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A13 Widening Programme Review & Lesson Learnt

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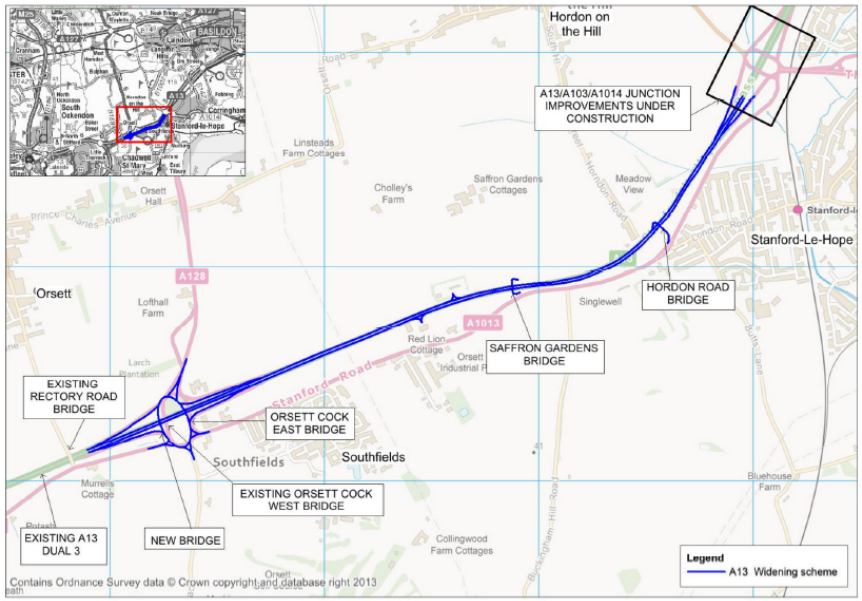
A13 Widening – Project Overview

- **OBJECTIVES**
  - Scope: The project will complete a Dual 3 x lane All Purpose (D3AP) standard carriageway along the A13 from junction 30 of the M25 to the A1014 junction. The A13 Widening project will tie in with the existing three lane section of the A13 to the west of the junction with the A128 (Orsett Cock). Alterations to the Orsett Cock interchange and two overbridges accommodate the widened A13.

  - *Original Approved Construction Budget: £78,866,596
  - *Initial Programme: Completed by February 2019

    (* at time of tendering & detailed design – Aug 2016)
  - *£100,202,194 in 2023 prices*

Figure 5.1: A13 Widening Scheme



Source: A13 Widening Initial Business Case – Atkins, Aug 2013

Figure 5.1: Location of the Project

A13 Widening – Project Overview

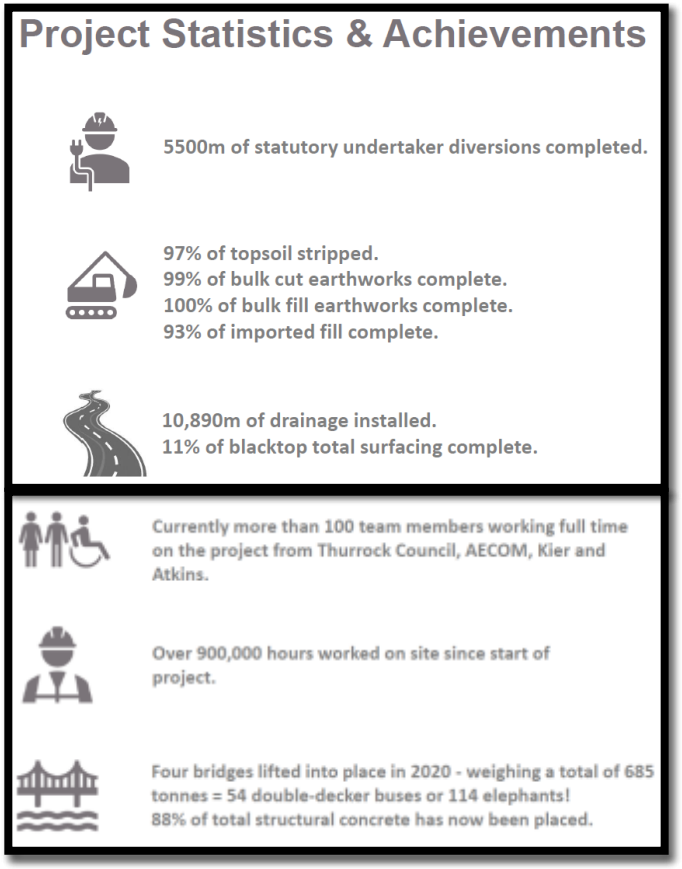
- **NEEDS** – The A13 Widening project addresses the following TC business and Regeneration needs
  - Increase capacity along A13
    - Previously operating above capacity at 77,000 vehicles per day. Widening provides a 50% capacity increase on the road.
    - Increase capacity at Orsett Roundabout. Forecast to be operating above capacity by opening year.
  - Support continued development at London Gateway Port
    - Will employ 12,000 when fully completed, 85% of employees live locally.
    - Forecast to handle 30% of the countries containerised trade.
    - No more than 3 berths are permitted without A13 Widening works completed. (Currently working on £350M 4th Berth)
  - Support continued development of other business around Thurrock; London Gateway Logistics Park, Thames Enterprise Park, London Distribution Park, Lakeside, Purfleet Centre, growth in Grays and Canvey Gateway

Scale of the A13 Widening – Project

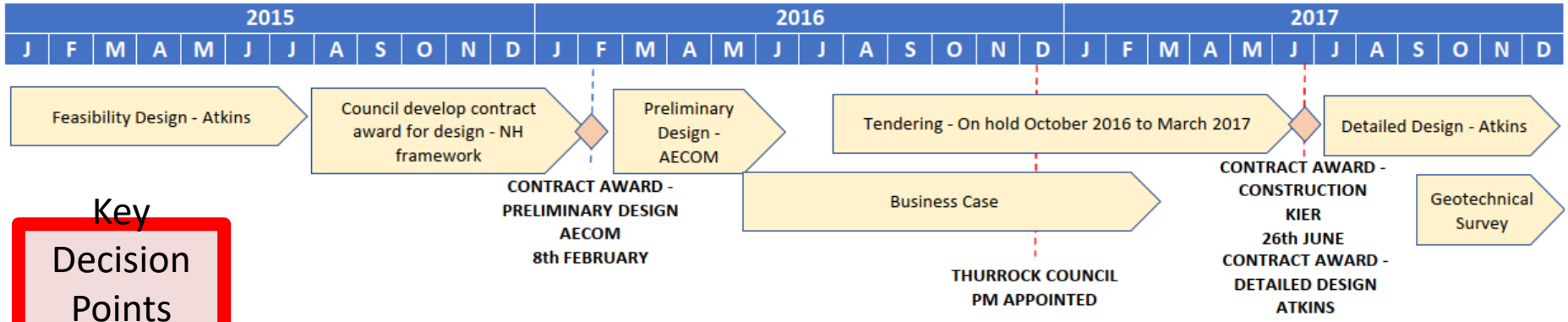
Project Stats at March 2023

- 18,000m of drainage
- 262 Steet Lighting Columns
- 362 chambers
- 197 traffic signs
- 104,000m^2 of new surfacing
- 10,000m of fencing
- 1,850m of Environmental Barrier
- 4 x Bridges
- 3,800m of Central reserve

Stats at December 2020 (Below)



A13 Widening – : 2015 to 2017 Programme

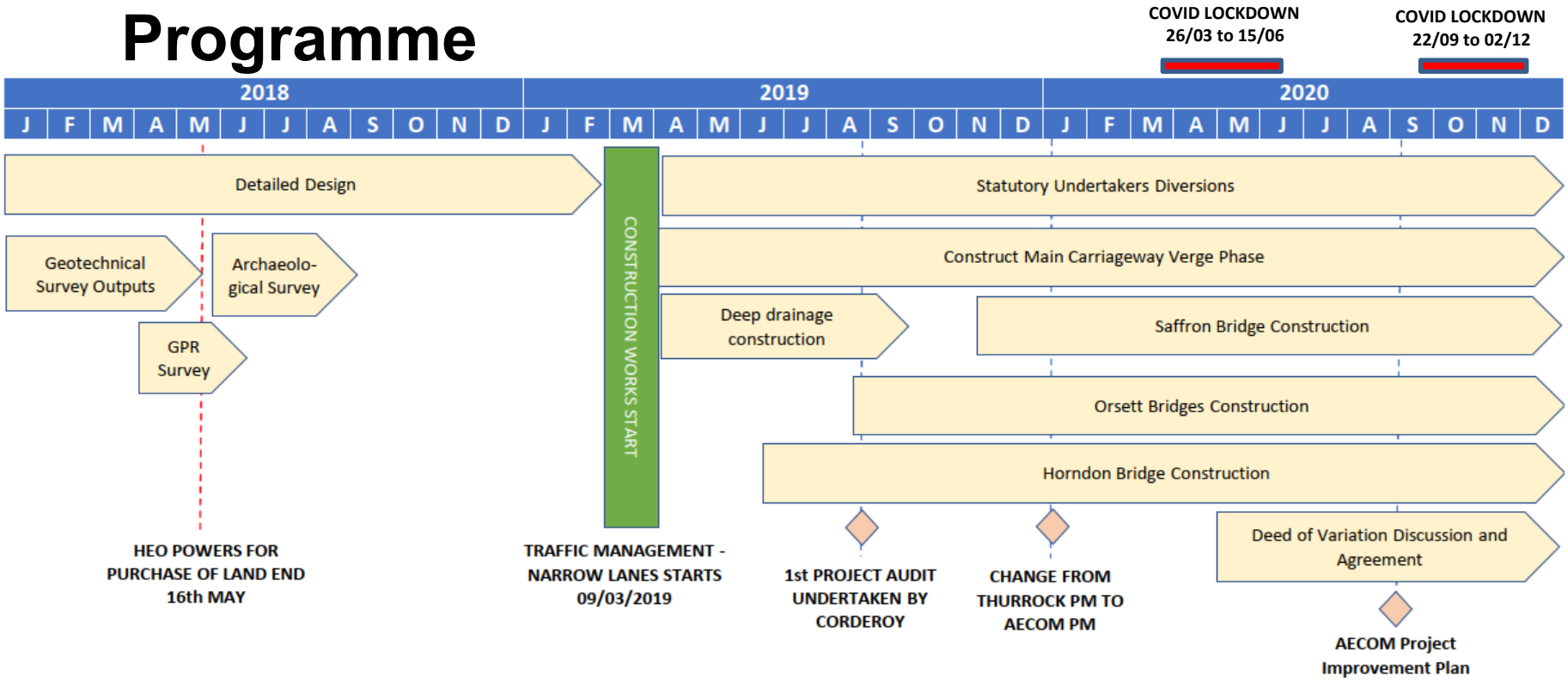


Key Decision Points shown

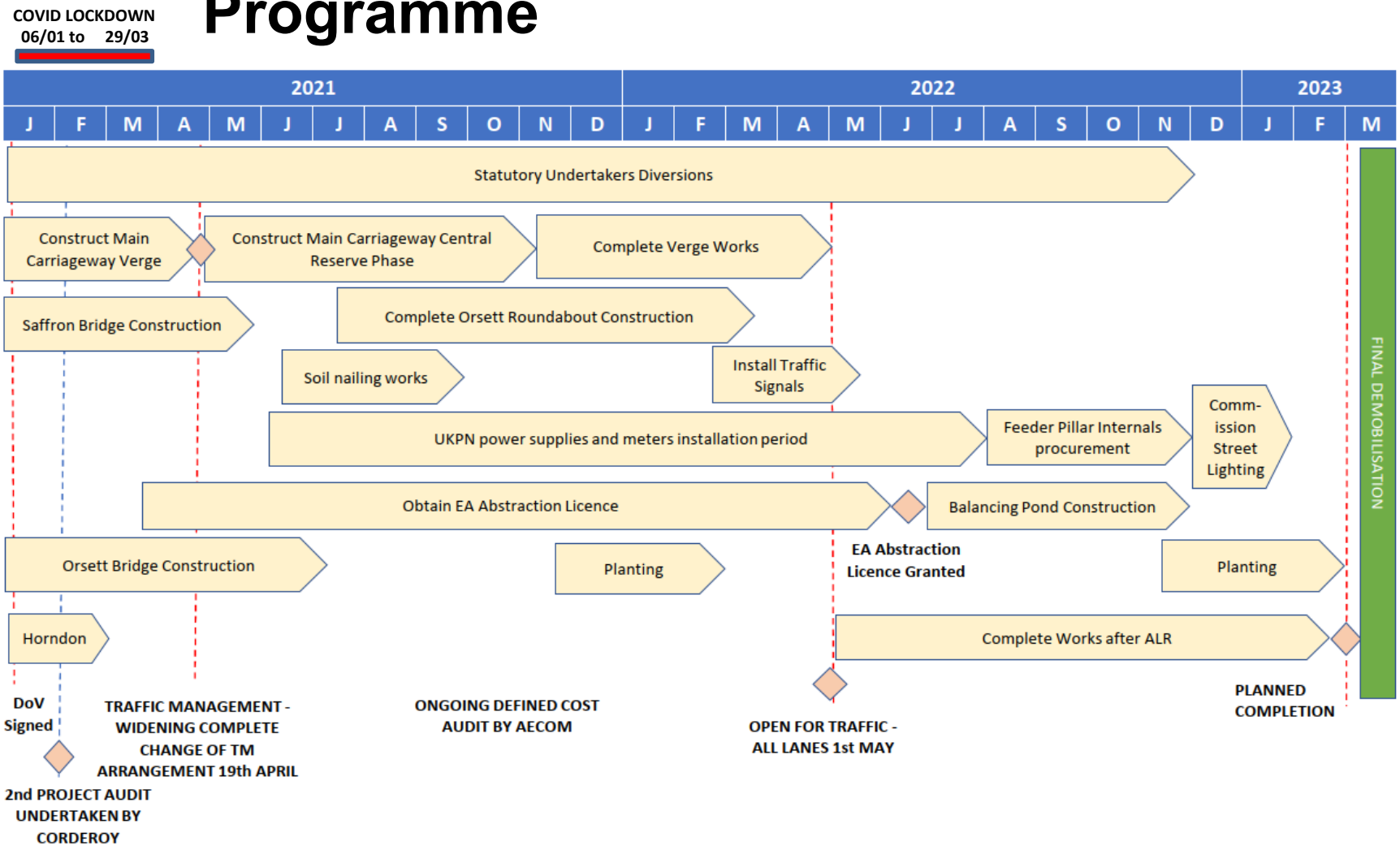
The Harbour Empowerment Order (HEO)

- This act of Parliament gave powers to create the Thames Gateway Port. It placed obligations on the developer of the port to provide supporting infrastructure in order to allow the expansion of the ports capacity. Rail and Highway schemes were defined by the HEO that would improve and minimise the impact of the port on the local infrastructure.

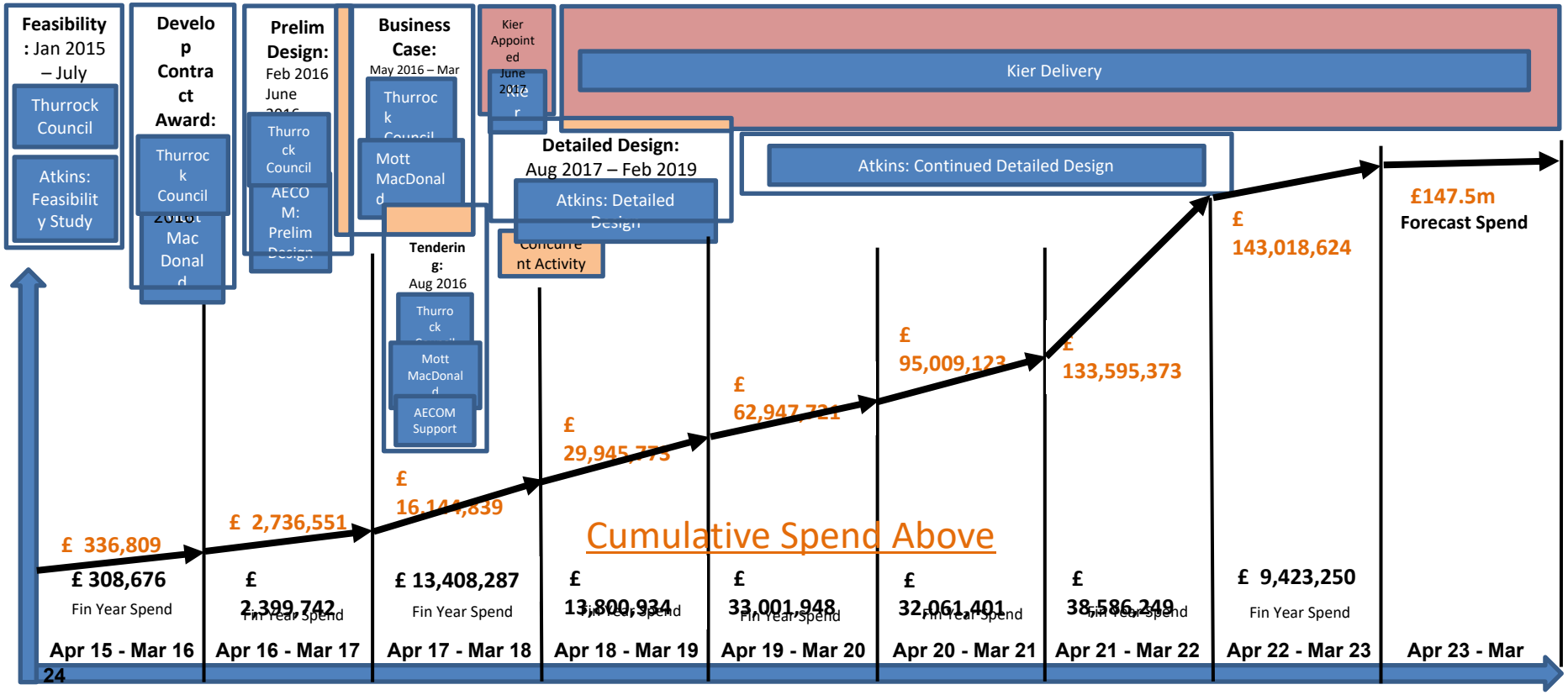
A13 Widening : 2018 - 2020 Construction Programme



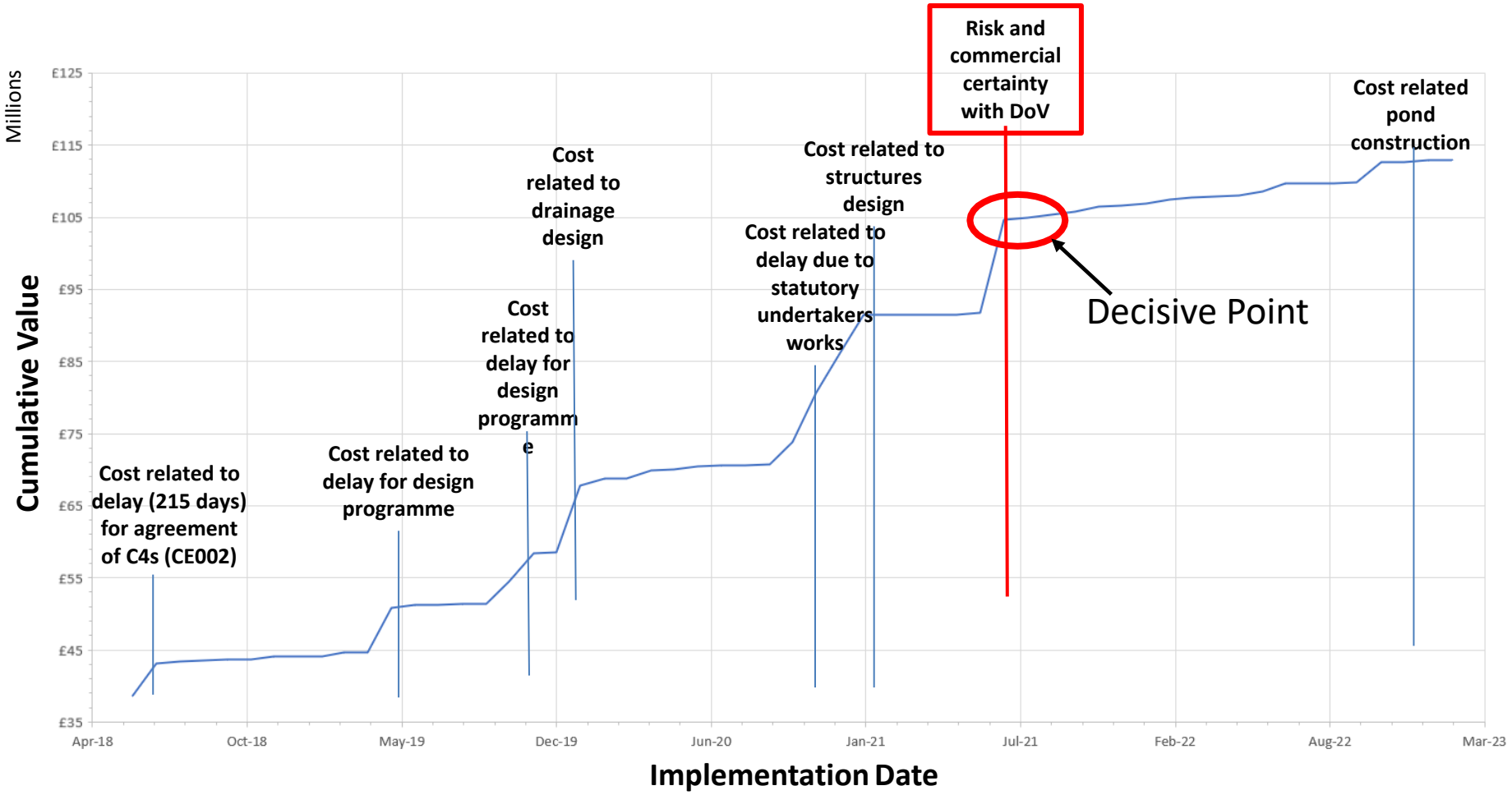
A13 Widening 2021 – 2023 Construction Programme



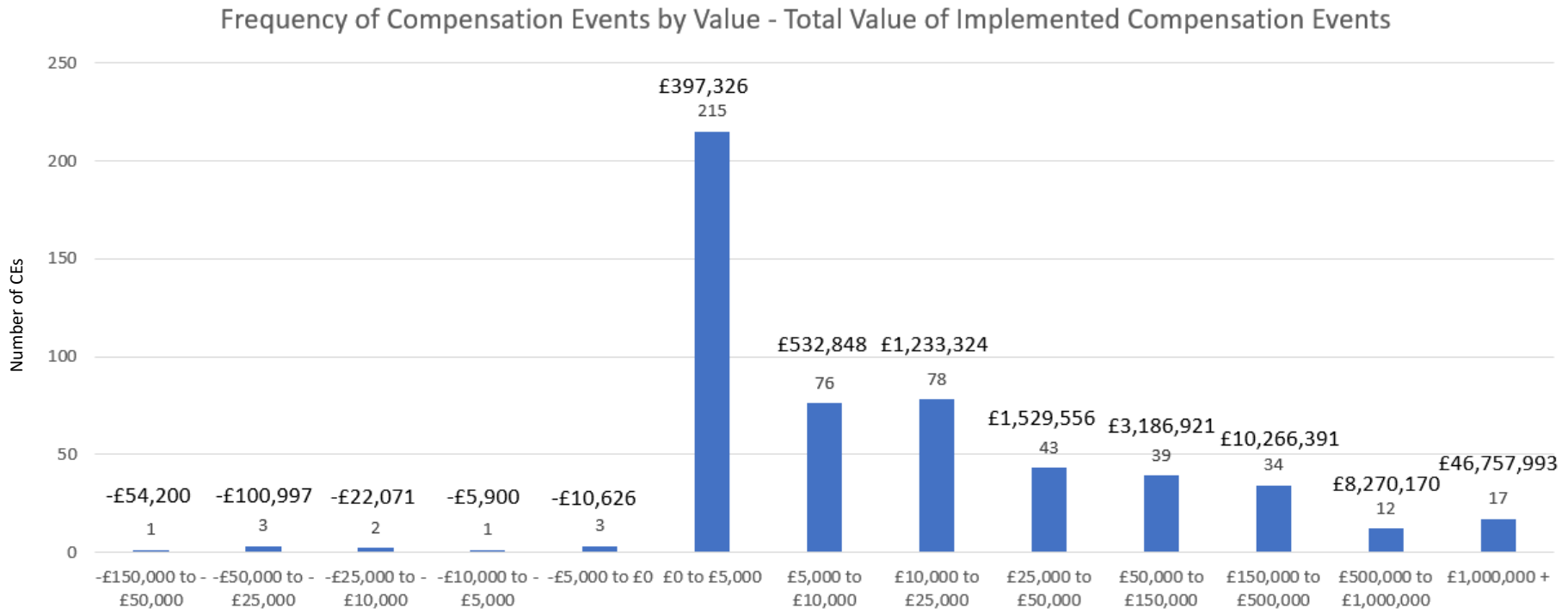
Stages and Cumulative Expenditure Graph



Cost Chart – Drivers of Change



Cost Chart – Frequency of Compensation Events by Value

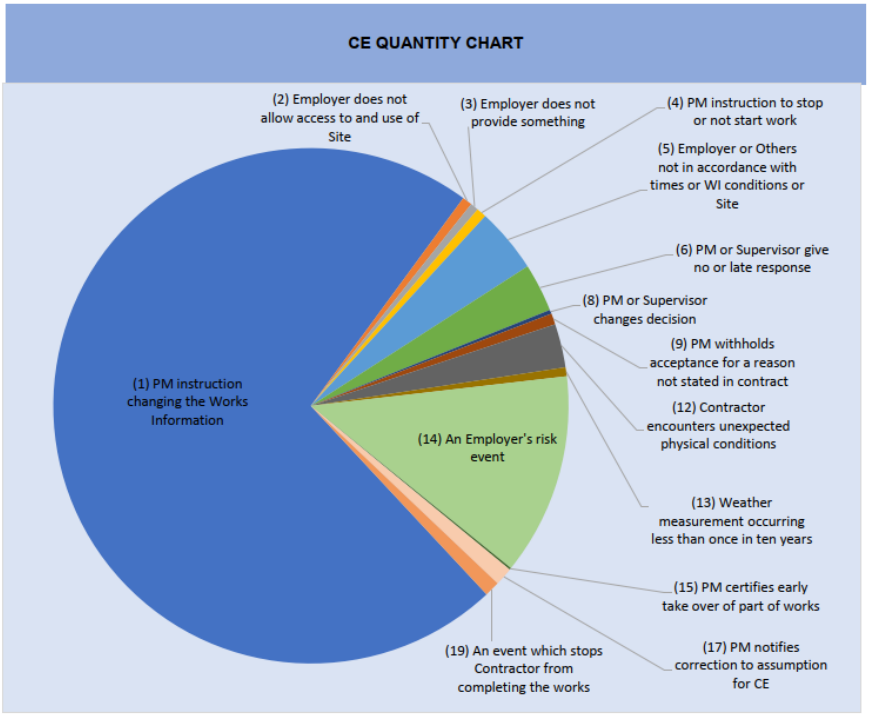


Note: In addition 810 No. Quotations are implemented at £0

Cost Chart – Compensation Events by type

A13 COMPENSATION EVENTS TYPE AND QUANTITY GRAPH

CE TYPE	QUANTITY		
	Total	Dov	Post Dov
(1) PM instruction changing the Works Information	1137	621	516
(2) Employer does not allow access to and use of Site	10	10	0
(3) Employer does not provide something	8	7	1
(4) PM instruction to stop or not start work	10	7	3
(5) Employer or Others not in accordance with times or WI conditions or Site	64	51	13
(6) PM or Supervisor give no or late response	48	47	1
(8) PM or Supervisor changes decision	4	3	1
(9) PM withholds acceptance for a reason not stated in contract	11	11	0
(12) Contractor encounters unexpected physical conditions	43	20	23
(13) Weather measurement occurring less than once in ten years	9	6	3
(14) An Employer's risk event	200	160	40
(15) PM certifies early take over of part of works	2	0	2
(17) PM notifies correction to assumption for CE	18	13	5
(19) An event which stops Contractor from completing the works	15	15	0
TOTAL	**1579**	**971**	**608**



Key Reasons for Project, Programme and Cost change

Lack of continuity in robust Governance, Controls and Peer Review

1. Time
2. Total Project Costs
3. Benefits (Financial and Non-Financial)
4. Aims and Scope Risk
5. Governance
6. Skills and Capabilities
7. Key Processes
8. Dependencies
9. Business Readiness to Change

Key Reasons for Project, Programme and Cost change

Lack of Controls for managing Project Programme and Cost change (SGA – Stage Gate Assessments)

1. Time
   a) This indicator would reflect the confidence that the project will achieve its declared End Date:
2. Total Project Costs
   a) This indicator should be based on the figures quoted in the Strategic/Outline/Final Business Case as drawn up in line with HM Treasury Guidance;
3. Benefits (Financial and Non-Financial)
   a) This indicator is the confidence that the project will realise, or deliver, its intended benefits. For the (rare) programmes / projects whose scope is to only deliver capability and where the delivery of benefits is covered in a different part of the programme, or is deemed to be the responsibility of to Business as Usual (BAU), this element may focus on the quality of the outcome:
4. Aims and Scope Risk
   a) This indicator considers:
      - The boundaries of the project in terms of processes, functional areas and organisations;
      - What is included in the scope of the project and what is not;
      - The definition of outcomes and benefits, with tangible measures and an understanding of the evidence required by which success will be judged – this will normally include timescales; and
      - The degree of clarity, stability and understanding by stakeholders of the above as a solid foundation for the project.
5. Governance
   a) This indicator considers:
      - Whether the project has appropriate decision making processes and structures in place with defined responsibilities;
      - Whether mandates at all levels exist so there is clarity over who is responsible for what, and who accounts to whom for what;
      - Whether decisions are being made at the appropriate level in accordance with mandates;
      - Whether project governance arrangements are evolving as the project matures to reflect varying stakeholder requirements and emerging needs; and
      - Whether project governance is linked with the governance arrangements within the parent or target business.

Key Reasons for Project, Programme and Cost change

Lack of Controls for managing Project Programme and Cost change (SGA – Stage Gate Assessments)

6. Skills and Capabilities

a) This indicator considers the overall level of skills and capabilities in place within the project now, as well as their projected availability in the future. Specifics include:
   i. The skills, capabilities and experience required at the various stages of the project;
   ii. The number of people already on the team compared with those required;
   iii. The capability of suppliers to deliver what is required to time and quality; and
   iv. The availability of appropriate capabilities, either by direct employment or through third parties, such as consultants.

The focus of this indicator is whether the skills and capabilities are in place or not. There may be a linkage with financial resources available to secure those skills, or if there are shortages, it may be due to a lack of available skills in the overall market.

This aspect will include the skills, capacity and capability of the SRO, Programme Director, Project Manager Etc. as well as the capacity and commitment of resources that are not part of the formal project team, for example, Board members business resources and specialist resources that might be external to the project:

Example Rating below:

RAG	Criteria Description
Green	The project is fully resourced, and there are no major skill gaps on any of the work streams.
Amber	There are shortages of skills and resources that may cause issues for the project in terms of schedule or quality.
Red	There are significant skills shortages, or lack of resources that are impacting very significantly on project schedule or delivery quality represented/poor attendance/the governance structure is unable to resolve project issues.

Key Reasons for Project, Programme and Cost change

Lack of Controls for managing Project Programme and Cost change (SGA – Stage Gate Assessments)

7. Key Processes

a) This indicator considers how well key project processes are established including:
   i. Project planning, progress monitoring and reporting;
   ii. Risks and issues management;
   iii. Benefits management;
   iv. Communications;
   v. Dependency management; and
   vi. Procurement.

b) Reviews should consider where the project complies with established best practice in project management, while respecting the fact that the unique needs and environment of each project may require individual approaches and additional custom made processes. Furthermore, the review should take into account the lifecycle stage when assessing the processes: i.e., at an earlier stage, processes may not necessarily be fully developed and implemented. The effectiveness, appropriateness and maturity of the processes should be considered, as should the existence of other project assurance mechanisms.

c) Risk and issue management, as a process, is included in this indicator. However, the actual risks facing the project can potentially fall across all and any of the indicators:

8. Dependencies

a) This indicator considers:
   i. The major external factors upon which the project depends, and over which it may have little or no ability to manage directly, for example legislation, third party activities (e.g. Trade Unions) or other major initiatives in other Government Departments; and
   ii. The overall complexity of the project in involving other agencies.

9. Business (Thurrock Council) Readiness to Change

a) This indicator considers the readiness and capability of the parent (Thurrock Council) to manage and support the change, ensuring any required new processes are defined, the affected parties are ready, willing and able to utilise the new processes and systems.

Commercial: A13 Comparison with Major Schemes

Reducing the gap between cost estimates and outturns for major infrastructure projects and programmes

Executive Summary

Major infrastructure projects and programmes suffer from a tendency to cost more or take longer than initial estimates outline. The reasons for this are complex. Projects are themselves complicated undertakings, spanning a development time of years or decades, with unique requirements, bringing together multiple stakeholders and a disparate workforce that spans the entire supply chain.

The nature of major projects and programmes means that their estimation of cost and schedule often carries limited accuracy. The uncertainties prevalent in such large activities and an inability to predict the future, be that changing economic or political circumstances, the availability of materials or labour, or the realities of the location, all work against achieving certainty.

Estimation takes place against the backdrop of cost envelopes, risk allocation, and probability calculations. As such, there will always be things which cannot be foreseen or do not go as planned. The challenge of squaring realistic estimates with a procurement process that may favour those who bid the least only adds to the problem.

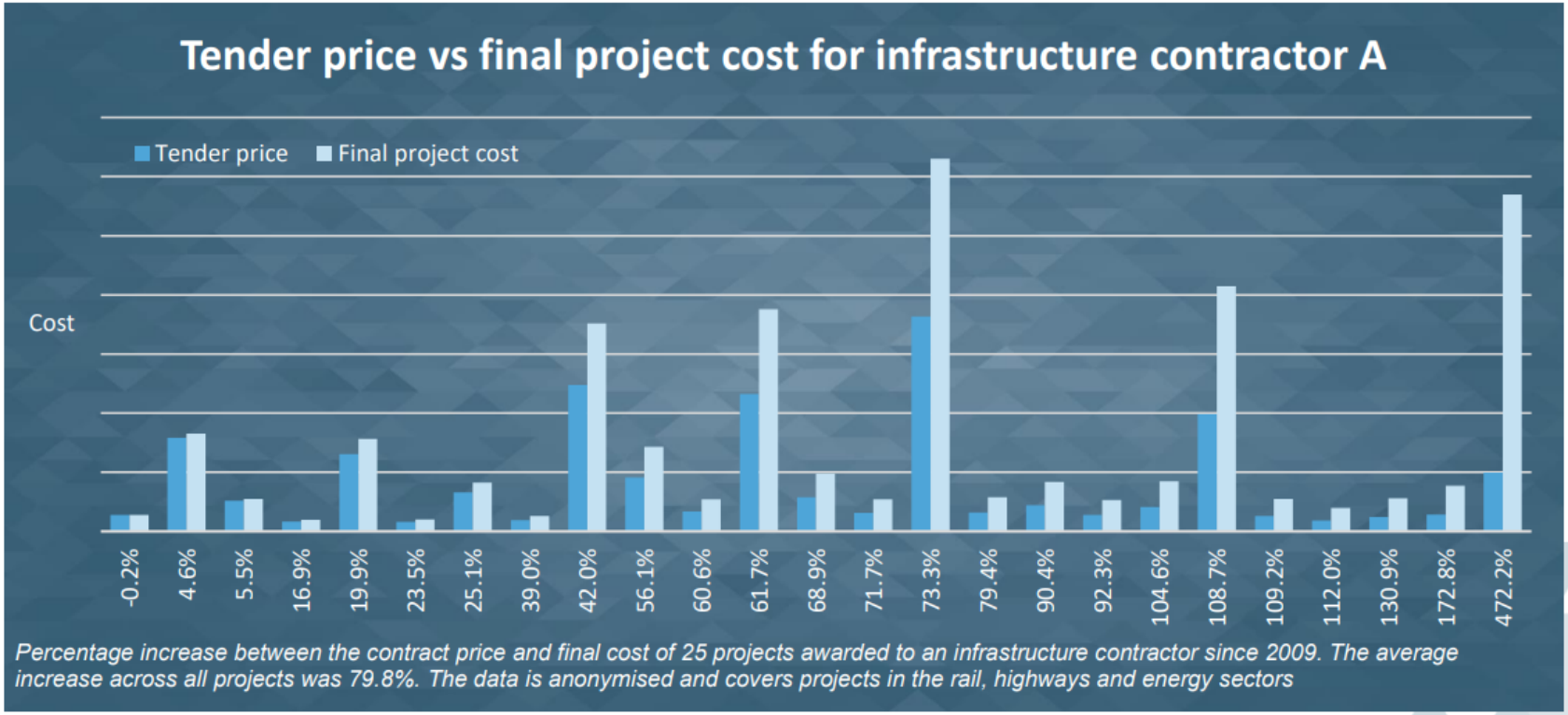
Scrutiny is too often focused on lowest capital cost whilst the whole life benefit of a project is often discarded. A sentiment which, perhaps surprisingly, is not shared by the British public. Indeed, YouGov polling conducted for ICE shows that only 3% of the public view a low overall cost of construction as the most important factor in determining the success of major infrastructure projects. Meanwhile 74% agree that politicians should talk more about the benefits, rather than the costs, of major infrastructure projects.[1]

None of this is to say that steps cannot be taken to reduce the gap between estimates and outturn. Many in the sector are taking steps to move away from a transactional arrangement to an enterprise model, with seven early adopters forming part of the Infrastructure Client Group's Project 13.[2] More collaborative working, better governance, data-led frameworks and sharing of best practice could all support improvements in project delivery.

Adobe Acrobat Document

ICE Infrastructure Report 2019

Commercial: A13 Comparison with Major Schemes



Percentage increase between the contract price and final cost of 25 projects awarded to an infrastructure contractor since 2009. The average increase across all projects was 79.8%. The data is anonymised and covers projects in the rail, highways and energy sectors

[8] Government Commercial Function (2019) The Outsourcing Playbook
[9] Bent Flyvbjerg, Mette Skamris Holm, and Søren Buhl, (2002) Underestimating Costs in Public Works Projects: Error or Lie?
[10] Gov.UK (2015) Early financial cost estimates of infrastructure programmes and projects and the treatment of uncertainty and risk
[11] ICE (2018) Improving approaches to risk in the built environment sector

Commercial: A13 Comparison with Major Schemes

Problem Statements and Recommendations

ICE is making four recommendations for the Government, infrastructure owners and project teams to create healthier expectations and attitudes toward project management, whilst encouraging a narrative shift away from cost only procurement and success metrics. In addition, these recommendations are targeted at instilling collaborative working and adoption of best practice to ensure better outcomes for infrastructure users and the public more widely.

We have set problem statements against each recommendation to clarify what we believe needs to be addressed, and how.

Scoping projects

- Scope change, scope creep or incomplete designs often occur once work has commenced.
- Too often designers, risk adjusters and contractors work separately or are not brought together at an early stage.
- **Recommendation**: Infrastructure owners should complete scope, design and exploration before commencement of work is allowed, to avoid scope creep or retroactive changes, taking steps to include contractors in design at an early stage.

Judging success

- Government over relies on cost (and to some extent time) to determine project success and frequently reduces contingency to 'save' money – limiting room for manoeuvre if new information comes to light, or if economic conditions change.
- Scrutiny of projects often focuses on the process of completion against arbitrary budgets and not the wider benefits infrastructure can deliver in the long-term.
- **Recommendation**: The Government and infrastructure owners must move away from capital cost as the most important metric when assessing project benefits, recognising the importance of whole-life economic, social and environmental value.

Estimating and tenders

- Estimates are often set at a fixed price point, before full project or programme scope and complexity are known
- Tenders are approved based on these early estimates and contracts allocated, potentially years before scope and complexity is understood.
- **Recommendation:** Principles set out in the Outsourcing Playbook should be mandatory for Government infrastructure owners, this includes infrastructure owners undertaking should-cost modelling to help inform their expectations and knowledge of appropriate tender prices during the procurement process.
- **Recommendation**: It should be mandatory for all public infrastructure owners undertaking procurement to award contracts based on a cost estimate range, using a should-cost estimate as a reference point, with an amount of contingency allocated appropriate to the level of project maturity.

Commercial: A13 Comparison with Major Schemes

The limitations of estimating major infrastructure projects

Initial estimates which do not match final outturn is not an issue restricted just to the United Kingdom; nine out of ten projects with a value of over $1bn go over budget or over deadline around the world.[3] Deadline overruns and budgetary inflation are frustrating for clients and contractors alike, even if they are not entirely avoidable: major projects are subject to numerous variables and pressures, are enormously complicated and take years – if not decades – to complete.

The overreliance on early estimates and the procurement process

Deciding final budgets or tendering at an early stage of the process before design, exploration or scoping is complete represents an industry wide obsession with price driven metrics and, when it occurs, a fundamental lack of understanding of the nature of major projects and their true cost.

The challenge of estimating for unknown or unpredictable factors

Early estimates are inherently challenging, due to the nature, scale and complexity of major projects and programmes. A lack of data from incomplete design, scoping and investigation and the nature of working in an established built environment all add to this challenge.

Forecast and outturn at contract level

There are a number of well-known and identified reasons why a project schedule or budget might slip, and which need to be managed, once a contract is awarded. These break down into external and project delivery challenges.

Commercial

Project delivery challenges

Optimism bias and benchmarking

Optimism bias is the tendency for individuals to believe the best-case outcome for any given project. The Green Book supplementary guidance[20] sets out recommended adjustment ranges for different types of works at various stages of completion.

155%*

*The average cost overrun of 5 major projects covering rail and energy provided to us by a major infrastructure contractor

External factors

Political considerations

All major projects can be impacted by political considerations, from the possibility of the need for ministerial planning permission, being owned and financed through departments or weathering changing governments, policies and priorities which might bring new pressures.

Economic climate

Economics can affect everything from the availability of finance and labour to increasing costs due to inflation. The IMF found that the 2008 financial crisis impacted on the availability of private capital with more projects facing cancellation or significantly higher financing costs.[19]

Leadership ability and leader personality

The personality and skills of any leader in a project can dramatically impact performance and care must be taken not to place individuals without experience or an appropriate skillset in senior roles.

Communication and relationships

Poor relationships, poor co-ordination of design and specification and late updates or revisions are major reasons why project co-ordination and communications break down and change events happen.[21]

Poor management of project risk

A failure to work more collaboratively, as part of an enterprise as encouraged by the Infrastructure Client Group's Project 13[22] can lead to risk being pushed down the supply chain or managed poorly by those least able to manage it.

Inadequate scoping

Difficulties caused by an inadequate initial scope, or changes post project commencement, can be costly. These are common drivers of additional cost and delay as found by TfL in a study of its Major Stations Programme[23]

Procurement

Lowest cost driven procurement can cause enormous problems from project inception, ensuring bidders compete on price to the point that they knowingly put in unrealistic bids and estimates, for fear of losing work. This is compounded by an industry where cash flow, and low margins, are a perpetual issue.

Lessons Learned

Reflection allows us to learn from our experiences, either good or bad.

- If we don't take the time to reflect on our ***Experience*** of what did, or didn't go well, then we'll be bound to repeat mistakes or ***fail*** to repeat specific behaviours that lead to success.

Regular **Lesson Learned** Sessions have been undertaken from 2021 – 2023.
The following observations have been captured and distilled from all the sessions.
The lessons Learned sessions dealt with the following areas:

- Business and Strategic Case
- Procurement and Tender
- Post Contract and Delivery
    - Completion, Handover and Business as Usual (scheduled for 21/3/2023)

Lessons Learned

(Lesson Learned Sessions undertaken annually from 2021 – 2023)

Procurement & Tender

- Limited Site Investigations, Utility surveys undertaken before construction
- Design not sufficiently mature to provide Cost Certainty for Pre-Tender and Tender Estimate
- Potential Design Risks not identified sufficiently and addressed commercially robustly
- Key financial risks not sufficiently well identified in Procurement
- Buildability risk & issues not clearly highlighted in Tender
- Risk mitigation strategy not sufficiently developed & in place at Tender
- Unclear resourcing strategy (skills, competency & availability) of consultants
- Roles / Responsibilities of consultants & Client parties not clearly defined at Tender stage
- Form of Contract (NEC3) was suited for the scheme however no punitive measures.
- Option C (Target Cost) not reflective level of risk regards behaviours / Utility Providers
- Works Information (Scope) not clearly defined

Lessons Learned

Lesson Learned Sessions undertaken annually from 2021 – 2023)

Procurement & Tender

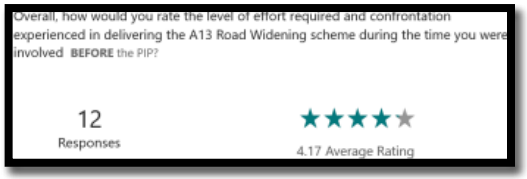
- The works and level of design maturity possibly suited a ‘Design and Build’ Form of appointment. (NEC3 Option A – Lump Sum)
- Budgetary and Design challenges not clearly identified in the contract documentation
- Targeted Value Engineering areas not clearly identified in Documents / Risk register
- The level of contingency for the form of contract was insufficient
- Financial risks were not clearly identified, comprehensively reviewed and corresponding mitigation strategy not clearly identified
- Reporting of budgetary issues / Challenges were not clear from the outset
- Value Engineering items / areas were not clearly identified by Tenderers during tender stage.
- Allow more time to develop tender / preliminary design
- Flawed baseline clause 31 Programme: The delta between Planned Completion and Completion was initially determined by the Contractor and not challenged, as they held Terminal Float.
    1. Delayed commencement of the main construction works (Employers risk)
    2. Delayed receipt and changes to the Works Information (Atkins design/Employers’ risk)
    3. Impact of the Employers statutory undertaker works (Employers risk)

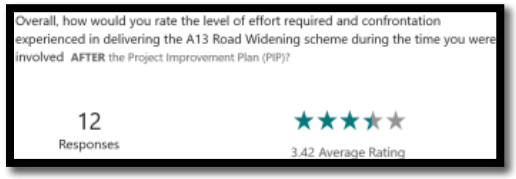
Lessons Learned]

(Lesson Learned Sessions undertaken annually from 2021 – 2023)

Post Contract

- PM appointed initially with little / no experience in the form of contract
- Limited Site Investigations and Utilities, trial pits
- Letting a construction and design contract separately with limited means of integrating
- No Kick-Off workshop where structure, governance and project processes were reviewed was held
- Contract management processes and Terms of Reference not clarified and shared
- Not all parties agreed and stuck to an agreed project plan and governance process
- Programme and cost certainty was not achieved because of lack of activities undertaken during early planning
- No visibility whether Lessons Learned from previous / similar scheme was reviewed and measures implemented
- Projects that are early adopters of integrated technology solutions will be able to make more robust decisions using analytics and will be able to deliver significant benefits from automation, thereby leading to better project outcomes, as well as asset performance improvements. Consider Cloud based management tools.
- Amount of Effort to manage scheme before Project Improvement Plan **PIP**: 83%. After 68%: **Reduction of 15% in Effort**





Lessons Learned (

Lesson Learned Sessions undertaken annually from 2021 – 2023)

Post Contract

- What simple things could have been done differently and would potentially have had a positive impact on the project during the Delivery Phase of the scheme before the Project Improvement Plan was introduced and implemented?

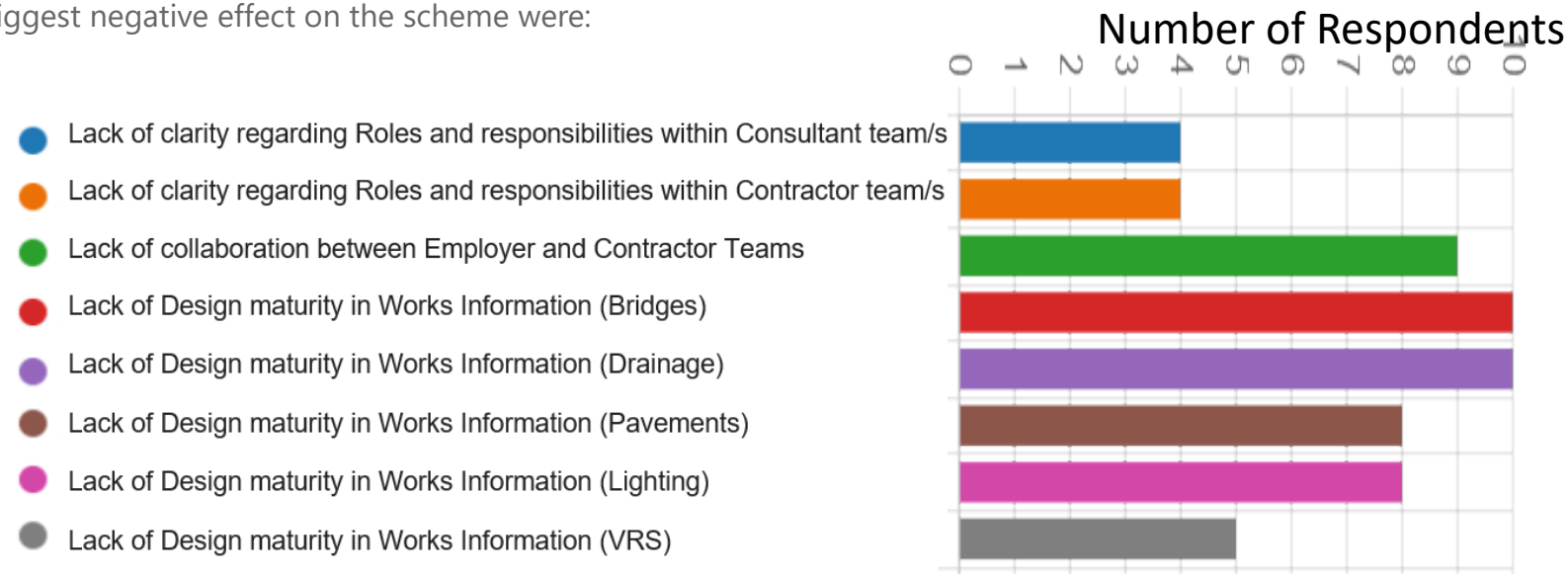
Let contract as D&B or allow more time for design
1) Refresh Workshop showing processes and 2) RACI reviewed and agreed
1. Greater design. 2. Alternative procurement route based on design.
Checks on the understanding and competencies of those involved. Greater emphasis on knowledge retention and sharing.
Better design maturity, and better coordination of programme between detailed designer and contractor.
Have a complete design & have enough resource at the beginning of the project especially pre-contract
Better collaboration, behavior from Contractor and design maturity
Stop- assess and relaunch
Replace disruption contractor team members/Change NEC PM to someone with NEC and highway experience. Co-locate design on site.
Additional attendance by the Design Team on site. Open discussions about best way forward on site decisions, rather than commercial gain being the sole purpose.

Lessons Learned

(Lesson Learned Sessions undertaken annually from 2021 -2023)

Before: Project Improvement Plan (22 October 2020)

The greatest Obstacles / Challenges faced that had the biggest negative effect on the scheme were:



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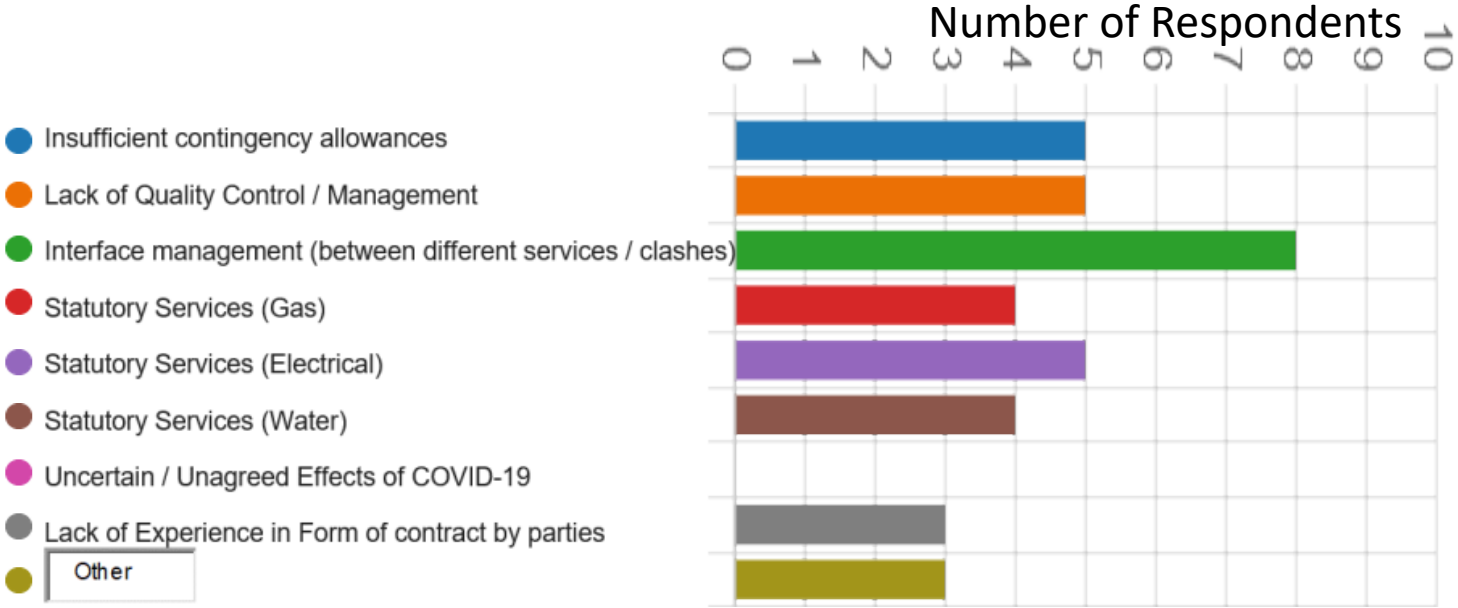

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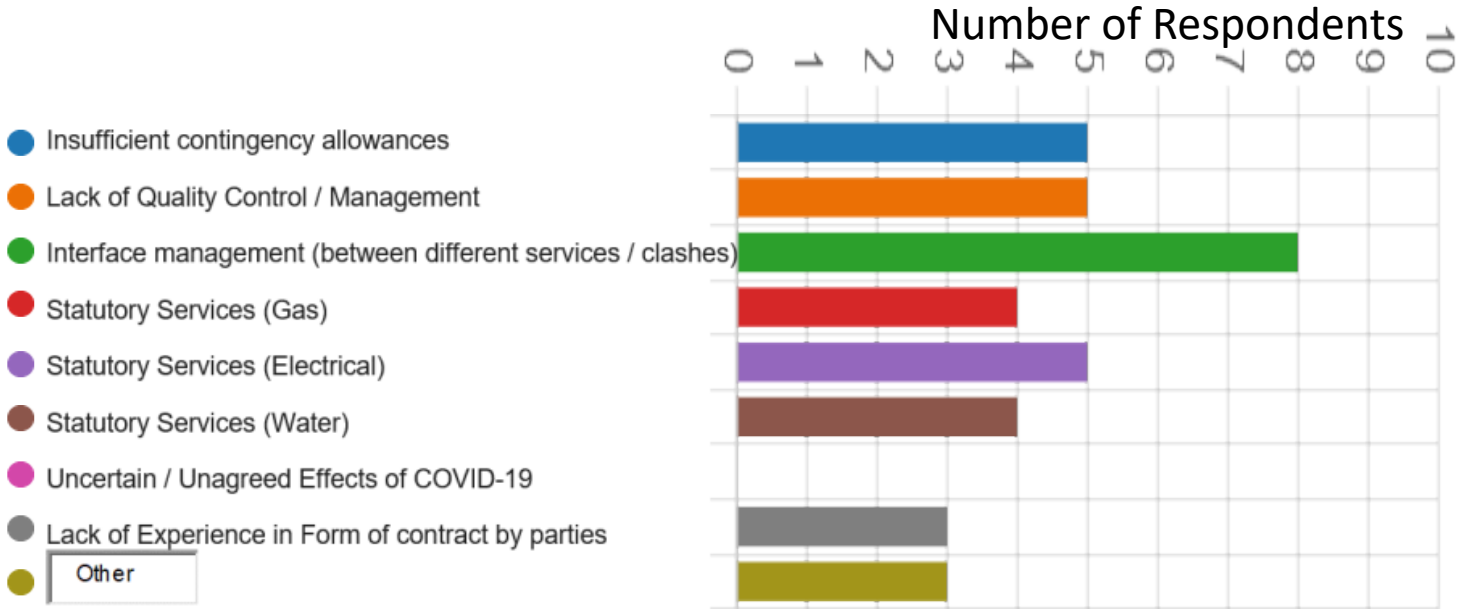


Lessons Learned

Lesson Learned Sessions undertaken annually from 2021 – 2023)

After: Project Improvement Plan (22 October 2020)

The key measures from the Project Improvement Plan (PIP) that had the greatest positive impact on the project (May 2022 Lessons Learned Session)

Greater collaboration Change in NEC pm Making Thurrock aware of real reasons for overruns
PM Change - NEC savvy RACI and Org AECOM Commercial team
1. DoV reduced backlog of change. 2. More improved resourcing & inclusion of key roles such as a planner. 3. Opportunity to look forward rather than back.
A greater understanding of the expected role was obtained from the client. Appreciation of the scope of the works to be undertaken by AECOM. High level review across all parties to resolve and discuss issues.
Level of resource, capability of resource, better working processes.
-Better resource - experienced PM - DoV being agreed and signed
Changes in AECOM resourcing, positive collaboration between Employer and Contractor teams and the DoV agreement.
Clearer R&Rs Additional resource to manage the contract (management, programme and supervision)
Shared information on the original project, and its issues. Setting a baseline. Improved openness in the team.
From an outside perspective joining when the Project Improvement plan was implemented it was clear that greater site resource had been required and this had a positive effect on the on site works and providing a fresh set of eyes from both quality and safety perspectives. Additionally the new project manager with an outside perspective with the determination of working collaboratively with the contractor appeared to help.

Lessons Learned (Lesson Learned Sessions undertaken annually from 2021 – 2023)

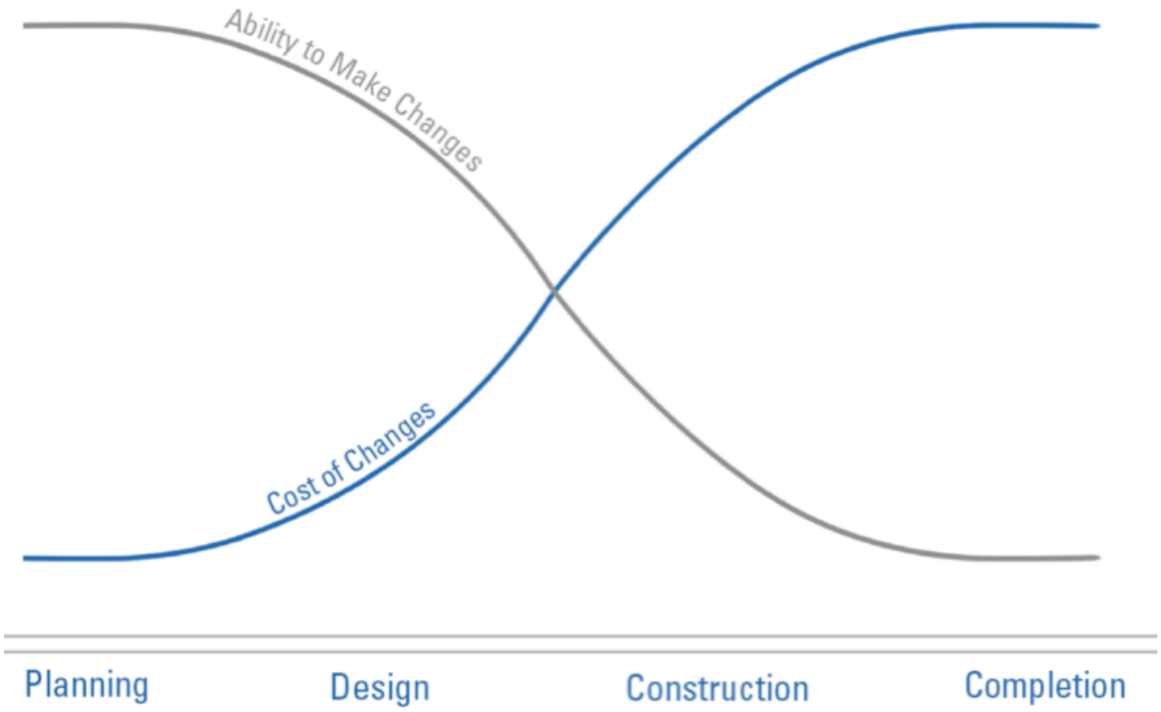
Question to all participants:

- What are the key takeaways to take from this project and implement / influence in your next highways scheme or infrastructure project?

Clearer procurement strategy Competent NEC PM Drive collaboration into project at all stages
Project Setup period - Design + Consultant team Clarity on Skillsets and Experience Robust Governance and Change Control
1. Greater involvement in the procurement / tendering phase. 2. Clear contract documentation from the outset to minimise conflict. 3. Have a defined scope to reduce change.
Ensuring the scope of the works is fully understood by all parties. Ensuring that appropriate levels for discussion are maintained. A greater understanding of the stages that the scheme is to pass through.
Better coordination of procurement of different suppliers. Get the right level of resource capability. Agree contract management processes and reporting drumbeat.
- Have the right / good amount of resource from the start - where possible - Have a finished design (mainly if Option C) - Have a clear file storage system for all docs / original contracts
Better collaboration with Contractor, Suitable PM team for the scheme and design maturity.
Regular auditing early on in the project.
Fix scope, get right team doing the right things at right team by teamwork
RACI matrix/R&Rs Important of procurement strategy Level of design maturity required
Thorough checking process / gateways agreed up front. Clarity of scope.
Agree more robust ITP plans at the outset with greater responsibility on the contractor to notify inspections to the supervisors team with ramifications if they do not comply with this requirement. This could greatly decrease the number of defects. Collaborative working is the most important aspect of progressing works and any challenges with this aspect of the construction process should be ironed out and rectified where possible.

Lessons Learned

- **Changes**. The one all encompassing word that describes what has affected this project to the greatest degree. Thurrock Council allocate a substantial number of resources, effort and budget into projects and want to make sure you get what is planned.
- The below chart illustrates the relationship between the Cost of Changes to the design and the ease of ability to make these changes as one moves through the phases of the project.



Lessons Learned *(Key Take aways)*

1. The Project original contract let sum did not take into account the level of change and risk residing within the scope at the time of appointing the Contractor, as captured in Lesson Learned sessions
2. The project was lacking in areas at time in terms of governance and behaviours. Addressed by intervention & measures implemented as demonstrated by the information within this pack
3. Covid-19 had a substantial impact on the scheme, not only in cost and programme, also in lack of experience for all parties (1st time event), exacerbating already troubled Project Team relationships
4. Once robust governance and controls were established, Regular audits and KPI's for reporting agreed, the controls and performance improved noticeably
5. Robust Gateways not evidenced in early stages (See
6. The scheme out turn cost would have been substantially higher if a scheme reset had not taken place (DoV - Dec 2020). This intervention yielded great benefits and off-set the potential lack of value gained due to lack of robust controls and governance prior to December 2019
7. The ultimate out turn cost is a fair representation of what the scheme value is, due to the many challenges, level of change and commercial shortcomings identified in the Lesson Learned sessions.
8. Ensure funding constraints don't lead to optimism bias / group think. Independent review required.

Lessons Learned ***(Key lessons to be implemented in future schemes)***

Stage Gate / Gateway Reviews / Robust Gateways not evidenced in early stages. *Recommended*

#	Classification	Definition
1	Governance	Recommendations related to the oversight, structure and decision making of a project. This theme also includes recommendations relating to alignment with pan-government priorities, strategies and controls.
2	Stakeholder Management	Recommendations related to relationships with all parties with an interest in the outcome of the project, whether internal to the agency, internal to government or external.
3	Programme and Project Management	Recommendations related to all aspects of project, programme and portfolio management, but excludes recommendations on Risk, Issues and Dependency Management (Theme 9) and Resource Management (Theme 10)
4	Change Management & Transition	Recommendations related to the Management of Business Change – all the work required with and in the business and with the customer to make ready for the initiative, in terms of changes to business processes including: business continuity planning, changes to work processes and resourcing, changes to organisational structures and staffing to support transformational or process changes to business delivery to ensure a smooth transition to BAU It does not include Technology Readiness for Service (Theme 12)
5	Financial Planning and Management	Recommendations related to financial planning, organising, directing and controlling of financial activities.
6	Benefits Management & Realisation	Recommendations related to the identification, ownership, measurement and realisation of benefits and dis-benefits. Benefits can be either financial or non-financial.
7	Commercial Strategy & Management	Recommendations related to the end-to-end procurement process including: Procurement strategy and planning, Approaches to the market, Contract negotiation and Contract management.
8	Context, Aim & Scope	Recommendations that are aimed at the clarity of the change to be implemented. It covers alignment to vision, strategy and policy; the purpose, objectives, justification and description of the change; and the determination of success and the necessary environment to ensure success.
9	Risk, Issues & Dependency Management	Recommendations related to the identification, analysis, impact assessment, response and the on-going review and management of Risks, Issues and Dependencies (i.e. outputs that are required by a project to succeed, but which will be delivered by parties not under the direct control of the project).
10	Resource & Skills Management	Recommendations related to all aspects of the identification, supply, optimisation, prioritisation and maintenance of resources and appropriate skills.
11	Knowledge Management	Recommendations related to the process of capturing, developing, sharing, and effectively using organizational knowledge. It includes sharing knowledge and experiences or Lessons Learnt.
12	Technology	Recommendations related to all technology issues, including the alignment of the technology solution to the technology and business strategy, the integration of one or more technology solutions, the operational readiness of the solution (including testing of the solution), and all aspects of security relating to the technology solution.
13	Other	To be used only when other classifications do not apply.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1002373/Guide_to_Preparing_an_Assurance_Review_Report_Version_1.2021_1_.docx

Lessons Learned ***(Key lessons to be implemented in future schemes)***

1. Review *Lessons Learned* for EVERY stage (From Concept, Feasibility etc - A standing Agenda Item)
2. Early Site / Ground Investigations (risk is greatest below ground / utilities / environmental)
3. Design maturity to provide acceptable level of Cost Certainty at appropriate stage
4. Buildability risk & issues to be reviewed robustly, with appropriate contingency allowances
5. Scope / Works Information, Design fixity, Site Conditions and Constraints clearly defined
6. Earliest identification of expertise required in RACI, implement / develop robust governance
7. Develop robust Interface management plan (Utilities, services, clash detection, risk and mitigation)
8. Risk Register, Contingency and Optimism Bias factored in commercially as soon as possible
9. Procurement Strategy clear with route to market (i.e., Form of contract /appropriate risk allocation)
10. Planning / Briefing / Kick-off / Refresh Workshops throughout to manage stakeholder expectations
11. Adopt appropriate tools (collaborative administrative software) to manage information and reporting requirements and to facilitate more robust decisions. Online platform: *1 version of truth*
12. Establish project drumbeat (clear meeting/s and reporting strategy for life of project)