

PPP's What Does it take for Road Projects? Eastern European Case Study (Romania)

Peter Snelson
Director PPP Consultancy
Project Development

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The Project

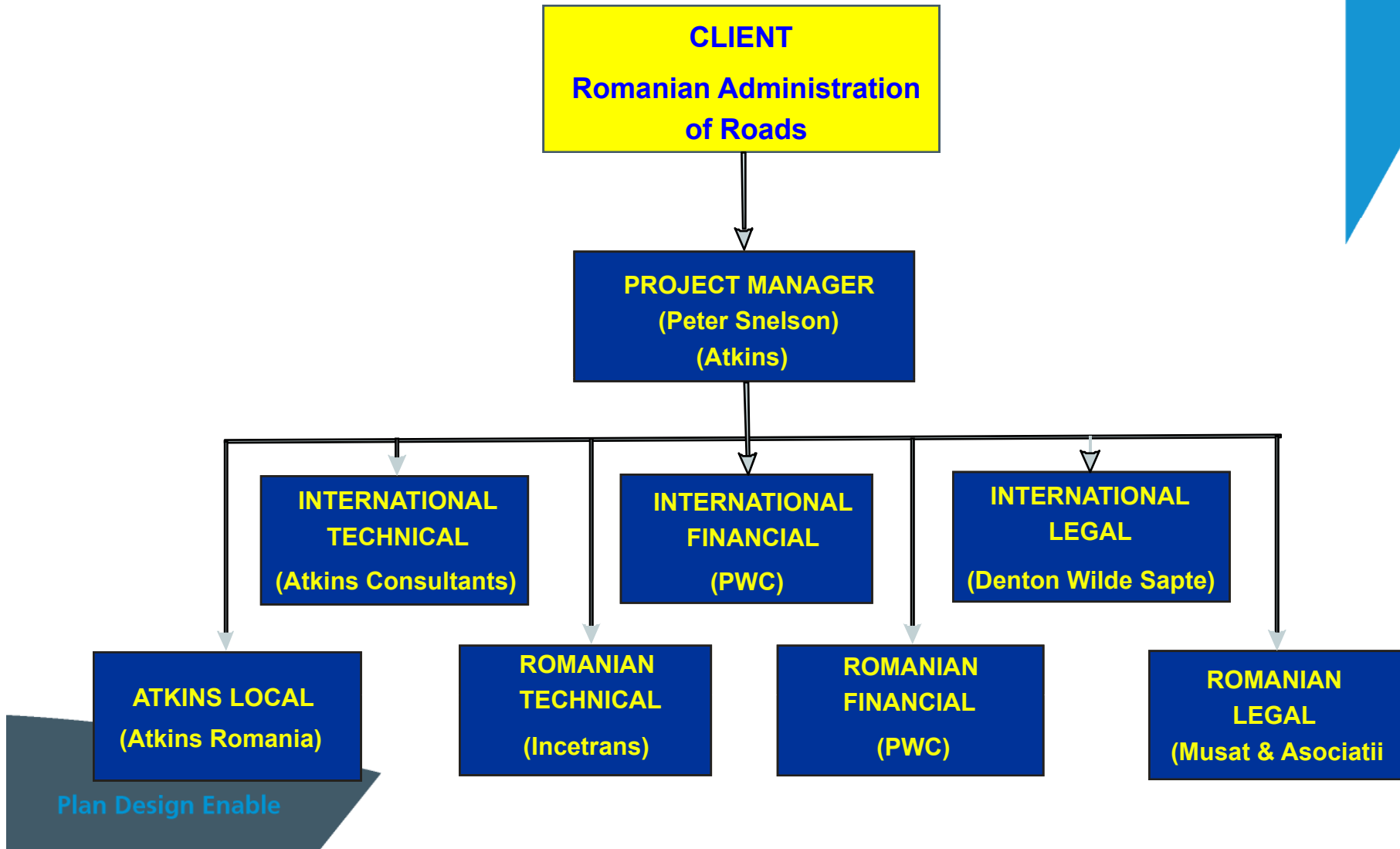


Plan Design Enable

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Project Organisation

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Outline Business Case

Legislative Issues

- Which Law Governs the Concession

Technical Issues

- Scope and Scale of Contracts
- Construction/Rehabilitation Options
- Performance Standards

Financial Issues

- Concession Spend Profile
- Financial Affordability/Viability

Public Sector Comparators

Payment Mechanisms

Legislative Issues

Which Law Governs the Concession?

The Motorway Law

- applies with priority as it is the specialist law which regulates the motorway concession

The Procurement Law

- applies to all public procurement and sets out the basic rules

The Concession Law

- applies on issues not addressed by the Motorway Law

The PPP Ordinance

- Motorway as a public asset raises a constitutional law issue (issues in relations between ordinance and laws)

Project Scope

Route DN1 Bucharest – Brasov 160km

- large number of settlements and frontage development throughout

Topography

- Bucharest – Ploiesti flat
- Ploiesti - Sinaia climbing into mountains
- Sinaia - Brasov mountainous

Road Segments

- Bucharest – Ploiesti (54km) with many accesses
- Ploiesti Bypass – (13km)
- Ploiesti – Comarnic (20km)
- Comarnic – Brasov (53km)

Structures

- 47 Bridges
- 73 Culverts

Scope of Concessions

Construct, Operate and Maintain

Base Concession - Regular Unitary Payment (Performance)

- Major New Construction
- Construction of Structures
- Major Rehabilitation (with Online Improvements)
- Routine Maintenance of Network (including Structures)
- Periodic Maintenance of Structures

Optional Works - Resource and Materials at Cost

- Road Safety Improvement Measures
- Environmental Measures (e.g. noise barriers)

Road Management

- Road-keeper Role with Total Responsibility for Route
- Day-to-day Operational Responsibilities shared with Route Operator

Scale of Concessions

Concession	Links	Description	Length
1	1 – 3	Bucharest – Ploiesti Ring	54.7 km
2	4 – 9	Ploiesti Ring – Sinaia	58.7 km
3	10 - 12	Sinaia – Brasov (DN1)	10.9 km
4	10-11,13-14	Sinaia – Brasov (via Predeal and Rasnov)	44.5 km
Total Length			191.5 km

Scale of Concessions (Whole Life Costs € M)

Strategy	Construction / Rehabilitation	Periodic Maintenance	Routine Maintenance	Total Euros
1	0.00	1.77	32.4	34.17
2	9.70	19.60	11.78	41.08
3	361.87	29.17	18.34	409.38
4	944.23	42.67	20.18	1007.08
5a	1231.38	6.00	29.97	1267.35
5b	1234.67	24.85	30.73	1290.25
6	1021.40	29.90	13.38	1064.68

Construction/Rehabilitation Options

Construction/rehabilitation based upon *Condition*

- New construction to take place within the first two years of the concession
- Years 1 and 2 upgrading for all sections of the route in very bad condition
- Years 3 and 4 upgrading for all sections in bad condition.
- Year five, upgrading all sections that are in fair, bad or very bad condition, bringing them to very good condition

Construction/rehabilitation based upon *Economic Return*

- New construction to take place within the first two years of the concession
- Year 1 to 5 rehabilitation and upgrading of all sections according to the cost benefits that would be attributed to the concessionaire

Construction/rehabilitation based upon *Traffic Flow*

- New construction to take place within the first two years of the concession
- Year 1 to 5 upgrading of all sections according to the traffic level, dealing with the heavily trafficked sections first, working down to the sections carrying the lightest levels of traffic

Performance Based Standards

for Routine & Winter Maintenance

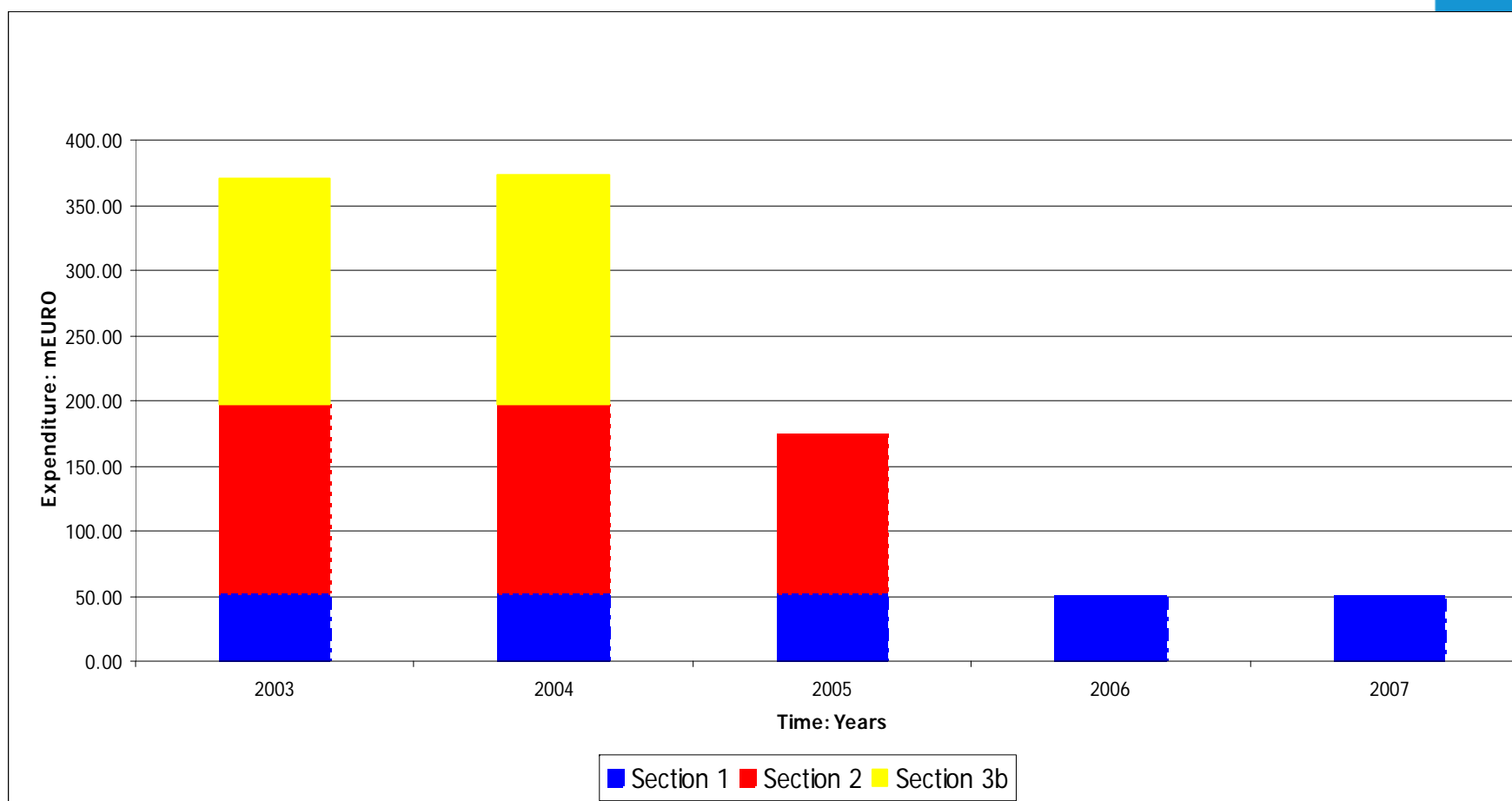
Based on:

- Output Specification
- Road Functional and Maintenance Classification
- Road User Level of Service Requirements
- Allowing Innovation and Application
- Payment on Performance / Availability

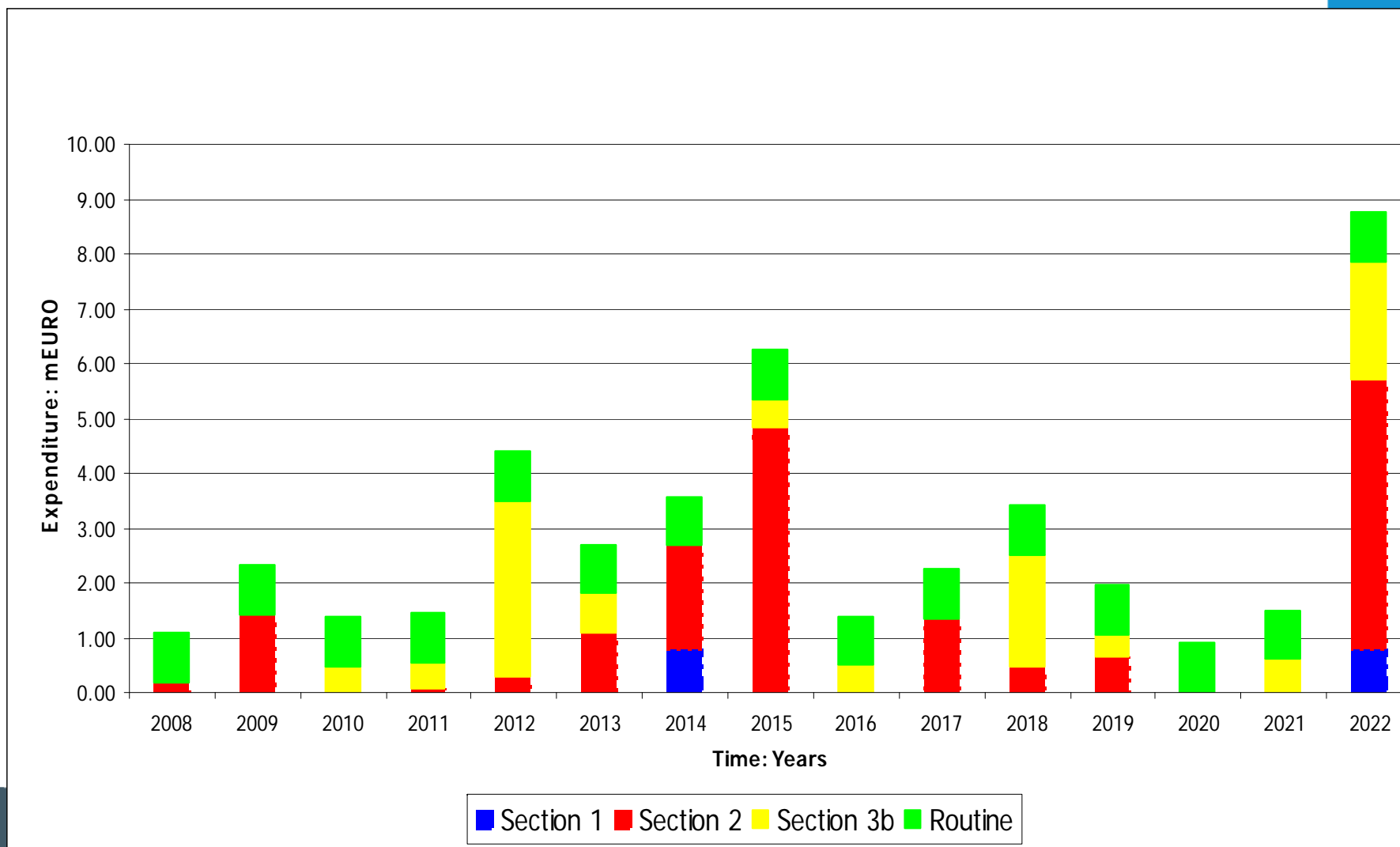
Versus

- Input Specification
- All roads treated equally
- No recognition of Level of Service
- Detailed Requirements and standards for Materials and Equipment
- Schedule of unit prices and estimates of quantities with no Quality Control

Concession Spend Profile Years 1-5

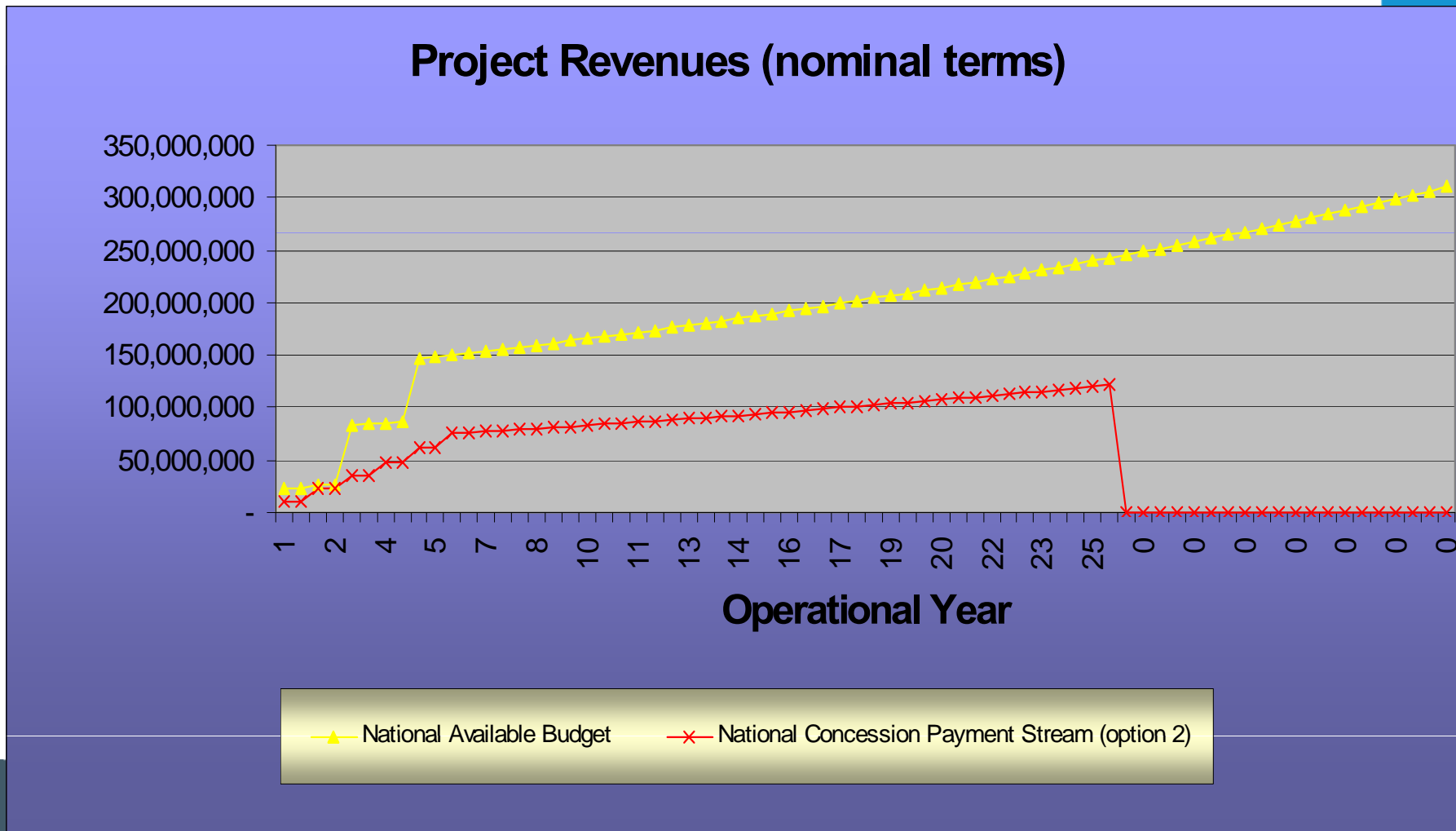


Concession Spend Profile after Year 5



Financial Affordability and Viability

Budget Availability and Payment Stream



Public Sector Comparator

Private Sector Delivery (PPP)

- 15% saving in Capital Cost for Construction
- 25% efficiency saving for Routine Maintenance
- 10% saving through Level of Service and Quality Assurance
- 1 year saving on construction period
- WACC 8.5%

Versus

Public Sector Service Delivery (Traditional)

- 40% average cost overrun
 - 2 year average time delay
 - WACC 4%
-
- NPV Calculated on 10% discount rate

Public Sector	NPV €m 611.00
Private Sector	NPV €m 520.00

Performance Based Payment

Key Principles

- to ensure that payments made can be related to measurable levels of service provided in a rational manner;
- to include a clear penalty deduction payment and default system;
- to take account of the key policy objectives of the public sector;
- to underpin the principal cost drivers of the private sector and their changing profiles through the contract period in order to deliver the services expected (otherwise the private sector would incorporate unnecessary price premium);
- to be simple, which eases understanding, implementation and administration and audit (otherwise any cost saving would be offset by higher cost of running the payment mechanism);
- to be able to stand the test of time (i.e. without having to be revised periodically, which reduces bankability and is time consuming); and
- to take account of the degree of trust between the contracting parties and the level of business propriety as large sums of money are involved

Performance Based Payment

Recommendations

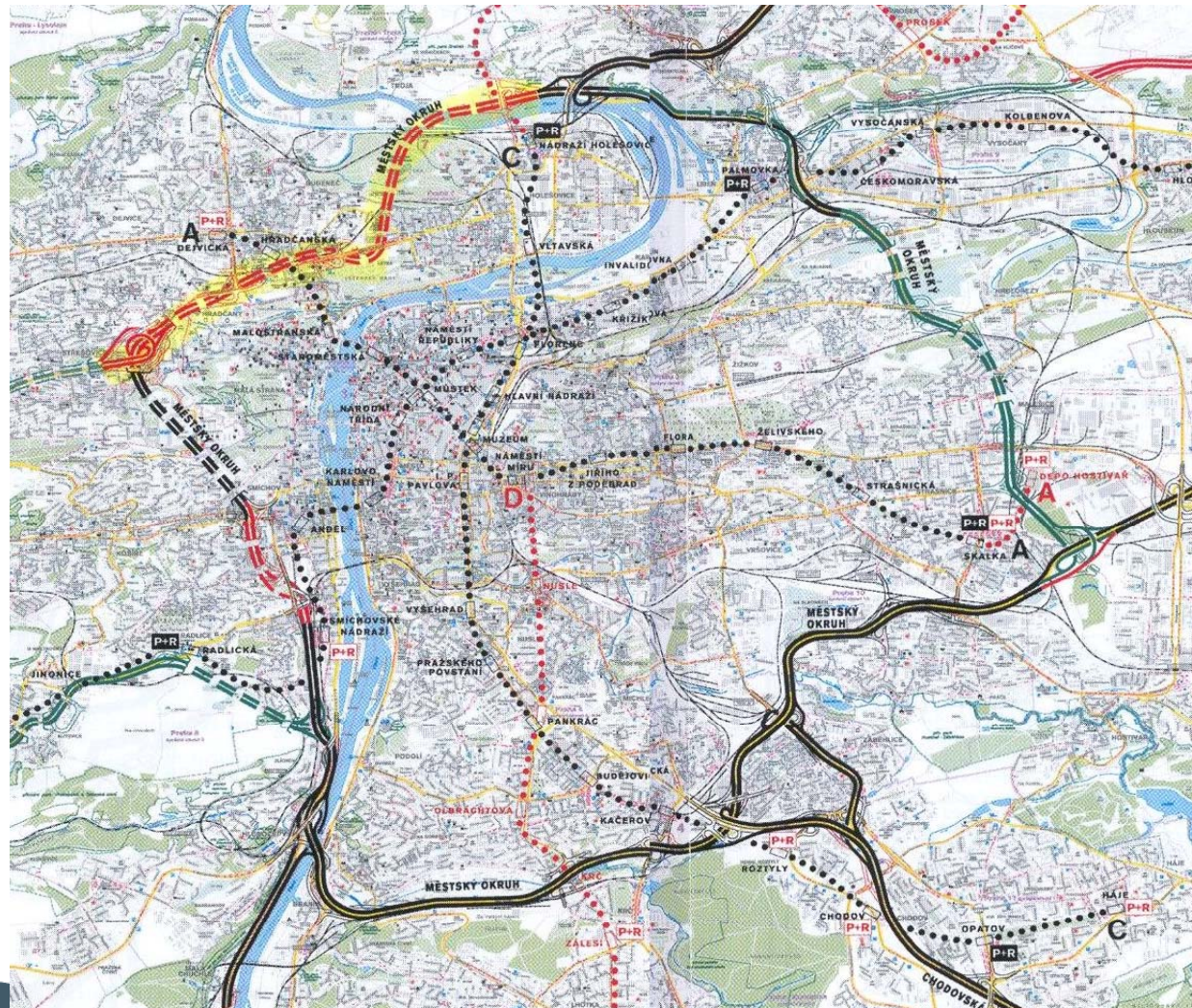
- Shadow tolling on existing DN1 linked to construction program of New Motorway.
- Upon programmed completion shadow tolling on existing route ceases and new motorway takes over
- Bonus/penalty system (performance based) Payment based on new motorway
- Performance Penalty Deduction system

Conclusions

- Legislative Issues
- Traffic (Demand)
- Financial Affordability and Viability
- Public Sector Comparator
- Technical Scope and Scale of Contracts
- Risks and Risk Allocation

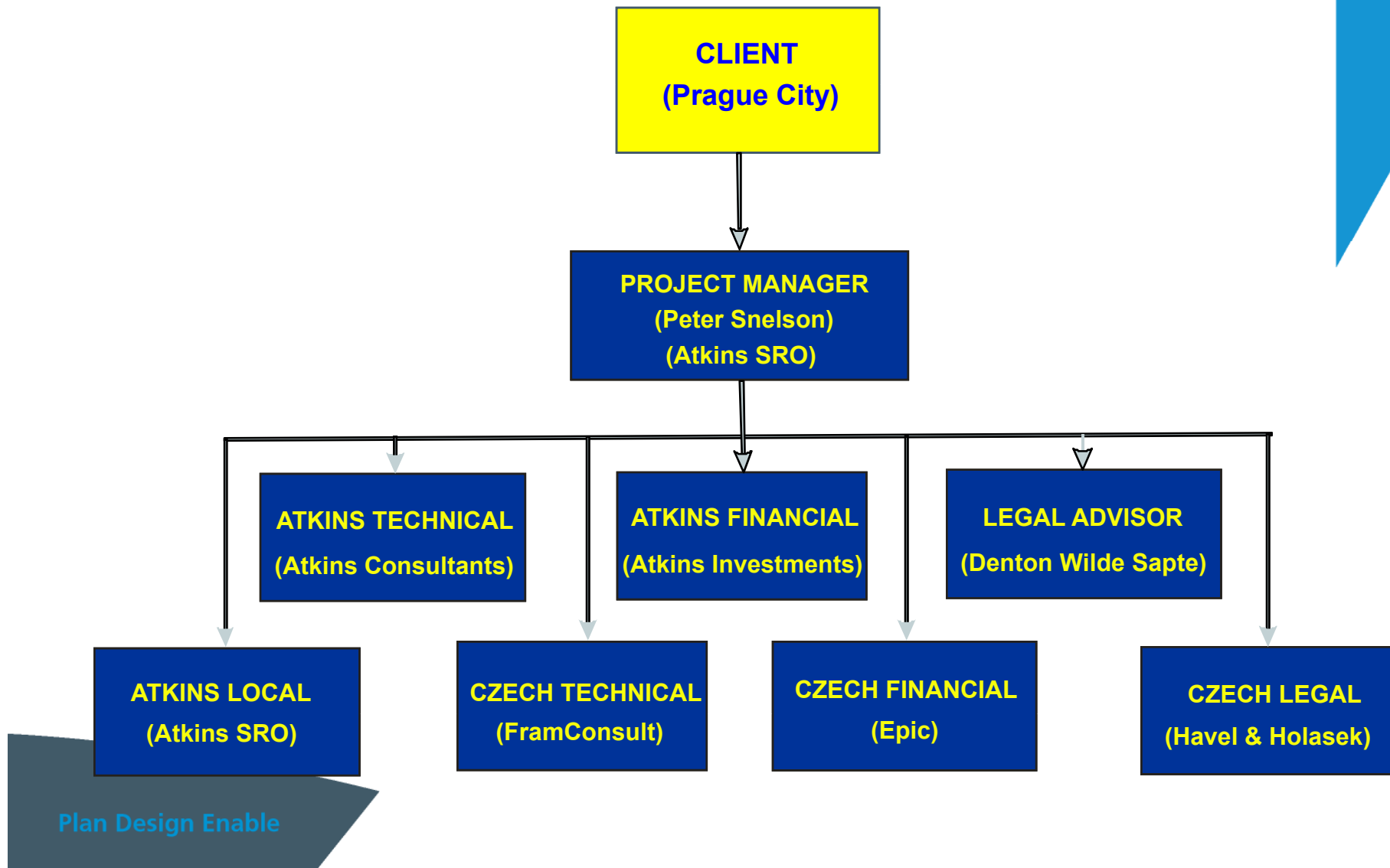
PPP's What Does it take for Road
Projects?
European Case Study
- Czech Republic

The Project – Prague City Bypass



Project Organisation

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Phase 1: PPP Feasibility (Outline Business Case)

Legislative Issues

- Current legislation and regulations

Technical Issues

- Scope and Scale of Contracts

Financial Issues

- Revenue Potential
- Project Financing

Public Sector Comparators

Risk Assessment and Allocation

Legislative Issues

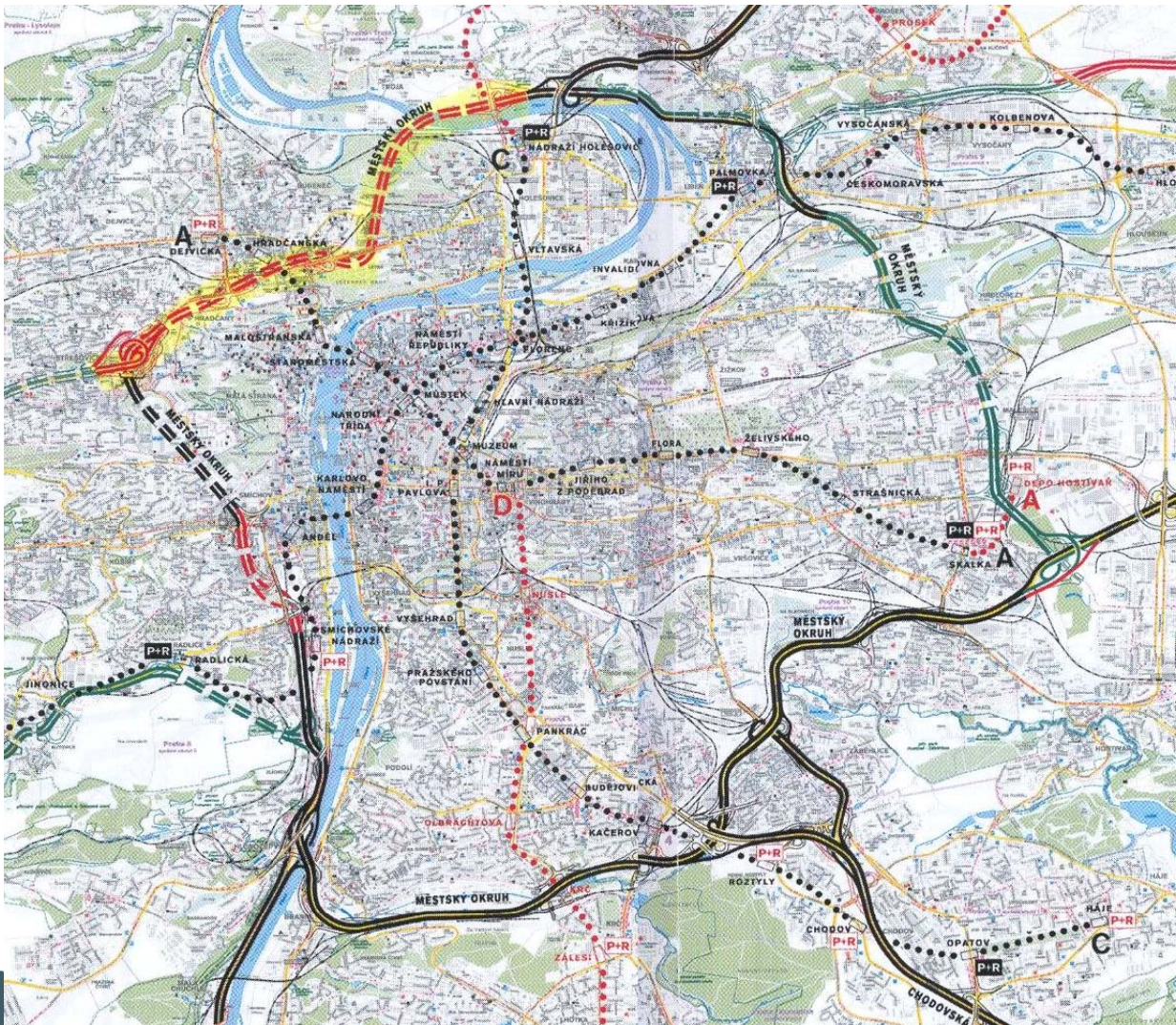
Current legislation enables the state to enter into PPP for construction of a motorway

But it does not clearly specify ...

- A municipality may enter into PPP for local road
- Municipality may wholly delegate administration and maintenance of a local road to a third party.

Legislative issues need to be resolved to provide Concessionaires legal certainty

Scope and Scale of the Concession



Plan Design Enable

Scope and Scale of the Concession

PPP Options

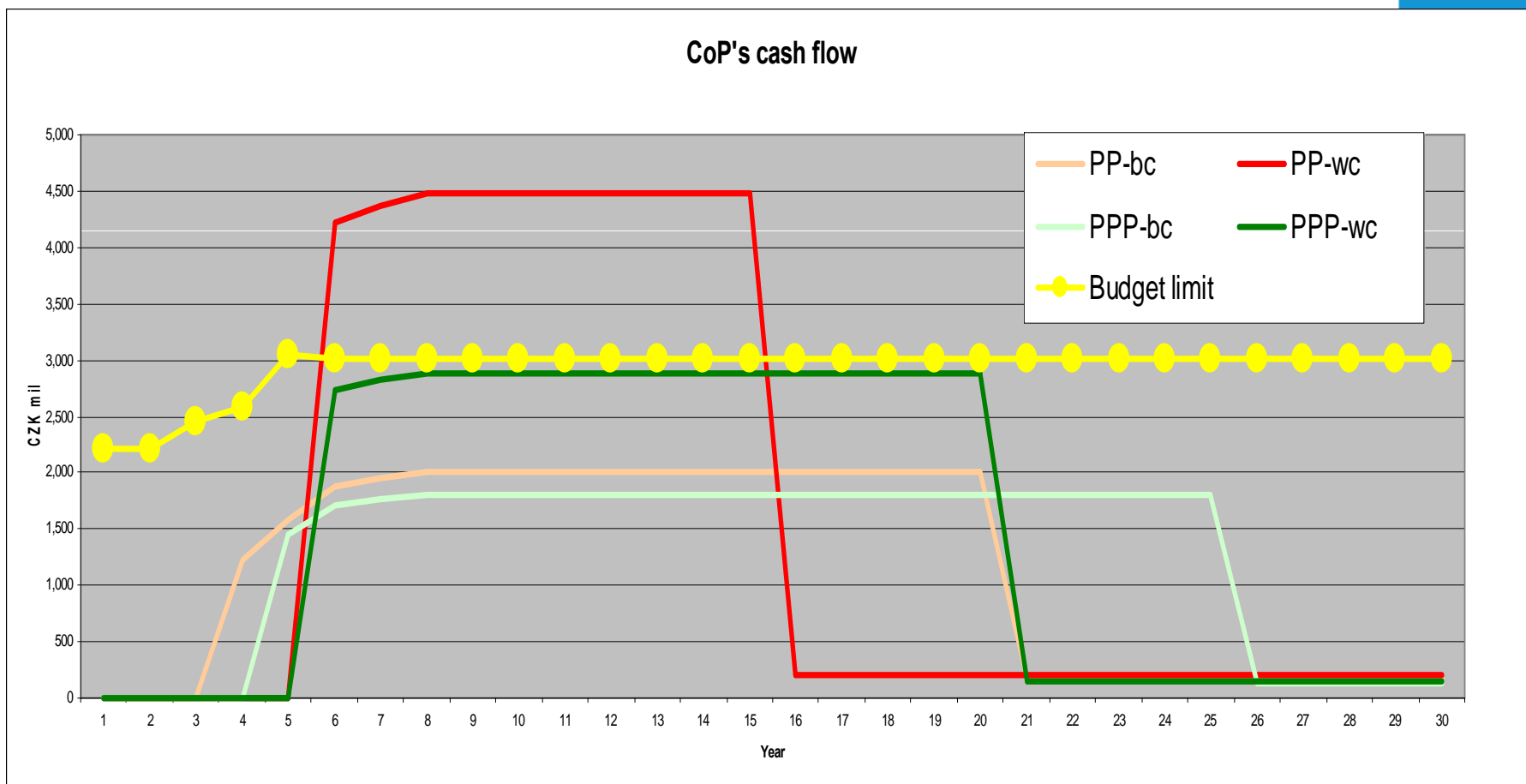
1. Construct, Finance, Operate and Maintain
Links 1, 2 and 3 of NW Section of City Bypass independently under three 30 year concessions
2. Construct, Finance, Operate and Maintain
NW Section of City Bypass, under single 30 year concession
3. Construct and Finance
NW Section of City Bypass, plus operate and maintain city by pass, under a single 30 year concession

Revenue Potential - 30 years

Charging Options

- Inner City Bypass Road - Distance based Toll Charge
 - Cost €160m
 - Minimum Toll to cover Costs €20 per km
 - Implications – 10% Traffic divert off Ring
- Inner City Bypass - Cordon based Congestion Charge
 - Cost €280m
 - Minimum Charge to cover Costs €60 per km
 - Implications – 5% Traffic do not enter cordon
- Old Town Cordon Based Congestion Charge
 - Cost €140m
 - Minimum Charge to Cover Costs €25 per km
 - Implications – 5% Traffic do not enter cordon

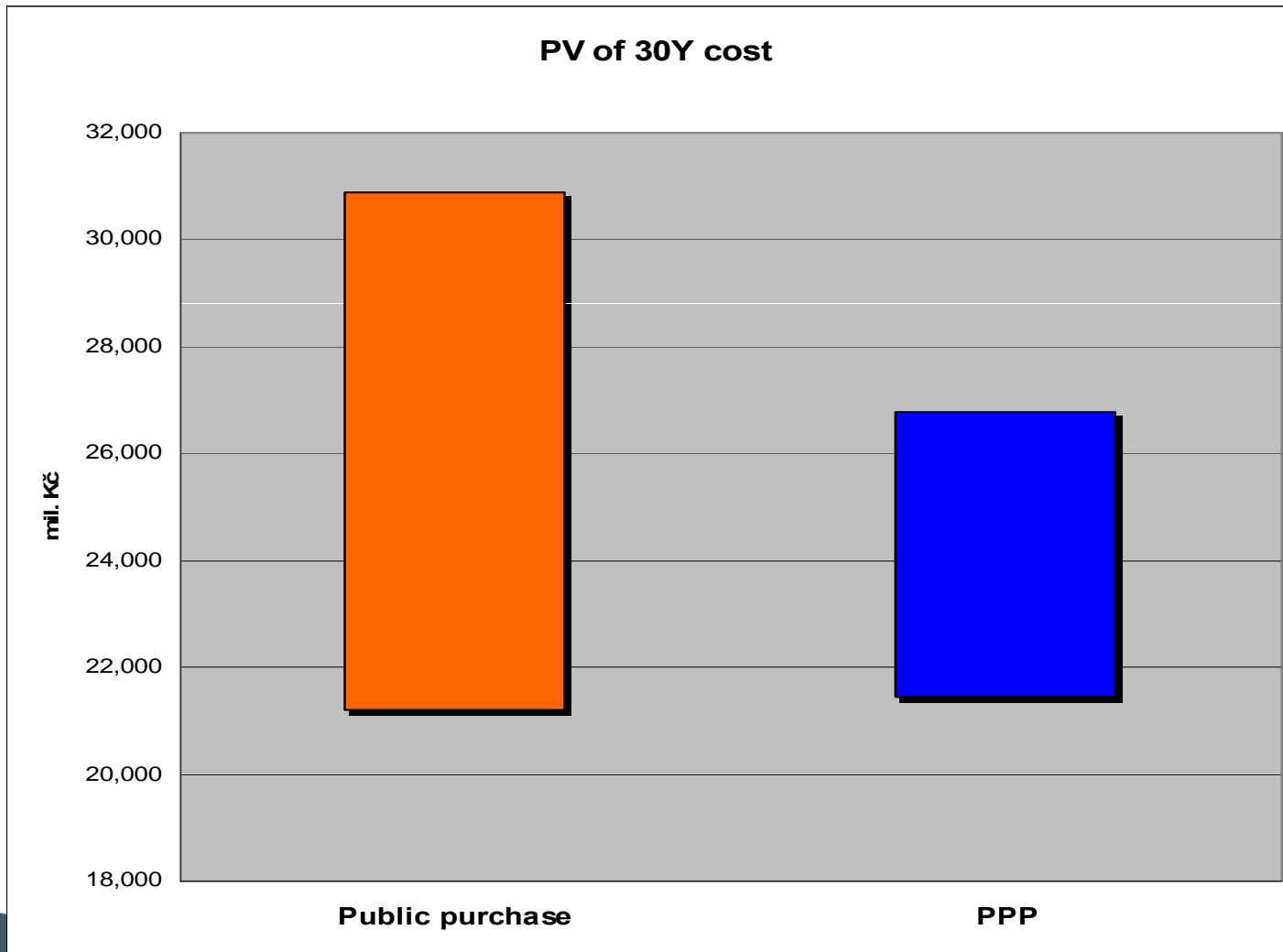
Affordability



Financial Assessment (PSC)

Elements of Bias and Cost		Public Purchase		PPP	
		Best Case	Worst Case	Best Case	Worst Case
Contractual construction cost (CCC)	As a % of CC	95	100	83	90
Cost of risk of construction cost increase		10	30	2	5
Cost of risk of construction extension		10	20	2	5
Cost of other risks		10	20	5	10
Other costs		1	2	5	10
TOTAL risk adjusted construction cost (ACC)		126	172	97	120
Contractual operational cost p.a. (COC)	% of OC	95	110	87	92
Cost of the risk		20	30	0	10
TOTAL risk adjusted operational cost (AOC)		115	140	87	102
Supplier WACC	% p.a.	3.5%	4.5%	6.5%	7.0%
Grace period	years	3	5	4	5
Year of last ACC instalment (min. 8 !)	years	20	15	25	20
<i>ACC instalment p.a.</i>	% of CC	<i>11.04</i>	<i>27.09</i>	<i>11.06</i>	<i>18.48</i>
PV of ACC instalments	% of CC	119.4	180.6	132.6	168.9
Operation period assumed	years	30	30	30	30
Discount rate agreed	% p.a.	4.0%	4.0%	4.0%	4.0%
<i>PV of 30 years City's Cost Cash Flow</i>	% of CC	<i>131.6</i>	<i>196.9</i>	<i>141.9</i>	<i>179.7</i>
<i>PV of 30 years City's Cost Cash Flow (according CAPEX of the project)</i>	% of CC	<i>120.4</i>	<i>175.22</i>	<i>121.6</i>	<i>152.0</i>
Legislative hurdles			none	description	
Legislatively implied delay	years		0		1-2

Financial Assessment



Risk Assessment and Allocation

Risk		Risk Allocation		
Item	Description / Comments	CoP	Private Sector	Shared
1.	PLANNING			
Project Preparation and Approval	Statutory Consent for Project	XX		
	Planning permit	XX		
	Building permit	XX		
	Environmental Impact Assessment	X	X	
	Settlement of existing agreements related to project	XX		
Land	Title and Possession - Responsibility for ensuring ownership rights and giving possession for land required for highway (including structures)	XX		
	Responsibility for securing land required for site compound, maintenance compound		XX	
	Third Party Rights and Compensation	X		X

Conclusions

- Legislative Issues
- Traffic (Demand)
- Financial Affordability and Viability
- Public Sector Comparator (Value for Money)
- Technical Scope and Scale of Contracts
- Risks and Risk Allocation

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Project Development

Enquiries: peter.snelson@atkinsglobal.com

Institutional Homepage: www.atkinsglobal.com