HMEP
Highways Maintenance Efficiency Programme

Lean Infrastructure
Meeting the challenges of Construction 2025

HMEP Lean Toolkit
12 months on

Matthew Lugg OBE
Director of Public Services at Mouchel
HMEP advocate seconded to DfT
Director of LCI UK

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Agenda

- Introduction and background to the toolkit
- First case study - Leicester City Council
- Second case study - Leicestershire County Council
- Third Case study Durham County Council

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HMEP: LEAN Toolkit

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What does it do?

- Explains how to apply LEAN within a highways service environment
- Gives advice, guidance and trialled methodology on how to overcome ‘typical’ challenges
- Can be used by Highway Authorities and supply chain partners to start or do more LEAN projects
- Includes 16 evidenced case studies from other authorities including contact details of those who will share their experiences
- Those that use LEAN are demonstrably saving money and improving services

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LEAN
Reactive Repairs

Rupert Bedder
Highway Maintenance Group
Leicester City Council

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Leicester City Council Highway Maintenance Group

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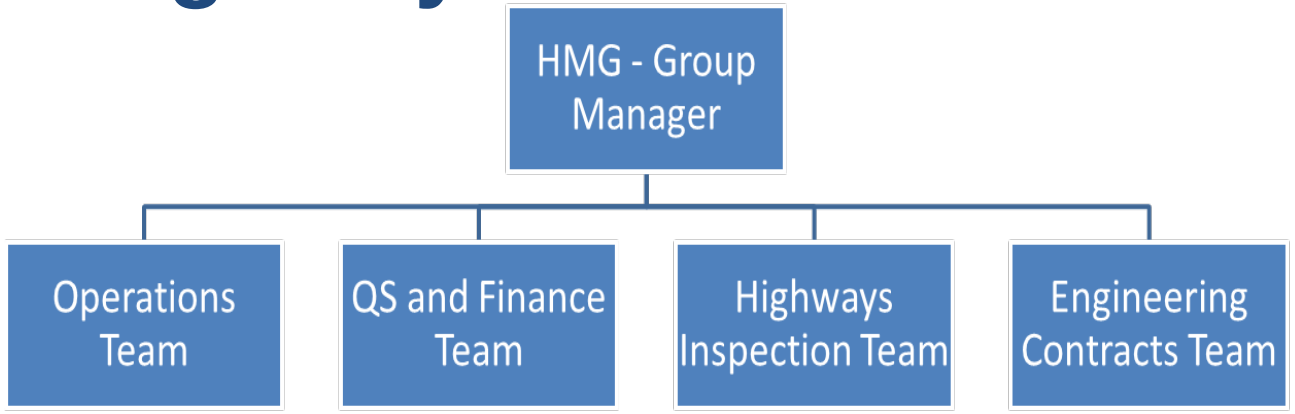

- 819km Road Network
- £1.3m + revenue spend
- ‘Traditional’ defect repair policy
- Permanent repairs

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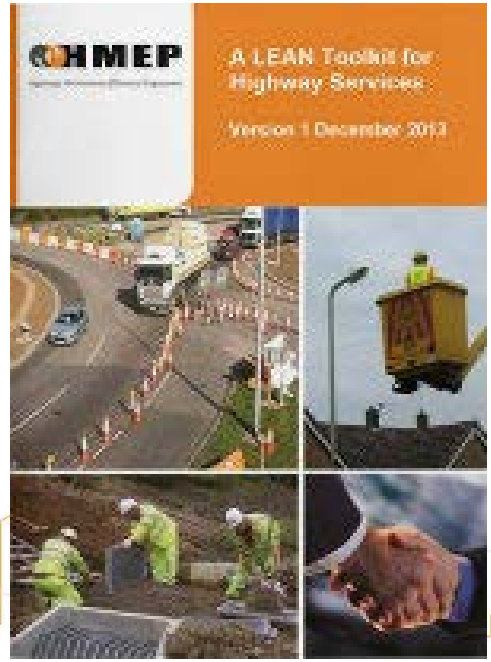
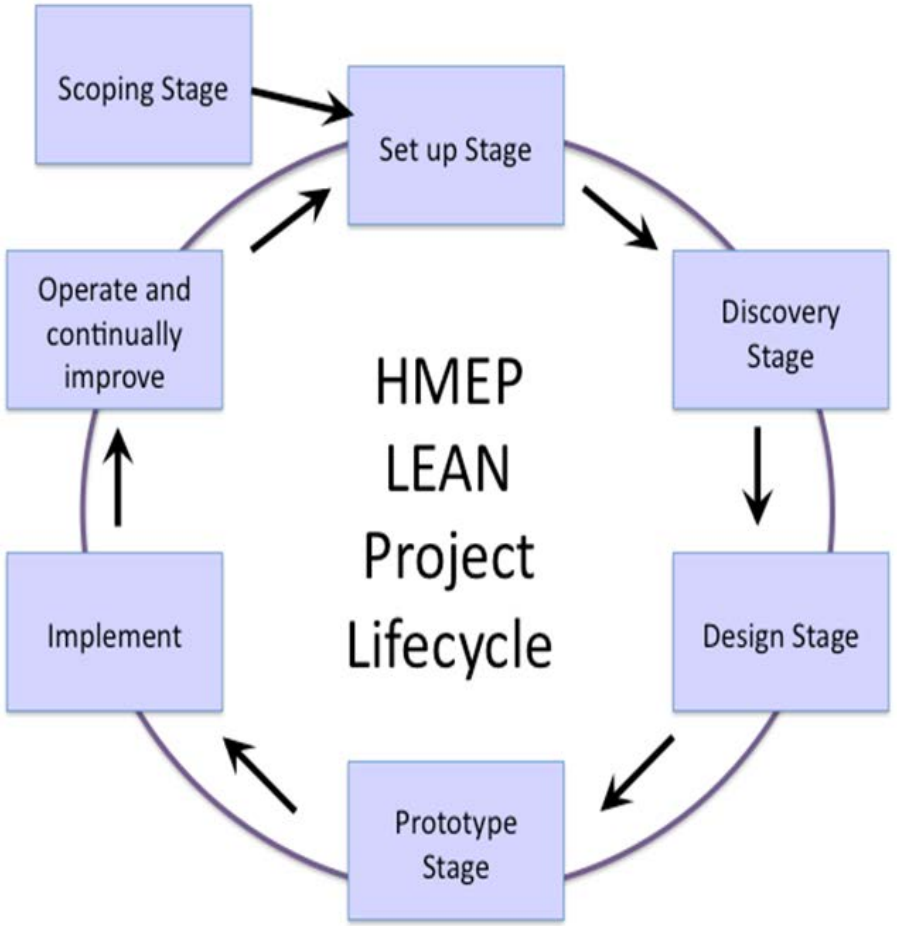
Using the HMEP Lean Toolkit

- Pilot project
- 6 month timescale
- 148 page toolkit
- User friendly





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Scoping + Set Up

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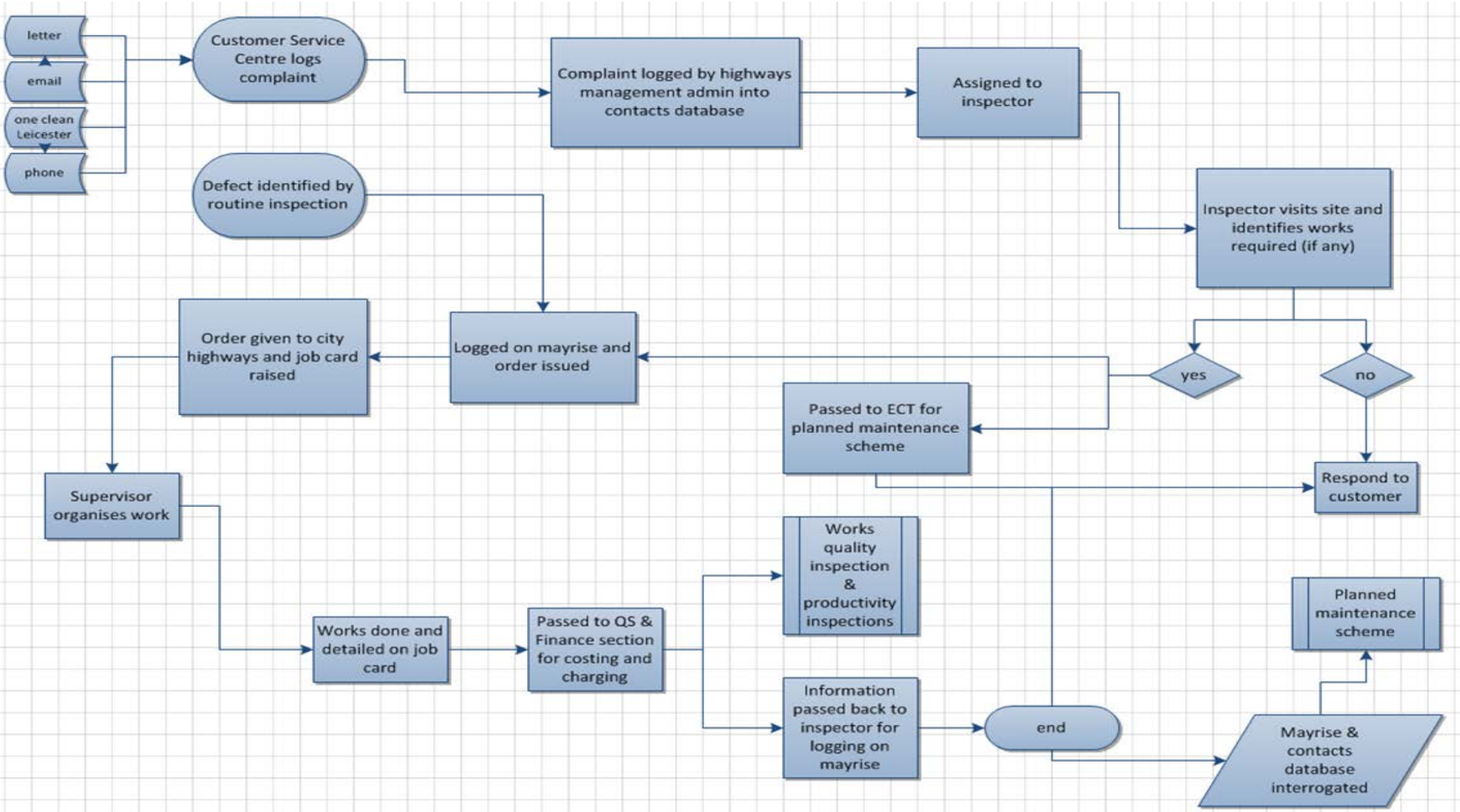

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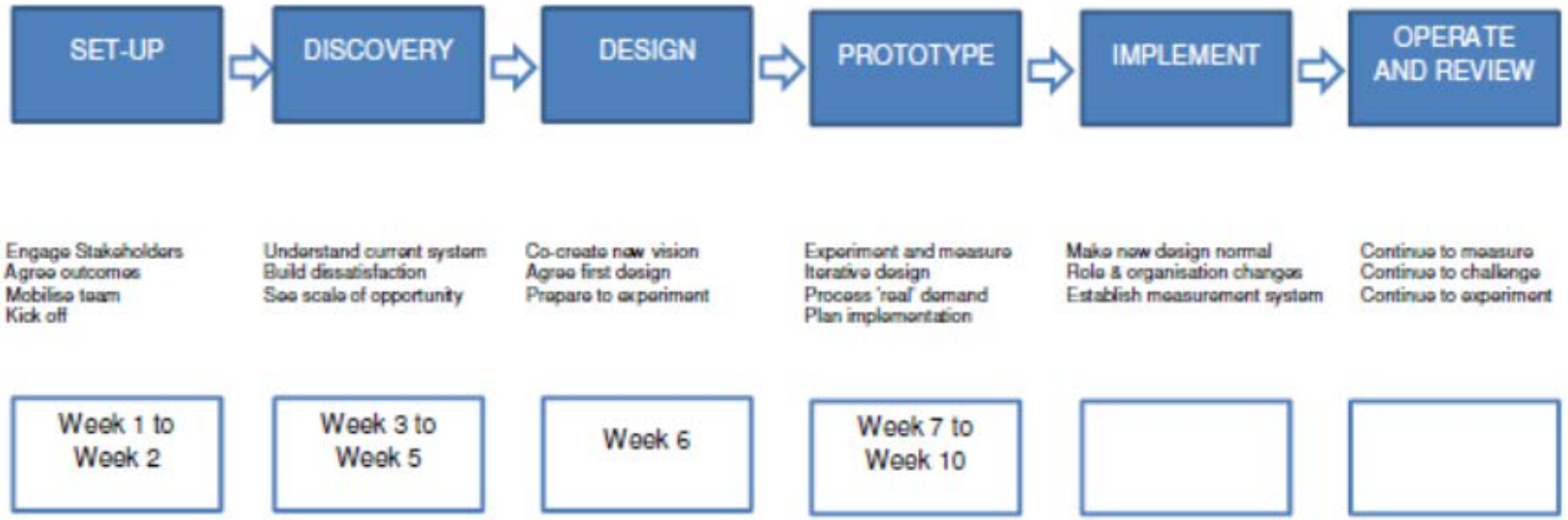
Scoping + Set Up

Purpose Statement:

To primarily review the reactive repairs process, whilst drawing on and including the wider, related issues. To address known and perceived inefficiencies and to identify opportunities for additional savings and reduction of waste. At all times aligning the process from a customer focussed



Discovery

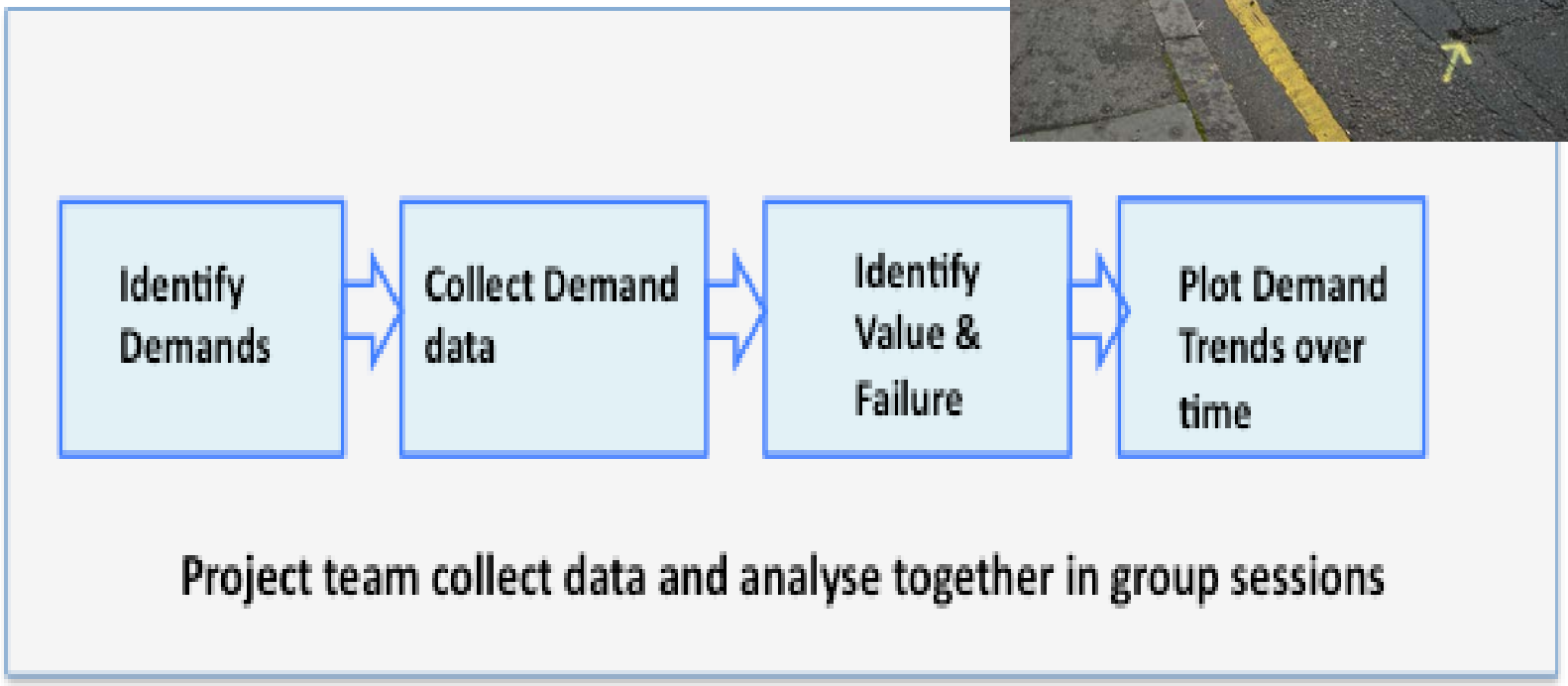
- Stakeholder Identification and Analysis

Stakeholder	Interest	Support	Engagement
Highway Users (general public)	Low	Low	Through user groups
Specific User Groups Bus – Cycling - Pedestrians	Low	Low	OL to contact council officers responsible for each identified user group.
DfT	Low	Low	None
City Mayor & Councillors	Low – Med	Low - Med	SL to keep informed of progress
Risk Management Services (Insurers)	High	Low – Med	OL to have 1 to 1 with Team Leader
Customer Services	Med	Low	OL to visit team, to understand role. Team to be kept informed of proposals and recommendations.
Traffic Operations Team	Med - High	Low – Med	OL to have 1 to 1 with Team Leader
Divisional Director (ALS)	Med	Med	SL to keep informed of progress
Communications Team	Med	Med	OL to have 1 to 1 with Team Leader

- Purpose and Customers
- Communications plan

Discovery

- Demand on the system



Design Day

- Data Review
  - Current Procedure
  - Hotspots/Selected Streets
  - Historic Costs
  - Cost Prediction
  - Inspections
  - Customer Services/RMS
- Prototype Design
- Detailed Design

Prototype

- 2 Inspectors – 4 Wards
- Intervention-level defect driven
- Loose boundaries
- More time out of office
- Greater inspection role

Benefits + Implementation

- More NRSWA Cat C inspections taking place
- More carriageway repaired for less money
- Greater staff satisfaction
- Better public perception
- More money!

- Using ‘Lean+’ methodology in 3 wards (3 Inspectors)
- Focussing on flexible carriageways
- Further use depends on budgets

Lessons Learnt

- Stakeholder management is important
- Realistic timescales
- Be prepared for ‘déjà vu’
- Loose Boundaries

- Adapt the toolkit to your project

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LEAN Thinking In Leicestershire

Gary Thompson
HMEP Project Manager
Leicestershire County Council

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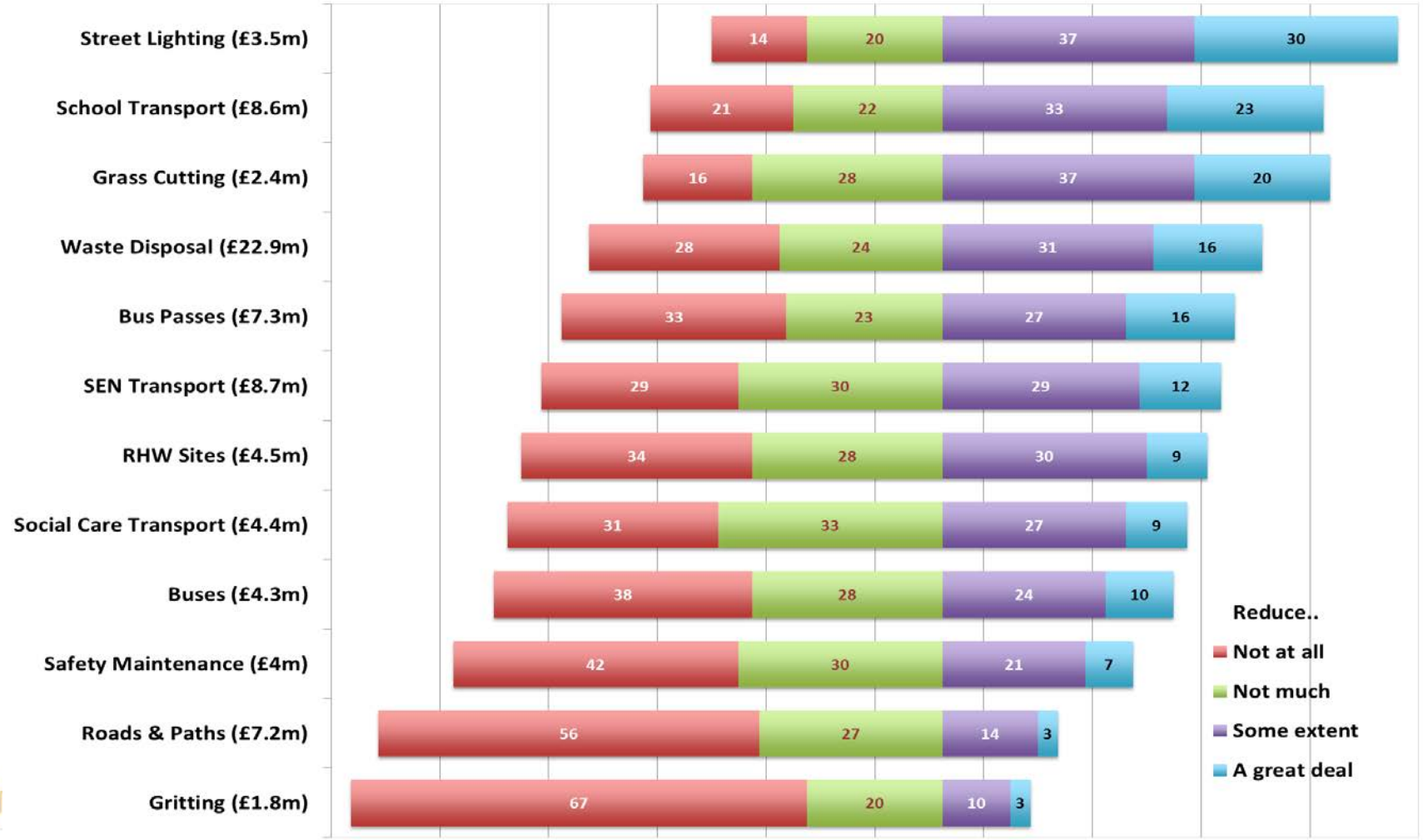
Coverage

Application of the HMEP LEAN toolkit to reshape service delivery for Highway Surface Defects

- Context for the review
- The Lean Toolkit
- What changed in service delivery
- Service improvements achieved to date

Public consultation in 2013



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Perception versus reality

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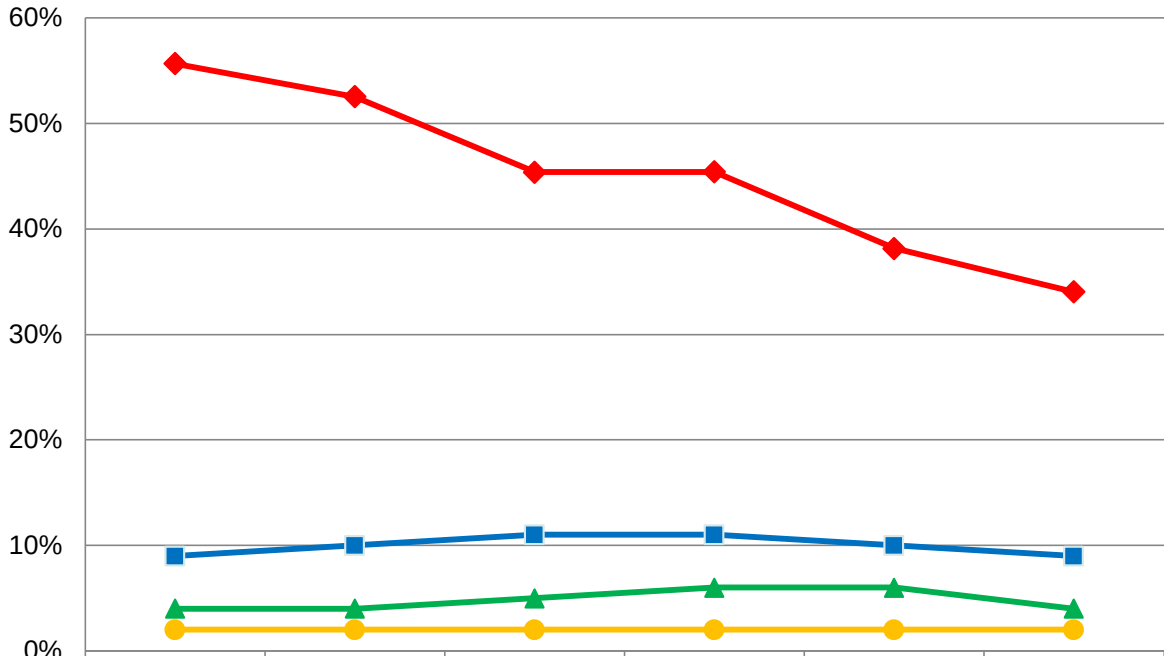
Road Condition vs. Public Satisfaction



	2008/09 (1 / 2)	2009/10 (1 / 4)	2010/11 (1 / 9)	2011/12 (1 / 2)	2012/13 (1 / 7)	2013/14 (1 / 11)
Overall satisfaction with the condition of roads (NHT)	55.7%	52.6%	45.4%	45.4%	38.2%	34.0%
% principal roads where structural maintenance should be considered	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
% non-principal roads where structural maintenance should be considered	4.0%	4.0%	5.0%	6.0%	6.0%	4.0%
% of the unclassified road network where maintenance should be considered	9.0%	10.0%	11.0%	11.0%	10.0%	9.0%

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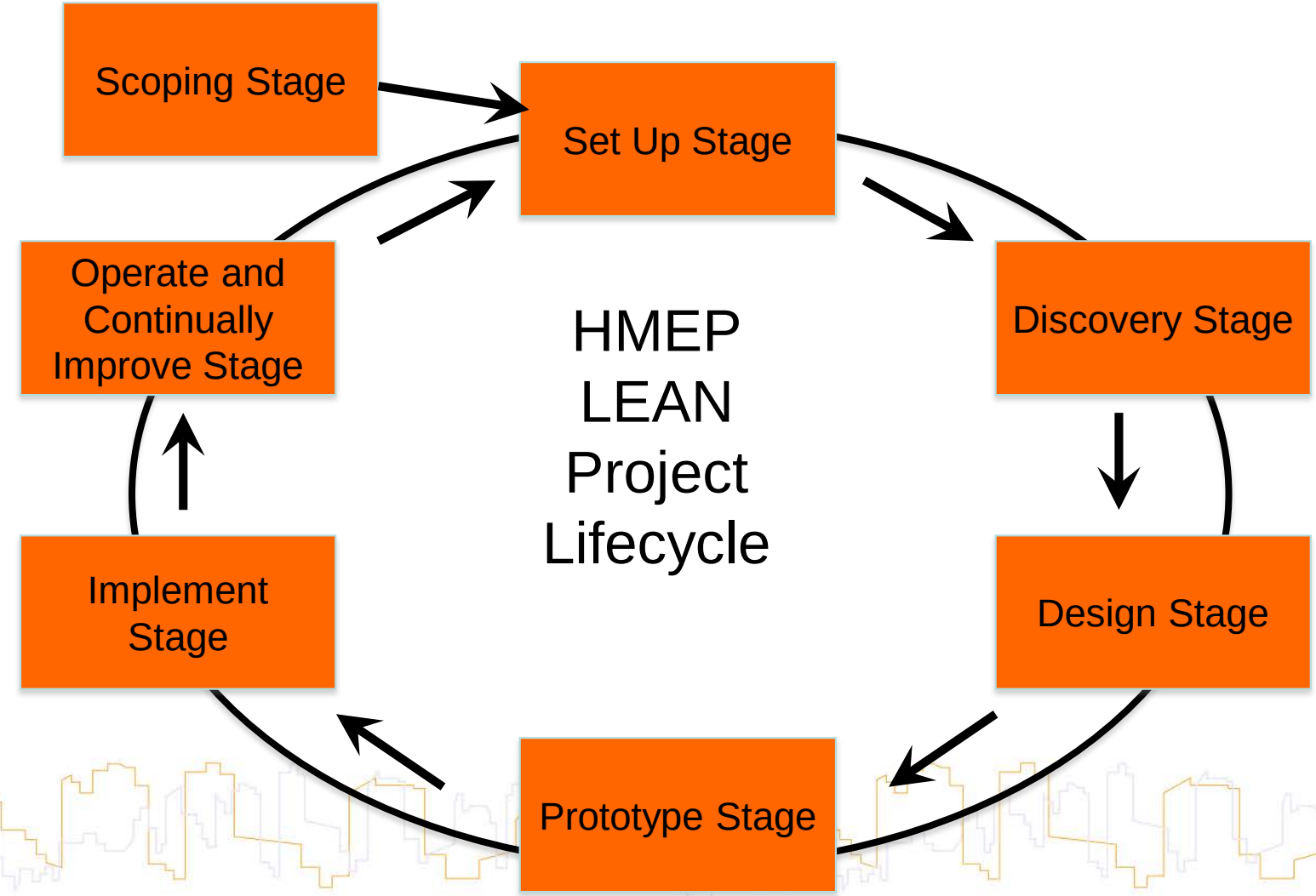
Application of the HMEP LEAN toolkit



Reshaping highway surface defects

Issues to be tackled:

- Queuing for materials at quarries
- Quality of temporary reinstatement material
- Volume of Cat 1 tickets – 3 days or 76 days?
- Quality of all works tickets poor, 15% errors
- Incomplete information provided (temp lights?)
- Clashes with programmed work
- Cat 1 temporary repair done but Cat2 remained
- Inaccessibility of officers for time-critical decisions

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Discovery - process map of defect resolution

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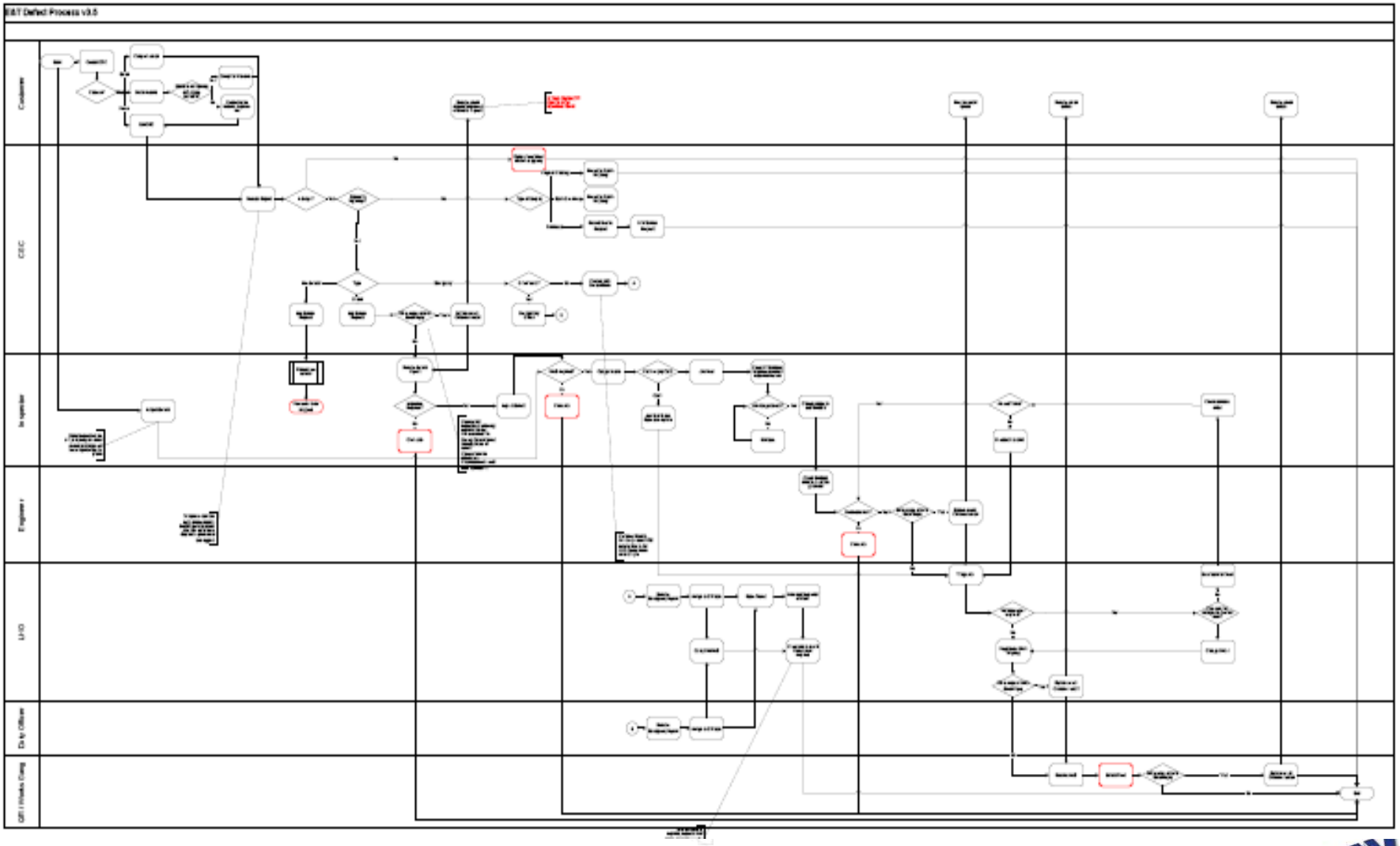

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Revised process map for Cat 1/Cat 2 defects

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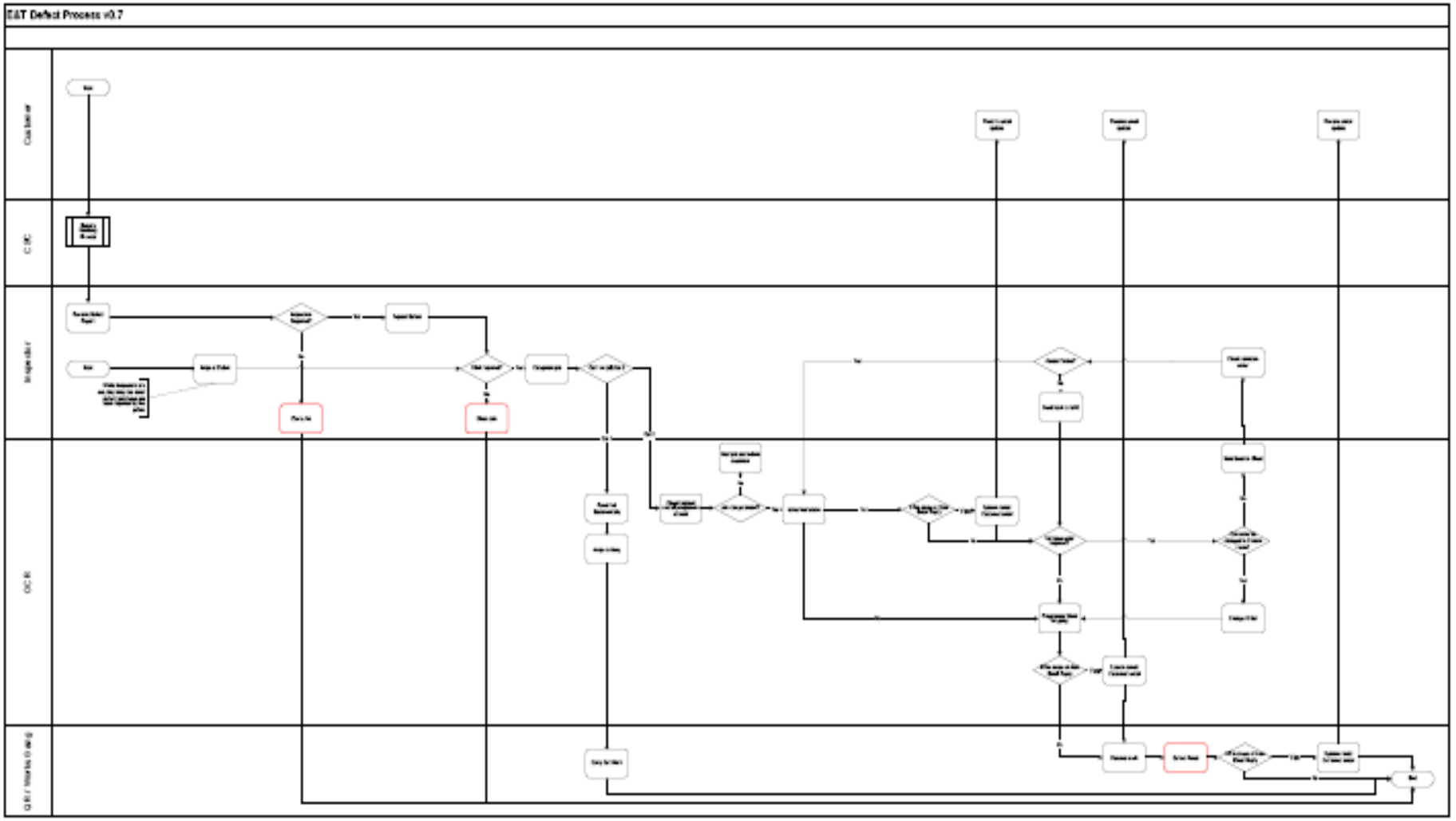

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An altered service …..

- **Changes made:**
  - Purged Confirm of planned work
  - Forward programme of works identified and shared
  - Inspectors identify the work with photos – no ordering
  - Technician converts inspector data into works tickets that are consistent
  - Cat 2 higher tickets (28 days) – 6 road menders
  - Gang link to OCR with phone tablets

An altered service …..

- **Changes made:**

  - Assistant Engineer on OCR weekly rota
    - cross-county review of Cat 1 & 2 requests
    - reviews for programme clash
    - assesses traffic sensitivity
  - Hot boxes leased and filled in afternoon
  - Trial of ‘semi-permanent’ reinstatement materials to improve durability of reinstatements

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Positive effects:

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- No waiting at quarries as hot box material available
- No errors in works tickets so no abortive visits
- No delays in time-critical decisions
- Reduction in Cat 1 tickets but increase in Cat 2 due to better identification and categorisation of defects
- Reduced volume of reactive work in HMS Confirm
- Highway inspectors' time released
- Scope for reinstating 6-monthly rural inspections
- No clashes with programmed work
- Greater alignment between Cat1 and Cat2 works

and performance improvements ……

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Performance Improvements

Improvements have been made in the time taken to repair defects raised by customers:

Defect Category	Average time (pre-project)	Average time (post-project)	% improvement
Category 1 (3 day)	*7.51*	3.12	58%
Category 2 (28 day)	*55.13*	27.58	50%
Category 2 (76 day)	*81.78*	28.93	65%

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Thanks for listening!!

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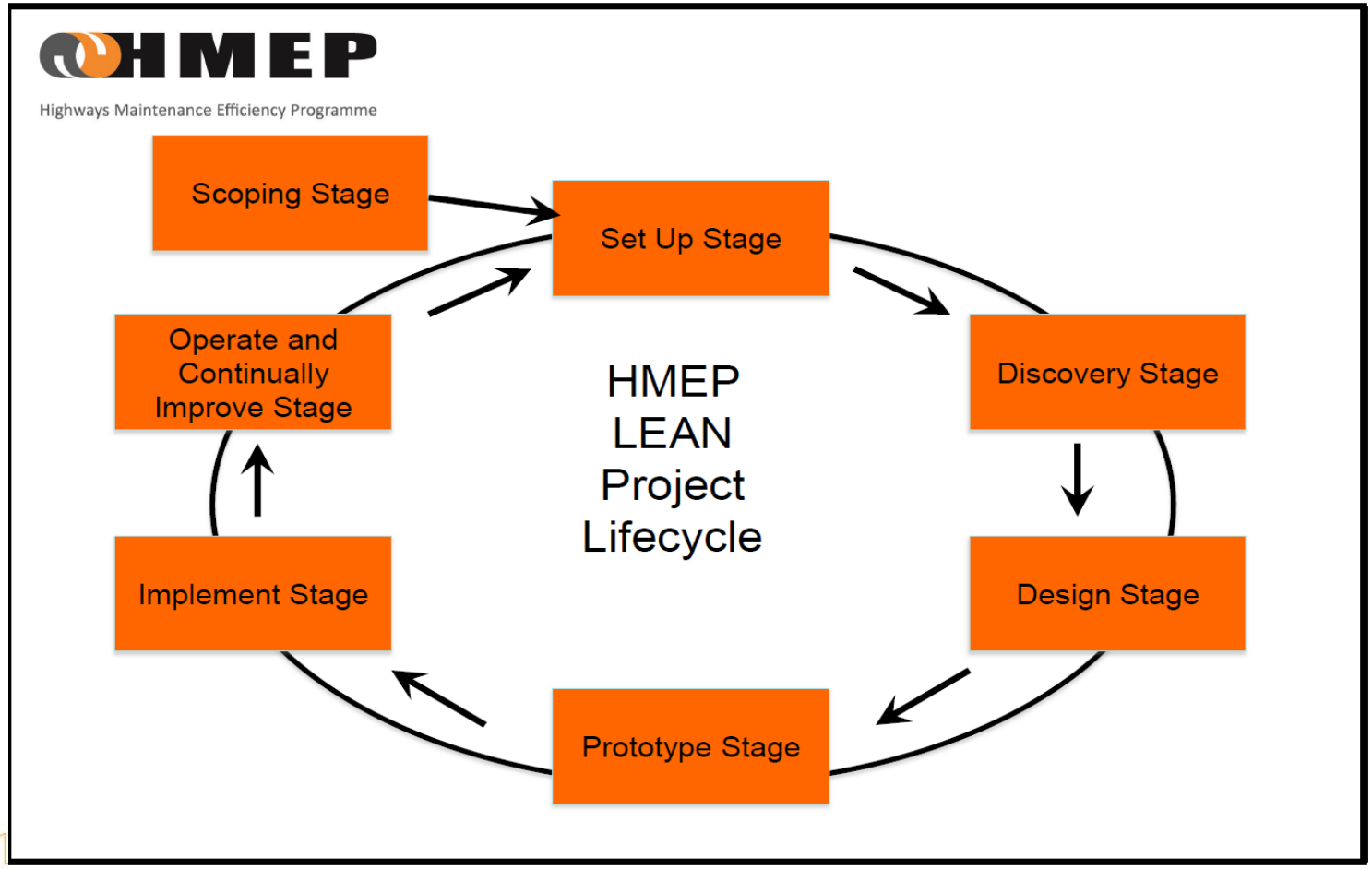
Durham CC Reactive Maintenance Lean Project

Introduction

- Used HMEP Lean Toolkit:



System Picture

- Mapped out the processes and root causes
- Focused on potholes, footpath defects and gullies
- Quarter 1 2013:
  - Carriageway Defects: 6045
  - Footway Defects: 2262
  - Drainage (gullies): 2800
- Average number of customer service requests 2,000 per month

Mapped Out Process - Dealing with a Pot Hole

- Amount of stages / processes – Are all stages required?
- There were 10 stages in the process
- Many stages adding no value

Discovery Stage
What Matters?

- Compliance with the Highway Safety Inspection Manual
  - Ensure safety of highway users as far as reasonably practicable
  - Defend public liability claims
- Right first time permanent repair – avoid repeat visits
- Time taken to repair
- Customer satisfaction
- Maximise efficiencies

Design Stage

- Workshop with all staff involved
- Mapped out the process:
  - Identified where added value
  - Identified waste

Case Studies

- Worked through 5 case studies to identify end to end process
- Identified non productive time
- Further monitoring undertaken to ensure that case studies representative

Prototype Stage

- Trialled a new process
  - Track end to end process
  - Reduce paper based system
  - Speedy response
  - Right first time permanent repair
  - Omit non-value components

Implement Stage

- Stop Highway Inspectors from checking all highway defects
- Introduce “Repair by default” by directing service requests direct to repair teams
- Recruit a Hub Manager to manage workflows
- Reduce Highway Inspectors from 20 to 16 through ER/VR
- Fully utilise technology to reduce paperwork

Conclusion

- Improved process
- Speeded up response times
- Achieved savings
- Re-invented savings in additional repairs
- Improved customer satisfaction

Thanks any Questions?

The HMEP toolkit is freely available at www.highwaysefficiency.org.uk