Asset Management Policy for Major PFI Projects
Agenda

• Asset Management Drivers
• Typical AM positioning in Motorway PFI
• Asset management Strategy
• Works Planning and Scheduling
• Innovation & Risk Mitigation
Asset Management Drivers (1/2)

• Increasing number of Brownfield projects in developed countries
  – Weighting of Heavy Repairs is higher on NPV
  – More complex network, developed incrementally over the years

• based on ‘Availability Payment’ scheme
  – No traffic risk
  – Heavy Repairs is the major outstanding risk
• PPP/ Concession schemes require convincing stakeholders that the project is bankable.
  – A documented process

• Heightened competition puts stress on asset expenditure profile
  – Fine tuning of renewal programmes

• In a global economic slowdown, planning of asset management is even more essential
Typical AM Positioning

NLE – The Philippines
Real Toll

A24 – Portugal
Shadow Toll

A8 – Germany

M25 - UK

Availability Payment
Typical AM Positioning

M25 - A key role for the Operator

- Programme of HM & R activities (Lifecycle Plan), right from start
- Design & Supervision of works
- Selected asset ‘Owner’

Staggered construction and successive HM and widening works

Size enables a portfolio approach

- 3,000 lane x km
- 1,800 structures incl.
  - 750 bridges
  - 2.8 km cable stay bridge
  - 4 tunnels

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Asset Management Strategy

• Objectives of the Lifecycle Plan
  – Optimal, documented programme
  – To maintain the network to a serviceable standard for the duration of the Contract
  – To anticipate Hand-back requirements
Asset Management Strategy

• Assessing the asset condition
  – Analysis of available data/ closing the gaps
  – Carry out visual inspections & machine surveys
  – Cluster data to set up comprehensive inventory

• Condition of network is refined over the years
  – Baseline for Handback
  – Representative sampling used for minor assets
Asset Management Strategy

• Design for Maintenance
  – Integrated approach to design: routine/ preventive maintenance and lifecycle constraints into construction
  – Environment, Safety in maintenance and sustainable development embedded into design
  – Identify areas to explore and analyse each one
  – Formal design review process
  – Define interfaces to minimise overall cost of project
Asset Management Strategy

- Develop a robust strategy for each type of asset
  - Typical deterioration curves
  - Decision tree enabling to sort out strategies
  - ‘Rules of the game’ (payment/penalty/lane rental mechanisms/level of service/hand-back requirements)

  Key Assumptions and sensitivity

- Risk the ‘owner’ of the asset is ready to take up

Risk & Opportunity matrix

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Asset Management Strategy
Comparing lifecycle strategies

Progressive structure lifecycle through preventive maintenance
- Maintenance delay 1
- Maintenance delay 2

Cumulative deterioration

- Effect of delay 1st intervention
- Effect of delay 2nd intervention

Heavy Repairs or Reconstruction

Years 45
Asset Management Strategy

- Pricing from existing databases/ shadow tenders
  - Cost of works (Labour, Plant, Material) taking into account the strategy (night work, seasonality, little & often…)
  - Cost of specific inspections & surveys
  - TM, incl. Mobilisation/ De-mobilisation
  - Lane Rental Charges
  - Design (preliminary or detailed) costs
  - Supervision costs
Asset Management Strategy

Lifecycle Activities during Bid Phase

Technical & corporate challenge provides opportunities to reviewers
- o to query key assumptions
- o to assess price robustness and risk transfer

Target the ‘best whole life price’
Works planning and scheduling

- Operator is best placed to detect defects, anticipate deteriorations (watchman role) and prepare the Lifecycle Plan
- Requires a performing asset management system incl. GIS and specific tool to test scenarios
Works planning and scheduling

Concessionaire challenges and endorses the Plan

• Service Critical assets are identified

• Value Management exercise
  – To cluster works on the same section
  – To prioritise work packages (arbitration between renewals and enhanced routine maintenance)

• Procurement through a 2-stage approach
  – Delivery contract + stringent supervision over the first years (test period)
  – Long term performance contract with the supply chain, who is engaged in quality and innovative solutions
Innovation & Risk Mitigation

• Long-term horizon and volume lead to investing in:
  – Material (e.g. quarry)
  – Plant (e.g. machine to move pre-cast VCB)
  – Process (e.g. Very thin wearing course, Fast setting concrete)

• Transfer to O&M Co of the full maintenance and renewals risk on some assets, typically:
  – Energised equipment (M&E, Road Lighting and ITS)
  – Ancillaries (road markings, signs, safety barriers, fences…)
Asset Management Trends

• Sustainable Development
• Adaptation to Climatic Changes
• Stealth Works
• Road-Space Booking
Q&A

Thank you

Jean.Pohu@egis.fr