

Key facts

£2.8bn

estimated implementation costs for the Science Capability in Animal Health programme (the Programme) as at November 2021

£1.2bn

funding for the Programme approved by HM Treasury in March 2020, part of the investment in the animal health science estate announced in the March 2020 Budget

15 years

estimated duration of the Programme, as at November 2021

Very high

rating given to the risk of failure of the Weybridge site in the Department for Environment, Food & Rural Affairs' corporate risk register

November 2021

date Programme Business Case was approved by HM Treasury with seven conditions

June 2024

date of next major milestone for the Programme – approval of revised Programme Business Case

£198 million

funding approved by HM Treasury for Tranche 1, to cover the first four financial years of programme implementation (2021-22 to 2024-25) following the Programme Business Case in November 2021. This is included within the £1.2 billion funding approved for the Programme

17

risks out of 25 in the Programme's strategic and programme risk registers as at May 2022 that have a risk score of high or very high

Summary

Introduction

1 Animal diseases have major impacts on the UK food industry and trade, demonstrated by outbreaks such as Bovine Spongiform Encephalitis (BSE), Foot and Mouth disease and most recently, Avian Influenza. Our 2002 report on *The 2001 Outbreak of Foot and Mouth Disease* estimated that the outbreak cost the public sector over £3 billion and the private sector over £5 billion based on prices at the time of the report (respectively over £4.6 billion and £7.7 billion in 2020-21 prices).¹ COVID-19 has highlighted the breadth of impact a zoonotic disease outbreak (diseases that can be transmitted from animals to humans) can have.

2 The Department for Environment, Food & Rural Affairs (Defra) leads government policy on animal health in England. The Animal and Plant Health Agency (APHA) is an executive agency of Defra and is responsible for the delivery of Defra's policy objectives in this area. It aims to investigate and respond quickly to emerging animal disease outbreaks, as well as undertaking long-term research into animal diseases. It supports the trade in plants, animals and associated products through certification, audit and inspection. APHA supports import controls on animals, plants, seeds and products of animal origin.

3 APHA's Weybridge site (Weybridge) houses the UK's primary science capability for managing threats from animal diseases. It has 98% of APHA's high containment laboratories. It is APHA's main site for running long-term animal health studies and is the only facility equipped to deal with most zoonotic diseases. Because the work at Weybridge involves hazardous biological agents and has potential for high consequence but low frequency accidents, the Health and Safety Executive (HSE) regulates APHA in line with its Major Hazard Regulatory model.

4 Weybridge is an important site nationally. Any failure in the facilities could have potentially significant impacts on the UK. In November 2021, we highlighted the need to strengthen national resilience in our report *The government's preparedness for the COVID-19 pandemic: lessons for government on risk management*.²

¹ Comptroller and Auditor General, *The 2001 Outbreak of Foot and Mouth Disease*, Session 2001-02, HC 939, National Audit Office, June 2002.

² Comptroller and Auditor General, *The government's preparedness for the COVID-19 pandemic: lessons for government on risk management*, Session 2021-22, HC 735, National Audit Office, November 2021.

5 Defra Group Property manages the physical infrastructure at the Weybridge site including maintenance and capital projects on the site. Weybridge is in poor condition, with ageing buildings that need major repair and replacement, and a lack of capacity to carry out science work. Defra estimated in 2019 that the ongoing decline at Weybridge could lead to a total loss of capability within the next five to 10 years. This would leave the UK vulnerable to future animal disease outbreaks.

6 Defra began the Science Capability in Animal Health programme (the Programme) to redevelop Weybridge in 2017. Its scope has increased from a programme focused on the construction and consolidation of Weybridge, to one which encompasses transformation incorporating science, digital, estates and sustainability transformation. The Programme is part of the Government Major Projects Portfolio.

7 The Programme is at an early stage. HM Treasury agreed Defra's first Programme Business Case with conditions in November 2021. The Programme is composed of phases, with Tranche 1 covering the period up to the next Programme Business Case in 2024. Construction of the main science hub is forecast to start in 2027. As well as the Programme, Weybridge has a critical works programme to ensure continued regulatory compliance and to maintain capability.

Scope of this report

8 This report examines how the Weybridge site has reached such a poor condition, and whether Defra is well placed to deliver value for money from the Programme to redevelop and transform the site. Our evaluative criteria are based on what we would expect to see in programmes at a similarly early stage, drawing on insights from our work looking at major programmes across government. We focus on:

- Defra's management of and investment in the Weybridge site over the past 20 years and why the site needs redeveloping (Part One);
- whether Defra has set up the Programme in line with good practice (Part Two); and
- how Defra is managing the Programme's risks, highlighting specific risks Defra will need to manage as it progresses to the next tranche of the Programme (Part Three).

9 We do not cover the extent to which the Programme is taking account of the government's sustainability and net-zero objectives, for example in its building designs. Both the Infrastructure and Projects Authority (IPA) and HM Treasury have already highlighted that more progress is needed in developing the Programme's sustainability and net-zero plans. Defra is working to respond to their recommendations. We also do not assess Defra's management of its critical works programme.

Key findings

Why the Weybridge site needs redevelopment

10 Defra has not had a long-term asset management strategy for Weybridge over the past 20 years. The site has been developed in a piecemeal way, sometimes reacting to major animal disease outbreaks. While there is evidence of recent work to improve asset registers and survey the condition of buildings, there remain gaps in the site's documentation. Defra's estate-wide facilities management contract does not have appropriate key performance indicators for a high containment site such as Weybridge. There have been serious weaknesses in Defra's management of the contract, including under-resourcing (paragraphs 1.12 to 1.16).

11 Defra has under-invested in Weybridge, and the current short-term 'patch and repair' approach is not sustainable. Investment to update the Weybridge facilities largely stopped following the 2008 financial crisis. There has also been under-investment in ongoing maintenance at Weybridge, resulting in a large maintenance backlog. There is currently a substantial shortfall in laboratory capacity. Weybridge is becoming increasingly costly to keep running through Defra's 'patch and repair' approach with an estimated £197 million required over the five years from 2020-21. For the 11 years from 2025-26, Defra expects its critical works programme to cost, on average, around £80 million a year (paragraphs 1.7 to 1.9).

12 The condition and capacity of the buildings is negatively affecting APHA's work and could limit APHA's response in the event of a major disease outbreak. APHA and Defra's corporate risk registers rate failure of Weybridge as a 'very high' risk, with Defra highlighting the old and poorly maintained facilities. The shortage of laboratory capacity is holding back the overall productivity and output of research programmes. In addition, APHA told us that the current condition and configuration of Weybridge would reduce its ability to respond effectively to disease outbreaks. There are aspects of the design and site layout that are not efficient. There have also been instances of core facilities breaking down and buildings unfit to be used. Some buildings are only usable because APHA has obtained exemptions from HSE from certain containment and control measures by demonstrating that risks will be adequately controlled by equally effective means (paragraphs 1.17 to 1.19).

Developing the Programme

13 Despite the increasing urgency to redevelop Weybridge, it has taken Defra several years to set up the Programme. Defra identified the need for substantial investment in urgent reactive maintenance at Weybridge in 2015, as part of its Spending Review submission. This reactive work highlighted that significantly more work was required. In 2017, Defra started work on the Strategic Outline Case for the redevelopment of Weybridge. However, following development of the Outline Business Case and HM Treasury's confirmation of funding in March 2020, it became clear to Defra that the cost estimates in the Outline Business Case were too low and it had not recognised the need for the Programme to incorporate wider transformation elements in addition to construction work. Defra needed to undertake considerable further work before the Programme Business Case was agreed by HM Treasury in November 2021. A full-time senior responsible owner for the Programme was only appointed in November 2020 (paragraphs 2.2 to 2.5).

14 Defra does not yet have a clear enough view of expected outcomes to be able to make informed investment decisions. Defra has set out a vision and clear case for the Programme, which has buy-in from a range of stakeholders, including APHA and Defra ministers. However, while Defra has set out five objectives for the Programme, it has not quantified the level of performance it is aiming to achieve. Defra has set out convincing evidence in its Programme Business Case for the overall benefits of the Programme. However, quantifying and valuing the benefits is challenging. Given this, Defra took a cautious approach using the lower bound of benefits estimates in the benefit-cost analysis, resulting in a benefit-cost ratio of only 0.5. The IPA raised concerns about the level of uncertainty of the benefits estimates and that understating the benefits case could lead to suboptimal investment decisions. Defra is planning further work to enhance the benefits case and understand the links between outputs, outcomes and benefits, and to develop a plan to realise these benefits (paragraphs 2.7 to 2.15).

15 Defra has improved its weak early cost estimates, including better reflection of risk and uncertainty, as well as a wider scope. Defra carried out detailed work to estimate costs for the Programme Business Case, although some elements were more mature than others. The work resulted in an increase in cost estimates from £1.2 billion in the Outline Business Case to £2.8 billion in the Programme Business Case. The estimates include a substantial allowance for risk, optimism bias and cost sensitivity, making up 34% of the estimated cost, excluding VAT and inflation. The IPA highlighted the cost plan and supporting detail as good practice. However, the estimate is based on an immature design brief and should be viewed as indicative (paragraphs 2.4 and 2.16 to 2.18).

16 Defra has made good progress in establishing governance structures within the Programme. The Programme has established a clear board structure with regular reporting from programme workstreams. Defra has taken action to strengthen governance and has identified areas for further work, such as improving the clarity around decision-making accountabilities and responsibilities. Key stakeholders (APHA and Defra Group Property) feel integrated into the governance structures. Defra is developing its Integrated Assurance and Approval Plan, which sets out the assurance arrangements for the Programme (paragraphs 2.20 to 2.23).

17 Defra has made clear efforts to learn from similar programmes and projects. Our *Framework to review programmes* highlights the importance of learning lessons within and across programmes.³ Defra has looked for opportunities to engage with other departments and programmes to learn lessons including: developing a network of contacts with experience of major projects on high containment sites; learning lessons from other major construction programmes; and learning from similar international sites (paragraph 2.25).

Defra's risk management approach

18 Defra has processes in place to manage the Programme's risks but needs to do more to integrate this with risk management across the entire Weybridge site. The Programme is high risk due to a range of factors including: the specialist nature of the construction, involving high containment engineering; and the complexity of managing a major construction programme while maintaining the business-as-usual operations of APHA. The weaknesses in the management of the site have increased the Programme's risk further by leaving it in such a poor condition. There has been an on-going process over the past three years to identify the Programme's risks since the development of the Outline Business Case. Defra has put in place the core risk management structures we would expect to see at this stage, and there are indications that it is developing a strong risk management culture. However, there is no process or individual with responsibility for assessing and managing risk across the entire Weybridge site covering the Programme, critical works, facilities management and APHA's business-as-usual operations. For example, construction work as part of the Programme could have health and safety implications and disrupt APHA's day-to-day operations (paragraphs 1.17 and 3.2 to 3.5).

³ National Audit Office, *Framework to review programmes, Update April 2021*, April 2021, available at: www.nao.org.uk/report/framework-to-review-programmes-update-april-2021/

19 In line with good practice, Defra is investing time upfront to help manage risk and reduce the uncertainty in the Programme. Defra has designed the Programme in phases, with Tranche 1 the important planning phase, running to 2024. The aim is to reduce risk and uncertainty through: moving ahead with work that would be needed on the site regardless; re-testing, as information improves, the core assumptions in the delivery plan (such as the extent of use of temporary buildings); fine-tuning the cost and schedule estimates; and reducing uncertainty, for example, through site surveys. At the end of Tranche 1a in April 2022, Defra had completed most of its planned deliverables. The main area of work yet to be completed was revisions to the Programme's commercial strategy (paragraphs 3.6 and 3.7).

Risks to the Programme

20 HM Treasury has not approved funding to cover the current estimated cost of the Programme. Defra has highlighted the risk that it fails to get sufficient funding to cover the full cost of the Programme and has to reduce its scope and hence the outcomes and benefits. HM Treasury approved funding of £1.2 billion for the Programme in March 2020 but has not formally agreed to fund the Programme at the revised cost estimate of £2.8 billion. Additional funding approval will be subject to further scrutiny of costs and benefits as the Programme moves to the next stage (paragraph 3.8).

21 The next major milestone for the Programme is HM Treasury's approval of a further iteration of the Programme Business Case in June 2024. Following this, Defra will begin procuring the main construction contracts, and expects construction of the science hub to start in 2027. From our experience of auditing other major programmes across government, we identify four risks that Defra will need to manage over the next two years to help ensure it is well set up for the next tranche of the Programme:

- **Unrealistic costs and schedules lead to unachievable plans:** Defra recognises there is still substantial uncertainty in its cost and schedule estimates but has not fully reflected this in its Programme Business Case estimates, which are expressed as single points. Best practice is to express estimates at this early stage as a range, to communicate the level of risk and uncertainty in the programme clearly to decision-makers. Not being clear about the level of uncertainty could lead to unrealistic expectations among stakeholders and result in, for example, decision-making being dominated by achieving a fixed completion date (paragraphs 3.10 to 3.12).
- **Not having appropriate staff capability:** Defra may not be able to recruit staff with appropriate skills for its 'intelligent client function' due to: a limited pool of people with the specialist skills required; civil service salary limits; and headcount limits in Defra. Failure to recruit the necessary skills (such as specialist technical and engineering skills) could impact on the pace and quality of delivery and increase costs. Defra is taking action to try to mitigate this risk (paragraphs 3.13 and 3.14).

- **Ineffective contractual arrangements:** The Programme will have a range of contracts covering professional services and construction. Failure to ensure contractors are working together with appropriate delivery incentives could result in higher programme costs. Following a recommendation from the IPA and Cabinet Office's Government Commercial Function, Defra is expecting to complete revisions to its commercial strategy in September 2022. Defra is also concerned about the level of contractors' appetite to bid for the main construction contracts (paragraphs 3.15 to 3.18).
- **Not managing external and internal dependencies:** Ineffective management of the range of external and internal dependencies could cause delays to the Programme. For example, delays to the critical works programme could delay clearing areas of the site for the Programme. Defra is still developing some of the processes to manage these dependencies. The link between construction design and transformation design is important, with transformation vital to delivering improvements in science capability. Some elements of transformation are not yet well developed such as science and digital. If this continues it could result in buildings not meeting the needs of APHA's scientists (paragraphs 3.19 and 3.20).

Conclusion on value for money

22 Defra has allowed its Weybridge site to deteriorate to a state where some of the facilities are no longer fit for purpose. The level of under-investment and poor strategic management of the site has greatly increased the risk and complexity of the redevelopment programme. Any delays or difficulty completing the Programme may expose APHA's operations to greater risk, potentially limiting its ability to respond effectively to a major disease outbreak. Recognising and managing these risks from the start will be important to delivering value for money.

23 In this context, it has taken a long time for Defra to set up the Programme and to understand its scope, which is now reflected in the increased estimated costs of the Programme. Defra has recently put in place many of the right elements for successful delivery of the Programme. Given the current uncertainty, Defra is rightly investing time upfront to reduce this uncertainty and is trying to learn lessons from other programmes. Defra needs to use this time to further develop its cost, schedule and benefit estimates, to present a robust case which can secure funding and demonstrate value for money.

Recommendations

The Weybridge site

24 Defra should:

- a** **prioritise producing a long-term asset management strategy for the Weybridge site within the next year.** This should clearly set out responsibilities of all stakeholders reflecting current programmes and future changes. The strategy should be supported by underlying detailed asset management information; and
- b** **implement a system-level view of risk at the Weybridge site, with clear ownership and accountability.** This will improve visibility across APHA, Defra Group Property and the Programme of the aggregate risk, so that the impact of decisions on all work and operations across the entire Weybridge site is understood by all.

The Programme

25 Our recommendations are intended to help Defra create the necessary conditions to deliver the Programme and achieve value for money.

26 As soon as possible, Defra should:

- c** **monitor its progress in recruiting the right staff, and the impact of any headcount restrictions.** Defra should acknowledge the impact that this risk will have on the Programme, including on costs and schedule. This should be reflected in its reporting and submissions to the IPA and HM Treasury;
- d** **demonstrate that it is continuing to learn lessons from across government and is using best commercial practice in integrating contracts and in aligning contractual incentives to reduce costs and deliver to schedule; and**
- e** **ensure that science and digital transformation elements of the Programme are fully integrated within the Programme and defined before finalising construction contracts.** This is so all requirements are included, to minimise the risk of changes and increased costs.

- 27** Within the next Programme Business Case, Defra should:
- f** **clearly express uncertainty in cost and schedule estimates, to help decision-making and avoid setting unrealistic expectations.** Where possible costs and schedule should be presented as ranges, with a plan for how these will reduce over time; and
 - g** **set out robust estimates of the benefits of the Programme, to allow decision-makers to assess what can be delivered at what cost and the impact of any changes in scope.** Defra needs to improve its understanding of benefits in advance of this, including on how both Defra and APHA will realise the benefits.