

Lean Support to Highways England 2015 – 2020



Foreword

Highways England has three imperatives:

Safety – our aim is that no one should be harmed when travelling or working on the strategic road network. We care about each other, our suppliers, our customers and communities.

Customer Service – improving how what we do impacts those that use the roads.

Delivering the Road Investment Strategy – on time and efficiently.

Lean principles provide a foundation to help enable all of these priorities to be achieved and our Lean approach will provide the skills and tools that support our organisation and those of our supply chain partners

We need to be bold and challenge some of our current practices, working with our suppliers to continuously improve. This is the basis of the Lean Division's work. This strategy document sets out how Lean will help us to deliver the RIS efficiently, whilst improving customer service and most importantly, doing it all safely.



Jim O'Sullivan
Chief Executive

The case for Lean

Our ambition is that by 2020 Highways England:

- will realise a £250m contribution toward the Road Period 1 efficiency target of £1.2bn using Lean techniques
- staff will use their Continuous Improvement skills every day. They will be empowered to see and act on opportunities to improve their own and the organisation's performance
- staff and delivery partners will be accountable for continuously improving performance in safety, customer satisfaction and efficiency
- will work with its delivery partners, suppliers, stakeholders, and customers to routinely use collaborative planning as an enabler to genuine collaboration
- will see productivity improvement demonstrated by year on year reduction in cost unit rates

Purpose of Lean in Highways England

This approach sets out how Lean supports Highways England to achieve our 5 Strategic Outcomes and specifically how we support the 4 Key Enablers set out in our Delivery Plan.

The Strategic Outcomes are:

- Supporting economic growth
- Safe and serviceable network
- More free flowing network
- Improved environment
- More accessible and integrated network

The Key Enablers are:

- Collaborative Relationships
- Delivering Performance and Efficiency
- Managing Risk and Uncertainty
- People and Company



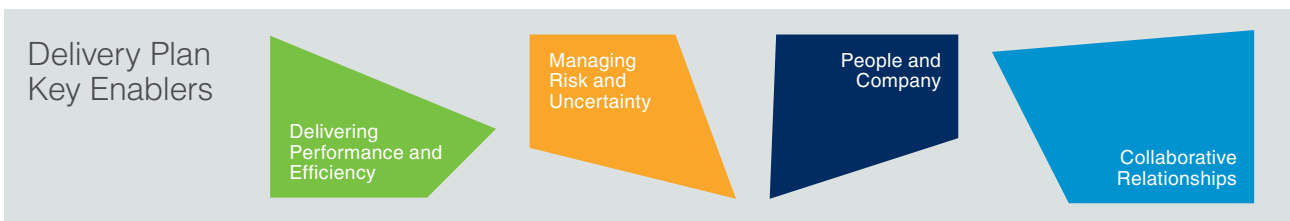
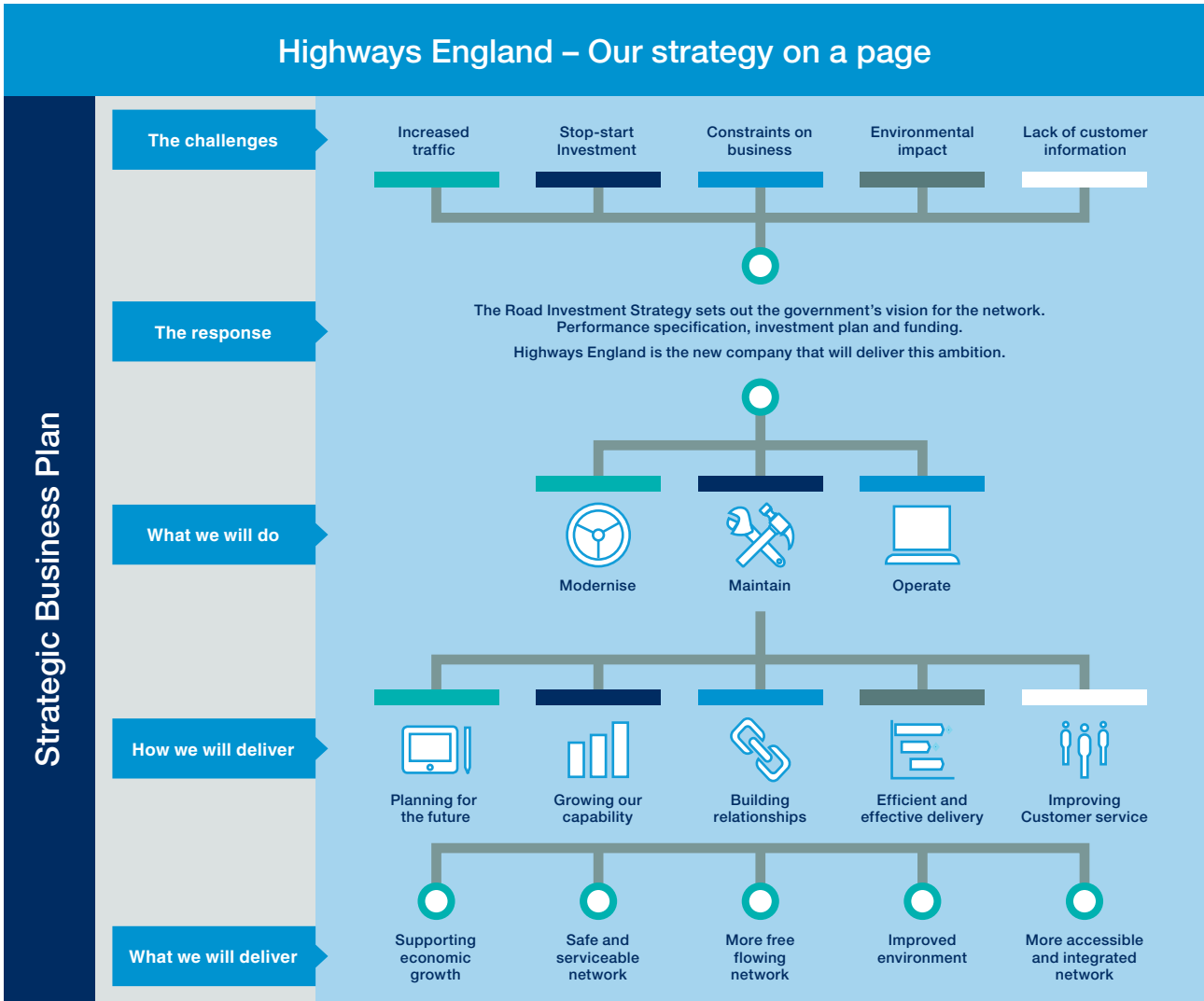
The approach sets out where Highways England Lean division fits into the wider organisation and how we envisage we can deliver support to our internal customers to achieve their objectives and to engender a culture of continuous improvement in safety, customer satisfaction and performance.

Customer Operations Senior Leadership Team

To help improve team planning, performance management and problem solving across Customer Operations Senior Leadership Team, we supported the use of visual management techniques based on Continuous Improvement (CI) cells. This methodology has introduced more evidence based customer focussed discussions with a clearer alignment toward the organisation's objectives.



How we support




Lean provides a keystone that supports the organisation in meeting its strategic challenges, delivered by specific activities through the 4 enablers.

How we support

Collaborative Relationships

Supporting Highways England to strengthen and develop collaborative relationships with suppliers and stakeholders by:

- establishing Collaborative Planning as standard practice across our business
- using Collaborative Planning to achieve ownership, alignment and commitment to a shared plan
- helping the supply chain to assess their own Lean maturity and provide guidance to future development
- sharing Lean efficiencies through knowledge transfer and learning
- working with our supply chain on process improvement
- embedding Lean into the Highways England Supply Chain Strategy and Value Chain plans
- developing supplier capability in the use of Lean principles, tools and techniques

Collaborative Relationships

People and Company

Supporting Highways England people strategy by:

Accountable leadership

- using CI cells to empower team members to own and improve performance
- leaders owning and improving their end to end processes, enhancing value and reducing waste

Capable employees

- providing training and support for people in the use of Lean principles, tools and techniques

Customer focused delivery

- helping our people to identify and understand the requirements of their key customers using Lean 'Voice of the Customer' principles

Performance visibility

- helping leaders develop customer focussed performance indicators

People and Company

Delivering Performance and Efficiency

Supporting and facilitating Highways England to improve performance and efficiency by:

- understanding and defining customer value
- using Lean principles, tools and techniques to deliver performance improvement in:
 - safety
 - quality
 - process cycle time
 - staff time
 - staff engagement
 - financial savings
 - carbon emission
- demonstrating that Lean efficiencies have contributed £250m towards the £1.2bn target

Delivering
Performance and
Efficiency

Managing
Risk and
Uncertainty

Managing Risk and Uncertainty

Supporting and facilitating Highways England in management of risk and uncertainty by:

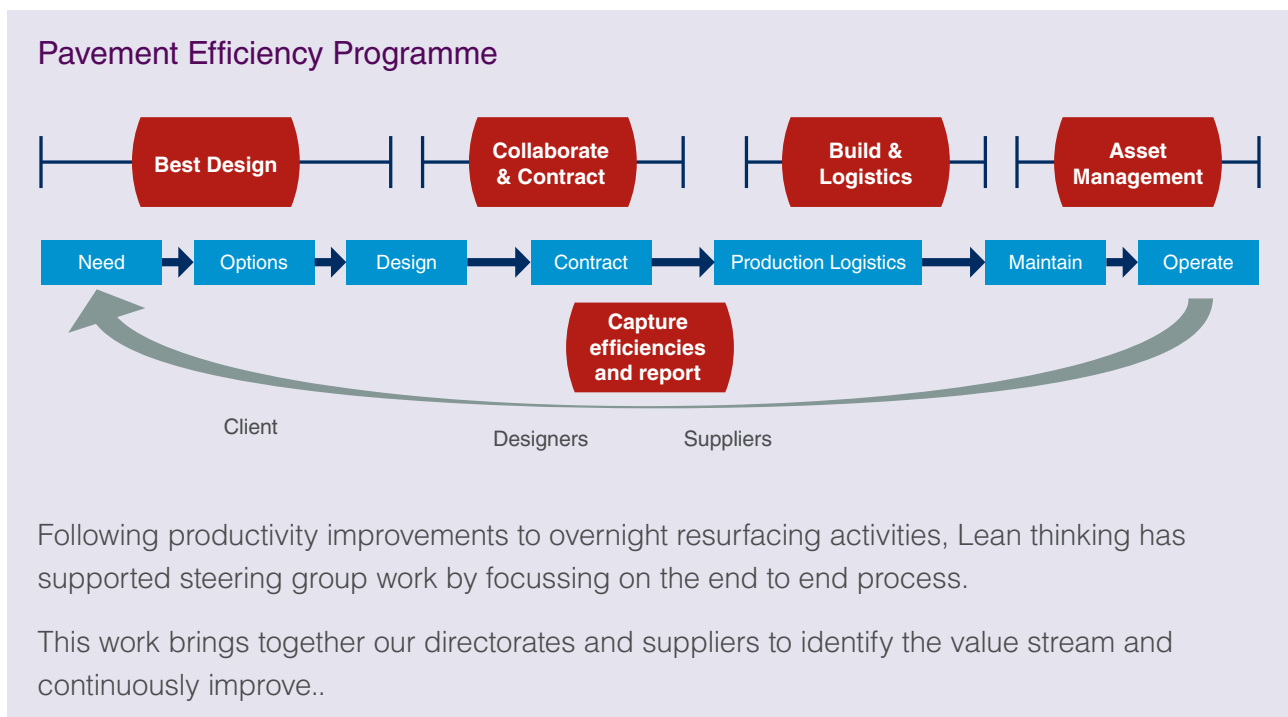
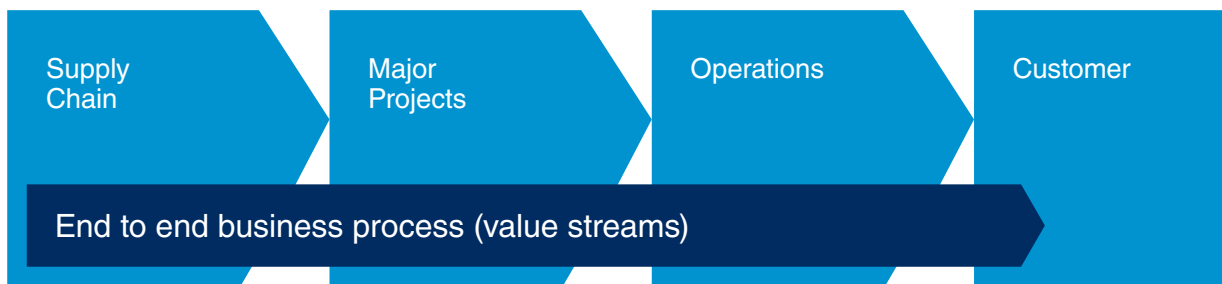
- establishing a clear definition of customer value to enable focus on “doing the right thing the right way”
- using Lean tools to minimise subjective decision making
- establishing standardised work principles
- reducing process variation to deliver predictable outcomes
- training all staff in problem solving techniques
- using Collaborative Planning to improve programme certainty
- applying “no errors forward” thinking and methods
- using performance cells to create a culture of ownership and rapid response to emerging issues

What we do

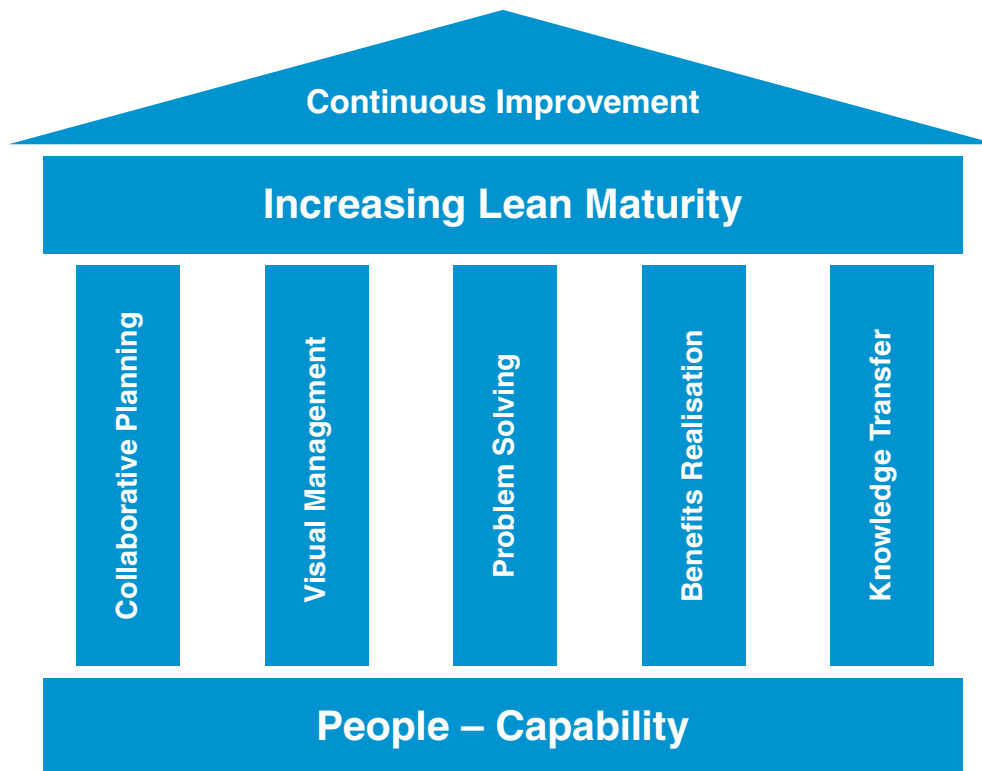
The objective of Lean is ‘to get value to flow at the pull of the Customer and then improve each day.

To achieve this we:

- focus on understanding and delivering customer value
- work across suppliers and our directorates to improve end to end business processes and get value to flow through value streams
- work with teams to engage them in continuously improving their own local processes



Our 'House of Lean' sets out the core themes of our approach



- The objective is for Highways England and its supply chain to routinely work together to **continuously improve** safety, customer experience and efficiency
- There is a structured approach to **increasing Lean maturity** using the Highways England Lean Maturity Assessment (HELMA)
- Our five supporting themes are:
 - **collaborative planning**
 - **visual management**
 - **problem solving**
 - **benefit realisation**
 - **knowledge transfer**
- The objective is only realised by developing the Lean capability of our people and those of our suppliers.

Lean Value Contribution Plan

Our Lean approach underpins the 4 key Enablers described in the Delivery Plan that will enable delivery of our 5 Strategic Outcomes.

We use Lean policy deployment to develop specific plans with each of our internal customers, providing clear line of sight between the Key Enablers, our lean tools, the specific interventions we commit to and measurable benefits we plan to achieve. The profiled plan showing the contribution Lean will make to business objectives is set out in our Lean Value Contribution Plan (LVCP).

The diagram opposite summarises our approach: understanding value; working with our customers; and supporting contribution to achieve Strategic Outcomes and KPIs.

Area 9 Resurfacing Productivity

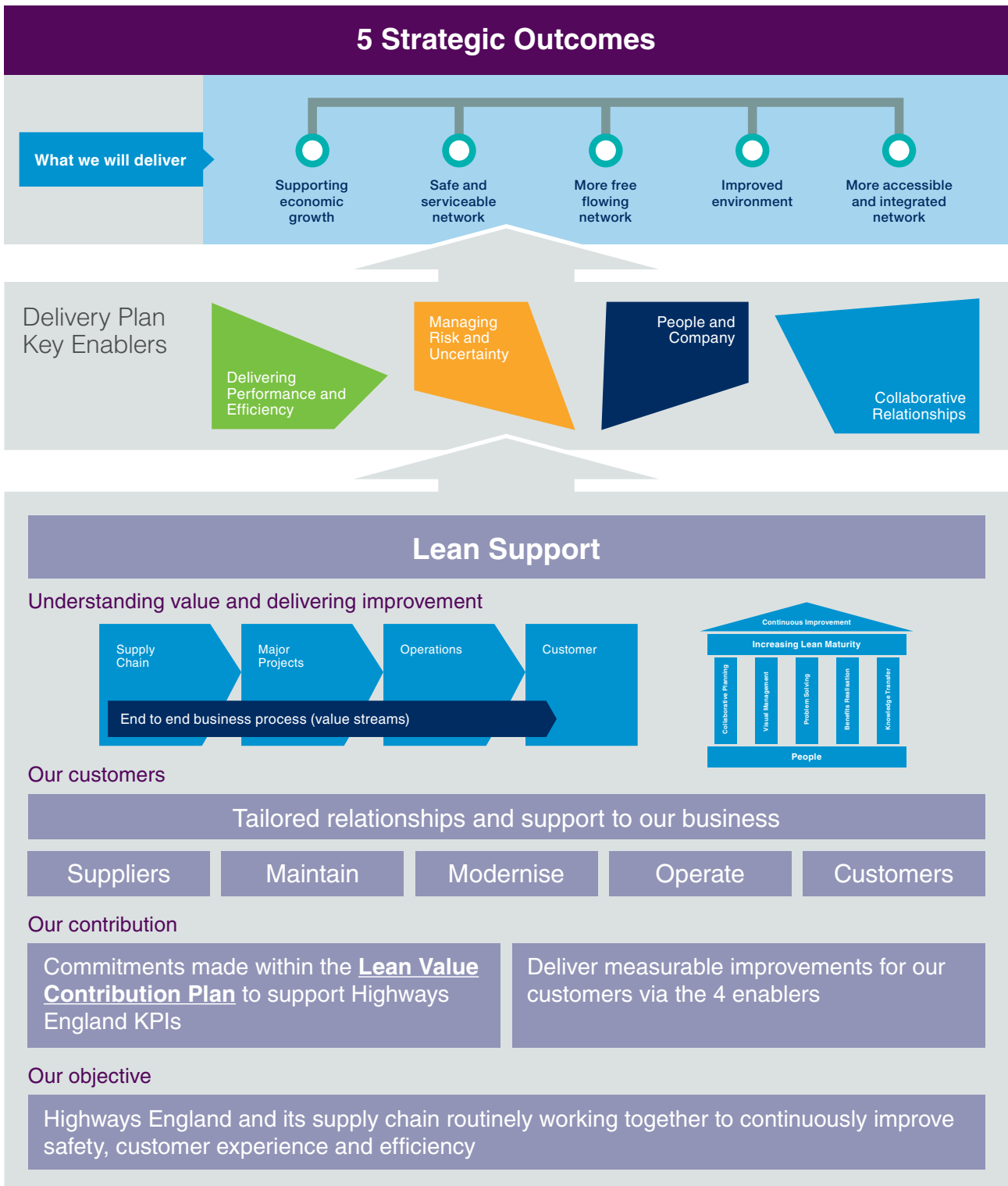
The challenge was to increase the surfacing output in a night shift. The scheme was averaging 240 tonnes per night.

Using **Production Management** we were able to help the area team increase this by 54% on average with a maximum in one shift of over 1000 tonnes.

In total this helped to create a cost benefit of c£600k for the project and reduce the project time by a third, or 18 overnight road closures. Having fewer overnight closures has customer benefits and reduces road worker exposure to potential harm.



How it fits together



How we measure success

We measure and capture the benefits achieved using our Benefits Realisation Capture Process which has been assured by Highways England audit.

During the five year period 2010 to 2015 we achieved c£100m savings from Lean interventions.

In the period 2015 – 2020, Lean has a target contribution of £250m toward the Road Period 1 £1.2bn efficiency target. The Lean Value Contribution Plan identifies how and where this target will be achieved.

We also target and capture improvement in:

- Safety
- Staff engagement
- Sustainability
- Quality (reduction in errors)
- Time (reduction in process time)

Boston Manor Viaduct Strengthening

Three months before the 2012 London Olympics, cracks were identified on this crucial M4 viaduct linking Heathrow to central London. It was imperative that the viaduct be fully open in time for the Olympic Games.

We applied **Collaborative Planning** and **Production Management** to improve planning reliability and integration between multiple contractors to enable confident delivery of the repairs within the limited time available prior to the Games.

This intervention enabled the challenging programme to be achieved and the viaduct to be fully open for the Games despite additional cracks being discovered during the works.

History and context

The Lean division was established in April 2009 and initial focus was on creating a foundation of ideas and people to generate momentum. Activity was concentrated on supply chain areas before moving into our organisation in 2012.

Auditable savings of c£100 million were achieved between 2010 and 2015 and a methodology to share good practice via Knowledge Transfer Packs was established. The return on investment has historically been circa 25:1 and to underpin these advances a series of guides were published outlining a standardised approach to techniques such as collaborative planning, visual management and benefits realisation. Supplier organisations were encouraged to develop their own Lean programmes and progress was assessed by the Highways Agency Maturity Assessment Tool (HALMAT) which was based on industry standard models.

The launch of Highways England and the growth challenges presented during Road Period 1 provide a fantastic opportunity for Lean to support the business in delivering increasing value to our customer more efficiently and safely.

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What is Lean?

There are FIVE overriding principles of Lean.

- Identify Customers and Specify Value - The starting point is to understand the specific needs of our Customer and to establish what represents value from their perspective. By clearly defining customer value for a specific product or service from the customer's perspective, non-value adding activities - or waste - can be targeted for removal. Typically, only a small fraction of the total time and effort organisations expend in their processes actually adds value for the customer.
- Identify and Map the Value Stream – The Value Stream is the entire set of activities across all parts of the organisation involved in delivering a specific product or service. This represents the end-to-end process that delivers value to the customer. Once you understand what your customer wants the next step is to identify how you are delivering (or not) that to them.
- Create Flow by Eliminating Waste – Typically when you first map the Value Stream you will find that only a very small proportion of activities are contributing to customer value (often only 5% or even lower!). Eliminating non-value adding or waste activities ensures that products or services “flow” to the customer with minimal interruption, detour or delay.
- Respond to Customer Pull – This is about understanding the customer demand on the service you provide and then designing processes that respond to this. The goal is to provide only what the customer wants when the customer wants it.
- Pursue Perfection - Creating flow and pull often starts with the improvement of individual process steps within a broader value stream. However, gains become truly significant as all the steps link together. As this happens more and more layers of waste become visible and the Lean journey continues towards its theoretical end point of perfection, where every asset and every action adds value for the end customer.

Bidston Moss viaduct Refurbishment and Strengthening

This viaduct on the M53 had a weight restriction placed on it and a project to strengthen and refurbish the viaduct was initiated.

Implementation of **Collaborative Planning, Production Management** and **Process Improvement** helped to lift the restrictions months earlier and the overall project was delivered early with audited Lean related cost savings of £1.16m.

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