#)

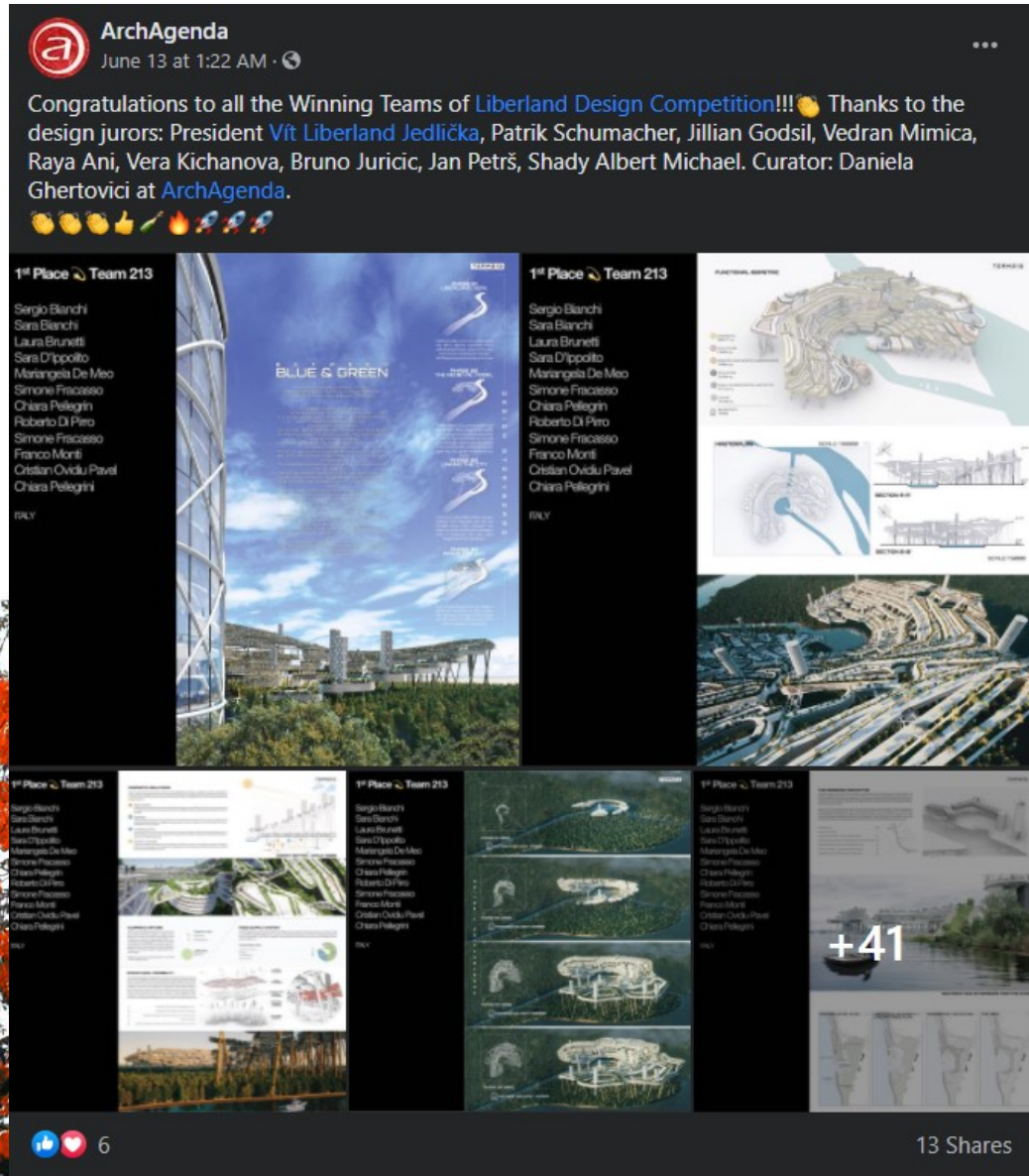
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WINNING LIBERLAND DESIGN ENTRIES

ArchAgenda Facebook Page <https://www.facebook.com/100057074725671/posts/266007961978359/?d=n>



LIBERLAND SITE + ECOLOGY

THE LAND OF LIBERLAND

Waterways

A collection of waterways, Liberland sits at the center of the Danube River, a vital body of water stretching from the Alps and flowing into the Adriatic Ocean. The river is about 100 km long, and the Danube River is the longest river in the Balkans. The Danube River and other tributaries during the large waterway.

Transportation

Liberland is the main transportation hub in the region of the Danube, connecting various cities and towns. The Danube River is the main transportation route, and the Danube River is the main transportation route. The Danube River is the main transportation route, and the Danube River is the main transportation route.

Land Use

Liberland is a small, rectangular area of land, about 100 km long and 10 km wide. The land is mostly flat, and the land is mostly flat. The land is mostly flat, and the land is mostly flat. The land is mostly flat, and the land is mostly flat.

Water + Wastewater

Water Treatment

Water treatment is a process of removing impurities from water. Water treatment is a process of removing impurities from water. Water treatment is a process of removing impurities from water. Water treatment is a process of removing impurities from water.

SOLID WASTE

Waste Treatment

Waste treatment is a process of removing impurities from waste. Waste treatment is a process of removing impurities from waste. Waste treatment is a process of removing impurities from waste. Waste treatment is a process of removing impurities from waste.

LIBERLAND TRANSPORTATION

INTRACITY TRANSPORTATION

Walking

Walking is the most common mode of transportation in Liberland. Walking is the most common mode of transportation in Liberland. Walking is the most common mode of transportation in Liberland. Walking is the most common mode of transportation in Liberland.

Bicycles and Scooters

Bicycles and scooters are popular modes of transportation in Liberland. Bicycles and scooters are popular modes of transportation in Liberland. Bicycles and scooters are popular modes of transportation in Liberland. Bicycles and scooters are popular modes of transportation in Liberland.

Public Transportation

Public transportation is a key mode of transportation in Liberland. Public transportation is a key mode of transportation in Liberland. Public transportation is a key mode of transportation in Liberland. Public transportation is a key mode of transportation in Liberland.

Regional Transportation

Regional transportation is a key mode of transportation in Liberland. Regional transportation is a key mode of transportation in Liberland. Regional transportation is a key mode of transportation in Liberland. Regional transportation is a key mode of transportation in Liberland.

LIBERLAND ENERGY

POWER

Renewable Energy

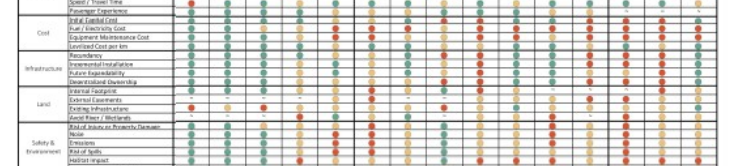
Renewable energy is a key source of power in Liberland. Renewable energy is a key source of power in Liberland. Renewable energy is a key source of power in Liberland. Renewable energy is a key source of power in Liberland.

Energy Storage

Energy storage is a key component of the power system in Liberland. Energy storage is a key component of the power system in Liberland. Energy storage is a key component of the power system in Liberland. Energy storage is a key component of the power system in Liberland.

Heating and Cooling

Heating and cooling are key components of the power system in Liberland. Heating and cooling are key components of the power system in Liberland. Heating and cooling are key components of the power system in Liberland. Heating and cooling are key components of the power system in Liberland.



TEAM 215

TEAM 215

TEAM 215



ANARCHITECTURE DESIGN TEAM

Tim Brochu
Joe Brochu

Architect
Engineer (Power Systems)

Anarchitecture Podcast
Anarchitecture Podcast

Goshe King
Joe Green

Mechanical/ HVAC Engineer
Mechanical/ HVAC Engineer

Engineering Tech Podcast
Engineering Tech Podcast

CarCampIt

Civil Engineer

Timeline Earth (The Podcast
Formerly Known as Friends
Against Government)

John Ellis

Architect

Palmer & Ryan

Architects

Problematic Podcast

Andy Boenau

Urbanism / Transportation

Urbanism Speakeasy,
How We Get Around

Mat Slaughter

Engineer



ANARCHITECTURE podcast

Designing Liberland: How to Build an Autonomous City

Why hasn't Liberland been developed?

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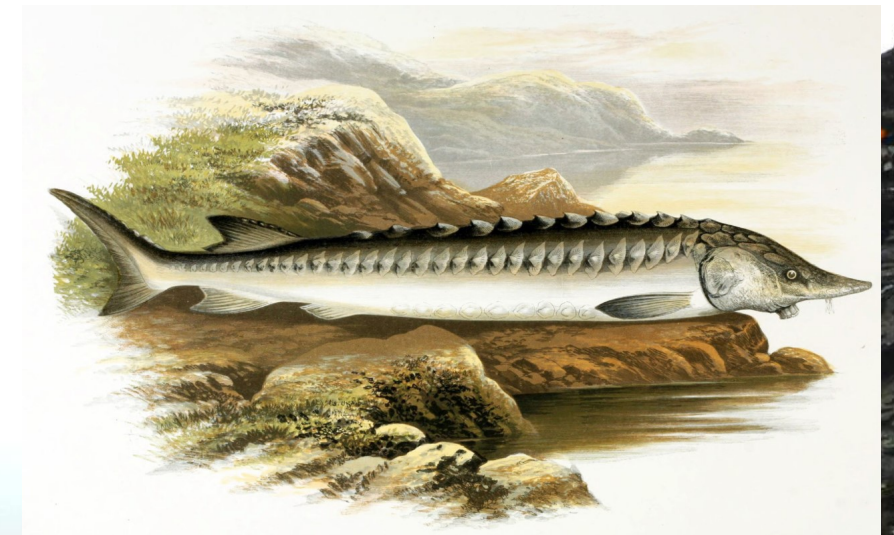
Why hasn't Liberland been developed?

WETLANDS



Why hasn't Liberland been developed?

WETLANDS



Why hasn't Liberland been developed?

FLOODING

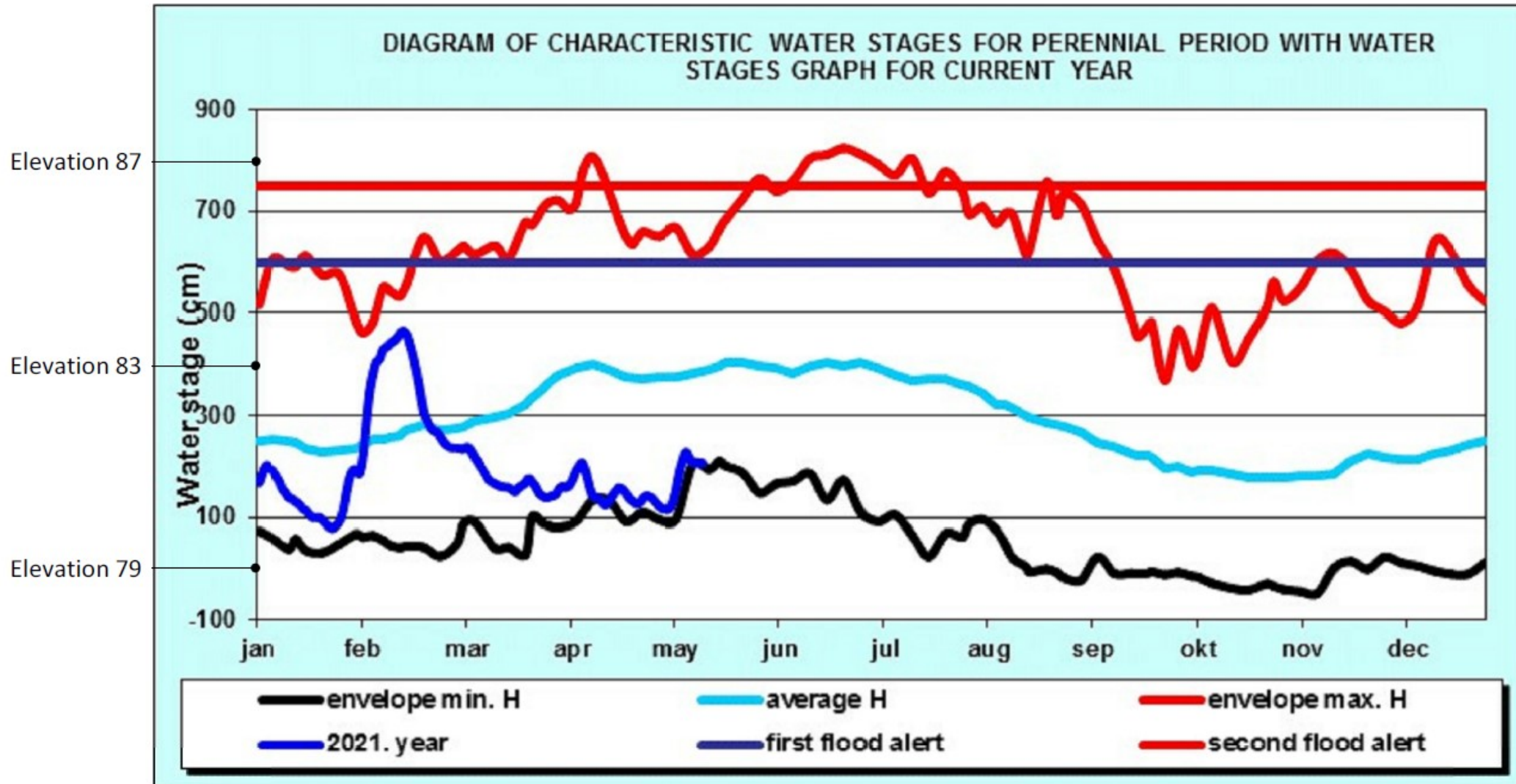


Image Source: Republic of Serbia, Republic Hydrometeorological Service of Serbia, Reporting surface water station: APATIN; May 13 2021; http://www.hidmet.gov.rs/eng/hidrologija/izvestajne/prognoza.php?hm_id=42015



Designing Liberland: How to Build an Autonomous City

FLOODING

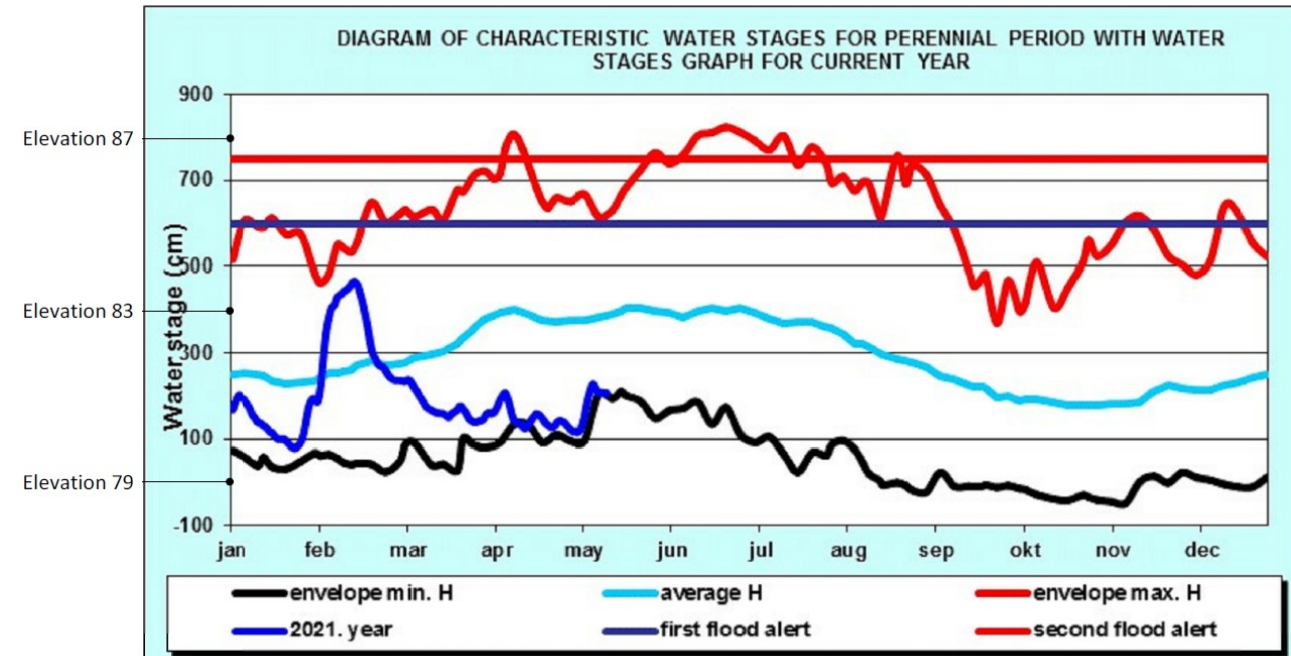
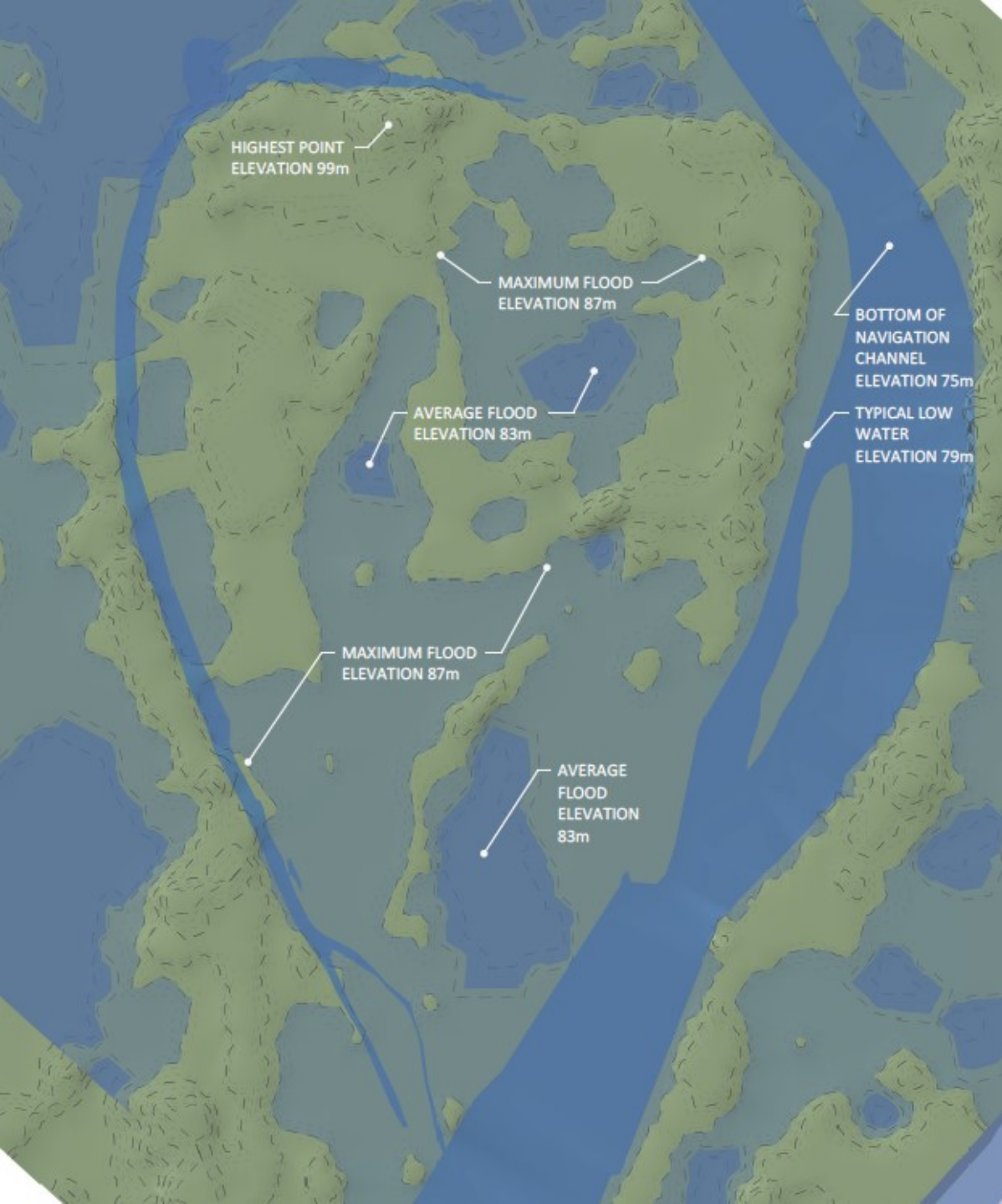


Image Source: Republic of Serbia, Republic Hydrometeorological Service of Serbia, Reporting surface water station: APATIN; May 13 2021; http://www.hidmet.gov.rs/eng/hidrologija/izvestajne/prognaza.php?hm_id=42015

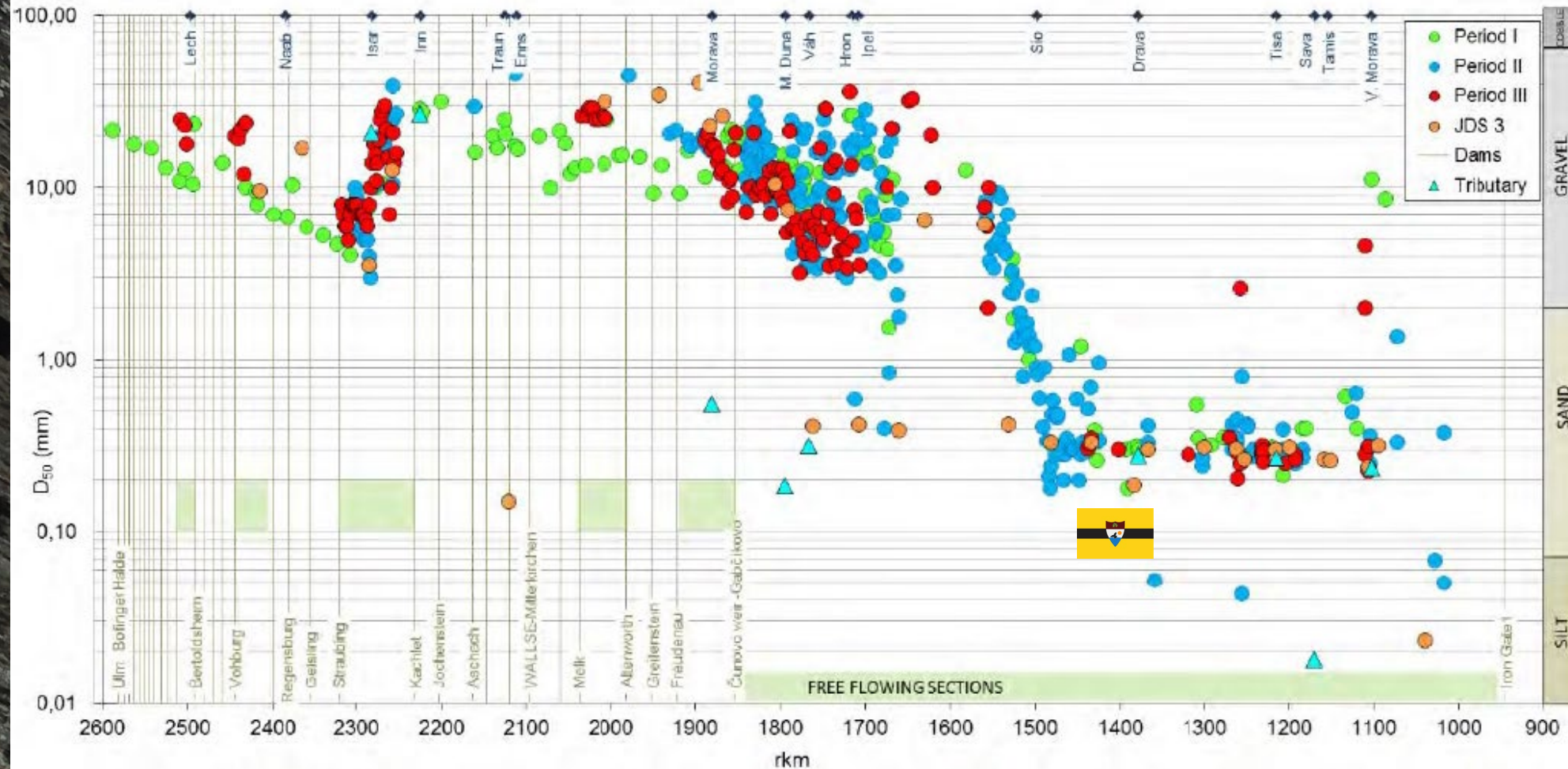
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Why hasn't Liberland been developed?

SOILS

Eutric Fluvisol ("Mud")



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Why hasn't Liberland been developed?

BECAUSE LIBERLAND IS NOT DEVELOPABLE LAND

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Why hasn't Liberland been developed?



Rendering of András Györfi's "The Swimming City"
Original uploader was [JackDayton](#) at [en.wikipedia](#) -
Transferred from [en.wikipedia](#) (Andras Gyorfi, TSI, <http://seasteading.org/design-contest-winners>, this image is CCA)



OPPORTUNITIES FOR AUTONOMY

- International waterway
- Infrastructure redundancy
- Investment in depressed region
- Environmental stewardship
- International multi-cultural society
- Win-win solutions

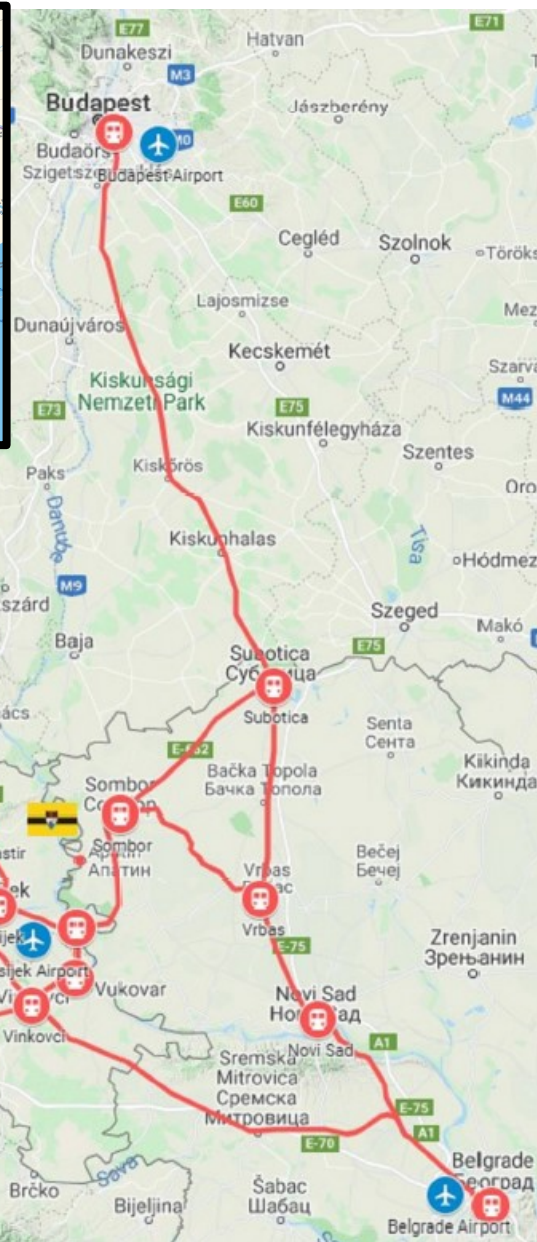


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TRANSPORTATION



Roads
River
Trains
Buses
Planes

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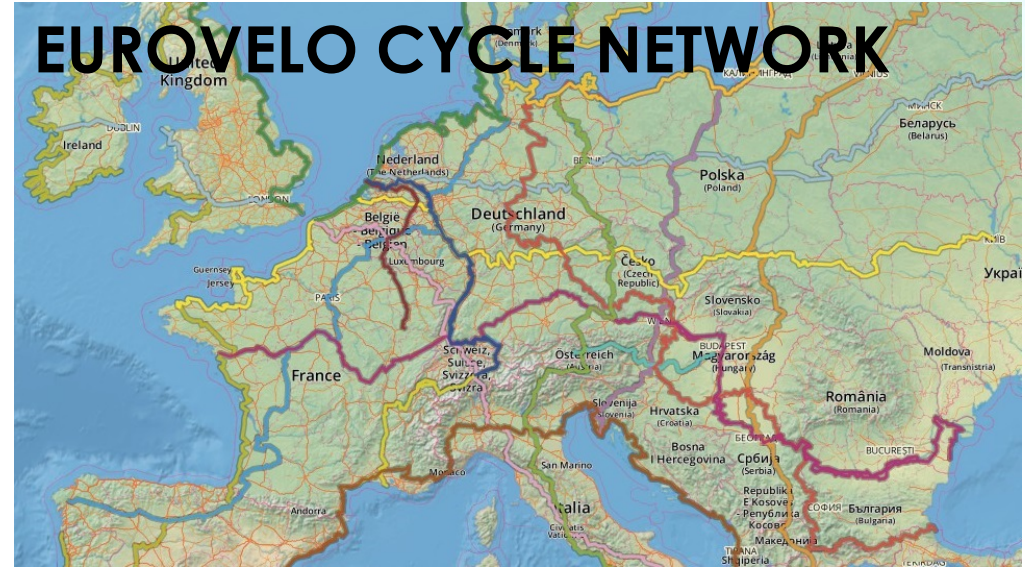


TRANSPORTATION



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EUROVELO CYCLE NETWORK



GONDOLA – INTERNATIONAL TRAVEL?



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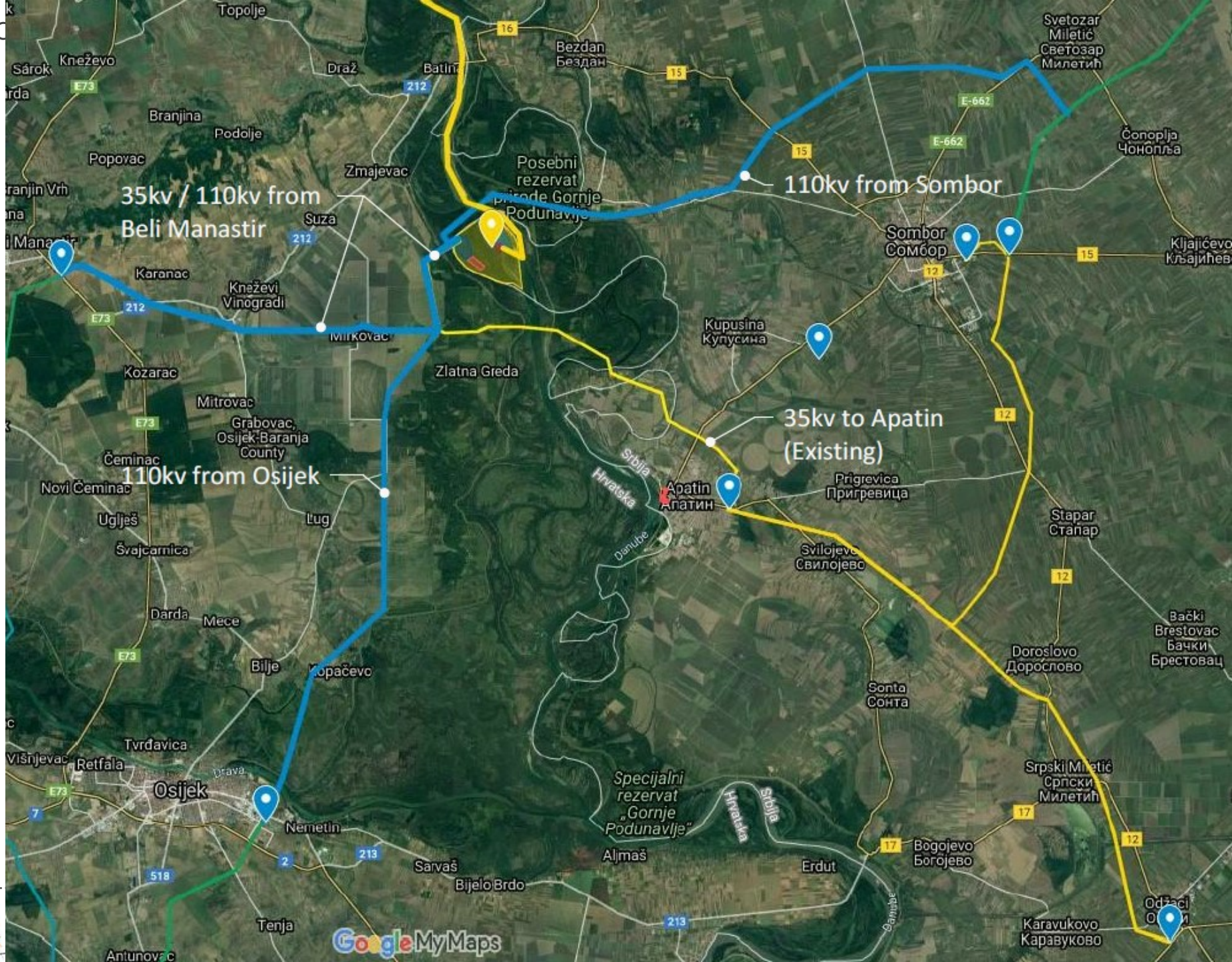
ENERGY – SELF-SUFFICIENCY OR REDUNDANCY?

[illegible]

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ENERGY

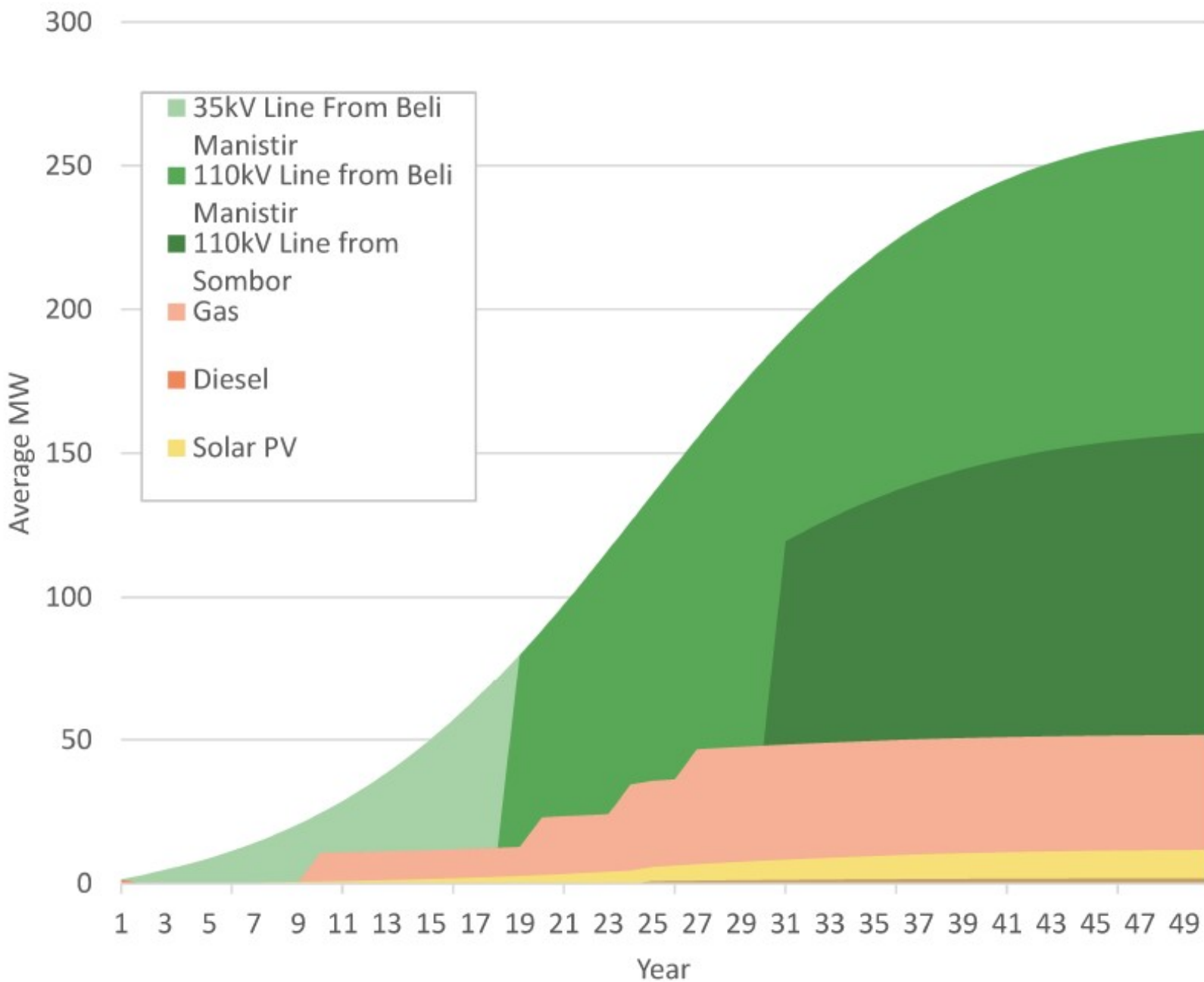
Power Grid



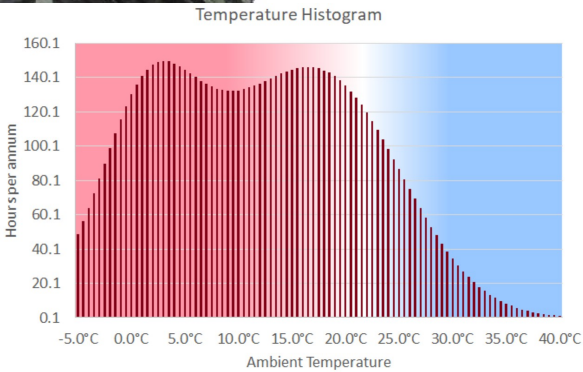
ENERGY MIX OVER 50 YEARS

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Energy Mix: Power Supply by Source Over 50 Years



Note: Energy intensive industries such as datacenters and blockchain mining farms would further increase this demand.



ENERGY – HEATING AND COOLING

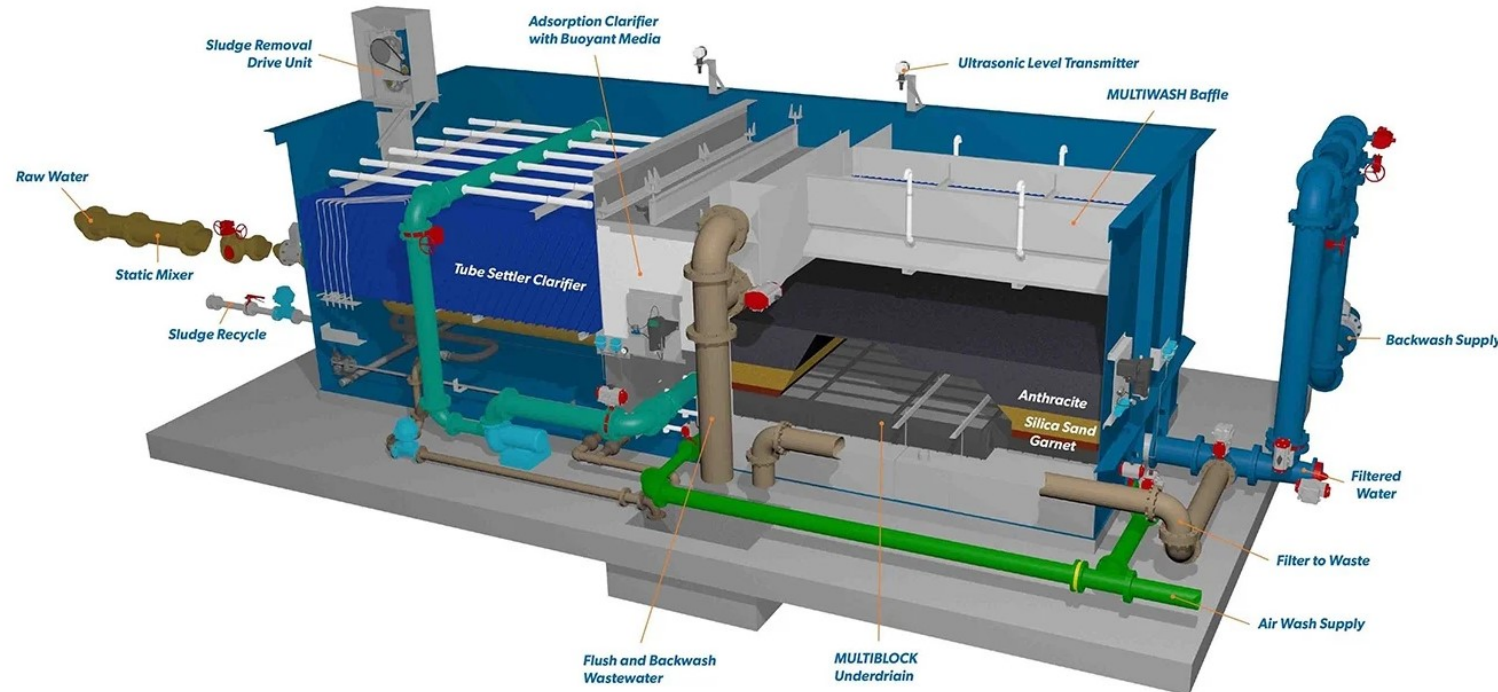
 Hours per annum Ambient Temperature		Heating					Cooling		Combined Heating/Cooling	
		Diesel / Fuel Oil	Natural Gas	Central Heating Plant (Gas)	Biogas Cogeneration	Natural Gas Cogeneration	Natural Ventilation	River Water Cooling	Electric Heat Pumps / Air Conditioning	Geothermal Ground Loops
Summary	Suitable for Liberland									
Capacity	Capacity (MW)									
	Annual Production (MWh/year)									
Infrastructure	Redundancy									
	Incremental Installation									
	Future Expandability									
	Equipment Lifespan									
	Decentralized									
Cost	Initial Capital Cost									
	Fuel / Import Tariff Cost									
	Equipment Maintenance Cost									
	Levelized Cost of Energy (\$/MWh)									
Land	Internal Footprint									
	External Easements									
Safety & Environment	Avoid River / Wetlands									
	Renewable Energy Source									
	Noise									
	Emissions									
	Risk of Spills									
	End of Life Disposal / Rehab									
Political	Imported Fuel Source									
	International Regulations									
	Resiliency (Disasters, War, etc)									

WATER AND WASTEWATER

WATER – River or Underground Aquifer

WASTEWATER – Enhanced treatment before returning to river

Trident® HS Package Water Treatment Plant

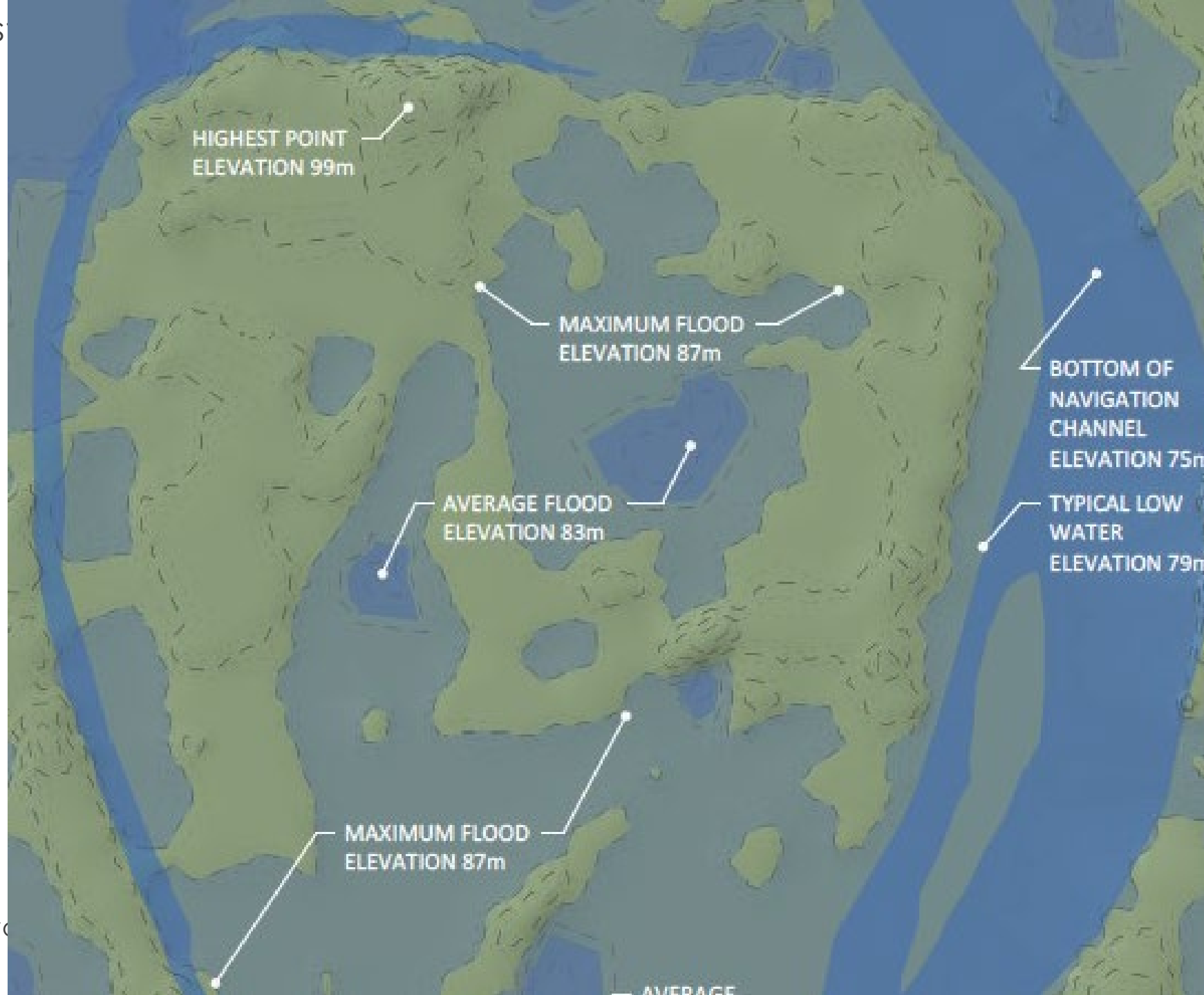
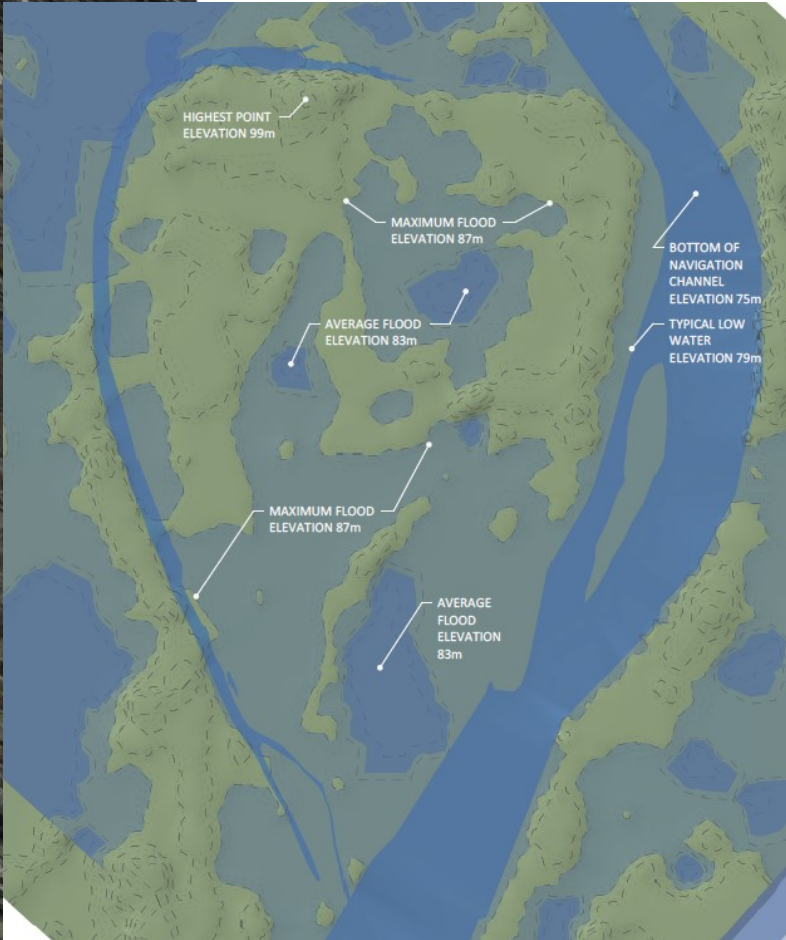


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OUR DESIGN



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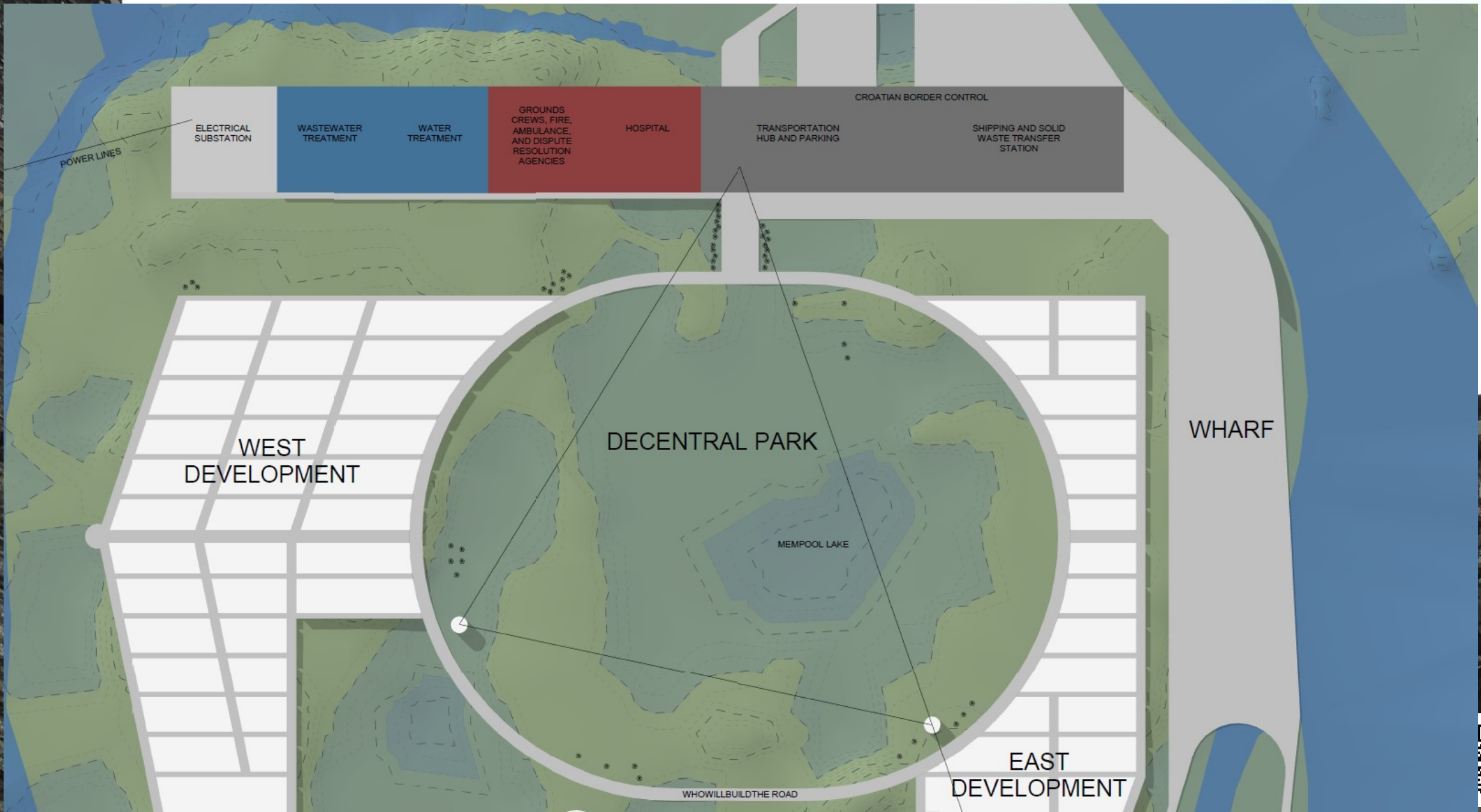
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OUR DESIGN



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DEVELOPMENT INCENTIVE D.A.O.'S

Blockchain-based
Decentralized Autonomous
Organizations to incentivize
development priorities
instead of rigid zoning

- **Density**
- **Open Space**
- **Environmental Mitigation**

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INFRASTRUCTURE D.A.O.

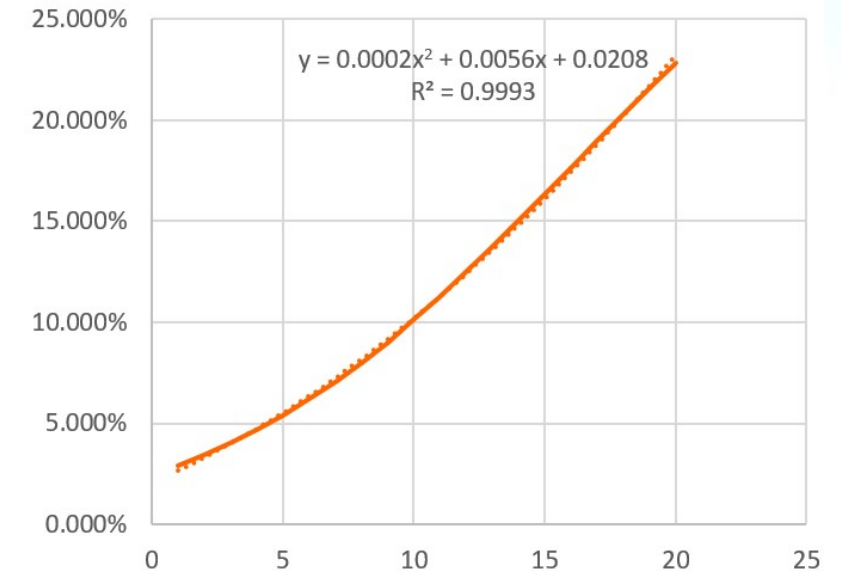
Interest rate increases as population increases

Users pay a fixed monthly rate

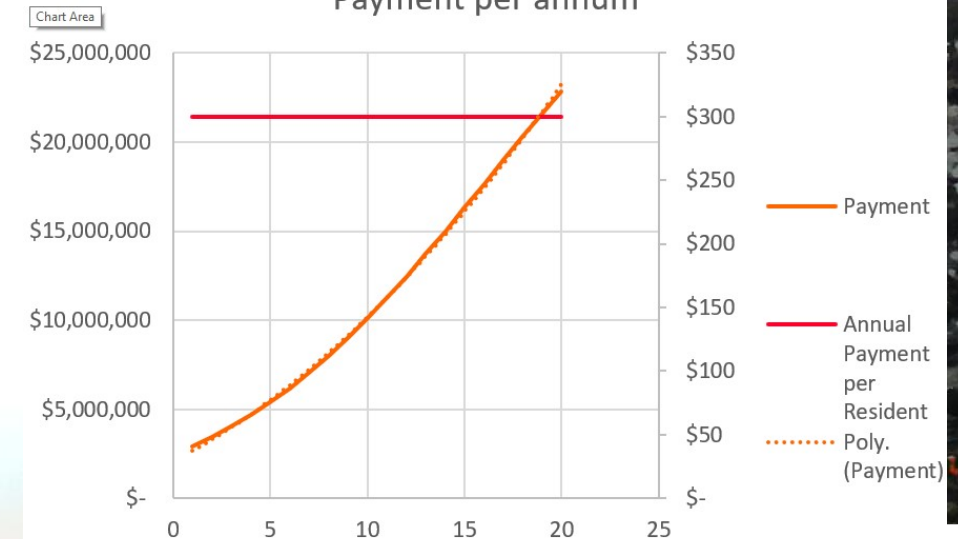
Initial Amount	\$ 100,000,000	Final Amount	\$ 230,845,383		
Per final Capita	\$ 1,313	Per Capita	\$ 3,032		
Initial payment per resident	\$ 300	Loan Profit	\$ 130,845,383		
IRR	6.8%	Profit %	131%		
Payback Years	13				
Loan Year	Population Serv	Annual Paymer	Payment	Rate	Cumulative Payment
0			-\$ 100,000,000		
1	9,646	\$ 300	\$ 2,893,733	2.894%	\$ 2,893,733
2	11,414	\$ 300	\$ 3,424,190	3.424%	\$ 6,317,923
3	13,385	\$ 300	\$ 4,015,571	4.016%	\$ 10,333,495
4	15,573	\$ 300	\$ 4,671,895	4.672%	\$ 15,005,389
5	17,989	\$ 300	\$ 5,396,640	5.397%	\$ 20,402,030
6	20,642	\$ 300	\$ 6,192,514	6.193%	\$ 26,594,544
7	23,537	\$ 300	\$ 7,061,190	7.061%	\$ 33,655,734
8	26,677	\$ 300	\$ 8,003,048	8.003%	\$ 41,658,782
9	30,056	\$ 300	\$ 9,016,923	9.017%	\$ 50,675,706
10	33,666	\$ 300	\$ 10,099,894	10.100%	\$ 60,775,600
11	37,490	\$ 300	\$ 11,247,134	11.247%	\$ 72,022,734
12	41,506	\$ 300	\$ 12,451,847	12.452%	\$ 84,474,581
13	45,684	\$ 300	\$ 13,705,323	13.705%	\$ 98,179,903
14	49,990	\$ 300	\$ 14,997,106	14.997%	\$ 113,177,009
15	54,384	\$ 300	\$ 16,315,296	16.315%	\$ 129,492,305
16	58,823	\$ 300	\$ 17,646,961	17.647%	\$ 147,139,267
17	63,262	\$ 300	\$ 18,978,626	18.979%	\$ 166,117,892
18	67,656	\$ 300	\$ 20,296,816	20.297%	\$ 186,414,709
19	71,962	\$ 300	\$ 21,588,599	21.589%	\$ 208,003,308
20	76,140	\$ 300	\$ 22,842,075	22.842%	\$ 230,845,383

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Interest Rate



Payment per annum

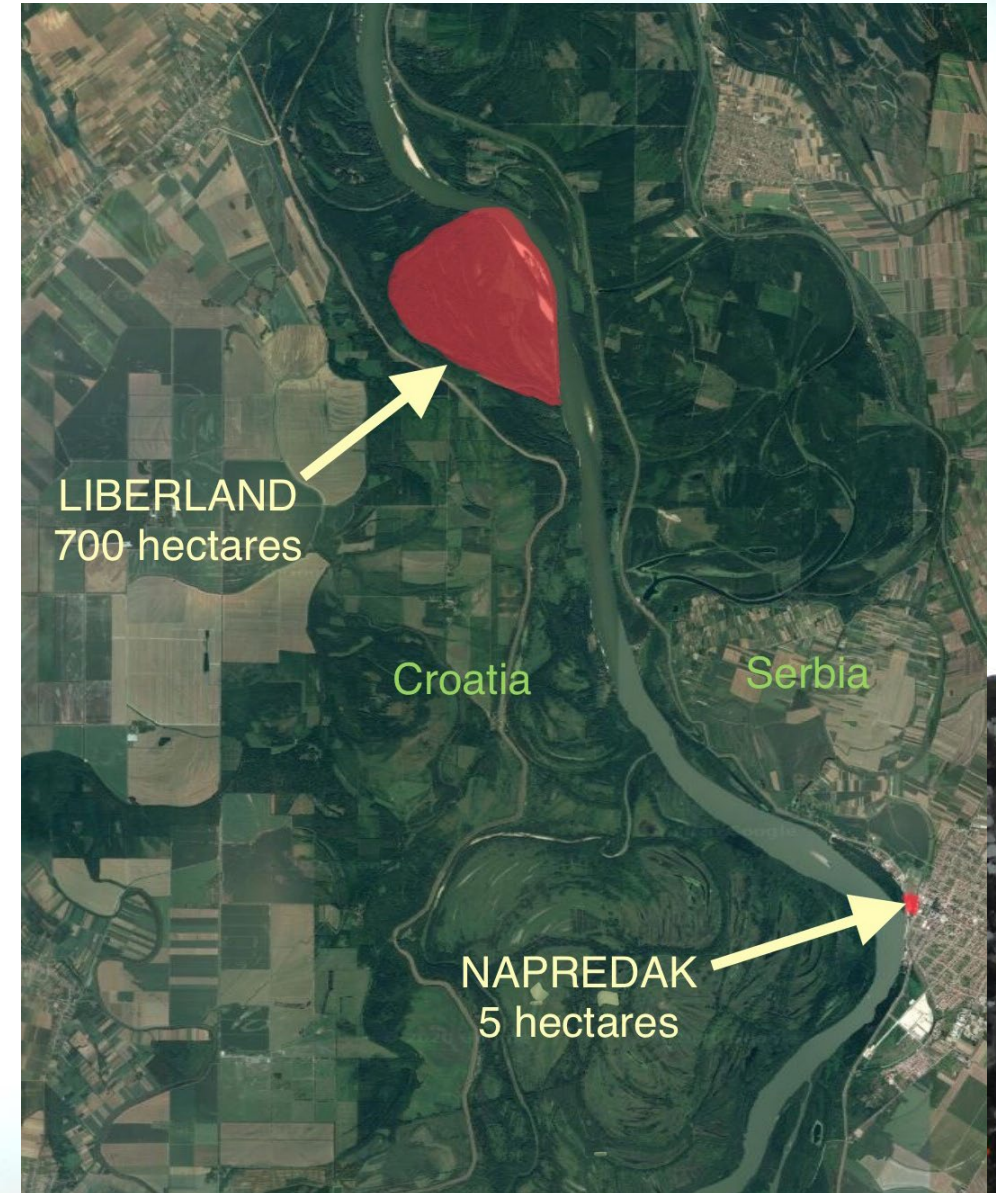


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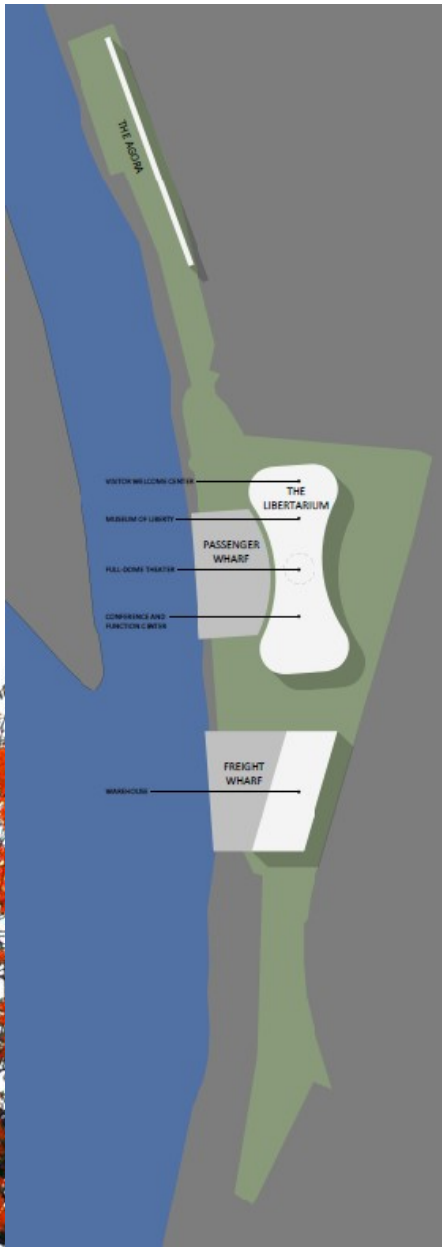


NAPREDAK

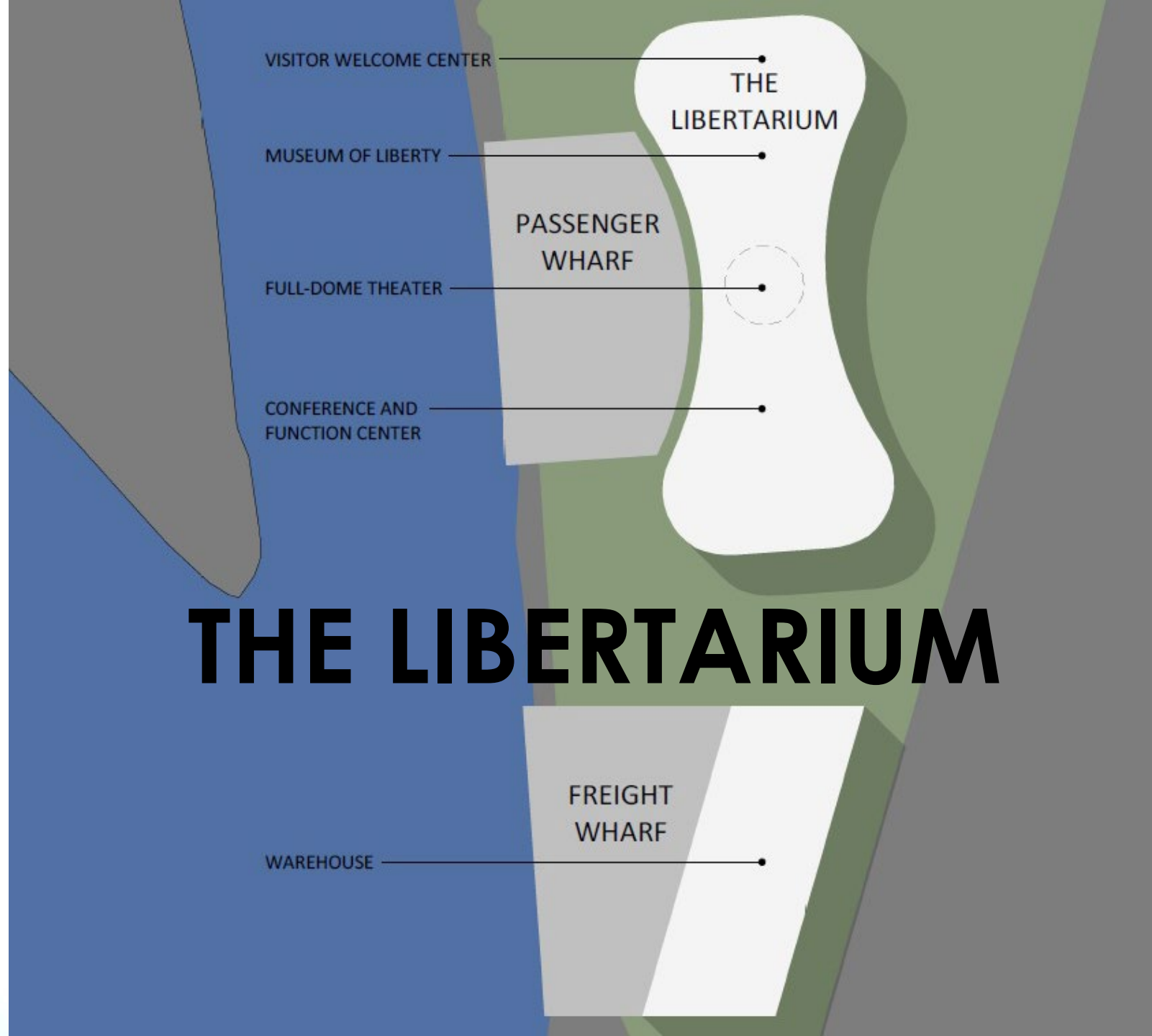
- Land parcel in Apatin, Serbia currently owned by Liberland
- Site of Floating Man Festival
- Ideal port for shipping and transportation to and from Liberland 10km downriver



NAPREDAK



Tim Brochu



THE LIBERTARIUM

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anarchism architecture infrastructure urbanism economy community

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