National Audit Office

Helping the nation spend wisely

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William Wragg MP
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Dear Mr Wragg

NAO RESPONSE – PACAC ENQUIRY

Further to my interim response on 6 April to your letter of 24 March, I am now writing to you with my more substantive reply.

Major projects

We have based our response on our experiences auditing major projects and programmes. Below we outline a summary of the key issues relevant to your questions. It is not an exhaustive account of the challenges major programmes encounter. The Committee may also find the NAO's resources on major programmes helpful for its enquiry, such as:

- our framework for reviewing programmes which sets out the key questions we ask when we review programmes, with examples of findings from our work against these questions;
- our survival guide to challenging costs in major projects, which outlines some of the challenges we have seen in estimating and managing the costs of major projects. It offers some ground rules and thoughts on factors to consider for Accounting Officers and senior decision makers when challenging costs; and,
- our back catalogue of publications on major programmes, including our recent work on programmes such as HS2, Crossrail, the Emergency Services Network and delivering Defence Capabilities. We have also just published a report on the Palace of Westminster Restoration and Renewal Programme, which makes recommendations based on our previous experience of auditing major projects and programmes.

1. A summary of key issues raised by recent NAO reports on major projects (i.e. why do so many fail?) (ToR Q2 - 5);

In our experience, the **nature of government major projects** introduces several challenges in accurately estimating the time and resources needed for their delivery. The major projects we have examined often have bespoke features and new technology, making them unlike previous projects, and their scale introduces complexities not seen in more standard projects. These factors make estimating cost and schedule difficult as there are few appropriate comparators to draw upon, which is further compounded by their specific context – factors such as contractual structure, industry conditions and the broader stakeholder environment can all have a significant impact. These challenges are not unique for government but are common in many of the major programmes we review. Major project planners are acutely aware of optimism bias, which is the tendency to underestimate the resources required and risks present in a programme. Government's planning guidance, such as the Green Book, recommends tools such as an optimism bias uplift on estimated costs at the early stages of a programme's development are used to mitigate this tendency, but nonetheless issues persist in accurately forecasting programme cost, schedule and benefits.

A persistent issue we find is that government often fails to recognise and account for the **level of uncertainty and risk** that is present in a programme at the outset. **Budgets and schedules are often set early in a programme's life**, before there is sufficient development of the programme to provide accurate information on what is needed to deliver it. Delivery bodies are then incentivised to meet what are later found to be overambitious targets. On Crossrail, we saw how decisions on the programme became dominated by a fixed completion date. Our recent report on High Speed Two highlighted how the 2026 opening date for Phase One, set in 2010, was ambitious and did not take into account sufficiently that it was a significantly larger programme than the comparators it had referenced to establish this date. Similarly, the Government set available funding for the programme in 2013, based on a basic design, and uplifted it for inflation during the 2015 spending review. Subsequent cost estimates did not account for the level of uncertainty and risk in the programme, resulting in significant cost increases once contractors developed the detailed design of the programme to inform a bottom-up costing.

A **programme's scope** is likely to change as it is developed and refined, and in response to factors such as unexpected site conditions. Outside of these expected changes, other priorities within departments can lead to additional scope being added to programmes (at times without additional funding) or being removed or deferred, both of which increase risk and complexity. Where programmes form part of a portfolio, the need to meet short-term affordability targets can mean that programme decisions are taken at the expense of longer-term value for money. Our work on the Ministry of Defence's (MOD's) Equipment Plan has shown how the focus of living within annual budgets is leading to the loss of existing capabilities when current funding allocations end, and actions to defer project expenditure leading to higher overall costs.

Major programmes often feature multiple major sub-projects, or interact with other projects and day-to-day services, in a way that means there are **multiple dependencies** which delivery and sponsor bodies must manage. However, project delivery teams frequently do not give enough attention to managing these dependencies and the potential risks that they present.

For example, our work on the Emergency Services Network (ESN) communication system found that eight months after resetting the programme the Home Office was not yet clear how the various elements of ESN would work together as a single, coherent, system. The original contracts with its suppliers were not sufficiently clear on who was responsible for this technical integration, and changes made since 2015 left the Home Office with responsibility for doing and assuring this technical work. The Home Office's plan for switching off the existing system also contained significant uncertainties, such as assuming that ESN would be rolled out in some areas before key parts of the system became available. At the time of our report, the Home Office had established a new technical working group to develop plans for integration and testing, and had begun a wider programme of work to inform a more detailed plan for switching off the existing system.

Programmes that are being introduced into a live service environment face particularly acute dependency challenges, as the focus needs to shift from an engineering project to one of systems integration and operational testing. Our work on the Thameslink programme found that whilst the Department and Network Rail's arrangements for managing the delivery of the infrastructure and trains were broadly effective in delivering the individual parts of the programme, they did not fully consider what arrangements they would need to manage the transition to bringing the enhanced services into use. Development of these plans required a high degree of collaboration across the rail network, and in 2016 the Department and Network Rail established new governance arrangements to strengthen management of these aspects. However, at the time of our report, we stated that it would be challenging for the operator and Network Rail to finalise and test plans in the time remaining.

Allocating risk appropriately between Government and the private sector in contracts has also been an area of difficulty, particularly as the scale of these programmes present significant financial risks. Should a supplier fail, these risks can revert back to Government, as they have to seek other arrangements to continue delivery, or cancel the programme entirely. Wider industry conditions can also exacerbate these factors; the need to use the only supplier, or one of a few, capable of producing the output needed can prevent government from best securing value for money in procurements – an issue the Ministry of Defence has frequently encountered. The construction industry has also become more fragile in recent years, exemplified by the collapse of Carillion, which has affected the level of risk that suppliers are capable of bearing.

Our report on High Speed Two found that HS2 Ltd let seven multi-million pound contracts for Phase One main civil construction to four joint venture companies, intending that agreeing fewer, larger contracts would create economies of scale and reduce the risks from, and costs of, managing many different contractors. However, HS2 Ltd considers that once the cost of building the railway became clear, the terms of the contract combined with worsening conditions in the construction industry, resulted in designs which were less efficient and contractors increasing their forecast prices further. HS2 Ltd has had to revise its commercial approach. It will now be responsible for funding increases above the estimated cost and contractors will lose a proportion of their fee for building the railway if they do not meet performance indicators on cost and schedule.

The **capacity, capability and skills** available to sponsor departments and delivery bodies is also a challenge. Programmes are often drawing from the same limited pool of skilled individuals, and the turnover of Senior Responsible Owners (SROs) is frequently high. Our recent report on delivering Defence Capabilities, found that under-resourced project and delivery teams contribute to delays in delivery, with particular shortages of engineering and commercial staff. SROs for nine of the 32 Defence Major Projects Portfolio capabilities considered that a lack of team capacity and skills is affecting capability delivery, and a short fall in the number of SROs has led to some individuals being spread across multiple projects.

2. An overview of the sorts of information you feel should be reported by the departments/ALBs through their ARA on major projects (i.e. why do so many fail?)

At a minimum, for major projects, we think it would be useful for ARAs to include: up to date forecast cost and schedules for a programme, perhaps in the form of a range of costs/delivery dates; the key milestones it has achieved in the period, and expects to achieve in the next; as well as some description of the key risks that the programme is facing. Figures included within an ARA are sometimes difficult to reconcile with other publicly available information, and so departments should take to ensure consistency. Accounting Officers are also required to publish summaries on their Department's website of any Accounting Officer Assessments they have completed, with copies sent to Parliament. Accounting Officer assessments help to provide assurance over public spending, and must be updated if a programme departs from agreed standards or the plan agreed when the programme was first approved. Publishing assessments would allow readers to know when projects were facing significant difficulty, though we have not always seen this requirement adhered to.

Some programmes are required to report regularly on progress, such as Crossrail, which reports yearly to Parliament on progress along with financial metrics, and the Ministry of Defence's publication of their Equipment Plan. However, regular reporting is not enough to ensure that the status of a programme is communicated openly. For example, Crossrail's July 2018 annual statement to Parliament alluded to cost pressures in the hundreds of millions, with no mention of schedule pressure, but by December 2018 it needed an additional funding package of £2.8 billion, and the schedule delayed by at least 2 years. Our work has also drawn attention to the weaknesses in the reporting of the Equipment Plan, such as changes in the basis of reporting between years, inconsistencies in data from different parts of the Department and weak quality control checks.

As such, transparency within organisations is just as critical as a commitment to transparency with the public; good management information systems, oversight, and contract management with the supply chain are needed to allow the line of sight within organisations to allow for external transparency. Similarly, a commitment to transparency externally needs to be more than a simple requirement – it requires open dialogue about risks, and other developments, with external stakeholders.

3. Any specific examples of good practice in project management that you are aware of?

Whilst we see persistent issues emerging across projects, we also see an appetite to learn lessons and embed better practice within organisations. Some programmes are starting to adopt the use of ranges to describe the forecast cost and schedule of programmes, which allows for better expression of the risk and uncertainty within a forecast. Whilst this is a welcome development, we would caution that decision-makers will need to consider how they understand what the range represents, and how they monitor a programme using a range, such as how to measure performance and how one goes about narrowing a range as costs and schedule become more certain. We have also seen examples where activity is being undertaken to identify and manage programme interdependencies at the early stages of a programme, such as within High Speed Two.

There are also larger initiatives being undertaken across government to learn lessons across programmes. For example, the Department for Transport recently concluded an exercise with the Infrastructure and Projects Authority which drew from its experiences across its portfolio of major programmes to produce "Lessons from transport for the sponsorship of major projects". This report focuses on behavioural and cultural challenges in major projects and highlights 24 lessons for the governance and delivery of programmes. The Department for Transport has also established a Programme Delivery Improvement Function (PDIP) to draw together learning and embed this within its sponsorship of major programmes more widely.

4. What changes you feel would be necessary (if any) to the Treasury Green Book to enable wider infrastructure investment in line with the Government's budget.

Government could make better use of evaluation to understand the impacts of its initiatives. While this primarily reflects not properly apply existing Green Book guidance on evaluation, we have previously recommended that the Green Book could include proportionate measures to mandate evaluation or follow up. We have found in our value for money reports that once an intervention has been approved, departments sometimes fail to revisit investment appraisals to monitor benefits realisation against forecasts. Increased emphasis on post-project evaluation allows learning to be incorporated into future interventions, to assist in targeting and managing these investments more effectively.

Our 2013 report on evaluation in government found significant gaps in evaluation evidence; only 14 out of the 34 evaluations we examined were of a sufficient standard to give confidence in the effects attributed to the policy, because they had a robust counterfactual. More recently, our 2020 report into Support to Business found that BEIS had only rigorously evaluated the impact of one scheme in our sample (although it has further evaluations planned). We also found that only two schemes' business cases in our sample referred to the lessons from such predecessor schemes. We would expect to see more reference to evaluation evidence of previous phases, other similar programmes, or evaluations of unsuccessful approaches, to substantiate claims about expected cost-effectiveness.

Similarly, we have seen weaknesses in the application of Green Book guidance on early appraisal of programmes through their business cases. This has had impacts on the management of major programmes. On the Great Western Route Modernisation, we found that whilst there was a good case for increasing passenger capacity on the line, the Department did not produce a business case bringing together all elements of what became the programme until several years after it began some of the projects. This was one way in which the Department did not manage the programme in a sufficiently joined up way until it introduced new arrangements in 2015.

Furthermore, our 2013 report on early programme preparation for High Speed Two found that the economic case for Phase One had twice contained errors, and the Department was slow to carry out its own assurance of the underlying data. The relationship between the strategic objectives of the programme, such as rebalancing the economy, and the largest quantified benefit in the economic case, journey times savings, was also unclear. The Department had not structured the programme around achieving its strategic objectives, and we cautioned that decisions being made at that early stage to control costs might impact achieving the programme's objectives.

We have also raised concerns in the past around the use of discount rates within the existing Green Book guidance. This relates to the appraisal of financing approaches for programmes, which could take the form of either conventional government borrowing or private financing. As part of our work on the private finance initiative (PFI), which was withdrawn for new investments in 2018, we reviewed the VfM assessment framework used to compare PFI against a public borrowing alternative. While based on the principles outlined in the Green Book, we found that this framework included a number of elements that favoured private financing. It was withdrawn by HM Treasury in 2012, but we retain a residual concern regarding Green Book guidance on the use of discount rates.

When comparing financing options, it is important to consider the timing of payments. Future payments are discounted to a present value so that comparisons can be made. However, discounting can create distortions, especially when financing options have different cost profiles. A financing option that allows costs to be spread out over time, such as private financing, will appear more favourable compared to a publicly financed project where the bulk of costs are incurred upfront.

In addition, the government uses a discount rate of 3.5% (which is 6.09% with inflation), known as the Social Time Preference Rate (STPR). The STPR is higher than government's actual borrowing costs, and as a result, we found that private finance was assessed as costing less than public finance even though the actual long-term cash costs of debt servicing and repayment would be higher than the cost of government debt. Changes to the evaluation framework in future may wish to address these issues to allow fairer comparisons.

More broadly, we have observed that other frameworks which sit beneath Green Book guidance may have similar effects on the types of decisions that are made. For example, the Accounting Officer for the Department of Transport sought a Ministerial Direction for the replacement of the Pacer trains in the North, as the project had a benefit-cost ratio of less than one. The low benefit-cost ratio was because the WebTAG transport appraisal framework the Department uses values benefits such as journey times savings, service frequency or new services. Replacing the Pacers would not result in any significant improvement on these criteria. The Secretary of State gave a direction on the basis that continued use of these vehicles and their negative reputational impact was incompatible with the Government's vision for economic growth in the North.

The focus on journey time savings also creates a bias towards investment in areas where there is significant existing demand such as in London and the South East. In general, many appraisals monetise only the direct costs to the public purse, and impacts on the primary subject of the intervention. Improved monetisation of wider social and economic impacts could assist in establishing the full value of investment in areas without significant existing demand. We have previously recommended in our work on options appraisal that the Green Book could emphasise more strongly the case for monetisation.

HM Treasury are currently undertaking a review into the relationship between the Green Book and levelling up, to which we are contributing.

Accounting for Democracy

You asked a number of questions about how the NAO will respond to HM Treasury's Government Financial Reporting Review.

Our strategic review has positioned the NAO's role in supporting effective accountability and scrutiny as one of our three strategic priorities. That the government's financial reporting framework is set up to enable effective scrutiny of government performance by Parliament is crucial. We have a role in both influencing those in government responsible for setting the framework and in holding departments to account for reporting their performance in line with that framework.

The legislative basis of the NAO's work means we can contribute to this agenda in various ways and help ensure that financial reporting satisfies PACAC's four purposes for government accounts. For example:

- Our statutory annual financial audit work programme provides a mechanism to meaningfully track government's progress in improving government financial reporting, both at an individual organisation and cross-government level;

- I can utilise my powers to issue a report on a set of financial statements if I felt there was an issue of such significance that it merited specific attention, including value for money considerations – even where this may not impact on my statutory audit opinion. Recent examples are C&AG reports on the financial sustainability of the NHS in the Department of Health's accounts and examining how government has responded to changes and risks to public finances in the Whole of Government Accounts. These reports are often the basis of evidence sessions held by the committee of Public Accounts, which brings considerable transparency to the performance of government; and

- I also can use my powers to carry out work on specific issues that are relevant to PACAC's four purposes for government accounts. For example, in 2019 we published an overview of the work of local public service auditors and recommended auditors should exercise their additional reporting powers appropriately, especially where bodies had not done enough to implement previous recommendations for improvement.

We will continue our work to influence relevant stakeholders. We are a member of government's Financial Reporting Advisory Board to promote the highest standards in financial reporting across government. The Financial Reporting Advisory Board has an important role in ensuring amendments to the financial reporting framework are aligned to desired improvements in the financial reporting landscape. We are also looking to deepen our engagement with the government's finance leadership group. Their strategy for the government's finance function sets out that data driven insight is fundamental to the success of the government finance function, particularly in promoting value for money discussions.

We have started to enhance how we share the insights we gather from our audit work in line with the key themes emerging from our strategic review. Following completion of the most recent audit cycle, we shared our detailed reflections with both the finance leadership group and audit committees of government organisations, suggesting improvements for future years. We reflected that the success of the annual report in describing the performance of the business was varied, noting that weak performance reporting often arises when there is lack of clarity or specificity in Single Departmental Plans (SDPs). We recommended that NAO audit teams should work with departments to review performance information in draft annual reports at an earlier stage to ensure that they accurately reflect the current business and its performance

We have also continued, and following our strategic review will accelerate, our work in helping stakeholders understand how to use annual reports and accounts to gain insight into a government organisation's performance. We ran a training session for Select Committee clerks in November 2019 with the aim of helping more Parliamentary stakeholders use accounts to assist their Committee in achieving its desired outcomes.

Unfortunately, given the exceptional circumstances we are now working in, it is unlikely that government will make the progress it originally envisaged in its Government Financial Reporting Review across 2020. Amendments to the financial reporting framework applicable for the 2019-20 reporting period are delayed. HM Treasury is currently reviewing annual report disclosures with a view to lightening the burden on government finance teams who are busy responding to Coronavirus, while also maintaining the inclusion of good quality information to support accountability and transparency.

Despite this unavoidable setback, the principle that annual report and accounts should clearly set out and measure government performance using the best quality data is a key element of the government's and NAO's agenda to better enable Parliament to effectively hold government to account for its performance.

I hope that this is of use to you and your Committee, and I am looking forward to appearing in front of you, albeit virtually, on 5 May.

In the meantime, if I can contribute further, please do get in touch.

Yours sincerely,

Gareth Davies

GARETH DAVIES