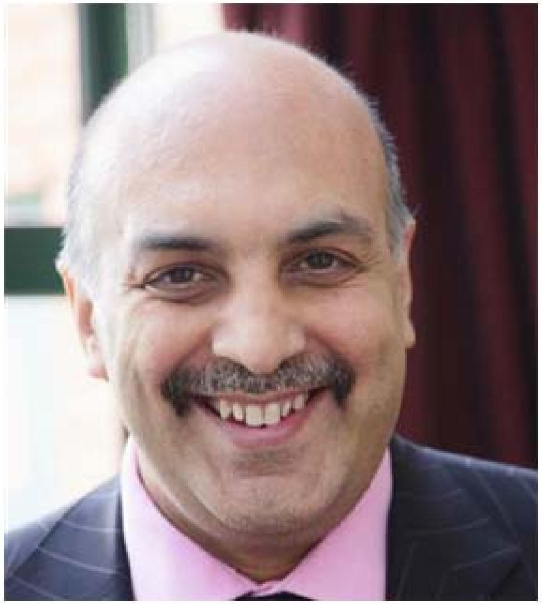
1st International Conference on Transportation Construction Management



TCM

Successful Project Delivery
New Challenges
New Solutions

Banquet Speaker
- Nirmal Kotecha,
British Highways Agency

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Safe roads, Reliable journeys, Informed travellers

HIGHWAYS AGENCY

Delivering more for less in a changing world
- transforming England's motorways -

Nirmal Kotecha

Major Projects Director

Presented to 1st International Conference on

Transportation Construction Management

Orlando

11 February 2009

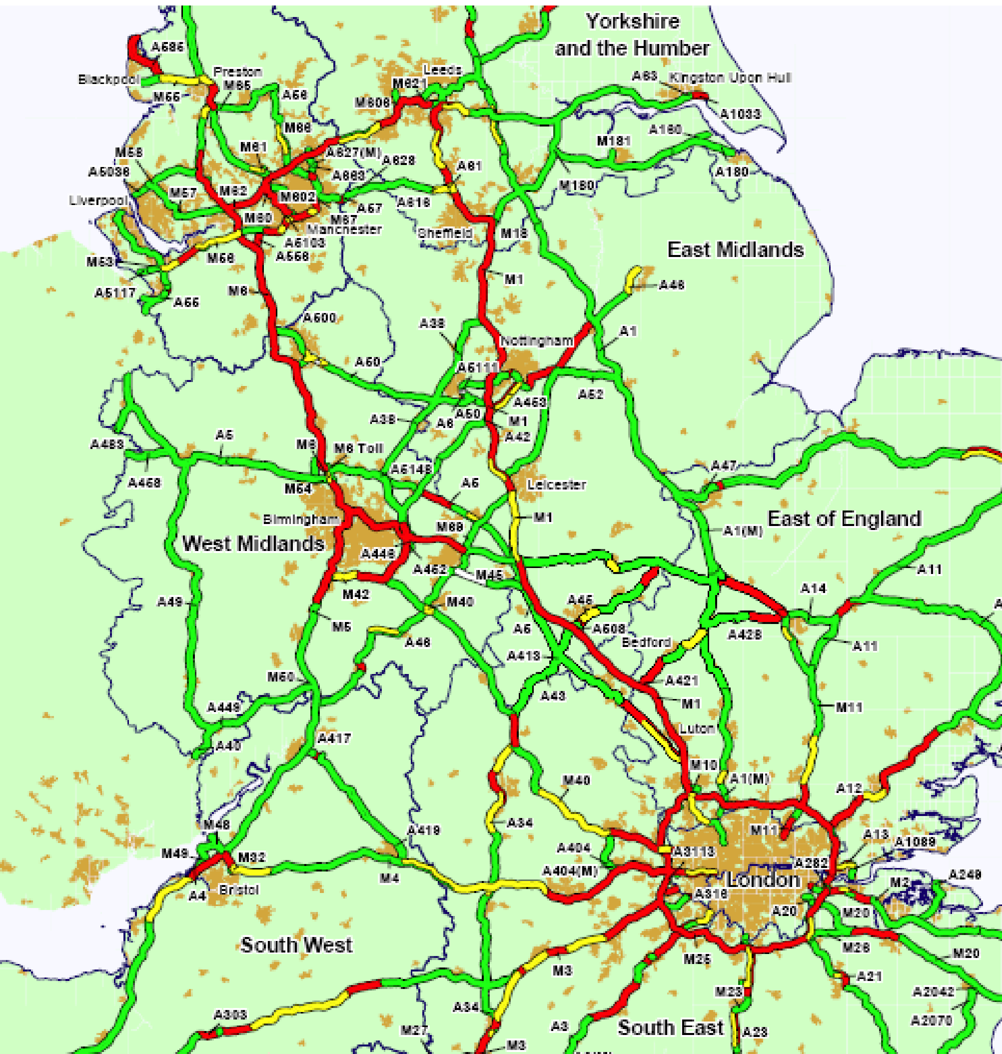
Agenda

The Problem
The Solution
Alternative Contracting Journey
The Future Strategy
Summary & Questions

The Problem

…and it's getting worse!

Network stress 2005



Network stress 2016

A key outcome sought..

Improved Journey Time Reliability

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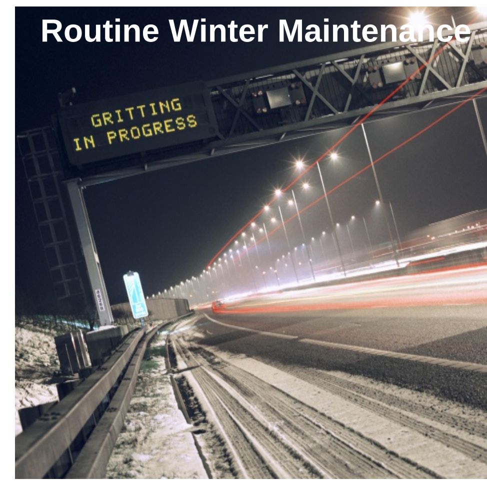
1. 24/7 Network Operator

Traffic Officer Service, introduced in 2005

RCC monitor

& control speed



Routine Winter Maintenance

Deal with incidents quickly to keep traffic moving

2. Investment in information technology

The NTCC is operated from a £160m centre near Birmingham

Collects information from a variety of sources

Distributes to many third party agencies

Feeds VMS and Travel Time VMS

Key enabler for better informed travellers

3. Make it easy for customers to better plan their journeys

4. Investing in extra capacity

Up to £6 Billion Programme to 2014

- Announced by Secretary of State for Transport in January 2009 – (excluding fiscal stimulus)

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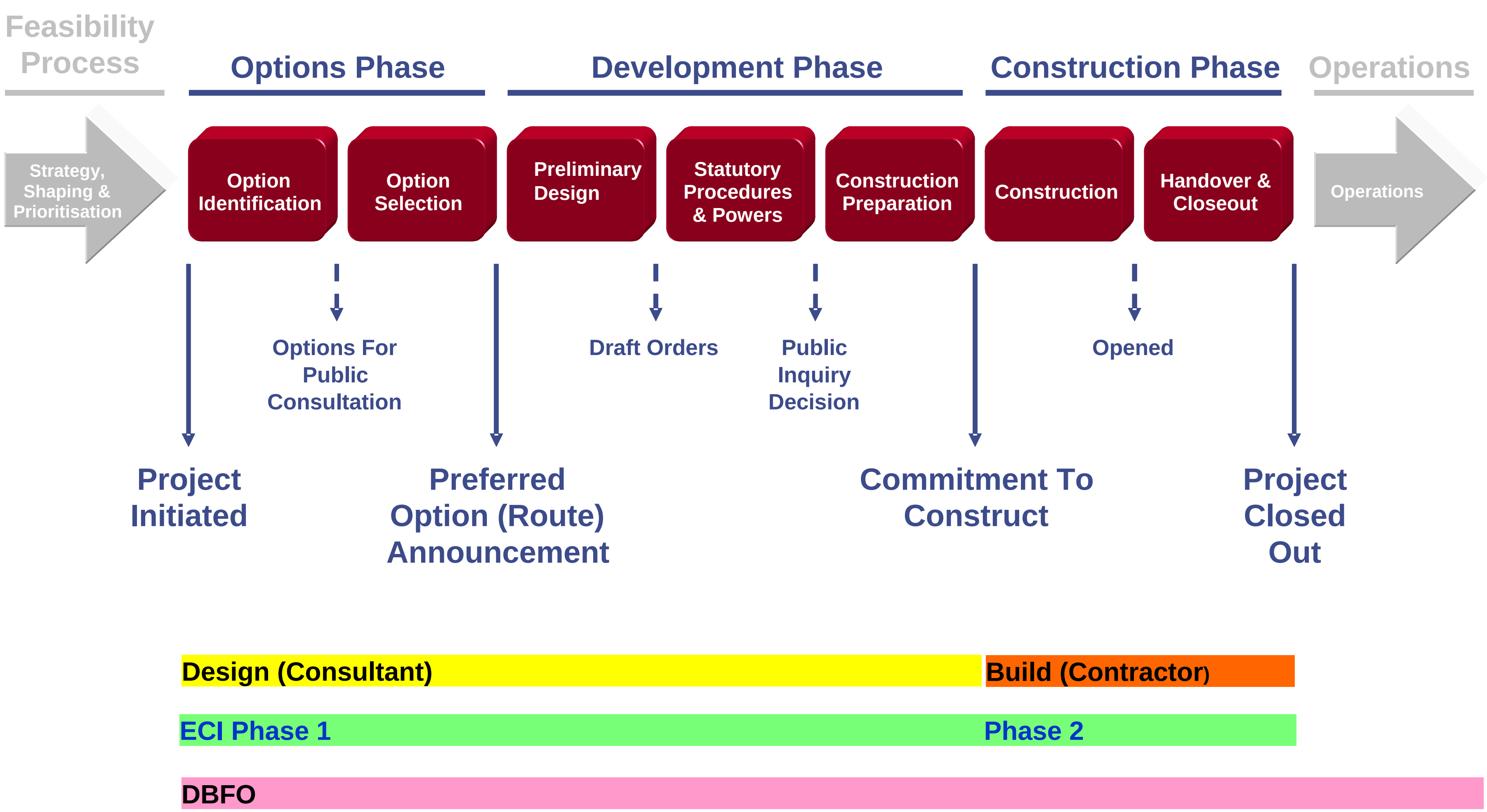
Evolution towards Early Contractor Involvement (ECI) and beyond

- 1980s – Re-measurement
- 1990s – Design and Build
- 2000s – ECI / DBFO
- Future – Collaborative Models?

Contracting Strategies versus Project Life Cycle



Two Phase approach to ECI

- Preliminary design work
- Statutory processes
- Constructability input
- Agreeing the contractor’s target cost (CTC). This CTC is proposed by the contractor and negotiated with the HA. This CTC excludes HA costs.
- Payment based on actual cost plus agreed profit margin

- Detailed design and construction
- Payment for Phase 2 is actual cost with a Pain/Gain incentive mechanism applied to the contractor’s target cost agreed at the end of Phase 1

Our conclusions on ECI

- Reduces project duration compared to D&B
- Improved quality – right first time
- Cost performance inconclusive because:
  1. Significant changes in risk allocation were made separately from the switch to ECI
  2. ECI contracts are more recent and therefore take into account:
     - More modern standards
     - Introduction of traffic management with its associated costs
     - Greater emphasis on Journey Time Reliability
     - New technology introduced

- The HA unable to set reliable estimates and therefore relied on the contractor to propose TC
- HA further reliant on Consultants to challenge TC
- The pain/gain arrangement limited to the CTC only so contractor can be in gain and HA in pain
- No commercial tension in the contract at either of Phases 1 or 2
- Expensive overhead during Phase 1

General concerns with approaches to date

- Contractors have called the shots
- Have not driven right behaviours across or down the whole supply chain (Tier 1 / 2 / 3 etc)
- Have not tackled significant inefficiency through the supply chain – estimated at around 30%

Will not deliver the level of efficiencies required in future

Key sources of “Waste” during design & construction

- Bespoke Designs
- Interpretation of Standards & specifications
- Waiting for materials
- Defects & Re-work
- Duplication & Man-marking
- Fee on fee / risk on risk
- No procurement scale economies
- No sharing of Best Practice
- Variable product quality

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Macro Context

Global Economic Crisis

Business Continuity

Inflation or Deflation?

Resource Capacity

Economic impact of congestion

Corporate Responsibility

The Business imperative for change!

Traffic Growth

Capacity at saturation

Nichols Review

Credibility with DfT

Affordability

Value for Money

Value for Money….

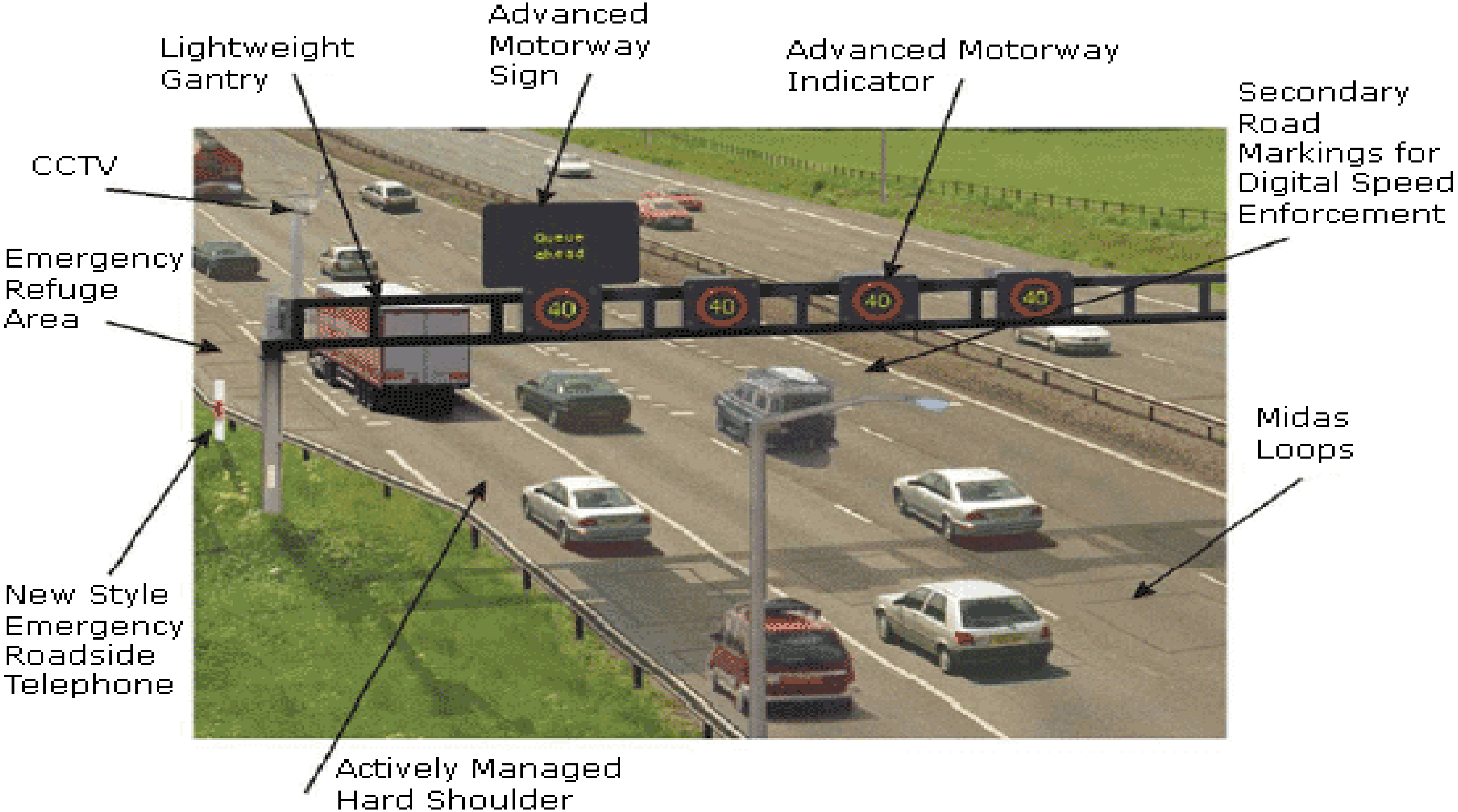
…means delivering a lot more for a lot less!!!

Response 1:

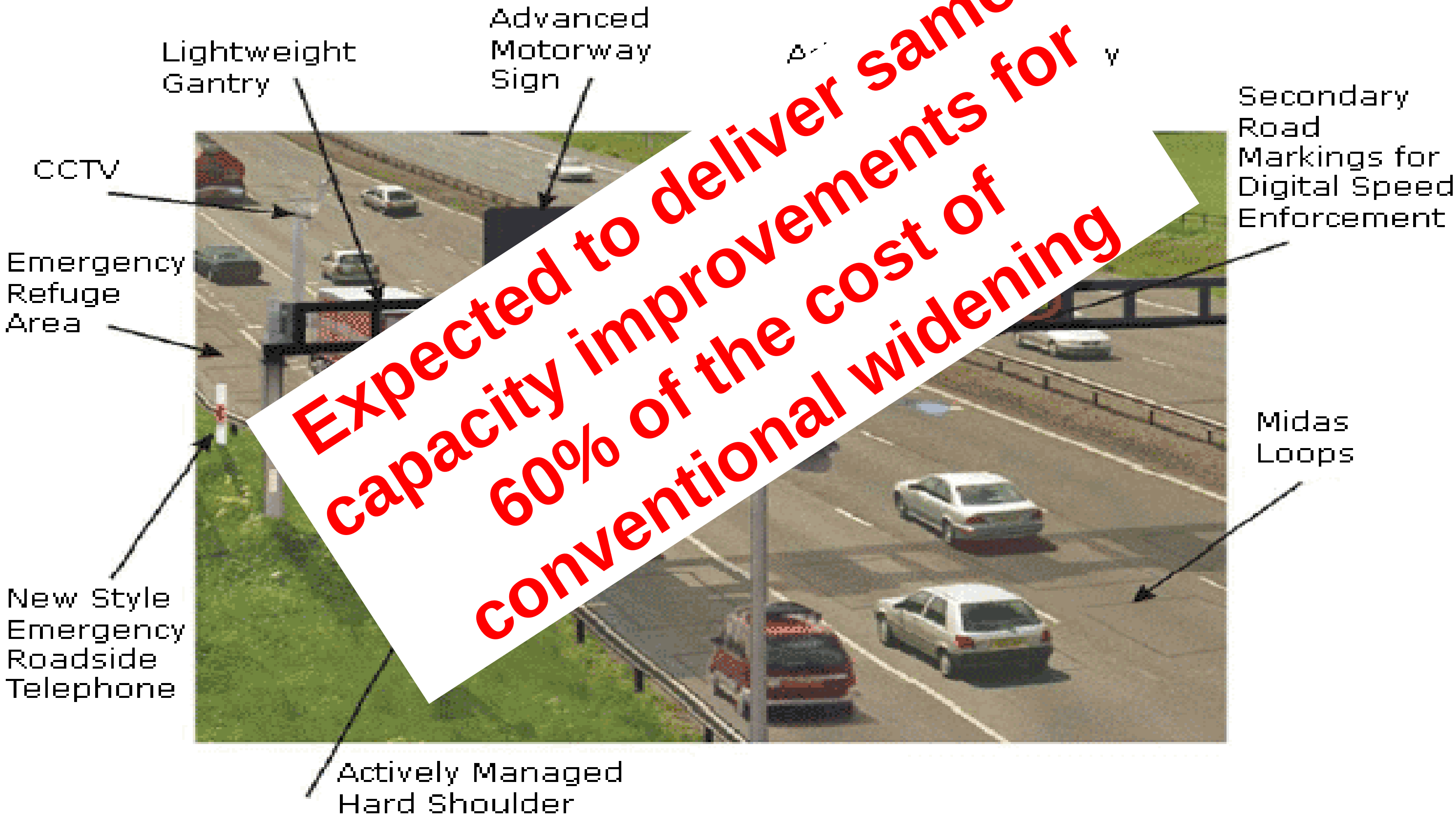
Sweat existing assets

Move to Dynamic Hard Shoulder Running (DHS)

DHS changes the landscape of our supply chain



ATM changes the landscape of our supply chain

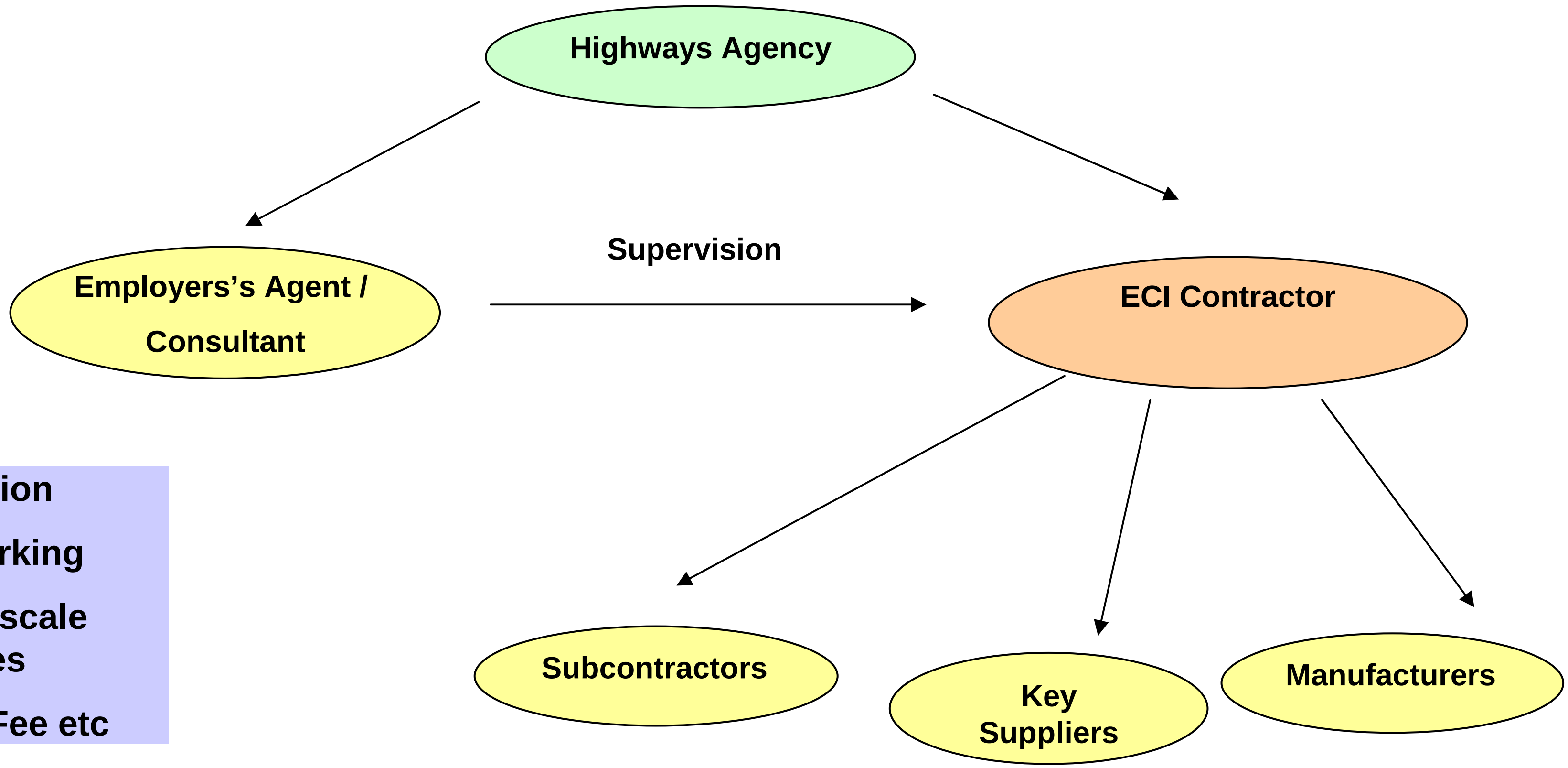


Expected to deliver same capacity improvements for 60% of the cost of conventional widening

Response 2:

Moving to a Collaborative Delivery Strategy underpinned by an integrated supply chain

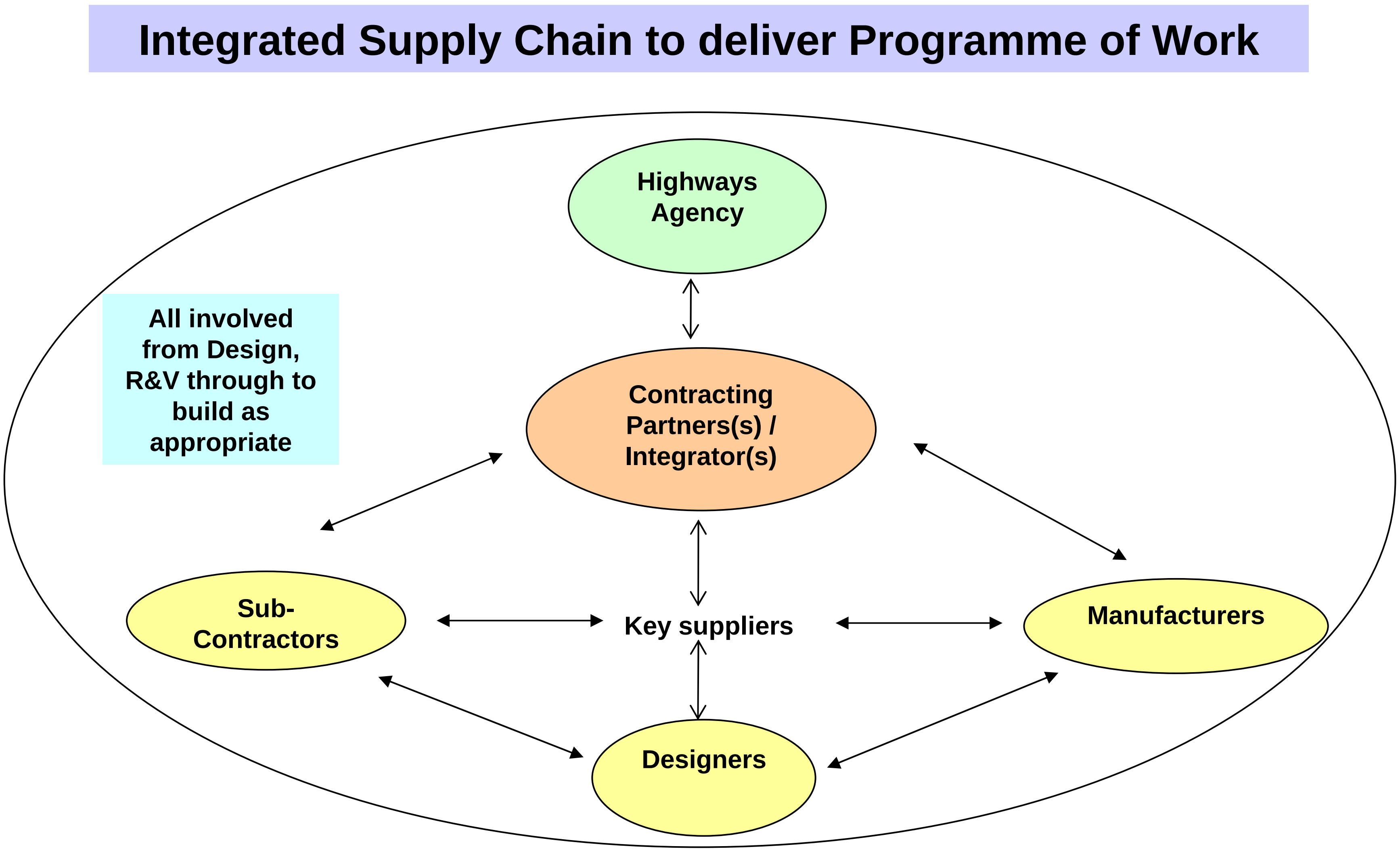
Integrated Supply Chains means… going from this….



- Duplication
- Man-marking
- Loss of scale economies
- Fee on Fee etc

Repeated for each scheme means huge lost opportunity

...to this.

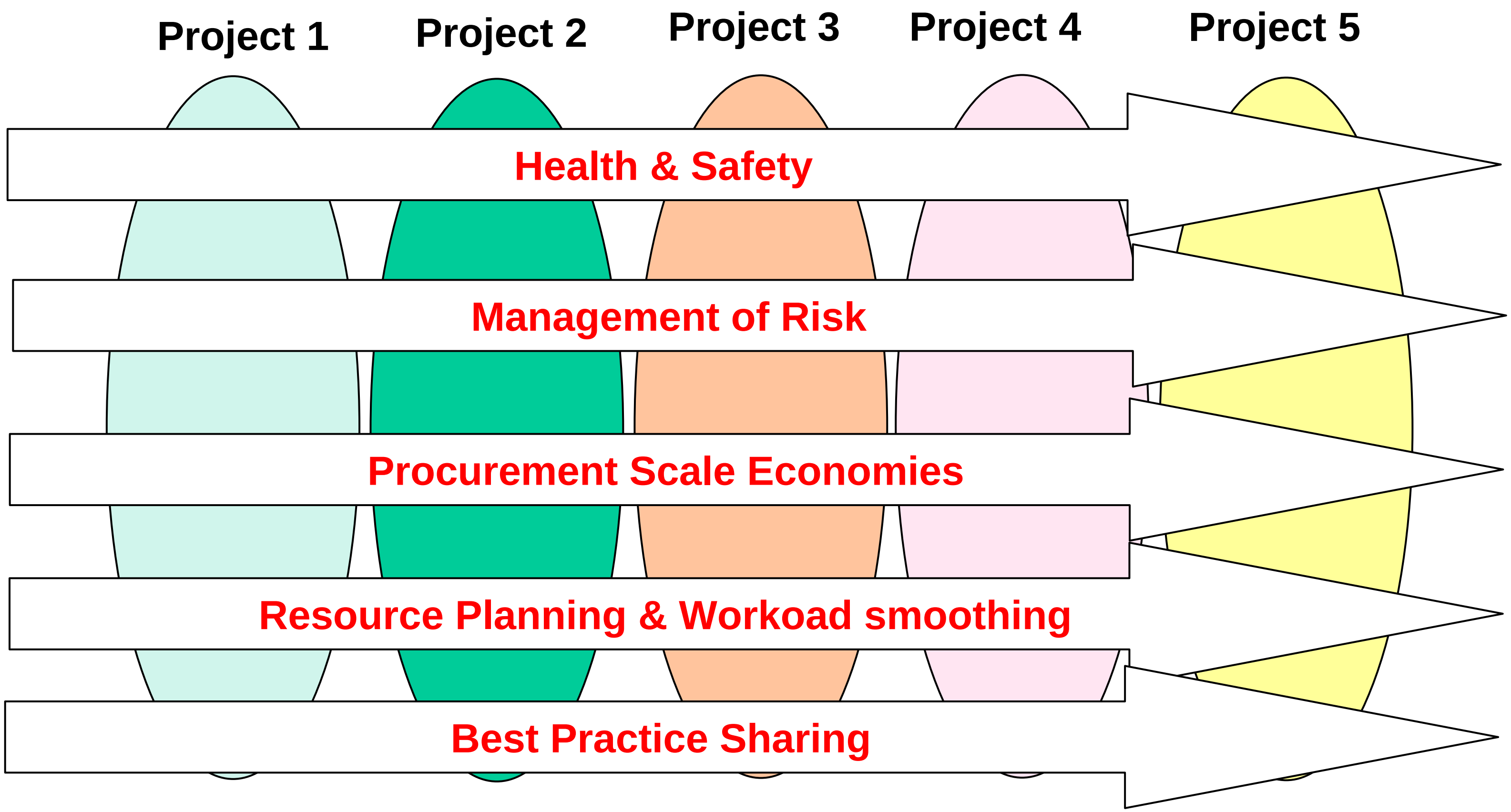


Integrated Supply Chain to deliver Programme of Work
Highways Agency
All involved from Design, R&V through to build as appropriate
Contracting Partners(s) / Integrator(s)
Sub-Contractors
Key suppliers
Manufacturers
Designers

Response 3:

Manage as a Programme

Manage as a Programme to drive scale economies and collaboration



Response 4:

Create transparency of all costs & waste

Creating total transparency of all costs & risks

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Overhead

Fee

Up to 10%

Traditional competitive tendering typically focuses on c. 10% of the total cost

Labour

Plant

Materials

Risk

Up to 90%

Real value will come from attacking the 90% that is invisible to Clients under conventional contracting

- Labour cost & productivity
- Plant Cost & utilisation
- Material – scale economies
- Risk – pay even if not realised

Waste inherent in all elements of the 90%

Adding the Client side costs into the mix

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Client Costs & Risks

Historically excluded from Contractor Gain Share potential – included in future

Overhead

Fee

Up to 10%

Traditional competitive tendering typically focuses on c. 10% of the total cost

Labour

Plant

Materials

Risk

Up to 90%

Real value will come from attacking the 90% that is invisible to Clients under conventional contracting

- Labour cost & productivity
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- Material – scale economies
- Risk – pay even if not realised

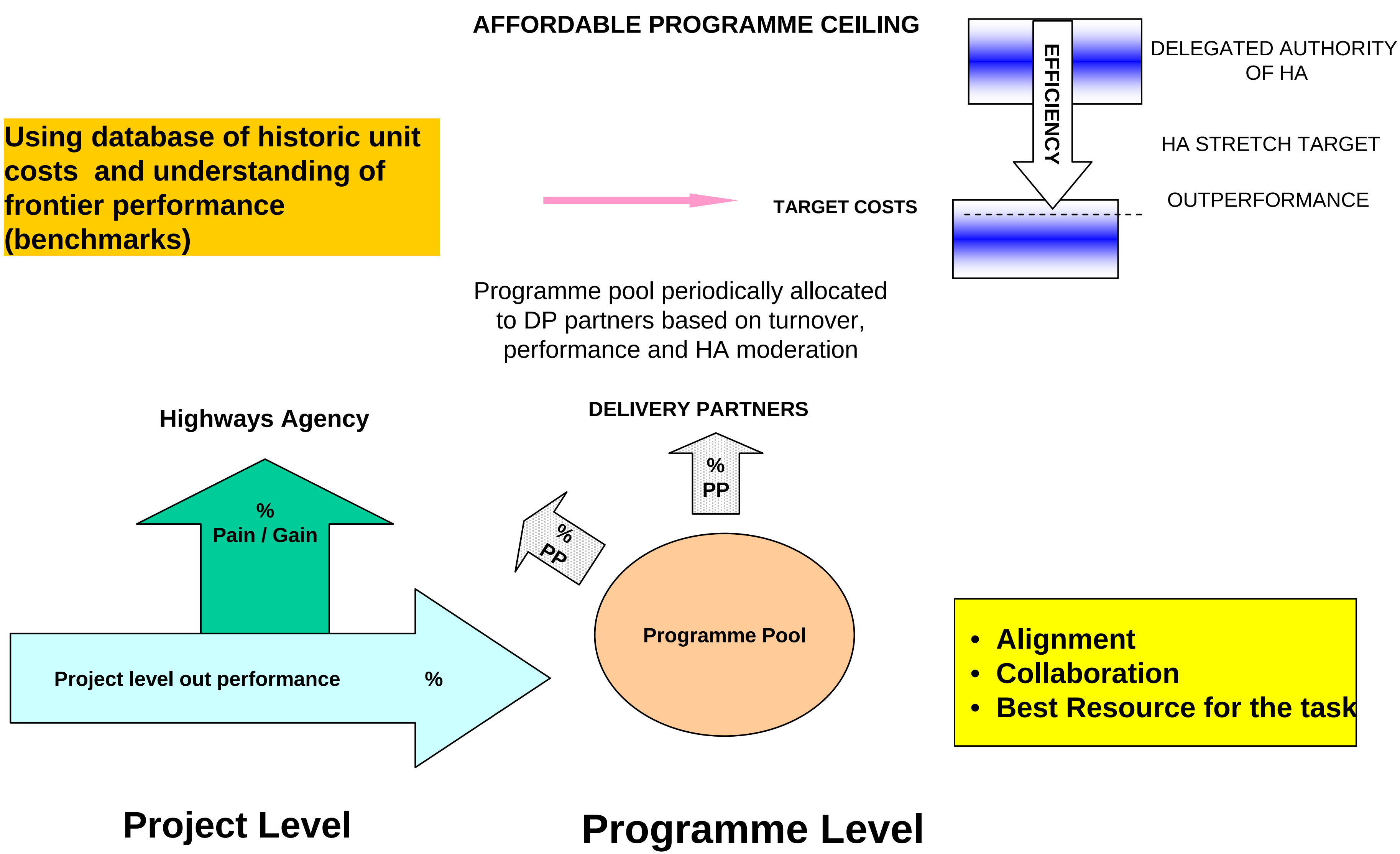
Waste inherent in all elements of the 90%

Response 5:

Create commercial models that drive the right collaborative behaviours

Start by defining what Good looks like and set the Target

Programme level incentivisation model



Programme level incentivisation model

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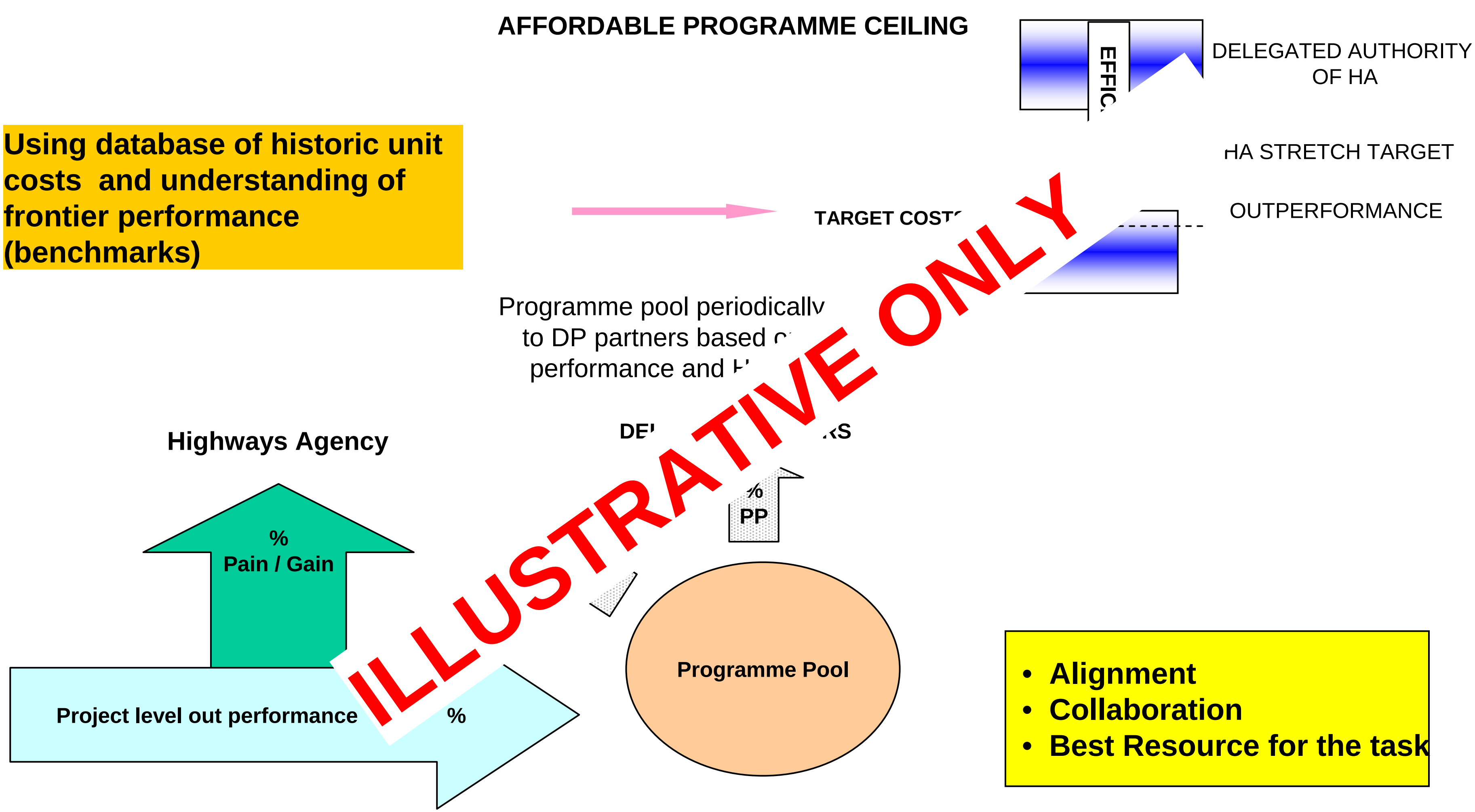

Project Level

Programme Level

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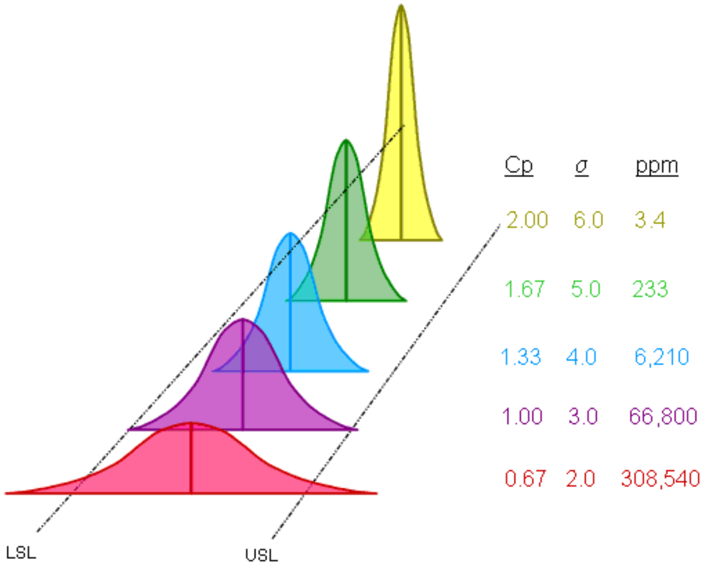
Response 6:

Attack on “Waste”

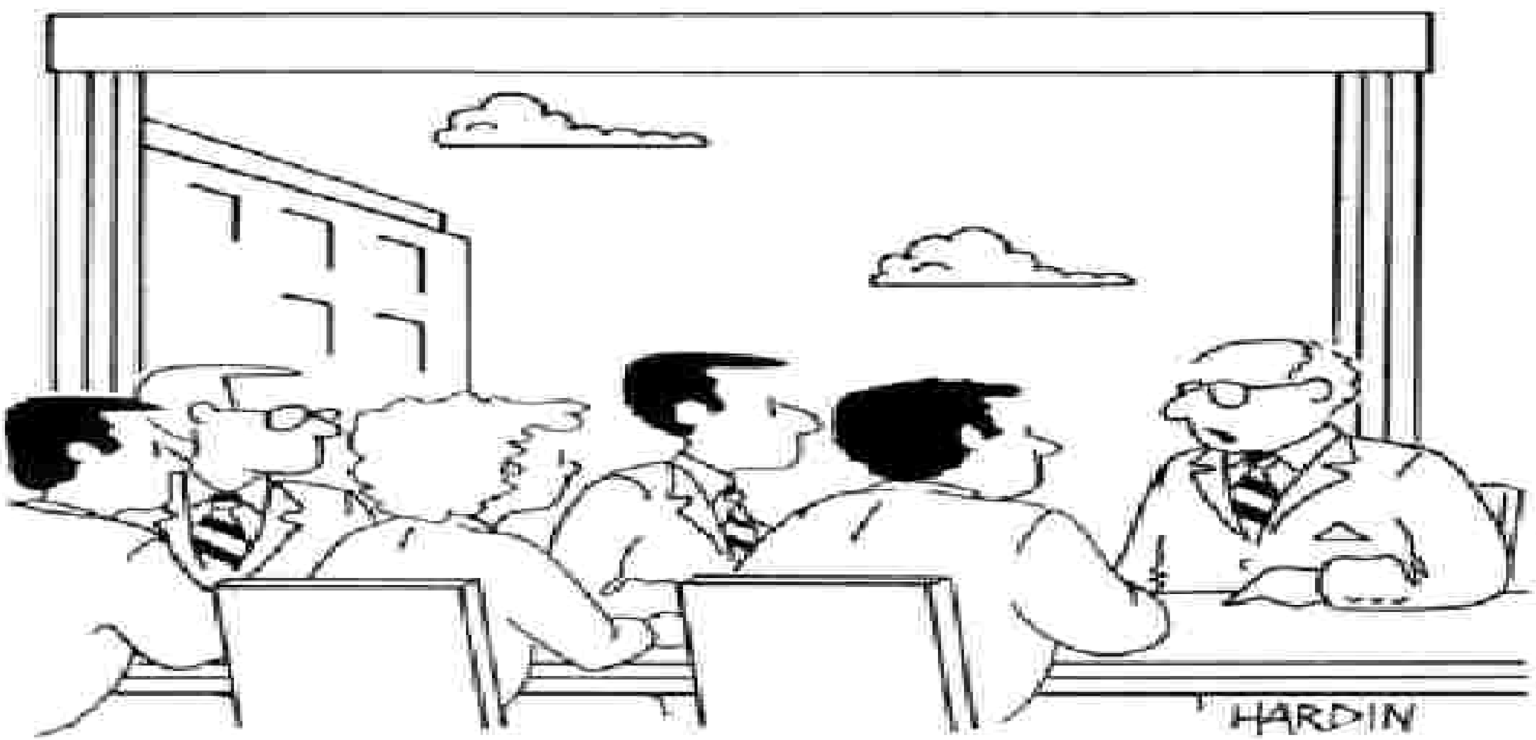
Response No. 8:
Remove known sources of “Waste” through adoption of:

1. Standard designs
2. Collaborative working – no duplication / man-marking
3. Commercial Model avoids risk on risk; fee on fee; design on design etc
4. Lean Sigma processes

Driving Process Improvements for stable and more predictable results



From the avoidance of risk to the management of risk



"We've considered every potential risk except the risks of avoiding all risks."

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Summary

- The Highways Agency is focused on JTR as a principle outcome
- JTR has led to the HA becoming a 24/7 Network operator
- Technology is playing a key part on a no. of fronts
- Conventional widening is being replaced with Managed Motorways

- A number of Contracting Strategies adopted over the years
- ECI has been the dominant model for a few years but can be a luxury
- Our Business drivers require us to deliver more for less in future

- There is a lot of inherent “waste” in the way we have delivered schemes in the past
- Conventional approaches will not address this
- ECI is therefore no longer the default model
- Collaborative working with integrated supply chains is seen as the way forward

Thank you

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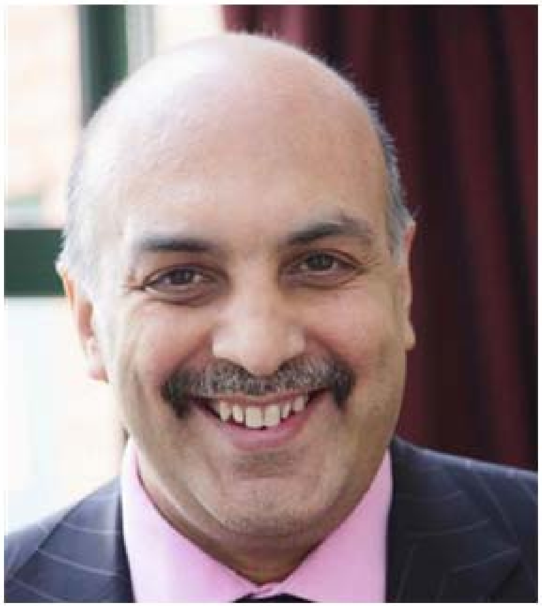

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