

**LISBOA 2010**  
MAY 25/28  
**16th World Meeting**

# Asset Management Policy for Major PFI Projects



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# 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

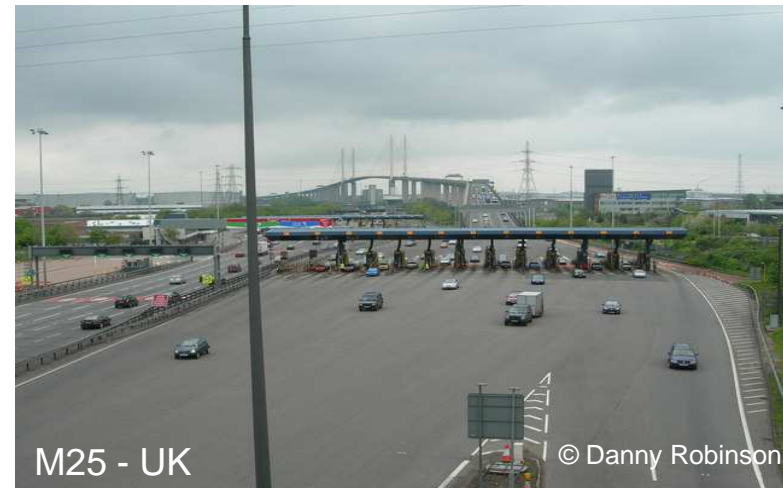
# Asset Management Drivers (2/2)

- 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



A24 – Portugal  
Shadow Toll



# Typical AM Positioning

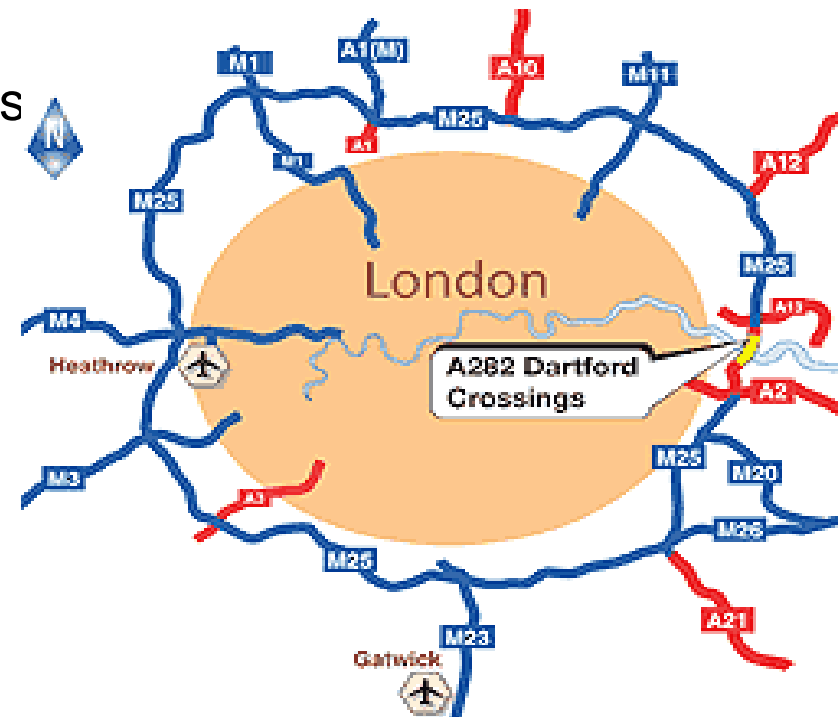
## M25 - A key role for the Operator

- 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





# 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

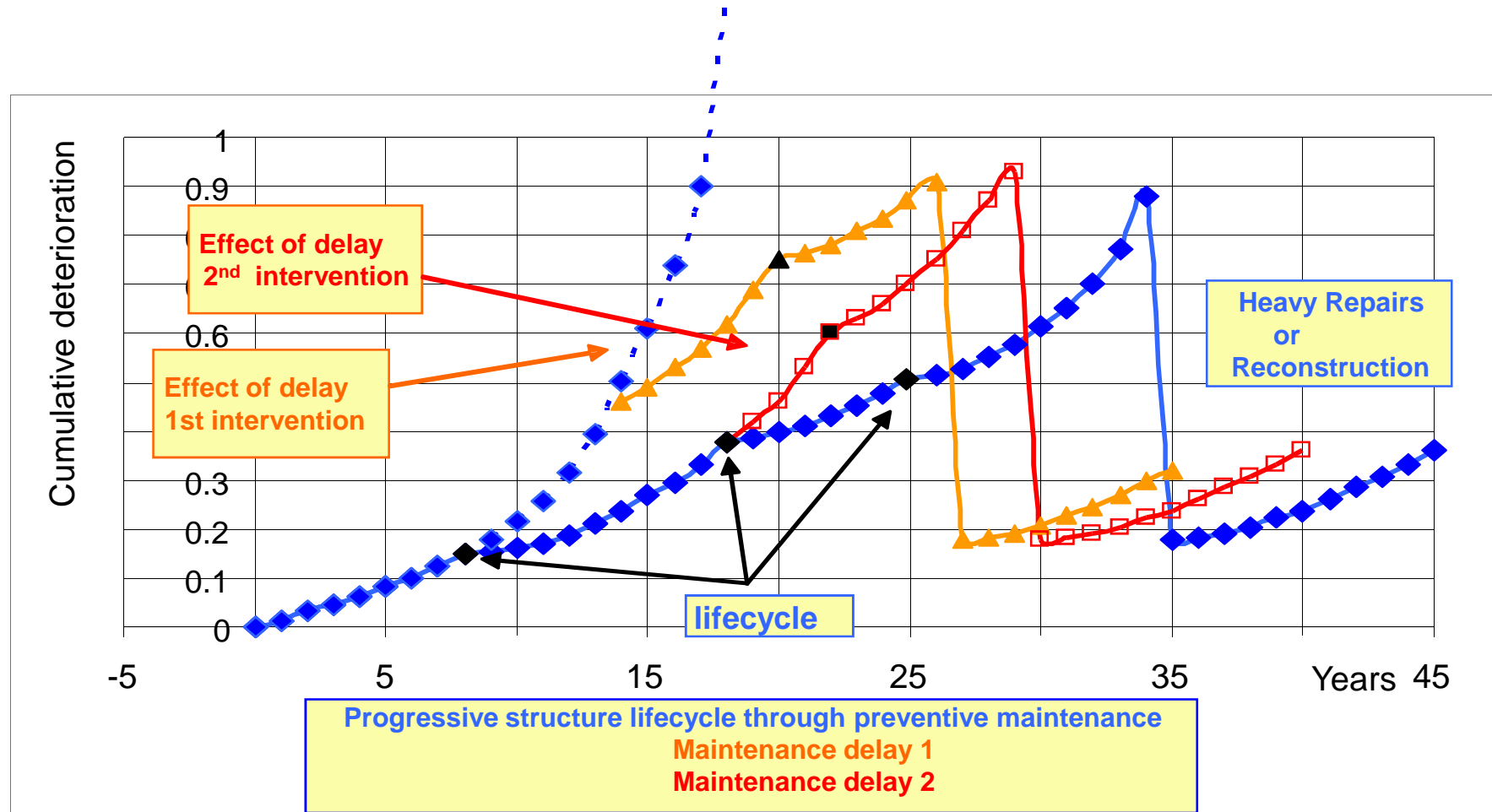
- Risk the ‘owner’ of the asset is ready to take up

➡ Risk & Opportunity matrix

		Skid resistance				
		4	3	2	1	0
PMT	4	4	3	2	1	0
	3	4	3	2	1	0
	2	3	2	1	1	0
	1	2	2	1	0	0
	0	1	1	0	0	0

# Asset Management Strategy

## Comparing lifecycle strategies



# 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

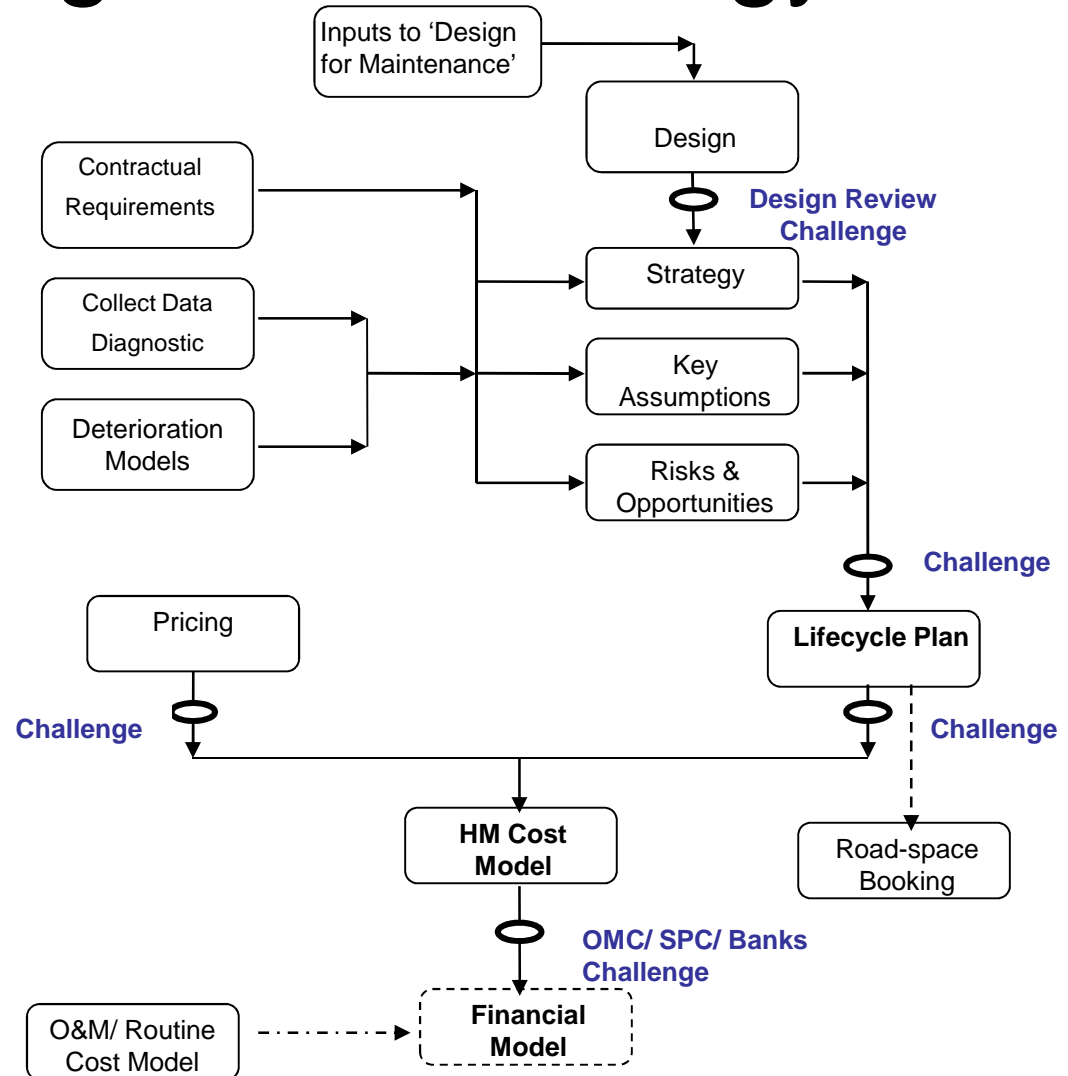
# Asset Management Strategy

## Lifecycle Activities during Bid Phase

**Technical & corporate challenge** provides opportunities to reviewers

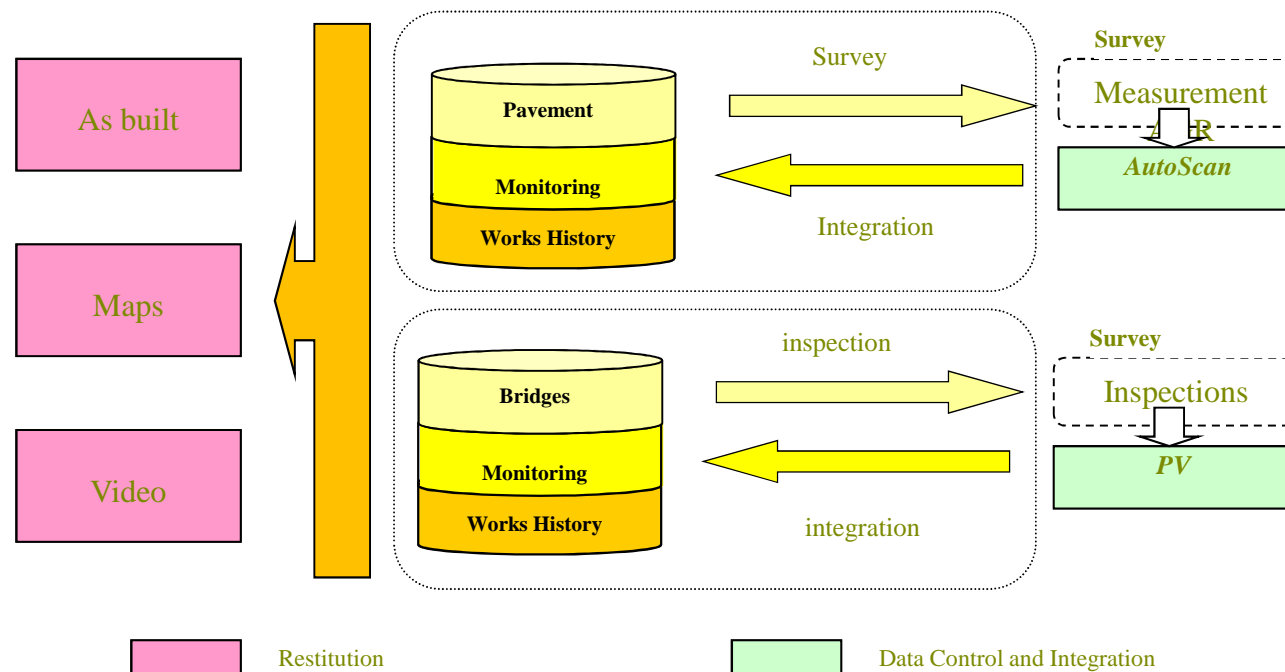
- o to query key assumptions
- o to assess price robustness and risk transfer

➔ **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





Sharing the road  
16th  
World Meeting  
International Road Federation



Q&A

Thank you

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