

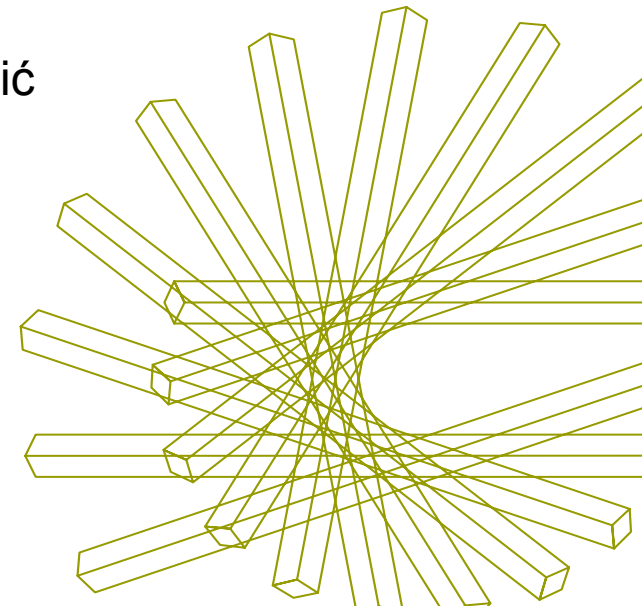


Sava Zagreb Megaproject Development

A Megaproject case study compiled by

Leo Penović, Ivana Burcar Dunović and Mladen Radujković

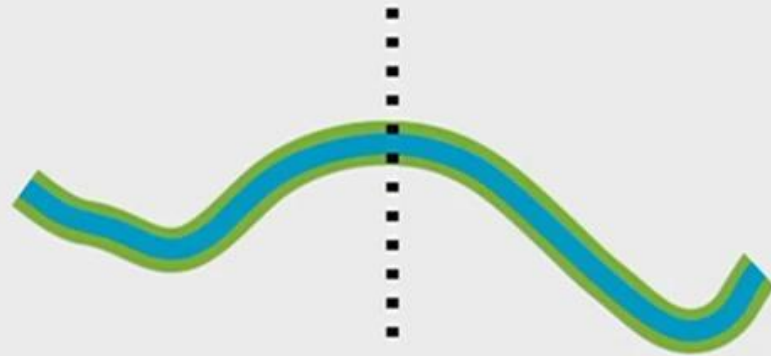
April 2015



MEGAPROJECT Case Study

Case compiled by: Leo Penović, Ivana Burcar Dunović and Mladen Radujković

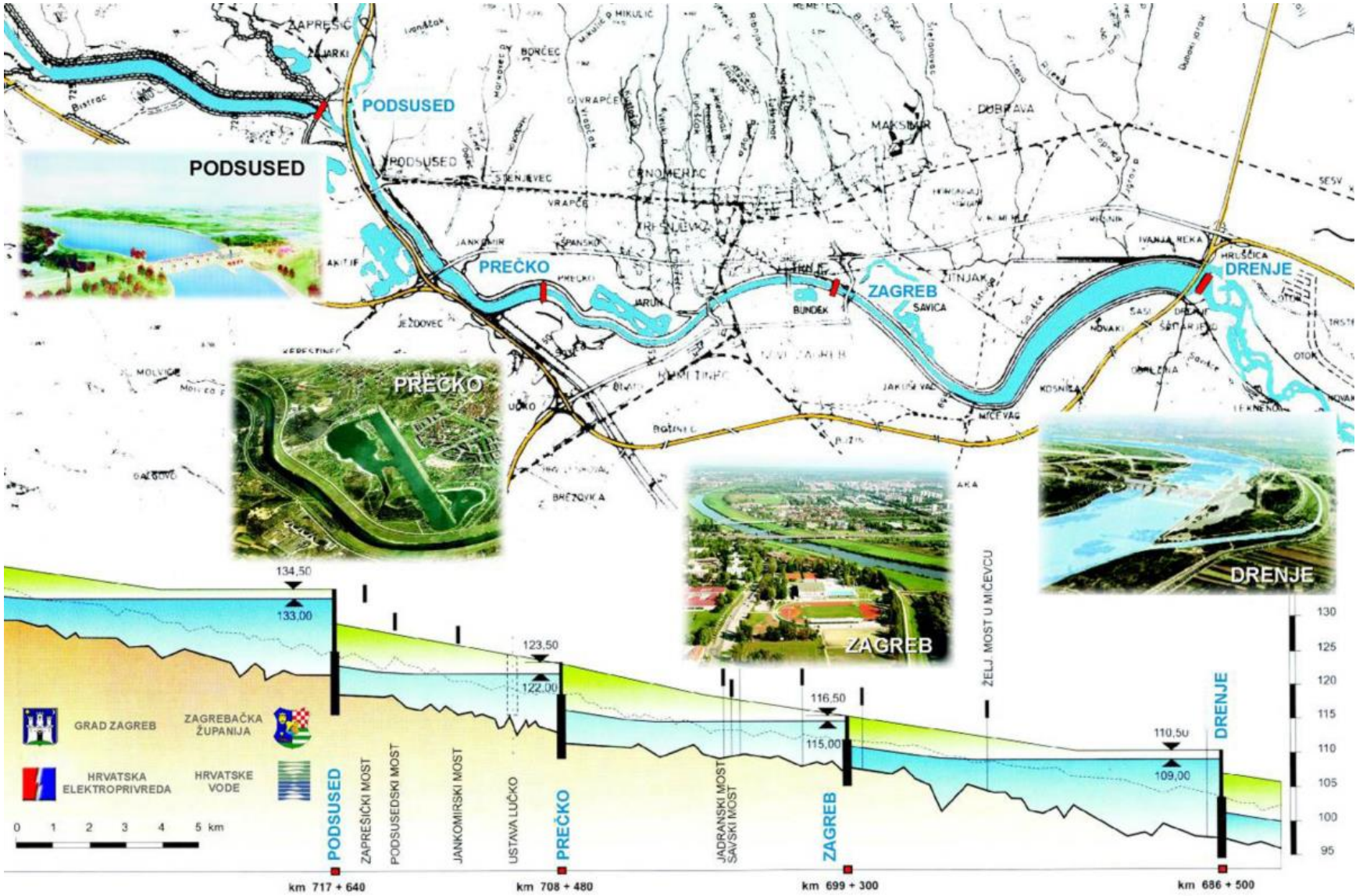
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Zagreb na Savi



MEGAPROJECT Case Study



Program Council

Ministry of the Economy
Ministry of Construction and Physical Planning
Ministry of Agriculture
City of Zagreb
Croatian Waters

Ministry of Regional Development and EU Funds
Ministry of Environment and Nature
Center for monitoring of the energy sector and investments
Zagreb County
HEP Group

Ministry of Foreign and European Affairs
Ministry of Maritime Affairs, Transport and Infrastructure
Sisak-Moslavina County

Strategic
management

Consultants Experts

Expert support for
Program manager

operational
decision-
making

ProgramSava d.o.o.
Program
manager

operational
decision-
making

Taskforce

Ministry of the Economy
Ministry of Maritime Affairs, Transport and
Infrastructure
Ministry of Regional Development and EU Funds
Ministry of Environment and Nature
Ministry of Agriculture
Ministry of Construction and Physical Planning
City of Zagreb
Zagreb County
Sisak-Moslavina County
Croatian Waters
HEP Group
Center for monitoring of the energy sector and
investments

Expert
verification

Program Expert Advice

Independent experts from different sectors
Professional public

MEGAPROJECT Case Study

Basic Project Information

Project Title	Zagreb on Sava
Location	Croatia
Purpose	<ol style="list-style-type: none">1. Raising the level of flood protection, stabilization of the groundwater level and the development of agriculture2. Using the traffic potential of the Sava River and connect with Luka Rijeka3. Using the energy potential of the Sava River4. Enabling the development potential of the city of Zagreb on the land between the embankments
Scope	Sava river from Slovenian border to Sisak
Total Project Value	1,4 billion euro
Project Status (i.e.. initiation, planning, construction, operation, dismantling)	Initiation (development of feasibility study and strategic environmental assessment)
Contractual Framework (e.g. fixed price, cost-plus etc.)	Fixed price for design stage and different framework for construction phase including PPP, lump sum...
Relevant Physical Dimensions (e.g. height, width, volume, length)	Project spreads over 130km of river flow, while the project impact area is calculated at around 2000 km ² . Implementation of the project requires construction of 3 hydropower plants, 4 small hydropower plants and a significant reconstruction of a discharge channel.

MEGAPROJECT Internal Stakeholder Identification

(Stakeholders with a direct legally sanctioned relationship with the project)

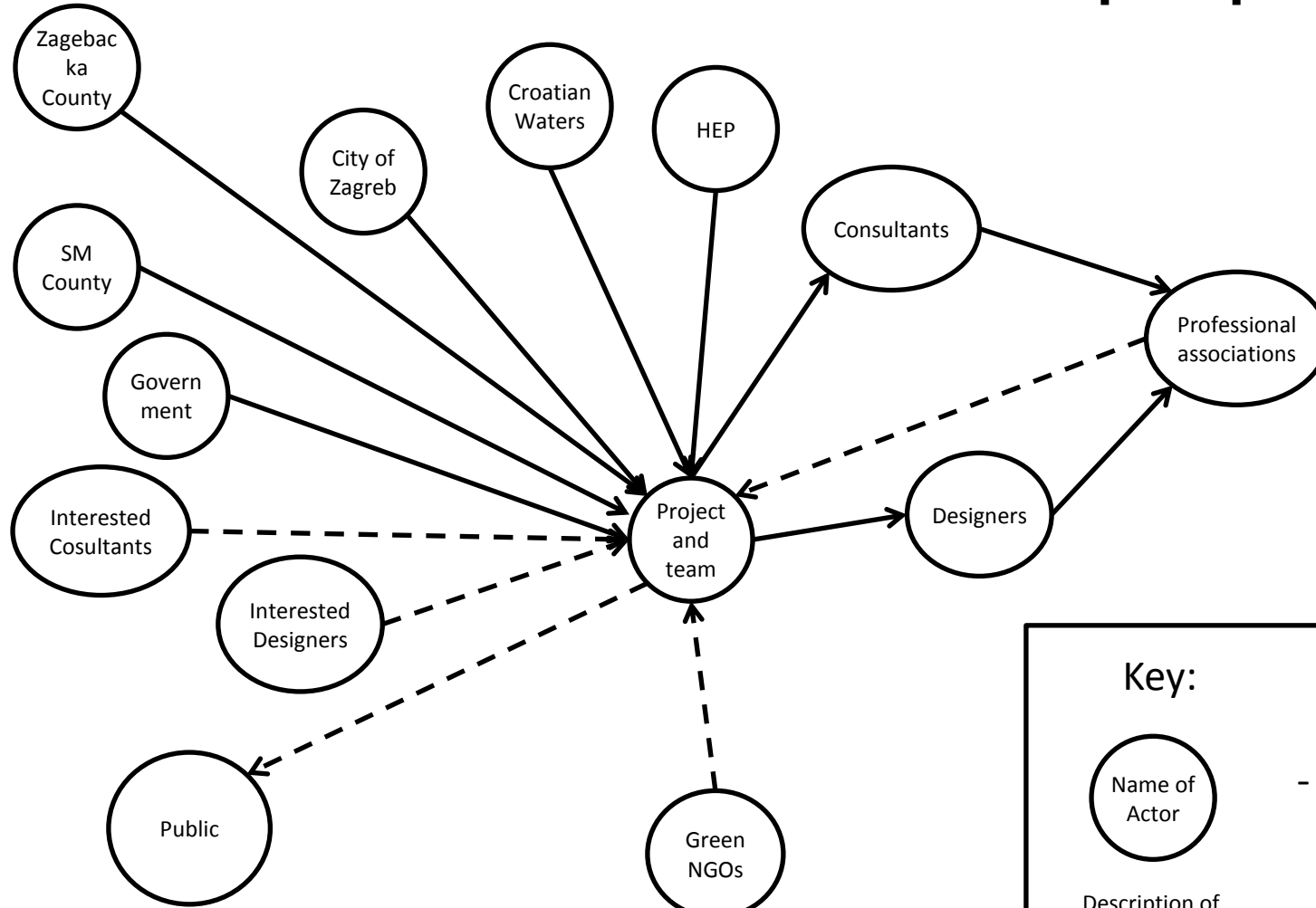
		Stakeholder Category	Case-Study	Comments (e.g. maturity, previous experiences of stakeholders, skills, influence on project)	
Internal	Supply-Side	Client	Public SPV company Program Sava		Project SPV
		Financiers	Owners European Commission		
		Sponsors	Directorate for Transport Infrastructure		
		Client's Customers	Citizens		
		Client's Owners	Government of Republic of Croatia The regional authorities - City of Zagreb, Zagrebačka County, Sisačko moslavačka County Public company – HEP Public company - Croatian waters		Strong political influence and low level of development skills
		Other internal supply-side categories (please specify)	Category	Case-Study	
		Members of expert council		Multidisciplinary expert council	
	Demand Side	Principal Contractor	Not known yet		
		First Tier Contractors	Not known yet		
		Second Tier Consultants	Elektroprojekt Zagreb Consotium MotMcDonald, WYG International, Atkins		Experienced local and international consultants
		Professional Services Providers			
		Other internal supply-side categories (please specify)	Category	Case-Study	

MEGAPROJECT External Stakeholder Identification




(Stakeholders with a direct interest in the project but with no legal contract)

		Stakeholder Category	Case-Study		Comments (e.g. maturity, previous experiences of stakeholders, skills, influence on project)	
External	Public	Regulatory Agencies	HERA, Inland water ways agency, Croatian waters			
		Local Government	Local regulatory entities – City of Zagreb, Zagrebačka County, Sisačko moslavačka County			
		National Government	Interested Ministries			
		Other internal supply-side categories (please specify)	Category	Case-study		
			Professional associations and chambers			
			Media			
	Private	Local residents	Residents of City of Zagreb, Zagrebačka County, Sisačko moslavačka County			
		Local Landowners	Land owners			
		Environmentalists	Environmentalists			
		Conservationists				
		Archaeologists				
		Other External Private stakeholders (please specify)	Category	Casestudy		
			Potential consultants			
			Potential designers			
Potential contractors						
Potential suppliers						

MEGAPROJECT Stakeholder Relationship Maps – Front End



Key:

-  - Project Actor
-  - Project relationship with a contractual basis
-  - Non-contractual project relationship

MEGAPROJECT External Stakeholder Attitude Analysis

External Stakeholder	External Stakeholder's Attitude to this Project	External Stakeholder's Influence on project	Impact of Project on External Stakeholder	Phase of Project of Greatest Interest (initiation, planning, construction, operation, dismantling)
7. Professional associations	interested	medium	strong	all
8. "Green" Associations and NGOs	suspicious	strong	Active strong	Initiation and planning
10. Interested designers	pro	low	strong	planning
12. Interested consultants	pro	low	strong	planning
13. Media	interested	huge	active	all
14. EU/EU funds	pro	huge	active	all
15. Public	Suspicious interested	strong	Continuously active	all

MEGAPROJECT Project Management

Project Organisation

Client Project Team Size & Structure	8 people in initiation phase
Contractor Project Team Size and Structure	
Sub-Contractor Project Team Involvement	

Project Tools and Techniques

Please ✓ if present, x if absent, leave blank if unknown

Life-Cycle Costing Approaches ✓	Project Management Software ✓	Lessons Learnt Transfers ✓
Stakeholder Involvement ✓	Relationship Management Tools ✓	Team Building Tools ✓
Building Information Modelling (BIM) X	Project Knowledge Management Tools X	Competency framework X

Other Tools and Techniques or More Information
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Project Processes

Risk Management Processes	Present (<i>describe below</i>) <input checked="" type="checkbox"/> Not Present <input type="checkbox"/> No Information <input type="checkbox"/> Team is continuously performing risk analysis and appropriate risk reductions are taken
HR Management Processes	Present (<i>describe below</i>) <input checked="" type="checkbox"/> Not Present <input type="checkbox"/> No Information <input type="checkbox"/> Public contest and direct engagement
Procurement Management Processes	Present (<i>describe below</i>) <input checked="" type="checkbox"/> Not Present <input type="checkbox"/> No Information <input type="checkbox"/> Public procurement
Integration Management Processes	Present (<i>describe below</i>) <input type="checkbox"/> Not Present <input checked="" type="checkbox"/> No Information <input type="checkbox"/>
Scope Management Processes	Present (<i>describe below</i>) <input checked="" type="checkbox"/> Not Present <input type="checkbox"/> No Information <input type="checkbox"/> Scope control
Time Management Processes	Present (<i>describe below</i>) <input checked="" type="checkbox"/> Not Present <input type="checkbox"/> No Information <input type="checkbox"/> Time schedule and progress control
Cost Management Processes	Present (<i>describe below</i>) <input checked="" type="checkbox"/> Not Present <input type="checkbox"/> No Information <input type="checkbox"/> Budgeting and controlling
Quality management Processes	Present (<i>describe below</i>) <input checked="" type="checkbox"/> Not Present <input type="checkbox"/> No Information <input type="checkbox"/> Quality manual and expert council revisions
Communications Management Processes	Present (<i>describe below</i>) <input checked="" type="checkbox"/> Not Present <input type="checkbox"/> No Information <input type="checkbox"/> Web page, conferences media, public consultation,

MEGAPROJECT Project Performance

Aspects of Performance Concerned with Doing the Project Right

	Original Targets and changes to targets	Actual Achievements Against Targets
Performance relating to time	Conceptual solution June 2013 MCA June 2014 Feasibility study august 2015 Permitting first phase 2015 Start of construction 2015 Full implementation 2028	Conceptual solution 2013 MCA June 2013 Feasibility study in progress....
Performance relating to cost	Conceptual solution 1 mill € Feasibility study 2 mill € Total value 1,4 bill €	Conceptual solution 1 mill € Feasibility study in progress....
Performance related to achieving specification	n/a	

MEGAPROJECT Project Environment

Legal and Regulatory Environment

Legal and Regulatory Project Environment (regionally, nationally and Europe wide)	EU Directives, Croatian legislative, local physical planning
Specific Legal and Regulatory events impacting on the project	Changes of physical plans on all levels, changes in legislative

Political Environment

Political Project Environment	Central, county and municipality government
Specific Political Events impacting on the project	Elections on all levels

MEGAPROJECT Project Environment

Economic Environment

Economic Project Environment	General economy environment, energy market, construction market
Specific Economic Events impacting on the project	Changes in energy prices, green incentives