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**MOTT
MACDONALD**

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Making it happen: The story of Asset Management on the Elizabeth Line



Agenda

- 1 Setting the scene: Introduction to the Elizabeth Line and the operational challenges
- 2 Asset management strategy and ambition
- 3 Asset management maturity assessment
- 4 Delivering the Asset Management Improvement Programme
- 5 Lessons learnt

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Setting the scene

- Main Line railway in a Metro Environment
- Almost perfect performance target – 95% of journeys on time
- Engineering access very limited – 2 hours working time in midnight time
- One train every 120 seconds – no room for error
- 200m long trains with 1500 people capacity
- Record 800,000 passengers a day (and growing!)
- Special noise restrictions around theatres and venues
- Interoperability standards requirements



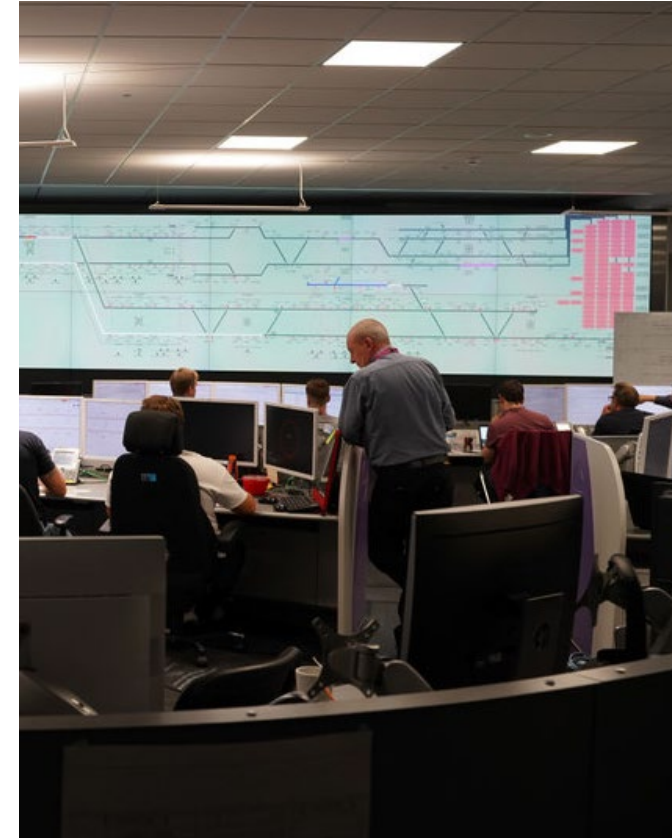
Other challenges along the way...



Construction

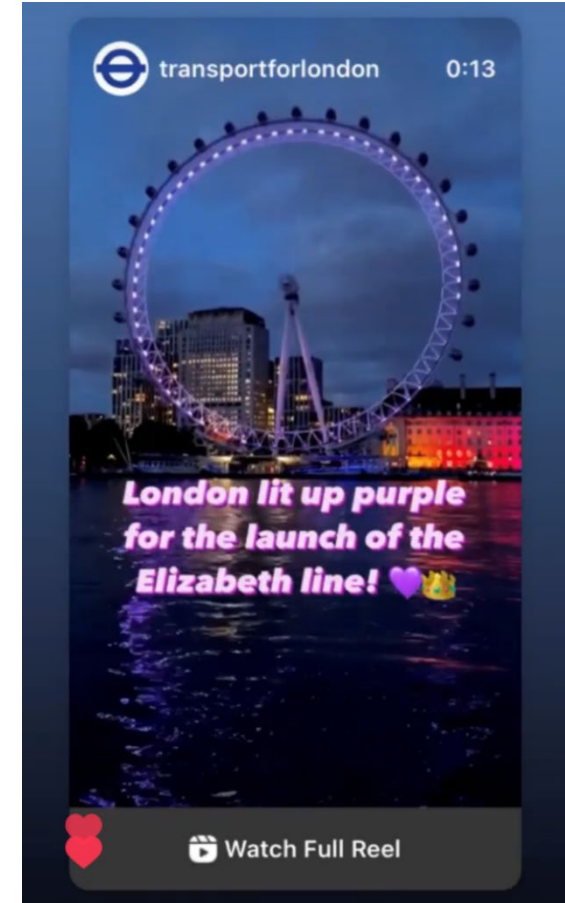
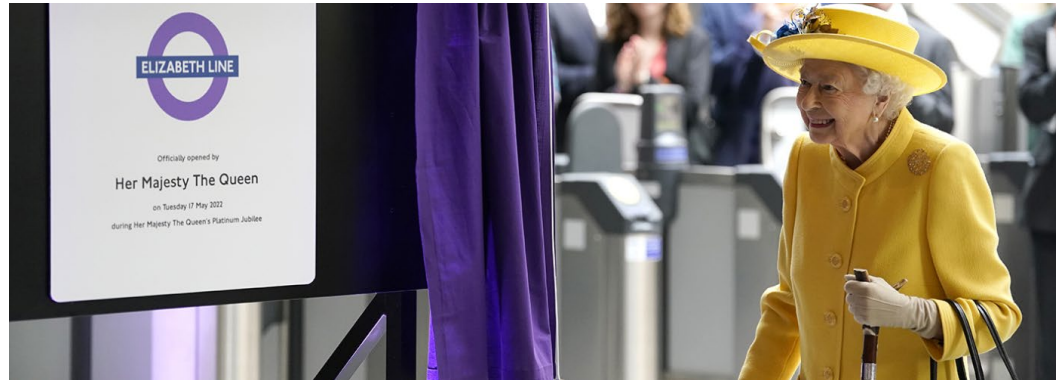


Operational Readiness



Operations

Elizabeth line has transformed the lives of Londoners!



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This improvement programme is not a “nice to have...”

Our vision

Our maintenance strategy is ‘Predict and Prevent’:

- We have a profound understanding of our assets
- We use technology to inspect the railway
- We use the workforce to do proactive work
- We respond to alerts before service affecting failures

Our investment planning process is integrated into the overall 50-year TfL asset management plan.

Service will be impacted if we don't move towards our vision



Asset management makes Elizabeth line's business possible



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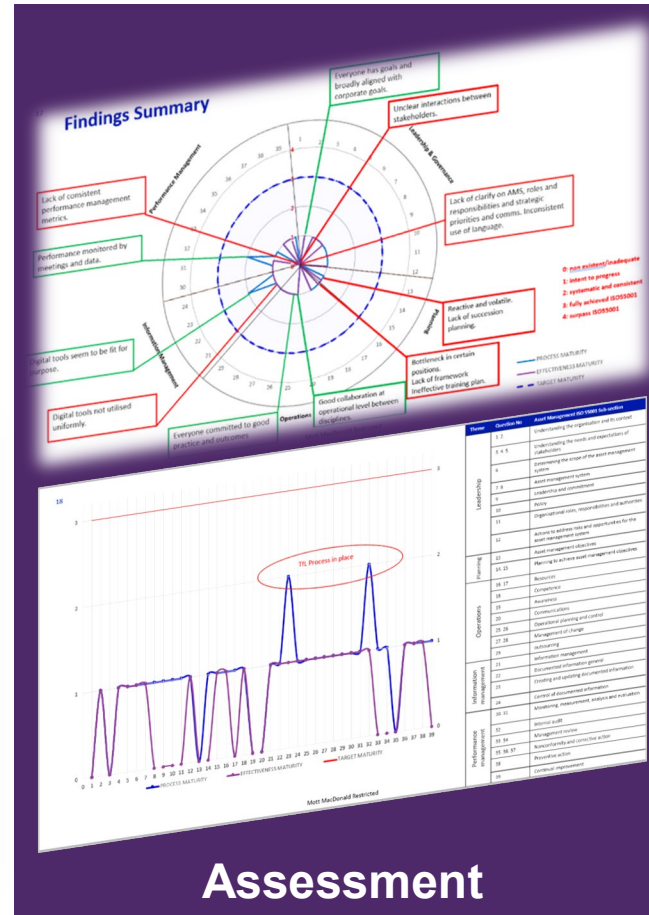
A common understanding of the problem statement to establish the priorities for asset management



A systematic methodology to identify, quantify and visualise the gaps, and to define interventions



Interviews



Assessment

Detailed Findings - Overall

01 Leadership & Governance	02 Planning	03 Operations	04 Information Management	05 Performance Management
01.01 Lack of clarity on AMS, roles and responsibilities and strategic priorities and controls. Inconsistent work of language.	02.01 Lack of consistent planning process to reflect the operational design and criteria for prioritisation.	03.01 Weak procurement process to provide access to services, goods and people.	04.01 Lack of ability of constrained process and initiatives on information management and the use of data.	05.01 Lack of consistent performance review metrics due to a lack of clear objectives and outcomes.
01.02 Inconsistent leadership based on lack of clarity on AMS, roles and responsibilities and strategic priorities and controls. Inconsistent work of language.	02.02 Lack of consistent planning process to reflect the operational design and criteria for prioritisation.	03.02 Weak procurement process to provide access to services, goods and people.	04.02 Lack of ability of constrained process and initiatives on information management and the use of data.	05.02 Performance review metrics are mostly done as meetings and informal feedback and not documented for each TL shift.

Detailed Findings - Projects

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Detailed Findings - Maintenance

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Visualisation

The safety of the line was managed, but people were working with limited strategic direction

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Detailed Findings - Projects

01 Leadership & Governance	02 Planning	03 Operations	04 Information	05 Performance
01 Lack of understanding of organisation objectives from top down.	02 Unclear prioritisation due to lack of understanding of org objectives and consistent criteria			
02 Lack of understanding of AM policy and how their roles contribute to wider AM.	02 Lack of consistent planning process to adjust to unplanned change and criteria for prioritisation.			
03 Inconsistent leadership based on lack of corporate identity, goals and common understanding. Too much based on experience of individuals.	03 A lack of resilience for the railway caused by a lack of integrated planning near total reliance on personal expertise.			
04 Strategic communications are inconsistent and insufficient, tend to focus on tactical rather than strategic.	04 Requirements for projects based on concepts that might be obsolete. Unclear if end users are being engaged.			
05 Lack of available and consistent training leads to poor understanding of asset management. Confusion between AMs and Maximo.	05 Lack of visibility of the resource available to plan and deliver work.			

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Detailed Findings - Maintenance

01 Leadership & Governance	02 Planning	03 Operations	04 Information	05 Performance
01 Minimal good understanding of own roles and accountabilitys, individuals able to set their own roles.	02 ASPs created before the AMPs where in place and not always aligned.			
02 Low visibility and understanding of organisation objectives and priorities.	02 60%-70% work delivered are planned and the rest are unplanned changes due to unexpected failure or requests from senior management.			
03 Inconsistent leadership based on lack of corporate identity and goals. Too much rely on personal experience.	03 Lack of consistent planning process to adjust to unplanned change and criteria for prioritisation.			
04 Engineering and Maintenance concepts are not aligned in roles and responsibilities. This creates confusion grey areas between teams.	04 A lack of resilience for the railway caused by a lack of integrated planning such as succession and resilience planning.			
05 Strategic communications are inconsistent and insufficient, focus on tactical rather than strategic.	05 Good collaboration between maintenance and engineering at the discipline level. Decisions are taken jointly to mitigate risk.			
06 Leaders and managers seem to be firefighting and forget the strategic/important to tackle the urgent.	06 Integration and alignment between Maintenance Engineering, Delivery and Planning teams.			
07 Lack of training on AMS caused confusion between Maximo and AMS within the team.				

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Detailed Findings - Overall

01 Leadership & Governance	02 Planning	03 Operations	04 Information Management	05 Performance Management
01 General good understanding of own roles and accountabilitys. Individuals able to set their own roles. These are usually aligned with corporate goals.	02 Lack of SAMP and discrepancy around the level of planning across different disciplines due to stages of commissioning.	03 Good collaboration in the working level mitigating the short-term effect of the lack of planning.	04 Very little use of private share, most people are familiar with the various tools available.	05 A lack of consistent performance review metrics due to a lack of clear objectives and priorities.
02 Insufficient clarity on roles and responsibilities of others between different teams.	02 Too much chaotic, reactive day-to-day planning of work, which leads to work overload.	03 Wrong process in the ADM team to deal with the volume of work and it militates against clear responsibilities of the IMES.	04 A lack of visibility of centralised process and instructions on information management and the use of tools.	05 Performance reviews are mostly done via meetings and informal feedback and not documented for non-TL staff.
03 Inconsistent leadership based on lack of corporate identity and goals. Priorities are not documented, shared and progress is not being monitored.	03 Lack of consistent planning process to adjust to unplanned change and criteria for prioritisation.	03 Weak procurement process to provide access to services, goods and people.	04 Do review approval process for information exists in some areas but inconsistently.	05 Unclear performance review process for staff from TL.
04 Unclear delegation of authority between Engineering and Maintenance.	04 Railway resilience is threatened by a lack of succession planning, near total reliance on personal expertise.	04 Not all managers understand the undertakings made by RLI in the MISA (Main Line Safety Authorisation).	04 People find Maximo fit for purpose to meet basic business needs but not achieving its vision.	05 Progress is not always monitored, evaluated and documented.
05 Strategic communications are inconsistent and insufficient, focuses more on tactical than strategic.	05 Good collaboration between maintenance and engineering at the discipline level. Decisions are taken jointly to mitigate risk.	05 Framework and governance for decision making exists in some areas but is inconsistent and not properly documented.	04 Those using TDM find it fit for purpose, however others are not using it as intended.	05 No process in place to consider continuous improvement.
06 Insufficient processes to define and evaluate individual and team objectives.		06 Many teams have enough resources but they don't always have the right capabilities in the team.	04 Good information management underpins the compliance of the MISA. Unclear if it is being fulfilled.	
07 Wasteful repetition in communicating and collaborating.		07 Everyone committed to good practice and outcomes.		

Red: Poor, Yellow: Inconsistent, Inadequate, Green: Existent, adequate

Simple visualisation Simple language Relevant to people

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How we are turning the red boxes green

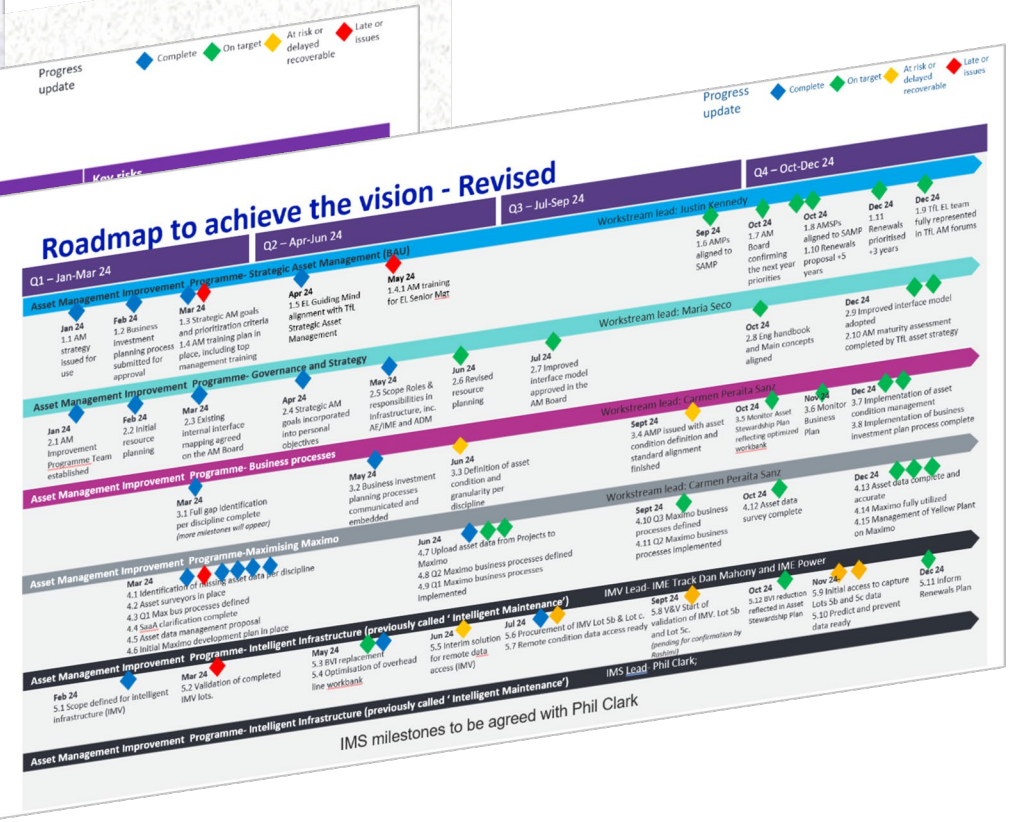


12 AMIP Success Criteria and Metrics			
Id	Benefit	Icon	Success criteria
1	Improved Safety		1.1 Information available at different levels of the organisation to inform decision making (safety risks)
2	Improved performance and reliability of RfLI assets		2.1 Shift resources targeted optimal m 2.2 Information av of railway and cong based decision ma
3	Improved efficiencies and productivities		3.1 IMV procured, available 3.2 Maximo fully u

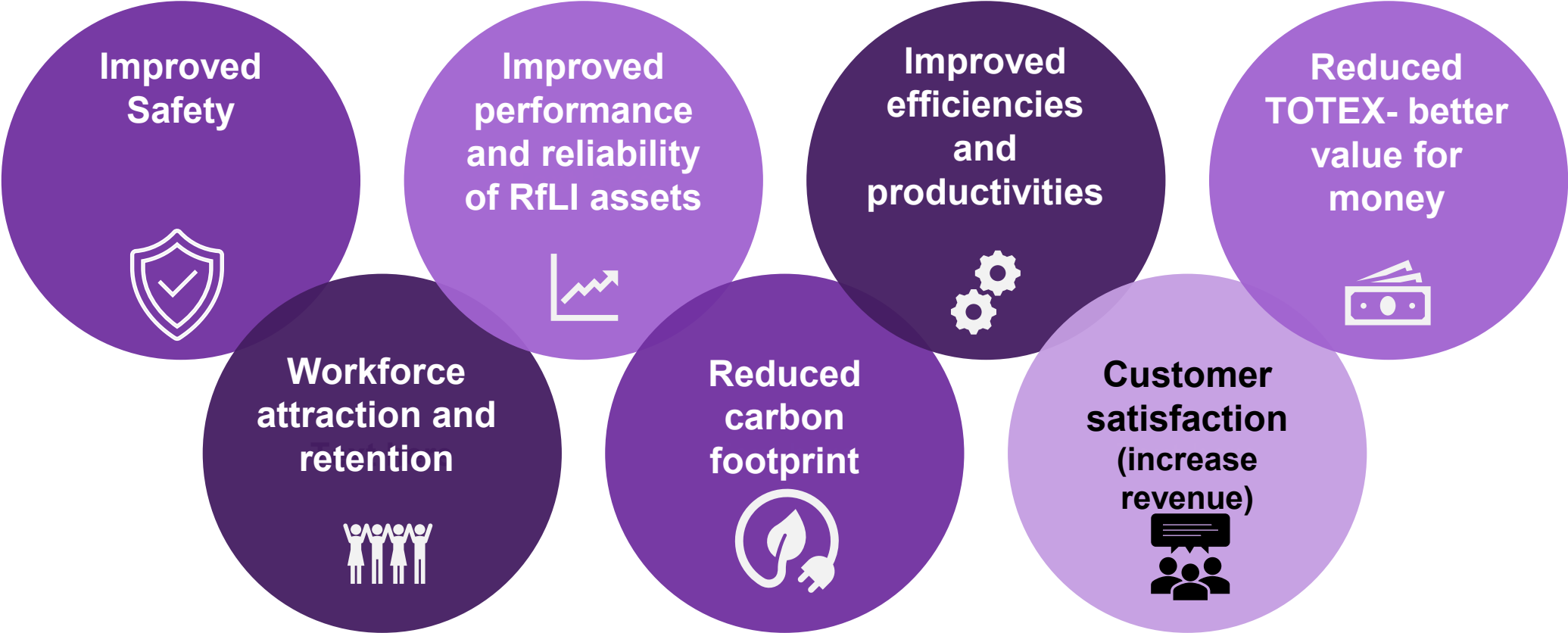
Workstream	Number of milestones completed to date vs Number of milestones due to date (End March)	Number of milestones on track next period vs Number of milestones due next period (End of March)	Overall Number of milestones on track vs number of milestones due (Dec 2024)	Roles and responsibilities by July
Governance and Strategy	2/3	4/4	6/9	On track

Periodic Progress Measurements

Roadmap to achieve the vision - Revised



Benefits of the improvement programme

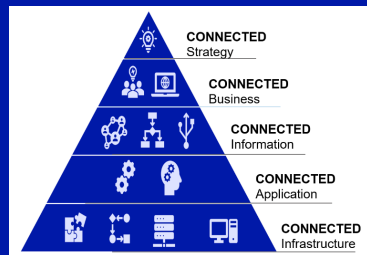


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What we have learnt to do well!

Ensure there is an enterprise approach



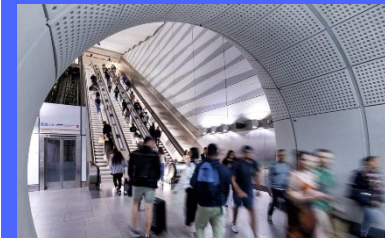
Keep a growth mindset



Have an infrastructure directorate



Put the customer and people at the centre



Work as a team



Q&A



Carmen Peraita Sanz
Consultant Director
Mott MacDonald

Change and Adoption Lead
Elizabeth Line



Maria Seco
Infrastructure Asset Strategy
and Implementation Lead
Elizabeth Line

Best Practice Highlights

- **Enterprise approach** allows for an agreed common view of the problem statement and input from all key players.
- A **common leader** across the asset lifecycle integrated all infrastructure departments and leads the cascade of the asset management objectives.
- Embed a **'growth mindset'** to continuously learn the strengths and weaknesses of the infrastructure.
- Applied **continuous improvement practices** before issues arise (we have a business improvement team).
- Invest in building asset management **competency** in the senior leadership team.
- **Transparent culture and collaborative approach** is fundamental to improve. You don't do great things in isolation.
- People are key to drive change and unlock value – **support talent to flourish and use the collective genius** of the responsible experts to drive sustained improvements.