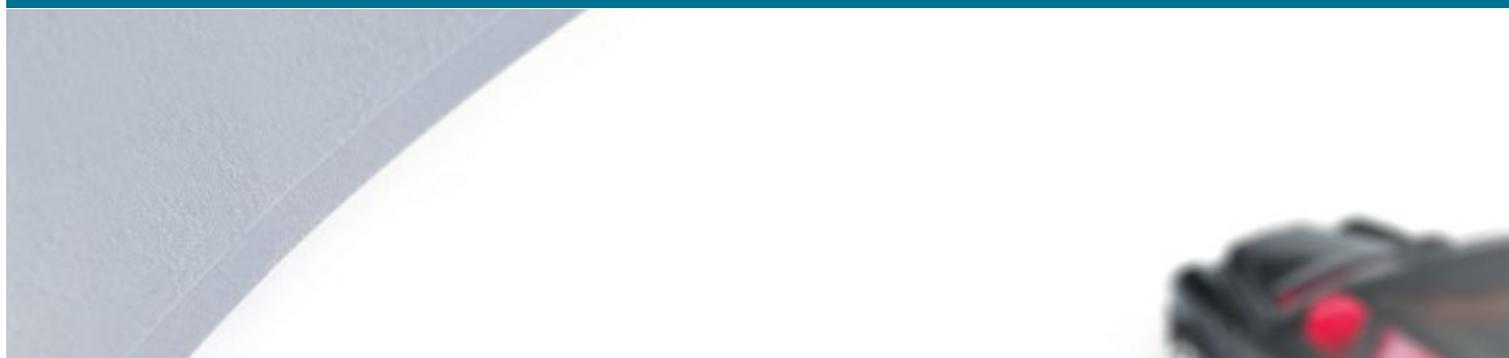


Scotland's key transport infrastructure projects



 AUDITOR GENERAL

Prepared by Audit Scotland
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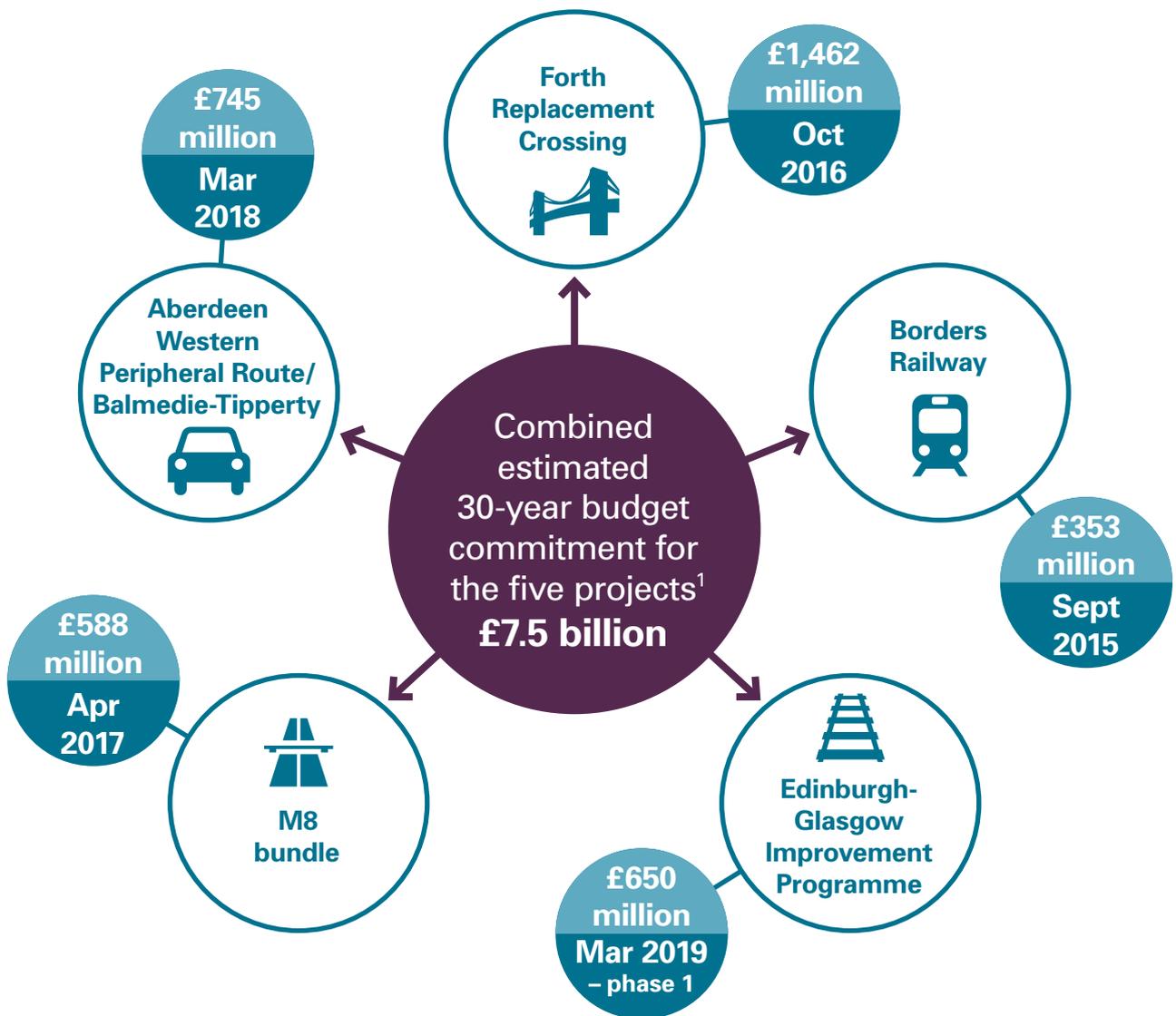
Exhibit data

When viewing this report online, you can access background data by clicking on the graph icon. The data file will open in a new window.

Summary



Key facts



-  Current estimated building cost
-  Current forecast completion date

Note:

1. The total estimated building cost for the five projects is £3.8 billion. The combined estimated 30-year budget commitment for the five projects of £7.5 billion reflects building, financing and operating costs.

Background

1. Investing in major infrastructure projects, including roads, railways and bridges, is a priority for the Scottish Government and a central element of its strategy to promote economic recovery in Scotland.¹ The Scottish Government has a key role in shaping, directing and delivering public spending on major infrastructure projects. It can provide funding to other bodies, such as Network Rail, to invest.²

2. As the national transport agency within the Scottish Government, Transport Scotland leads the delivery of the significant programme of major infrastructure projects in the transport sector. Created in 2006, it is accountable to the Scottish Parliament and the public through Scottish ministers. It supports ministers in their role, which includes prioritising future transport policy and infrastructure investments.³ In 2011/12, Transport Scotland employed 400 permanent staff and spent £2.1 billion. This included £224 million on capital investment, mainly on roads, and £507 million to pay for investment by others including, for example, Network Rail on railways in Scotland.

3. Within its current programme, Transport Scotland is responsible for delivering or securing the delivery of five large infrastructure projects that are the subject of this report.⁴ These have estimated capital costs of between £353 million-1,462 million each and a combined estimated capital cost of £3,798 million. They are due to come into operation between 2015 and 2019.

- The £1,462 million Forth Replacement Crossing (FRC) is the largest public capital investment project since devolution. Most spending on it will occur over the five years 2012/13 to 2016/17 and the Scottish Government will pay for all of this from its capital budget.
- Two new roads projects: the £745 million combined Aberdeen Western Peripheral Route and Balmedie to Tipperty (AWPR/B-T) project and the £588 million combined M8/M74/M73 improvements (M8 bundle) project. For these projects, the private sector is being invited to design, construct, finance and maintain and operate the new roads over 30 years under the Scottish Government's Non-Profit-Distributing (NPD) contract method.
- Two major rail projects: the £650 million Edinburgh-Glasgow Improvement Programme (EGIP) and the £353 million Borders Railway. Network Rail will deliver and finance these projects for Transport Scotland using Regulatory Asset Base (RAB) financing, a special form of financing for rail projects.

4. Using NPD and RAB financing for four of these five projects allows the Scottish Government to reduce greatly the up-front call for them from its capital budget. Instead, the Scottish Government will pay for most of the cost of these projects after completion through ongoing annual payments to the providers over the 30 years' life of each contract. [Appendix 2](#) provides further details on the financing methods for the five projects.

About the audit

5. Audit Scotland has reported previously on major capital projects and how the Scottish Government manages its investment programme.⁵ Given the scale and cost of the five major infrastructure projects, it is important that the Scottish

Parliament has assurance that the Scottish Government and Transport Scotland are effectively progressing, monitoring and publicly reporting them.

6. In this report we provide key stakeholders, including the Scottish Parliament Public Audit Committee and the public, with information on whether Transport Scotland is progressing the five projects to meet time, cost and scope targets. We report on whether the governance structures and processes that are in place for each project are fit for purpose. We explain governance in [\(paragraph 36\)](#). We also assess Transport Scotland's cost estimation and financial management of the projects and how well the Scottish Government and Transport Scotland monitor and publicly report on the projects.

7. The report includes:

- A two-page summary of our findings on each of the five projects [\(Exhibit 1, pages 10-11\)](#)
- Overview of projects and progress to date [\(Part 1\)](#)
- Investment decision-making and management [\(Part 2\)](#)
- Financial management and public reporting [\(Part 3\)](#).

8. We completed the main part of our review between February and April 2013. This included a detailed review of Transport Scotland's main documents relating to each project. We interviewed Transport Scotland leaders and people responsible for delivering or overseeing the projects, and people within the Scottish Government's finance team. We also reviewed relevant material from the Scottish Government, such as reports to its Infrastructure Investment Board (IIB).⁶

9. Our audit examined five live projects where the position is constantly changing and there will have been developments since we completed the audit. For this reason, our opinion and any assurance given at this stage do not provide absolute assurance that these projects will be delivered successfully.

10. [Appendix 1](#) provides information on our methodology and the limits on the scope of our report.

Key messages



- 1** All the projects are at different stages. Transport Scotland expects to deliver all five within their current budgets and to complete four on time. It has adjusted the scope of the Edinburgh-Glasgow Improvement Programme to reduce costs. Consequently, the timescale for its completion has increased by over two years. Transport Scotland is managing the risks to each project well but cannot eliminate them completely owing to the projects' size and complexity.
- 2** The five projects will cost a combined £3.8 billion to build but the estimated combined budget commitment over 30 years, reflecting building, financing and operating costs, is £7.5 billion. The Scottish Government considers this spending is affordable in the long term, but it has not fully demonstrated the reliability of its analysis in this area.
- 3** Transport Scotland and the Scottish Government need to improve their public reporting of infrastructure projects. Except for the Forth Replacement Crossing, they have not informed the public or the Scottish Parliament of the combined estimated financial commitment arising from these projects. Reporting of the building cost estimates for three projects has also been incomplete or inconsistently presented.
- 4** Transport Scotland has good corporate governance structures for major investment projects. It has well-established governance in place for two projects, and it is revising it for the other three to take account of recent changes to them. This is appropriate but it now needs to develop aspects of its monitoring and reporting for these three projects as soon as possible.
- 5** Good-quality business cases are vital for project scrutiny, decision-making and transparency. However, for the Borders Railway and EGIP projects, Transport Scotland did not ensure that business cases were complete and up to date at all stages. Consequently, at certain decision points, it had not fully demonstrated the viability, value for money and affordability of the projects. Since its inception in 2010, the Scottish Government's Infrastructure Investment Board (IIB) has strengthened scrutiny of high-value projects. However it was set up after the five projects started and was unable to scrutinise them at an early stage.

Recommendations

To improve its control and decision-making, Transport Scotland should:

- review and update by December 2013 its current business case development and assurance processes to ensure these align with wider processes for planning and decision-making for all projects, including rail investment and to identify the specific points where ministerial approval is required. It should then ensure these are systematically applied to all projects
- ensure Project Execution Plans (PEPs) are completed for Borders Railway, AWPR/B-T and EGIP by September 2013
- establish by December 2013 a standard approach to presenting cost estimates and financial monitoring reports for high-value projects, costing more than £20 million. Cost estimates should be presented so that the full financial impact of these projects is clear and understandable in both cash and real terms (that is, taking account of inflation)
- refine its risk-management framework by December 2013 to promote a more consistent approach to recording and scoring risks between individual projects', directorate and corporate risk registers.

To help develop its scrutiny of major projects, the Scottish Government should:

- by December 2013 refine and develop its plan for scrutinising, challenging and monitoring major investment projects. This plan should aim to promote closer integration of the major decision-making, scrutiny and assurance stages throughout the lifecycle of all projects. This includes the key dates for ministerial approvals, IIB reviews, business case decisions, Gateway and integrated assurance reviews. The plan should show:
 - the objectives for each stage
 - who is involved
 - when each stage will take place for each project, including inter-dependencies
 - how progress towards each stage will be monitored, including the remit of the IIB in this area and what monitoring information about the progress of individual projects that the IIB should receive as a matter of course.

To improve openness and public accountability, the Scottish Government should:

- consult with the Scottish Parliament's Public Audit, Finance and Infrastructure and Capital Investment Committees on a threshold value for routine public reporting of all major infrastructure

investment projects that ministers have approved for procurement. It should then set a threshold for routine public reporting

- by December 2013 improve the content and presentation of information about major projects to the Parliament's Public Audit Committee that it provides in its six-monthly updates. Reports should include commentary and indicators that show:
 - individual projects' progress (or changes) against approved time, cost and scope objectives
 - long-term revenue commitments for projects once contracts have been signed
 - estimated long-term revenue commitments for all other projects, where these have been approved for procurement. To avoid disclosing estimates for individual projects that may be commercially sensitive before contracts are awarded, reports may provide this information on a portfolio basis or according to the type of investment being made, such as roads or schools
 - provide improved information as noted above on individual capital investment projects to other parliamentary committees as appropriate.
-

Exhibit 1

Summary of findings about Scotland's five key transport infrastructure projects

Project	 Forth Replacement Crossing New crossing of the Firth of Forth connecting with trunk road network	 Aberdeen Western Peripheral Route/Balmedie to Tipperty A 46km dual carriageway bypass west of Aberdeen and upgrading to dual carriageway 8km of the A90 north of Aberdeen	 M8 bundle Enhancements to M8, M73 and M74 to support completion of the central Scotland motorway network
	Estimated building cost: £1,462m Estimated completion: Oct 2016 Status: In construction Financing: Capital	Estimated building cost: £745m Estimated completion: Mar 2018 Status: In procurement Financing: NPD	Estimated building cost: £588m Estimated completion: Apr 2017 Status: In procurement Financing: NPD
Delivery	Scope of project and cost estimates changed in 2007. On track to complete within latest approved cost estimate and on or ahead of schedule.	Subject to earlier delays and cost estimate increases. On track for revised estimated completion date. Progress against revised cost estimate is unclear.	Three previously separate projects were combined into a single NPD project in 2010. Subject to earlier delays and cost estimate increases. Now on track to complete within latest approved cost estimate and within schedule.
Risk	A high-risk construction project, though much risk lies with the contractor. Sound risk management arrangements are in place.	Risks associated with procurement using NPD finance are higher in the current economic climate. Sound risk management arrangements are in place.	Risks associated with procurement using NPD finance are higher in the current economic climate. Sound risk management arrangements are in place.
Investment decision-making	Followed procedures for developing and seeking assurance on the outline business case and full business case. Scrutinised by the Scottish Government's Strategic Board, though not by the IIB.	Followed procedures for developing and seeking assurance on the outline business case. Full business case due prior to contract award. IIB scrutinised the project before procurement but not at the project's inception.	Followed procedures for developing and seeking assurance on the outline business case. Full business case due prior to contract award. IIB scrutinised the project before procurement but not at the project's inception.
Governance	Well-established governance arrangements in accordance with good practice requirements.	Governance is being revised following the merger of two previously separate projects. Financial monitoring and reporting are not yet happening routinely.	Well-established governance arrangements in accordance with good practice requirements.
Public reporting	Full and accurate public reporting of estimated capital costs. Publicly reported the estimated increase in operating and maintenance costs but this excludes risk and optimism bias.	The publicly reported capital cost estimate differs from the approved estimate. No public reporting of 30-year costs associated with NPD procurement, which is commercially sensitive information at this point.	The approved capital cost estimates significantly exceed the publicly reported costs. No public reporting of 30-year costs associated with NPD procurement, which is commercially sensitive information at this point.

Summary of findings about Scotland's five key transport infrastructure projects (continued)

 Edinburgh-Glasgow Improvement Programme A programme of line, station and rolling stock improvements, including electrification, aimed at improving journey times and passenger capacity across the Edinburgh-Glasgow railway line	 Borders Railway A new railway from Edinburgh to the central Borders, to connect the Borders and Midlothian more effectively to the Edinburgh economy	Project
Estimated building cost: £650m Estimated completion: Mar 2019 – phase 1 Status: In procurement/parts in construction Financing: RAB	Estimated building cost: £353m Estimated completion: Sept 2015 Status: In construction Financing: RAB	
<p>Ministers approved major changes in 2012 to reduce the estimated costs and ensure the affordability of overall railway investment plans.</p> <p>At the time of our review, achieving cost and time estimates is particularly uncertain. However, Transport Scotland is developing a full business case to demonstrate viability and value for money.</p>	<p>No significant changes to scope.</p> <p>Subject to earlier delays and cost estimate increases. Now on track to complete within the latest approved cost estimate and within schedule.</p>	Delivery
<p>The project is at a risky stage because the objectives, scope and costs for phase 1 have changed considerably and this is still to be reflected in an approved business case.</p> <p>Transport Scotland should finalise its risk allocation matrix with Network Rail, ScotRail and the Office of Rail Regulation (ORR). It should also develop a risk register for the risks it owns.</p>	<p>Risks associated with construction are currently being managed.</p> <p>Transport Scotland should further develop its own risk register.</p>	Risk
<p>Transport Scotland did not update or approve an outline business case before requesting ministers to approve the major changes to scope and cost estimates. Full business case due prior to contract award.</p> <p>IIB scrutinised the project in 2011 but not at the project's inception.</p>	<p>Transport Scotland did not approve a revised outline business case before requesting ministers to approve a change in procurement strategy. Followed procedures for developing and seeking assurance on the full business case.</p> <p>IIB has not scrutinised the project at any stage.</p>	Investment decision-making
<p>Governance arrangements need further development. Still to agree plans for transferring programme to Network Rail and complete the business case as part of the ORR submission.</p> <p>Financial and risk monitoring and reporting need to be further developed.</p>	<p>Relatively well-established governance arrangements. Some aspects being developed to reflect transfer of responsibility to Network Rail in November 2012.</p> <p>Financial and risk monitoring and reporting need to be further developed.</p>	Governance
<p>Full and accurate public reporting of capital costs.</p> <p>No public reporting of 30-year costs associated with regulatory asset base (RAB) procurement or franchise costs, which is commercially sensitive information at this point.</p>	<p>The publicly reported capital cost estimate was incomplete until April 2013. No public reporting of 30-year costs associated with RAB procurement or franchise costs, which is commercially sensitive information at this point.</p>	Public reporting

Part 1

Overview of projects and progress to date



Key messages

- 1** Scotland's five key transport infrastructure projects have combined estimated capital costs of £3,798 million and are due to come into operation between 2015 and 2019.
- 2** The estimated scope, cost or construction date of each project has changed over time. At April 2013, Transport Scotland remained confident that it would complete four projects (with the exception of EGIP) within current approved completion and scope targets. At the same time, it forecast that it would deliver all five projects within current approved capital cost targets.
- 3** Transport Scotland approved an outline business case for EGIP in November 2011, with an estimated completion date of December 2016 and a capital cost estimate of £1.1 billion. In July 2012, ministers announced a phased approach to EGIP and committed £650 million to deliver a reduced scope of improvements within phase 1. At April 2013, Transport Scotland expects to deliver phase 1 of EGIP by March 2019 and within the £650 million estimate. But the capital cost estimate is particularly uncertain as it is not yet based on an up-to-date business case. Transport Scotland expects to complete a full business case for the first phase of EGIP by May 2013. Ministers will then be invited to approve the scope, cost and time targets for the project.
- 4** The estimated capital cost of the M8 bundle is significantly higher than has previously been publicly reported.

the five projects will support the Scottish Government's strategic outcomes for transport

The Scottish Government's strategy is to finance more infrastructure investment from its revenue budget

11. The Scottish Government continues to emphasise capital investment as a central element of economic recovery in Scotland. However, it has had to consider other ways of financing its investment in infrastructure. This is because of the exceptionally large scale of the construction costs of the FRC project and the general reduction in its capital budget in recent years. Its total capital budget is expected to fall in real terms over the spending review period, from a peak of £3.5 billion in 2010/11 to £2.5 billion in 2014/15.⁷ Consequently, in its 2010 Spending Review and its 2011 Infrastructure Investment Plan, the Scottish Government set out a strategy to maintain investment levels, taking account of the financial challenges it faced.

12. The Scottish Government plans to:

- use private finance, finance from the European Investment Bank and borrowing on its own account to maintain infrastructure investment spending
- take forward a £2.5 billion pipeline of new revenue-financed investment to be delivered mainly through NPD projects, including the M8 bundle and AWPR/B-T projects
- make full use of RAB financing for new rail projects, including EGIP and, as it later decided, the Borders Railway.

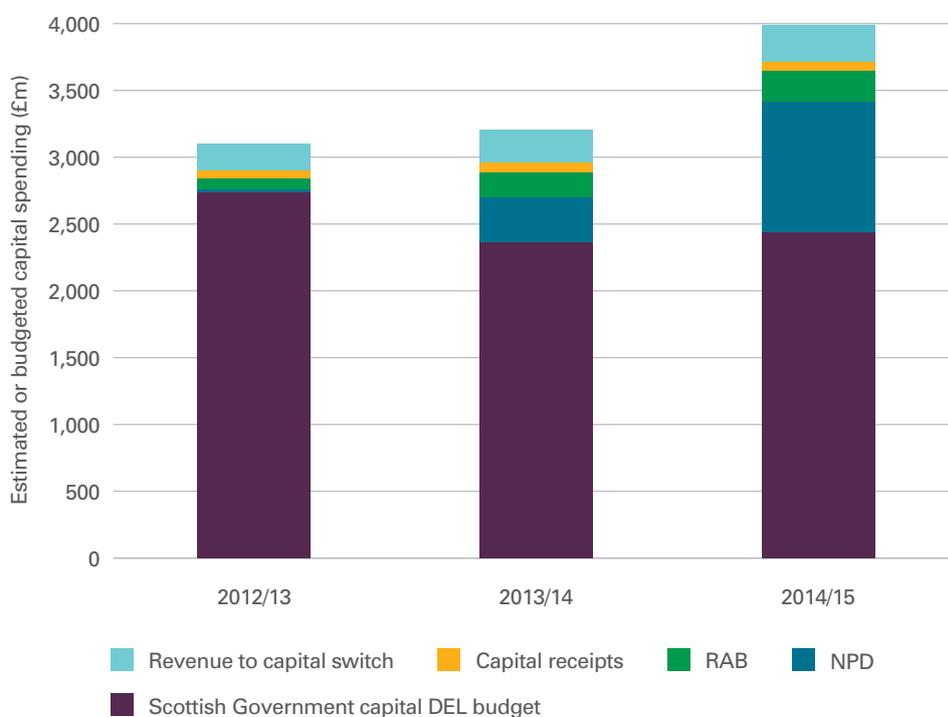
[Appendix 2](#) summarises the advantages and disadvantages of using capital, NPD and RAB financing methods.

13. The latest Scottish draft budget, for 2013/14, confirms that the Scottish Government is seeking to maximise investment by transferring money from revenue to capital budgets and by using other sources of finance for investment as much as possible ([Exhibit 2](#)).

Exhibit 2

Capital investment and how it will be financed

The Scottish Government is seeking to maximise investment by transferring money from revenue to capital budgets and using other sources of finance for investment as much as possible.



Note: Values for NPD and RAB investment are approximate. They are the Scottish Government's estimates for spending by the providers based on the estimated capital cost of new contracts or projects approved in each year. The estimated spending on contract payments for RAB and NPD financed projects is not shown in this exhibit.

Source: Figure 2, *Scottish Draft Budget 2013-14*, Scottish Government, September 2012



Ministers have approved all projects for procurement and two have advanced to construction

14. Transport Scotland has been planning these five projects for many years. They are five of 29 major transport infrastructure projects that Transport Scotland identified as priorities, as part of its *Strategic Transport Projects Review* in 2008.⁸

15. Two of the projects (FRC and Borders Railway) required legislation to remove barriers to their development and management arrangements:

- **For the FRC**, the Scottish Parliament introduced the Forth Crossing Act 2011 to give ministers powers to build a new Forth crossing to the west of the existing Forth Road Bridge. In addition, in May 2013 the Scottish Parliament approved the Forth Road Bridge Bill. When enacted, this will enable ministers to appoint a new bridge operating company to manage the Forth Road Bridge, the new FRC and connecting trunk roads as part of a managed crossing strategy.
- **For the Borders Railway**, The Waverley Act (Scotland) 2006 authorises rebuilding the railway from Edinburgh to the Scottish Borders. Originally, Scottish Borders Council was charged with delivering this project. Its responsibilities were transferred to Transport Scotland in October 2008 and then to Network Rail in November 2012.

16. After the Parliament approved the necessary legislation, Scottish ministers approved the main construction contracts for the FRC in March 2011. Similarly, they approved the transfer of responsibility for construction of the Borders Railway to Network Rail in November 2012. These projects are now under construction.

17. Scottish ministers have also approved that the M8 bundle, AWPR/B-T and EGIP should proceed to procurement. The construction contracts have yet to be agreed for the main building works for these projects. However, contracts for some parts of EGIP have already been awarded, and construction for these is either under way or has been completed.

18. Under the Budget Act 2013, the Scottish Parliament has approved spending plans for 2013/14, which explicitly provide £259 million for the FRC. The Parliament has not made any specific spending approvals for the other projects we examine in this report; spending on them is included within other categories of approved spending.

The five projects will support the Scottish Government's strategic outcomes for transport

19. The five projects will together help towards meeting the Scottish Government's three 'key strategic outcomes' for transport.⁹ These outcomes are:

- **Improving journey times and connections** to tackle congestion and the lack of integration and communications in transport that impact on the potential for continued and economic growth.
- **Reducing emissions** to tackle climate change, air quality and health improvement.

- **Improving quality, accessibility and affordability** to give people a choice of public transport, where availability means better-quality transport services and value for money or an alternative to the car.

20. [Exhibit 3](#) (page 16) summarises the objectives of the five projects.

The scope of four projects has changed since their initial approval

21. The scope of the FRC project has changed since ministers first announced their commitment to it in 2007. Transport Scotland's initial plan was to build a bridge that would take all the traffic from the existing Forth Road Bridge. This was based on advice from technical experts who investigated the bridge's cabling and identified significant deterioration. They advised, at that time, that the bridge was unlikely to be safe for vehicles from around 2019. Since then, experts have investigated in more detail and found that the rate of deterioration was not as bad as initially believed. Their technical report concluded that the existing bridge could be used safely as long as the volume of traffic, particularly heavy goods vehicles, could be reduced substantially. Transport Scotland therefore included the existing bridge as part of a managed crossing strategy. This reduced the estimated capital cost of the FRC project by about £1.7 billion. Ministers approved the full business case in March 2011.¹⁰ The reasons for changing the scope of the FRC project are clear and reasonable.

22. Transport Scotland approved the outline business case for EGIP in November 2011. However, in early 2012, it proposed to ministers possible changes to the scope and phasing of EGIP. This revision was due to concerns about the affordability of the overall railway investment plans for the years 2015–19, which Transport Scotland was considering in parallel with EGIP. Ministers agreed changes to EGIP were necessary and in July 2012 announced a phased approach to its delivery. In its 2011 outline business case, Transport Scotland forecast EGIP would cost £1,071 million. The reduced scope of EGIP (phase 1 of the programme) is currently estimated to cost £650 million. The scope reduction and rephasing of EGIP was confirmed as feasible due to proposals, announced in September 2011, by Network Rail and Buchanan Galleries to refurbish Glasgow Queen Street Station. This development provided an opportunity to extend existing platforms to accommodate longer trains. The reasons for changing the scope of EGIP are clear and reasonable.

23. Transport Scotland has adjusted the scope of the AWPR/B-T project to combine the original project for a new bypass around Aberdeen with a previously separate project for improving the A90 north of Aberdeen (Balmedie to Tipperty). This change was to secure better value for money through a single NPD project. Transport Scotland has further changed the scope of the original Aberdeen bypass element as a result of preliminary ground investigations and design development to respond to public concerns. The reasons for changing the scope of the AWPR/B-T project are clear and reasonable.

24. The main change affecting the M8 bundle is that, in December 2010, ministers approved a proposal to take it forward as a single NPD project, merging three previously separate projects.¹¹ This did not significantly change the objectives or scope of the works.

25. The objectives and scope of the Borders Railway project remain largely unchanged.

Exhibit 3

Objectives for the five projects

The five projects together help to meet the Scottish Government's strategic transport objectives.

Forth Replacement Crossing (FRC)

- Maintain and improve cross-Forth transport links as part of Scotland's strategic transport network.
- Improve journey time reliability for all types of transport.
- Increase travel choices and improve integration between types of transport.
- Improve accessibility and social inclusion, by improving public transport including increased capacity and more reliable journey times.
- Minimise the disruptive effects of maintenance on the network.
- Enable economic growth and development that can be sustained over the long term.
- Minimise the effects of the works on people and the natural and cultural heritage of the Firth of Forth area.

Aberdeen Western Peripheral Route/Balmedie to Tipperty (AWPR/B-T)

- Improve access to and around Aberdeen and on the A90 between Balmedie and Tipperty; enable economic development in these and neighbouring areas.
- Ease traffic on existing roads, including removing long-distance heavy goods vehicle traffic; remove congestion, noise and air pollution; and increase safety for local communities.
- Provide access to existing and planned park-and-ride and rail facilities and promote greater use of public transport.
- Improve journey times and reliability and increase safety on the strategic road network.
- Minimise intrusion of the new works on the natural environment, cultural heritage and people; enhance the local environment where opportunities arise.

M8 bundle (M8, M73, M74 improvements)

- Deliver specified traffic flow improvements.
- Reduce journey times and improve reliability.
- Improve safety for road users.
- Improve access to facilities and employment areas.
- Improve facilities and conditions for cyclists and pedestrians.

Edinburgh-Glasgow Improvement Programme (EGIP)

- Deliver a programme of cost-effective improvements to rail connections between Edinburgh and Glasgow, improving reliability, capacity and journey times, with an associated target journey time of 42 minutes.
- Provide an easy and effective public transport linkage between the Scottish rail network and Edinburgh Airport.
- Build a railway for the long term that will be more efficient, less expensive to run and generate fewer carbon emissions.

Borders Railway

- Promote access to and from the Scottish Borders and Midlothian to Edinburgh (including Edinburgh Airport) and the central belt.
- Foster social inclusion by improving access to services for those without access to a car.
- Prevent decline in the Borders population by securing ready access to Edinburgh's labour market.
- Encourage people to use public transport rather than cars.

Four of the five projects are on track to be delivered within the latest approved timescales

26. In 2007, ministers approved a completion target of 2016 for the **FRC**. The target has not changed since then, and Transport Scotland currently expects to deliver the project on time or slightly ahead of schedule. Ministers approved revised completion targets for three projects (Borders Railway, AWPR/B-T and M8 bundle) since they were first publicly announced.

27. For **Borders Railway**, in 2006 – when the Scottish Parliament was considering the Waverley Railway (Scotland) Bill – the target completion date for the project was 2011. In 2009, Transport Scotland’s outline business case revised this target to 2014. Since 2009, the completion target of 2014 has slipped by about a year, to September 2015, largely owing to procurement difficulties:

- In September 2009, ministers approved the procurement of the Borders Railway, with a target of completing its construction to allow services to start in 2014.
- In September 2011, Transport Scotland advised ministers that the initial attempt to procure the project as an NPD contract had failed because two of three consortia involved in the tendering process had withdrawn from it. In the absence of effective competition, Transport Scotland believed that it might not get the best price and contractual terms. Consequently, it abandoned efforts to procure the Borders Railway as an NPD contract. Instead, it negotiated directly with Network Rail to procure and finance it using RAB finance. In the light of this change, ministers approved a revised completion date for the project of September 2015 – about a year later than originally anticipated.
- Transport Scotland remains accountable to ministers and the Scottish Parliament for successfully completing the railway. It currently expects Network Rail to complete construction of this project and allow services to start within the revised date of September 2015.

28. For **AWPR**, the 2011 completion target originally set in 2005 has slipped by about seven years to March 2018, largely owing to a public inquiry and legal challenges:

- In December 2005, ministers approved the Aberdeen bypass (as it was then called), to be completed in 2011.
- The bypass was delayed owing to protracted planning and legal challenges, which began with a public inquiry announced in 2007 and which was resolved in October 2012. Ministers then announced a revised target to complete construction by March 2018. This new target completion date is for the combined AWPR/Balmedie-Tipperty project.
- The combined AWPR/B-T project is currently forecast to be delivered within the revised completion target.

29. For the **M8 bundle**, the 2014 completion estimate announced in 2009 has slipped by about three years to April 2017, largely owing to uncertainty about how to finance the project in the difficult economic conditions since 2008:

- In 2007, ministers announced their priorities for major transport projects, including completing the important link between the M8 at Baillieston to Newhouse. No completion date was estimated at that time but the Infrastructure Investment Plan, published in March 2008, indicated that the three projects that would later comprise the M8 bundle would be procured separately using NPD contracts. The expected timing for their completion was between 2011/12 and 2013/14.
- In November 2010, ministers approved Transport Scotland's proposal to take the three projects forward as a single NPD contract, which would provide economies of scale and efficiency in procurement. Ministers announced Transport Scotland would begin procurement in 2011, to complete the project by 2016/17.
- In March 2012, after consulting potential providers and reviewing optimum tender timetables, Transport Scotland published the contract notice to start procurement, with a target completion date of April 2017. Transport Scotland remains confident that it will meet this target.

30. Transport Scotland set an expected completion date for the full EGIP project of December 2016 in its 2011 outline business case, although ministers did not formally approve this as a target. Transport Scotland and the Scottish Government have continued to publicly report December 2016 as their forecast completion date for EGIP. Since the Transport Minister's announcement in July 2012 that EGIP would be delivered in phases, Transport Scotland has been working with Network Rail to agree a reduced scope of improvements and timescales for phase 1 that can be delivered within the £650 million approved target. Transport Scotland is currently preparing a full business case for this project and it expects to complete it by the end of May 2013. Following this, ministers will be invited to approve the scope, cost and time targets for phase 1 of EGIP.

31. As at April 2013, Transport Scotland expected to deliver the electrification of the railway and most of the infrastructure included within phase 1 of EGIP by June 2016. This should allow some but not all of the increased capacity on the railway line to be provided by December 2016. The most recent joint estimate by Transport Scotland and Network Rail is that they will complete the redevelopment of Queen Street Station by June 2018. They also anticipate that the timetabling changes will be delivered by December 2018 and that the full fleet of new trains will be delivered by March 2019. At this point, they expect to realise the full benefits planned for EGIP phase 1.

Transport Scotland expects to deliver all five projects within the latest approved capital costs

32. The estimated costs of all five projects have changed over time ([Exhibit 4, page 20](#)). This is partly due to the changes mentioned in relation to scope and timescales. In particular, scaling back the FRC and EGIP projects has resulted in a significant reduction in their estimated capital costs. However, the estimated capital costs of three projects have increased. This is partly due to scope changes and partly because of differences in what has been included within the estimate:

- **AWPR/B-T project** – the Scottish Government forecast in 2005 that the cost of the new bypass around Aberdeen (excluding the Balmedie to Tippetty works) would be £295-395 million. In 2012, in the outline business

case, Transport Scotland forecast the cost of building the project would be £703 million, later revised to £745 million. The £745 million estimate includes £653 million for AWPR, reflecting revised, higher underlying cost estimates for the Aberdeen bypass, the cost of inflation as a result of the delay, and additional risk allowance. It also includes £92 million for the cost of the Balmedie to Tippetty works.

- **M8 bundle** – similarly, Transport Scotland was required to revise its initial £279-335 million estimates of the total cost of the three main constituent elements of the project. The current capital cost estimate is £588 million, which includes higher underlying cost estimates as well as higher allowances for the costs of inflation.
- **Borders Railway** – in 2006, when the Scottish Borders Council was responsible for promoting the railway, the estimated capital cost was £155 million. In 2008, when Transport Scotland became responsible, it estimated the capital cost would be £235-295 million. In 2012, when ministers approved its business case, Transport Scotland estimated the costs would be £299 million. However, this estimate excluded some £54 million of costs it had incurred separately in advance of the main works. In April 2013, the Transport Minister announced that the project will cost £350 million, which includes the £54 million. The figure of £350 million is close to Transport Scotland's latest cost estimate of £353 million (£299 million and £54 million). Transport Scotland has also separately agreed an additional contingency to be included in the RAB to meet potential extra costs over the 30-year lifecycle of the project.

33. While the estimated capital cost of the Borders Railway has increased since 2008, this is not expected to result in higher recurring charges to Transport Scotland during the operating period of the railway. In fact, Transport Scotland estimates that it will pay slightly lower charges to Network Rail than it would have incurred had it succeeded in procuring the railway using an NPD contract. This is because Network Rail expects that by spending more at the outset it will need to spend less on future maintenance and because the financing costs through RAB are lower than would be possible using an NPD contract.

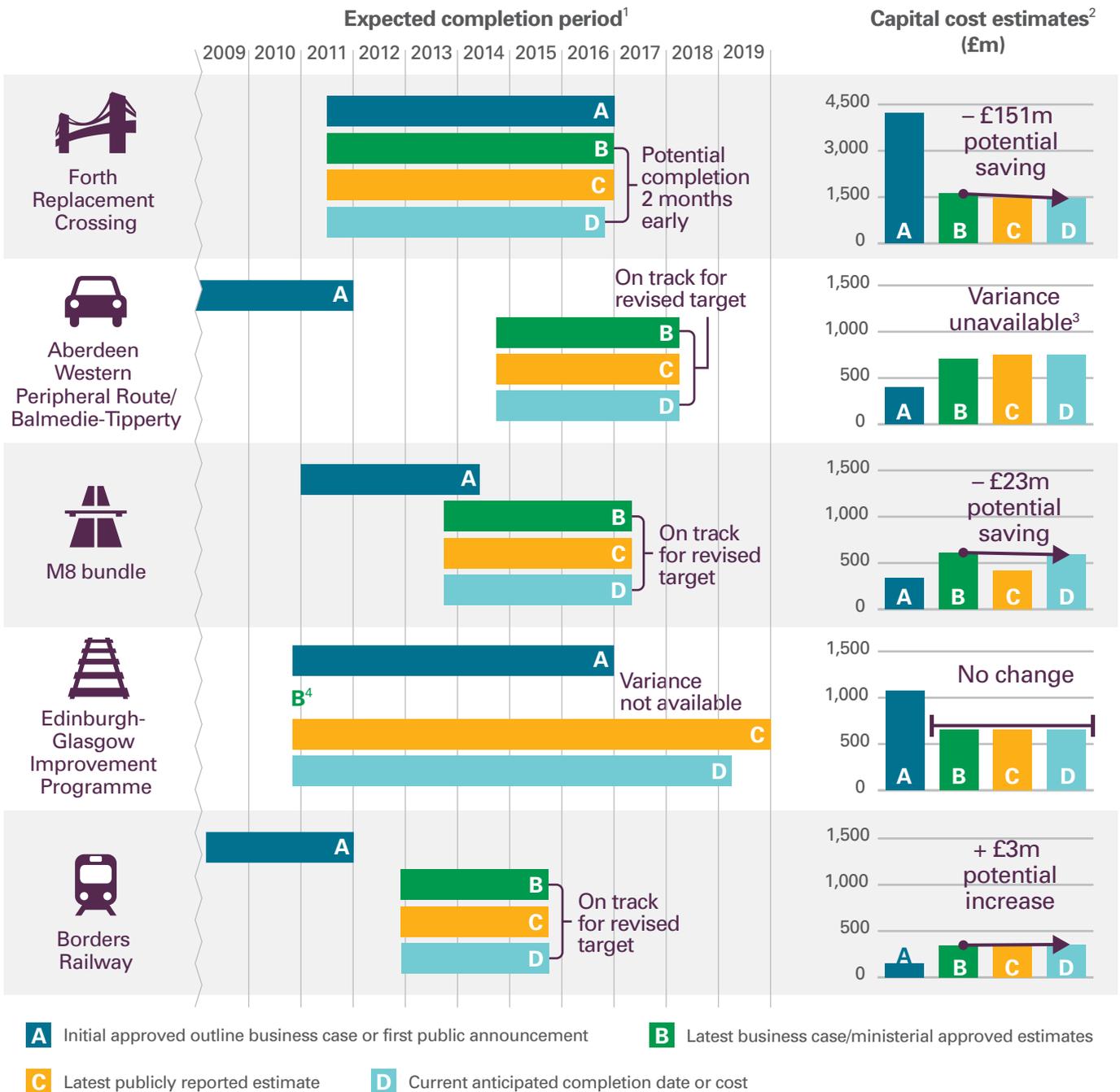
34. Although Transport Scotland is forecasting to deliver EGIP within the £650 million limit, the capital cost estimate is particularly uncertain at this stage. This is because it is not yet based on a complete and up-to-date business case that sets out the scope, timescales and cost estimates, including the detailed assumptions underpinning these.

35. We discuss Transport Scotland's approach to cost estimating and reporting of project costs further in [Part 3](#).

Exhibit 4

Summary of changes in expected completion periods and capital cost for five projects

Transport Scotland expects to deliver four of the projects on time and all within their approved budgets.



Notes:

- For estimates A-C, the indicated starting point of each project is approximate in some cases.
- The price basis for each capital cost estimate may vary at different stages of the project development and therefore the amounts are not necessarily directly comparable.
- The latest business case estimate for the capital cost of the AWPR/B-T project (item B, £703 million) was prepared on a cash basis. Later estimates for this project (items C and D, both £745 million) were prepared as net present values. Because these calculations are different it is not possible to compare them and we cannot say if there is any variance.
- Ministers have still to confirm a revised target completion date for EGIP. They will do this once Transport Scotland prepares a full business case, which is due to be complete in May 2013.

Source: Audit Scotland



Part 2

Investment decision-making and management



Key messages

- 1** Scottish ministers decide whether to invest in major infrastructure on a project-by-project basis. Transport Scotland should provide business cases, demonstrating value for money and affordability, to support investment decisions. Business cases should be kept up to date to aid the management of projects. However, Transport Scotland did not have up-to-date business cases for the two rail projects at certain decision points.
- 2** The IIB has strengthened scrutiny of projects. There is scope for it to reinforce its role in scrutinising and monitoring larger projects.
- 3** Transport Scotland has good governance structures and there is well-established governance in place for the FRC and M8 bundle projects. It is revising aspects of governance for the other three projects to take account of recent changes to them. This is appropriate but it now needs to develop aspects of its monitoring and reporting for these three projects as soon as possible.
- 4** All five projects are live and have significant risks with the potential to impact on cost and time owing to their scale, complexity and long-term nature. Transport Scotland is managing these risks but is unable to eliminate them completely.

good governance is critical to successfully delivering large, complex capital projects

The Scottish Government is responsible for overseeing major capital project investment

36. We use the term 'governance' in this report to refer to the complex processes of management, decision-making and control that are required to progress any major capital project. Good governance provides a framework for planning and managing performance, costs and risks, and ensuring accountability for securing efficiency and effectiveness. It is critical to effective investment decision-making and to successfully delivering large, complex capital projects.¹²

37. Ministers and the Scottish Cabinet, the Scottish Government and, to a lesser extent, the Scottish Parliament are all involved in aspects of the governance of major capital projects:

- Ministers decide on the purpose and direction of investment spending, including which projects should have priority and what spending can or cannot be afforded.

- The Scottish Government sets out its investment spending plans and priorities through periodic Spending Reviews and Infrastructure Investment Plans.¹³ The Scottish Cabinet approves the Infrastructure Investment Plan, as well as the Draft Budget and the content of Spending Review plans.
- The Scottish Parliament does not normally separately approve individual major capital projects, although it approves all spending within the Scottish Budget. It scrutinises and approves the Scottish Government's spending plans and allocations within the draft Scottish Budget annually.

38. Within the Scottish Government, Transport Scotland is responsible for managing transport projects and programmes for the infrastructure, investment and cities portfolio. Decision-making in the Scottish Government for major transport investment projects draws on advice from a range of bodies including the IIB, the Scottish Government finance team, the Office of Rail Regulation and the Scottish Futures Trust ([Exhibit 5, page 23](#)).

There is scope for the Infrastructure Investment Board to reinforce its role in scrutinising and monitoring large projects

39. The Scottish Government established the IIB in 2010 to oversee and promote effective governance for major investment projects and to assist scrutiny. In recognition of its important role, the Scottish Government's Director-General Finance chairs the IIB and its members are senior and experienced. The IIB exercises its role through:

- scrutinising high-value (£100 million or more) major infrastructure projects at an early stage
- monitoring the progress of major projects
- overseeing governance for major investment projects across the Scottish Government.

While it is an influential body, the IIB's function is to advise decision-makers and not to make decisions itself.

40. Before it established the IIB, the Scottish Government's Strategic Board provided scrutiny of some individual projects. The Permanent Secretary chairs this board and it comprises the Scottish Government's most senior staff and three of its non-executive directors. The Strategic Board has a wide range of responsibilities and part of the reason for creating the IIB was to provide a stronger focus for scrutiny.

41. The Scottish Government has an Infrastructure Investment Unit within its Finance Directorate. This is a small team with primarily administrative functions that include:

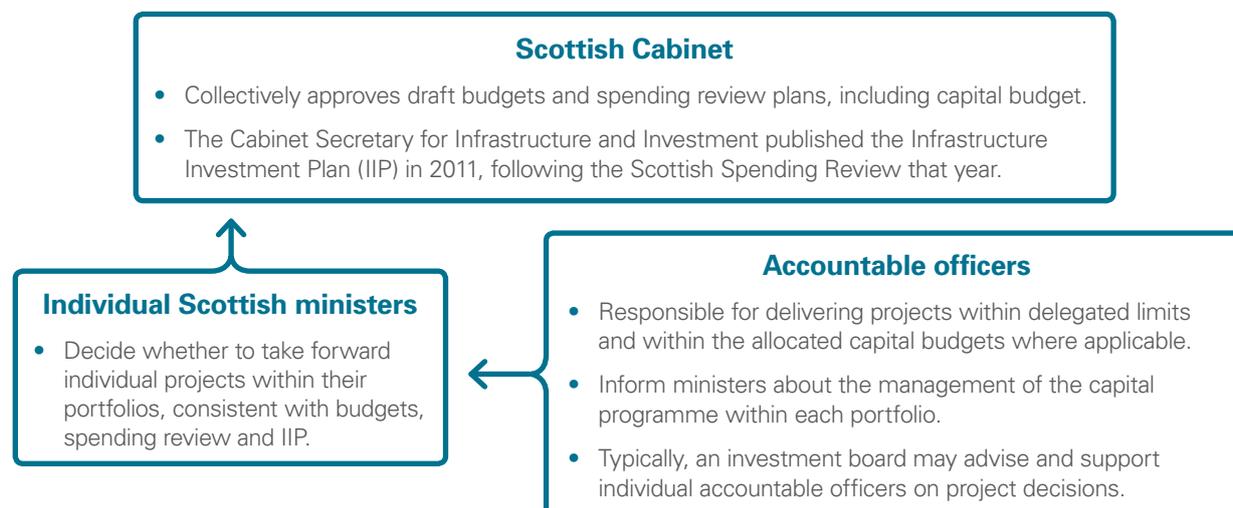
- policy advice to ministers on the Infrastructure Investment Plan and capital planning and finance issues
- support for the IIB
- managing the infrastructure projects database¹⁴
- sponsorship of the Scottish Futures Trust.

Exhibit 5

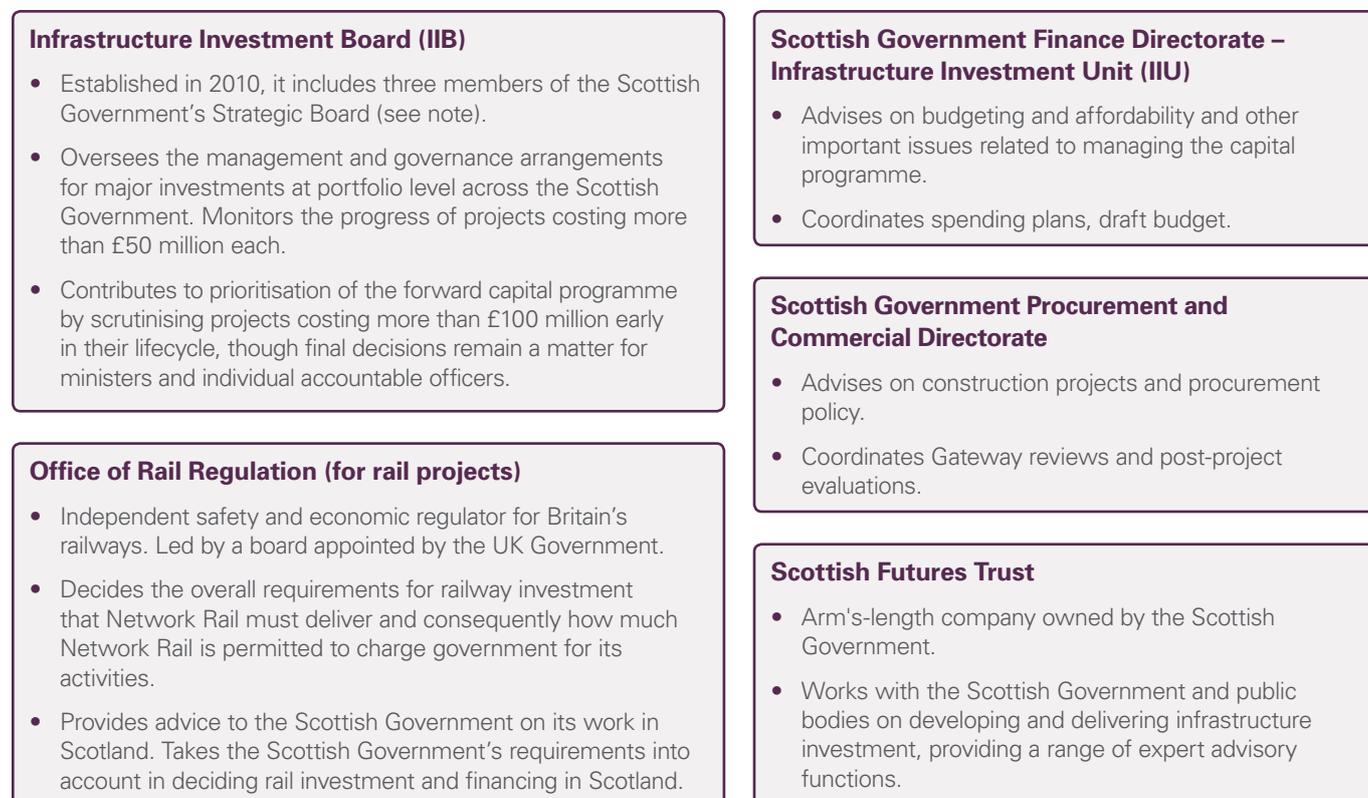
Decision-making and governance for major capital projects within the Scottish Government

Scottish ministers are ultimately responsible for making decisions on capital investment spending. In doing so, they and officials draw on advice and guidance from a range of bodies.

Decision-makers – Scottish ministers and officials



Advice, guidance, coordination and regulation



Note: The members of the IIB are Director-General Finance, a Non-Executive Member from the Scottish Government's Audit and Risk Committee, Director-General Governance and Communities, the Chief Economist, Director of Procurement, Chief Executive of Transport Scotland, Head of the Infrastructure Investment Unit and the Chief Executive of the Scottish Futures Trust.

Source: Audit Scotland

42. All five projects we examined had received initial approval before the IIB was established. Consequently, while the IIB has scrutinised three projects (the M8 bundle, EGIP and AWPR/B-T) at later decision points, there was no opportunity for it to scrutinise any project at its inception. It has not scrutinised the Borders Railway or the FRC. However, the Scottish Government's Strategic Board scrutinised some important decisions about the scope of the FRC project in 2008 and 2009 ([paragraph 21](#)); and the IIB received and took assurance from an update on progress and governance of the FRC in November 2012.

43. The IIB recommended further development of the outline business case for EGIP when it first scrutinised this. However, as we discuss later in Part 2, the subsequent development of this project has not been subject to full business case development and assurance processes.

44. The IIB has a key role to provide scrutiny of high-value projects. It would be appropriate to refine and develop a detailed plan or schedule for its scrutiny work, to help ensure this is fully integrated with individual major investment decisions.

45. With regard to monitoring, the IIB receives quarterly, high-level progress and financial reports on all projects costing more than £50 million, including the five transport projects. The reports provide information about progress against selected cost and time targets and the outcome of assurance reviews, such as Gateway reviews where applicable. These reports provide only brief, summarised information intended to highlight anything unusual or unexpected and do not provide the basis for the IIB to make any in-depth assessment of progress independently of project management. It would be appropriate for the IIB to define what it should achieve from its monitoring remit and whether the information it receives is enough to do this.

Transport Scotland has good corporate governance structures for major investment projects

46. In line with good practice, Transport Scotland has a range of well-established governance processes for managing projects within its delegated responsibilities. In summary these are as follows:

- The Chief Executive chairs the senior management team, which meets every four weeks and is charged with supporting and advising the Chief Executive. The senior management team also reviews the corporate risk register every four weeks.
- The Chief Executive also chairs an Investment Decision-Making Board (IDMB), also made up of senior managers. The IDMB meets when required to make investment decisions about individual projects at key stages.¹⁵
- A corporate Risk Management Group monitors risks across the business and meets quarterly.
- Transport Scotland also has an Audit and Risk Committee (ARC) to reinforce good risk management and governance. The ARC is an advisory group of external members and meets quarterly.

Governance for two of the five projects is well established and operating well and arrangements are developing for the other three projects

47. To ensure good governance for any project, Transport Scotland must have clear and effective project organisation and accountability structures and be clear about project time, cost and scope requirements. It should have high-quality arrangements for:

- managing performance and finance
- reporting regularly on these.

48. These arrangements should include systematic change control and risk management procedures. All main roles, responsibilities and delegated authorities, such as those for the project owner, project sponsor and the project manager, must be clearly defined, understood and allocated to suitably qualified and capable individuals.

49. The FRC is in the construction stage and the M8 bundle is well advanced in procurement. Both have clear and well-defined project governance in accordance with good practice. Transport Scotland is managing these two projects fully in line with its normal governance standards and requirements.

50. Project governance is developing well for the AWPR/B-T, Borders Railway and EGIP projects. These projects have changed significantly and Transport Scotland is currently revising its governance documentation and procedures to take account of these changes. This is appropriate:

- All large capital projects should prepare a project execution plan (PEP) before the full business case is approved. The PEP is a key control as it details the organisation and accountability structures and risk, performance and financial management and reporting requirements, including change control procedures.
- The AWPR and B-T elements of the project previously had separate PEPs but these are out of date. Transport Scotland is currently developing a revised PEP for the combined AWPR/B-T project.
- The Borders Railway project previously had a PEP. However, it was based on the project being delivered through the NPD route and is no longer fit for purpose. Transport Scotland has officially transferred the responsibility for delivering the project to Network Rail. Instead of using a PEP as its governance framework for this project, Transport Scotland is using a combination of full business case, the terms of the transfer agreement, and documentation that the Office of Rail Regulation requires. Together, these individual documents cover most of a PEP's main requirements. However, Transport Scotland may benefit from preparing a PEP to enable it to more easily review and update its governance as necessary so that the processes remain fit for purpose.
- EGIP is at an earlier stage of development and did not previously have a PEP. Transport Scotland intends to follow the same governance approach that it is taking for Borders Railway. Transport Scotland and Network Rail have still to agree a commercial deal for the delivery of the EGIP and the full business case needs to be approved.

51. While full PEPs are not in place for three projects, Transport Scotland has established project boards, or their equivalent, with clear responsibilities for decision-making and monitoring. The name, role and membership of the former AWPR project board changed in January 2013 to reflect its extended responsibilities for the combined AWPR/B-T project. The board, which plans to meet three times each year, comprises representatives of Transport Scotland, City of Aberdeen Council, Aberdeenshire Council and Scottish Futures Trust. As at April 2013, the new board had only met once and aspects of the project team's progress and financial reporting to the board needed further development.

52. For these three projects, the formal roles and responsibilities of the project team members and appointed project advisers are in line with good practice. For the rail projects, regular four-weekly project reporting to the project board has been taking place although aspects of this, such as risk and financial monitoring, need further development. The rail projects also have a formal quarterly review, which the Office of Rail Regulation leads in some cases. This strengthens the governance of these projects.

Transport Scotland has clear guidance on business cases but it did not have up-to-date business cases to support some decisions for two rail projects

53. In developing and delivering any major capital project, Transport Scotland must follow specified business case development, project approval and assurance processes. Good-quality business cases are vital for effective project scrutiny, decision-making and transparency, as they should provide clear justification for investment and demonstrate value for money, affordability, and feasibility of projects. Business cases should also be regularly reviewed and updated continuously, ensuring any major changes to projects' objectives, scope, cost and timescale targets and the assumptions underpinning these are recorded. This helps to maintain effective management and control over projects and provides a clear audit trail of major changes to the projects, with justification for these changes.

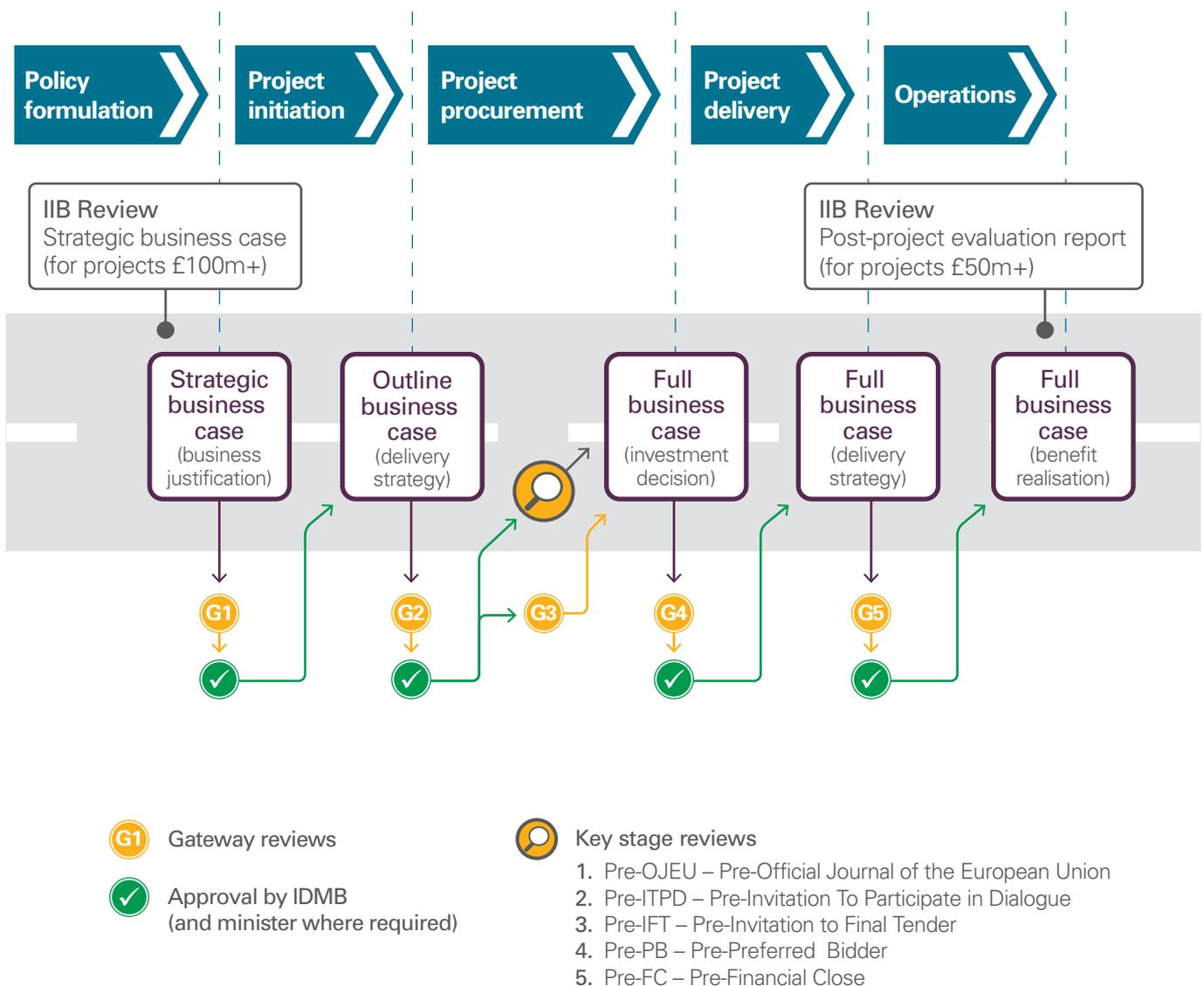
54. Transport Scotland has developed clear investment decision and business case requirements that it should follow for all projects. Its guidance aligns with the Scottish Government's business case development and assurance process. At defined points for any project, Transport Scotland's IDMB and Scottish ministers must approve the project to progress to the next stage (though Transport Scotland's guidance does not specifically identify where ministerial approval is required). The IIB should also provide scrutiny ([Exhibit 6, page 27](#)). There are three main decision points before the construction phase of any project starts:

- A **Strategic Business Case (SBC)** to justify the strategic context of the proposal and provide an early indication of the proposed way forward. Approving the SBC gives bodies the authority they need to invest in further developing their project proposals.
- An **Outline Business Case (OBC)** to identify the preferred option for getting the best value for the money available, affordability and feasibility of the project. The OBC also includes details of the procurement strategy and management arrangements for the successful delivery of the project. Approving the OBC provides bodies with the authority to invest further in the development of the preferred option and begin procurement within it.

- The **Full Business Case (FBC)** to revise the OBC and provide important project information, including a recommendation to proceed following discussions with stakeholders, including potential suppliers. Approving the FBC provides the basis for entering into a contract with the preferred supplier. Once the FBC is approved, the award of the main contract for the project usually follows quickly. Later, the FBC provides the basis for managing the delivery and assessing the outcome of the project.

Exhibit 6

Transport Scotland's business case development, approval and assurance processes for major projects
 Business cases should be the basis for all project investment decisions and Transport Scotland should perform additional assurance reviews shortly before each decision point.



Note: Key stage reviews are carried out for NPD projects only. These reviews are carried out instead of Gateway 3.

Source: Audit Scotland, based on unpublished information from the Scottish Government, 2013

55. Formal analysis and documentation – the business case – should be the basis for the decision at each point. In addition, it is good practice for Transport Scotland to arrange independent additional assurance reviews shortly before these decision points. The reviews aim to provide confidence that the project is truly ready to proceed to the next phase, or to identify what improvements are required to achieve this. They may take various forms ([Exhibit 7](#)).

Exhibit 7

Gateway and other forms of assurance reviews

There are three types of independent assurance reviews that may apply to major transport projects.



Gateway reviews

Gateway reviews are short, focused reviews of a programme or project that should be carried out at five decision points throughout the lifecycle. In the Scottish Government, all projects worth £5 million or more need to complete an initial risk assessment to identify at what stages Gateway reviews will be completed. An independent team carries out these reviews, which provide an important assurance check on the status of projects. The reviews make recommendations that help with effective decision-making and with managing programmes and projects effectively.

OGC Gateway Review – A Guide to Gateway Review in the Scottish Government, Scottish Government, January 2011



Key stage reviews (KSRs) and the Integrated Project Assurance Model

Until 2011, in addition to Gateway reviews, NPD-financed projects had to have mandatory KSRs, which the Scottish Futures Trust carried out. KSRs have similar but not identical aims to Gateway reviews.

Since 2011, all NPD-financed projects must follow the Integrated Project Assurance Model (IPAM), which is intended to meet the requirements for both types of review at the procurement phase of the project and to avoid duplication. In practice, this means that NPD projects will undergo Gateway reviews 1 and 2. The Gateway review 3 will then be replaced by a series of key stage reviews in the lead-up to and during the procurement phase. Thereafter, NPD projects will be subject to Gateway reviews 4 and 5.

Validation of Revenue Funded Projects: The Key Stage Review Process – Information Note to Projects, Scottish Futures Trust, December 2011



Governance for Railway Investment Projects (GRIP)

Network Rail manages and controls all its rail investment projects using the GRIP process. Under this, all projects have eight defined decision points. Network Rail holds formal GRIP reviews at critical stages in each project to provide assurance that it can successfully progress to the next stage.

Governance for Railway Investment Projects (GRIP) Policy, Network Rail, March 2012

56. Transport Scotland complied with the requirement to prepare strategic business cases for all five projects as part of wider strategic transport appraisals, using its Strategic Transport Appraisal Guidance.¹⁶ It also followed its own procedures and the Scottish Government's requirements for developing, seeking assurance and approving the outline business cases for the M8 bundle and for the AWPR/B-T project, before asking ministers to approve these to move to the next stage. Transport Scotland also met these requirements for the outline and full business cases for the FRC.

57. However, Transport Scotland did not use complete and up-to-date business cases as the basis for certain important decisions and changes affecting the Borders Railway and EGIP projects. Consequently, at certain decision points it had not demonstrated viability, value for money and affordability for these projects:

- **EGIP** – Transport Scotland approved an OBC, costed at £1,071 million in November 2011. However, in June 2012 it invited ministers to approve major changes to the project intended to reduce its costs by 39 per cent to £650 million ([paragraph 22](#)). It invited ministers to confirm to the Office of Rail Regulation (ORR) that they wished Network Rail to deliver the project as part of the next five-year rail improvement programme. However, this was subject to agreeing specific commercial terms for the project. Transport Scotland did not update the OBC at this time. It is developing a full business case for EGIP and expected to complete it by the end of May 2013.
- **Borders Railway** – Transport Scotland approved an OBC to procure this project as an NPD contract in September 2009. However, in September 2011, following failure to procure the railway as an NPD contract, Transport Scotland concluded that Network Rail was uniquely placed to deliver the project successfully, without undue delay or cost increases ([paragraph 27](#)). Transport Scotland requested ministers to approve procurement through Network Rail, subject to agreeing commercial terms for the project. It did not update the OBC at this time. It has since developed, assured and approved a full business case for the project in line with its own procedures.

58. Although Transport Scotland did not have up-to-date business cases for these projects at these times, it provided ministers with briefings on the preferred options for both and is confident that they will provide value for money. It approved the full business case for the Borders Railway before ministers approved the transfer of responsibility for building it to Network Rail in November 2012. Similarly, Transport Scotland will invite ministers to give final approval of EGIP phase 1 only after it has completed and approved a full business case for doing so.

59. Transport Scotland also has some assurances on the costs of the Borders Railway and EGIP projects through the role of the ORR. The ORR is the independent regulator for Network Rail. As part of its regulatory role, the ORR will assess Scotland's rail investment plans, including the cost estimates for the five-year period between 2015 and 2019. It will then decide how much Network Rail can charge the Scottish Government for delivering the agreed improvements. The ORR will continue to monitor and assess these costs during the construction period.¹⁷

60. Transport Scotland has not updated the business cases for two projects to ensure they reflect the latest information available:

- **AWPR/B-T** – the outline business case has not been updated to include the current capital cost estimate of £745 million at 2012 prices.
- **Borders Railway** – the business case has not been updated to clearly show the full £353 million estimated capital cost of the project.

Transport Scotland is managing the major risks to each project but cannot eliminate them completely

61. All five projects are large, live and complex. Therefore, as we would expect, there are risks and uncertainties about whether they will be delivered on time and within scope and budget.

62. All five projects face a variety of significant risks to their construction and delivery. The main construction risks for all five projects include:

- unforeseen problems with ground conditions
- the need to divert existing utilities, such as by moving electricity pylons
- problems accessing the building sites, for example when building new bridges over live railway lines.

63. Managing risks is an integral part of delivering major capital projects and generally systems are in place to identify and control risks. For example, Transport Scotland has separated out advance utilities diversions on some projects from the main infrastructure works to minimise the risk of disruption and cost increases once the main infrastructure works start.

64. The FRC project faces significant construction risks due to the complexities of initial construction work under water. However, this crucial stage of the project construction is currently on target to be completed in summer 2013, after which the risk will substantially decrease. There is also a high risk of delay in completing public utilities diversions for most projects. Many of the risks associated with the construction of the FRC lie with the contractor. However, if there are any delays, Transport Scotland could still incur additional costs as a result of inflation increases.

65. There are significant risks to Transport Scotland in securing the procurement of the M8 bundle and AWPR/B-T projects using NPD finance at an affordable price. Transport Scotland intends to complete the tendering processes and award contracts for the M8 bundle and AWPR/B-T in October 2013 and November 2014 respectively. Until then, significant uncertainty and risks relate to financing these projects. The risk associated with securing NPD financing at the target price is higher in the current economic climate. This is because of the general lack of available long-term finance for such projects in the market. However, once the contract is awarded, the cost of the NPD contract (both construction and operating costs) will be more certain than with a traditional procurement route.

66. Transport Scotland has classified Borders Railway as a high-risk project because a number of risks may materialise during its construction. Current risks

for the construction of the Borders Railway relate to ground conditions, the condition of existing assets such as bridges and tunnels, flood risk assessment and adverse weather.

67. EGIP is currently facing significant risks. The objectives, scope and costs for phase 1 of EGIP have changed considerably since the outline business case. There is not yet a full business case setting out the revised project objectives, scope and detailed specification. Transport Scotland has prepared a high-level summary brief for Network Rail, which is now developing a detailed specification for the programme. Transport Scotland expected to agree the full business case and a detailed specification by May 2013.

68. Transport Scotland has introduced a clear corporate risk management framework, covering all of its business, which sets out its approach to identifying, scoring and managing risks. The framework allows for differences in scoring risks at project, directorate and corporate levels. Transport Scotland is managing the major risks on each project. It has developed sound project-level risk-management procedures for three of the projects (FRC, M8 bundle and AWPR/B-T). It is further developing its risk registers for Borders Railway and EGIP.

Part 3

Financial management and public reporting



Key messages

- 1 The current capital cost estimates for four projects appear reasonable if assumptions hold. At April 2013, the cost estimate for EGIP is more uncertain as the business case had still to be updated and, at April 2013, only 14 per cent of the costs were based on detailed designs.
- 2 The five projects will commit a significant share of future public budgets. The total estimated 30-years budget commitment for them is £7.5 billion in real terms. Spending on the FRC over its four years' construction peak 2011/12 to 2015/16 will average £286 million a year in real terms. By 2018/19, when all four revenue-financed projects should be operating, Transport Scotland will incur charges for them of £225 million a year and these charges will continue over 30 years.
- 3 The Scottish Government and Transport Scotland reported the long-term costs of the FRC project in public but they have not done this for the other four projects. They have reported capital cost estimates for all five projects but the cost information is not always complete or presented consistently. Consequently, public reporting does not provide the Scottish Parliament and the general public with a clear view of the financial impact of these projects.
- 4 The Scottish Government has set an affordability cap to spend no more than five per cent of its total annual DEL budget to pay for revenue-financed infrastructure investment. The DEL budget forms the majority of the Scottish budget and the cap means that investment decisions made now should not unduly crowd out choices in future years. The Scottish Government considers spending on the five projects is affordable in the long term within its limit, but it has not fully demonstrated the reliability of its analysis in this area.

Transport Scotland and the Scottish Government should improve public reporting of these projects

The latest capital cost estimates for four projects appear reasonable but inherent uncertainty remains across all estimates

69. Our audit of the cost estimates for each project comprised a high-level assessment of how each had been prepared and adjusted over time. We assessed whether each estimate appeared to be both reasonable and to include all components in accordance with good estimating practice. However, we did not reperform any underlying calculation or reassess quantities or prices and we did not obtain any new independent assessment of the expected costs.

70. On this basis, the latest capital cost estimate for the FRC project appears reasonable at this stage provided that key assumptions hold. Transport Scotland has carefully and thoroughly researched and prepared the estimate, which is now aligned to firm contract prices for the work. There are allowances for risk and uncertainty. The estimated £1,462 million final capital cost is below the revised approved maximum cost target in the full business case of £1,613 million and within Transport Scotland's anticipated capital cost range of £1,450-1,600 million reported to the Scottish Parliament's Public Audit Committee (PAC).

71. Similarly, the capital cost estimate for the M8 bundle appears reasonable at this stage, although subject to unavoidable uncertainty. At January 2013, the anticipated £588 million final cost forecast for construction and other scheme preparation costs was within the revised approved outline business case estimate for them. The capital cost estimate remains uncertain because it may change as a result of competitive bidding.

72. The anticipated final cost of the AWPR/B-T project included in the outline business case was £703 million. This includes £544 million in 2012 prices to be financed by the NPD scheme and a further £159 million in cash prices to be financed separately. Overall, the capital cost estimates appear reasonable but remain uncertain as they may change owing to competitive bidding. However, Transport Scotland should have prepared the cost estimates for the full scheme using the same price basis, reflecting both cash and real terms.

73. For both the M8 bundle and the AWPR/B-T projects, significant uncertainty remains about how much NPD financing will cost. Transport Scotland has obtained expert advice and made what it considers to be prudent and cautious assumptions about this cost. However, any estimating error could be significant as financing costs for these projects could represent about a third or more of the total expected cost of each contract to Transport Scotland. This is based on costs that Transport Scotland has incurred on another recently completed project, the M80 from Stepps to Haggis design, build, finance and operate contract. Because both projects are, or will be, subject to competitive tendering, precise estimates cannot be disclosed at this time.

74. For the Borders Railway, the £299 million capital cost (2012 prices), to be financed by the RAB, is based on a commercial agreement between Transport Scotland and Network Rail. The target price included in the agreement includes the costs of some advance works and land. However, it excludes the £54 million already spent and a further contingency to be included in the RAB to meet potential costs over the project's 30-year lifecycle. Network Rail has appointed the main contractor for the project and the latest cost estimate accurately reflects the price for this. The ORR has initially assessed this estimate and approved it in principle to be financed through the RAB. It will make its final decision in October 2013 on whether the costs can be added to the RAB.

The capital cost estimate for the EGIP project is particularly uncertain

75. EGIP's latest capital cost estimate of £650 million (2012 prices) is based on Network Rail's estimate at November 2012. This estimate is subject to commercial negotiation between Transport Scotland and Network Rail and is therefore not fixed at this point. The latest estimate is mainly developed on the basis of outline designs for discrete parts of the programme. Of the £650 million approved:

- £93 million was based on detailed designs, so the amount involved is fairly certain¹⁸

- £453 million was based on outline designs, and the exact cost involved is still uncertain¹⁹
- £104 million was based on early designs and is therefore significantly uncertain.²⁰

76. The £650 million estimate also reflects the outcome of Transport Scotland's technical adviser's (Jacobs) review of the full £1,071 million EGIP programme, as set out in the November 2011 outline business case ([paragraph 22](#)). Transport Scotland appointed Jacobs to 'undertake a short sharp review of the full EGIP programme to confirm the scope and to investigate any alternative solutions that provide similar benefits'. It asked Jacobs specifically to consider whether:

- all the infrastructure schemes on the Edinburgh to Glasgow route were required
- it would be possible to defer some of the infrastructure elements as well as cost
- any alternative options to the existing programme are viable, given concerns about the overall affordability of rail investment.

77. Jacobs reported that the original programme proposal was correctly specified. It also identified an option to extend existing platforms and to build the full EGIP programme in phases. However, Jacobs did not have access to the full cost model for the earlier scheme. As a result, it made a number of qualifications about whether its initial cost estimate of £650 million was enough or fully accurate.

78. As part of developing a full business case for the project, Transport Scotland is continuing to review the objectives, scope and detailed specification for phase 1 of EGIP. It expects to complete this work by May 2013. So far, it has set out a high-level brief of what phase 1 of the EGIP project will deliver by March 2019. Network Rail has confirmed that it expects to be able to deliver this phase within the £650 million cost estimate. However, Network Rail and Transport Scotland still have to agree this contractually. Similarly, the ORR has yet to assess the full cost estimate and decide whether it is eligible to be added to the RAB. The ORR has confirmed approval in principle for £188 million to date for work that has already been separately approved.

Transport Scotland has good guidance on cost estimating but project cost estimates are not presented consistently

79. Good financial management supports effective planning, decision-making, risk management and accountability. An essential component of good financial management in capital investment projects is ensuring that realistic estimates of capital costs and lifetime costs are made at the outset.

80. We assessed Transport Scotland's approach to cost estimating for all five projects against good practice guidance as part of our audit.²¹ Many features of its cost estimating are done well. However, its approach to preparing and presenting capital cost estimates was inconsistent across the five projects or did not completely meet good practice ([Exhibit 8, page 35](#)).

Exhibit 8

Assessment of project cost estimates against good practice requirements

Many aspects of Transport Scotland's cost estimating are done well. However, capital cost estimates were, in some respects, prepared inconsistently between projects.

Capital cost element	Included in business case analysis for each project?				
	 FRC	 M8 bundle	 AWPR/B-T	 EGIP	 BR
Capital cost cumulative (including construction cost, design cost, bid preparation) – cash prices ^{1,2,3}	Yes	Yes	Partially	No	No
Optimism bias – cash prices ¹	Partially	No	Partially	Partially	No
Risk allowance (based on quantified risk assessment) – cash prices ¹	Yes	Yes	Yes	Partially	Yes
Includes VAT (assumptions based on finance method) – cash prices ¹	Yes	Yes	No	Yes	Yes
Special Purpose Vehicle costs in construction (NPD projects only) – cash prices ³	N/a	Yes	Yes	N/a	N/a
Includes appropriate allowance for inflation based on clear assumption ¹	Yes	Yes	Yes	Yes	Yes
Target price has been market tested to confirm market appetite ^{1,2}	Yes	Yes	Yes	Partially	Yes
Revenue cost element					
Cost of capital rate for NPD and RAB financed projects ²	N/a	Yes	Yes	Yes	Yes
Unitary charge in year 1 for NPD projects only – cash prices ^{2,3}	N/a	Yes	Yes	N/a	N/a
Lifecycle costs and revenues (all costs over the life of the project) – real prices ^{2,4}	Yes	Yes	Yes	No	Partially
Lifecycle costs (risk allowance) ¹	Yes	Yes	Yes	No	Yes
Total unitary charge for NPD projects – net present value, based on 3.5% discount rate in line with HM Treasury guidance ²	N/a	Yes	Yes	N/a	N/a

Note: This assessment is based on good practice criteria from the following publications:

1. *Public Sector Business Cases Using the Five Case Model: Toolkit and Templates*, HM Treasury.
2. *Value for Money Assessment Guidance: Capital Programmes and Projects*, Scottish Futures Trust, October 2011.
3. *Validation of Revenue Funded Projects: NPD Programme Pre-Financial Close Key Stage Review*, Scottish Futures Trust, December 2011.
4. *Value for Money Supplementary Guidance for Projects in £2.5bn Revenue Funded Investment Programme*, Scottish Futures Trust, October 2011.

Source: Audit Scotland

81. Project managers working on large, complex projects should also ensure that their cost estimates include appropriate allowances for risk and optimism bias.

- Risk can be defined as uncertainty about the effects of both planned and unplanned activities on delivering a project successfully.
- Optimism bias is the tendency for appraisers to be over-optimistic about projects' estimates of costs, timescales and benefits.

82. There is a clear relationship between risk and optimism bias. As such, it is good practice for organisations to consider allowances for these together over the lifetime of a project. For example, organisations are usually able to reduce the level of optimism bias over time as they develop more reliable estimates of relevant costs and project-specific risks. As optimism bias decreases, risk allowances will often increase as project teams may have a better understanding of the possible financial effects of risk.

83. Transport Scotland has good guidance for projects in calculating optimism bias and risk allowances and for reducing optimism bias over time. The guidance correctly identifies that optimism bias will be highest at the strategic business case stage of a transport project and then decrease through the outline and full business case stages. It also requires projects to justify clearly and record any adjustments in the optimism bias from its recommended values.

84. The capital cost estimates for all projects include specific allowances for risks arising from construction work and, where relevant, subsequent operations and maintenance. Professional advisers have prepared or contributed to quantified assessments of project risks in all cases, with the exception of Borders Railway and EGIP. For the Borders Railway, Transport Scotland and Network Rail prepared this jointly. Transport Scotland and Network Rail have also quantified risks for some but not all parts of EGIP. In our opinion, where allowances have been made, they appear reasonable at this stage, if key assumptions hold. However, further project-specific risks could arise at any stage during these projects' lifetime.

85. In the five project business cases we examined, Transport Scotland took varying approaches to including optimism bias in its capital cost estimates:

- Transport Scotland's capital cost estimates in the business cases for the M8 bundle and Borders Railway projects did not include any allowances for optimism bias. Optimism bias was included within the economic appraisal for AWPR/B-T but not in the financial appraisal in the business case. In our opinion, it would have been more prudent for these projects to have made some allowance for optimism bias as uncertainty remains about project-specific risks at this stage.
- The allowances for optimism bias included in the latest cost estimates for EGIP and FRC are lower than the recommended levels that should have been applied under STAG guidance. The FRC project is well under way and the allowance for optimism bias has proved sufficient. However, in our opinion, the allowance for optimism bias within EGIP's cost estimates appears low. This is because only £93 million (14 per cent) of the £650 million capital cost estimate is based on detailed designs and the business case and detailed project specification have still to be agreed.

Financial monitoring and reporting are variable across the five projects

86. Good practice in financial management requires strong monitoring and control over the expected costs and timetable at each stage of the project, from inception through to completion and operation. Once both capital and lifetime cost estimates have been approved, managers need to monitor and control actual spending against these estimates and take corrective action if necessary.

87. The Scottish Government's construction manual identifies the costs that should be included in financial reports for capital projects. It highlights the importance of reports including both capital costs and the related whole life costs of a project. All reports should include:

- details of the initial authorised cost estimate
- the current authorised budget and, if applicable, new budget authorisations – giving justification for changes
- expenditure to date – each section on budgets and expenditure should explain the original base estimates, how and why these have altered, and risk allowances for each element
- commitments made to date, commitments required before the project is complete and agreed variations – giving justification for them
- potential and expected claims or disputes awaiting resolution – if the project is progressing well, this area should be small
- orders yet to be placed, variations pending, and anticipated changes.

88. We assessed whether financial reports for the five projects complied with the Scottish Government's guidance. We found that financial monitoring and reporting are good for the FRC and M8 bundle projects but need to be further developed for the other three projects:

- AWPR/B-T – financial reports are currently being developed to reflect the combined project and recently agreed funding responsibilities between the Scottish Government, Aberdeen City and Aberdeenshire councils.
- Borders Railway – Transport Scotland made some refinements in their four-weekly financial monitoring reports for the railway, in line with the new commercial arrangements with Network Rail. However, these monitoring reports need to feature a clearer and more strategic analysis of progress against key elements of the commercial arrangements. More commentary could be provided, including reporting of price bases, key assumptions and the project's full costs. This includes the RAB repayments, the £54 million costs separately funded and the franchise subsidy that will be met from the public purse.
- EGIP – financial reports show the capital cost estimate of £650 million and the total cost of work done to date, which is £110 million according to the latest report.²² Reports do not include important information such as spending against each capital cost element, with commentary justifying

any variations from estimates. In addition, they do not show the estimated or actual costs to the public sector of EGIP, such as the RAB repayments, franchise subsidy and rolling stock costs.

The estimated 30 years' budget commitment arising from the five projects is £7.5 billion

89. Transport Scotland will meet the whole £1,462 million construction cost of the FRC project from its capital budget. Spending on it over the four-year construction peak 2011/12 to 2015/16 will average £286 million a year. This is equivalent to 67 per cent of Transport Scotland's capital spending budget in 2013/14. Once the FRC has been built and opened, Transport Scotland will incur additional costs for maintaining and operating the two bridges. Transport Scotland has estimated that the recurring costs to be met from its future budgets, for the annual running and maintenance costs of both bridges, will average £18 million a year in real terms.

90. The Scottish Government has decided that Transport Scotland will finance the other four projects mainly using either NPD contracts or RAB financing from Network Rail. Consequently, Transport Scotland will meet most of these projects' costs through annual payments to the providers. This approach reduces the up-front call on its capital budget but involves accepting a large, long-term spending commitment that Transport Scotland will pay for from its future revenue budgets.

- Transport Scotland has forecast that by 2018/19, when all four projects should be fully operational, its total payments to Network Rail and to the NPD operators for these projects will be £225 million a year. These payments reflect the estimated construction costs for each project and other costs associated with financing, operating and maintaining them over the 30-year contract period.
- The annual operating payments will continue over the 30-year contract period. In 2018/19, the payments are equivalent to 14 per cent of Transport Scotland's revenue spending budget for 2013/14. Over 30 years, the estimated payments to operators for these four projects are £5,154 million in real terms.
- Although Transport Scotland avoids paying up-front for the main construction works for the four projects, it still expects to spend £402 million on advance and supporting costs for the four projects between 2008/09 and 2020/21. It will finance this spending from its capital budget.²³

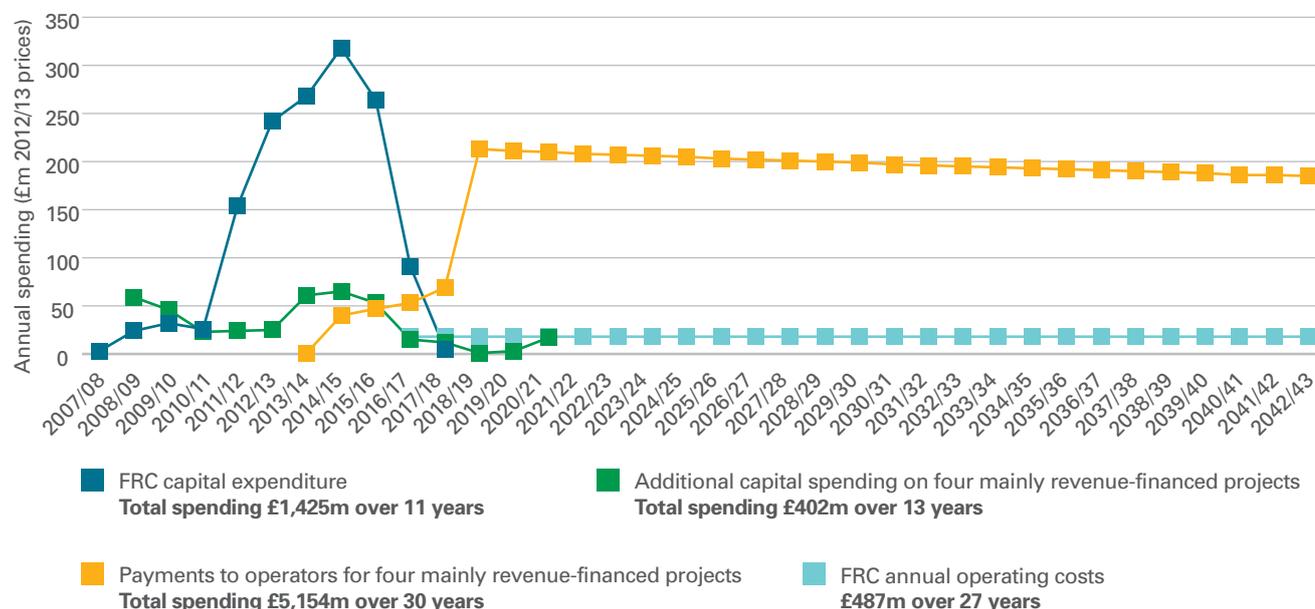
91. Together, the five projects will commit a significant share of future public budgets ([Exhibit 9, page 39](#)).

92. In addition, the EGIP and Borders Railway projects may also affect the cost of the franchise agreement for rail passenger services in Scotland. The franchise agreement is the legal agreement Scottish ministers currently have with ScotRail to provide rail passenger services in Scotland at an agreed cost. Transport Scotland has estimated the impact of the Borders Railway on the cost of the ScotRail franchise and intends to provide updated estimates for EGIP as part of the full business case. Nevertheless, there are inherent uncertainties at this stage relating to the franchise agreement and passenger numbers. The current franchise agreement with ScotRail ends in 2015 and a new agreement will be subject to competitive tendering. As with any tendering process, there are risks and uncertainty until the contract has been awarded.

Exhibit 9

The £7.5 billion estimated budget commitment for five key transport projects

Scotland's five key transport infrastructure projects will commit a significant share of future public budgets. Combined spending on them between 2007/08 and 2042/43 is estimated to be £7,469 million.



Source: Audit Scotland



The Scottish Government has capped capital investment from revenue sources but it is not fully clear how well it has assessed the affordability of this part of its investment programme

93. Capital investment project proposals should only be considered when they disclose details of the expected operating costs. Proposals should also clearly indicate how existing budgets will accommodate operating costs, or explicitly detail the need for additional financing. Where revenue finance is used, it is important that all potential and actual costs are clearly identified and regularly reviewed.

94. The Scottish Government recognises that investment decisions made now should not overly constrain choices in future years. Accordingly, it stated in 2011 that it will cap its future commitments from all revenue-financed investment projects to a maximum of five per cent of its expected future annual total Department Expenditure Limit (DEL) budget, for both capital and revenue spending.

95. The DEL budget forms the majority of the Scottish Government's budget. In 2012/13, the DEL budget totalled £28,260 million and it is planned to fall slightly in real terms to £27,403 million in 2014/15. In these two years, five per cent of the DEL budget equates to £1,413 million and £1,370 million respectively. Commitments for the four revenue-financed projects (M8 bundle, AWPR, EGIP and Borders Railway) will account for £225 million a year.

96. We requested information from the Scottish Government to enable us to examine how it had considered the long-term budgetary implications for these projects and its analysis of the affordability of infrastructure investment. The Scottish Government reported the outcome of its analysis was that the future cost of all revenue-financed investment was within its control target of five per cent of the estimated future DEL budget. However, it did not provide information to allow us to test or confirm that this analysis was reliable or how otherwise it had assessed the affordability of the five projects.

Transport Scotland and the Scottish Government should improve public reporting of these projects

97. The Scottish Government and Transport Scotland provide the Scottish Parliament and the public with a range of reports about their investment in infrastructure. Along with statements and announcements concerning individual projects, the most important reports have been as follows:

- Since December 2008, the Scottish Government has provided six-monthly progress updates to the Scottish Parliament's Public Audit Committee on its current major capital projects with an estimated cost of £50 million or more. Each report has provided a short description of progress against the Committee's previous recommendations and a summary of the state of progress of all major Scottish Government projects. The latest report, in December 2012, included information on 22 projects and programmes, with an estimated total capital cost of up to £7,383 million.
- In its December 2011 *Infrastructure Investment Plan*, the Scottish Government reported its long-term strategy and priorities for investment. It summarised the framework for investment; financing methods; how investment is prioritised; and the organisations involved. It also summarised planned and intended investment by the Scottish Government, sector-by-sector, in the period 2012-30. It included a summary 'project pipeline' of larger strategic investments, with information including estimated cost and timetable for individual projects.
- In its February 2013 *IIP 2011 – Progress report for 2012*, the Scottish Government provided a summary of investment progress, sector-by-sector, including commentary on individual projects and programmes. At the same time, its *IIP 2011 – Updated programme pipeline* reported the expected capital cost and key dates for current projects with a capital value of £20 million or more each. This included cost information about 84 individual projects with an estimated combined capital cost of up to £6,667 million.
- Transport Scotland provides a range of information about individual projects and progress on its website and in its corporate reports, such as its Annual Review 2012.

98. These reports provide important information about infrastructure investment spending. However, information about the progress of individual projects is not presented consistently and is not always comprehensive.

- The reports provide 'snapshot' information only. They include current (ie, most recent) estimates of cost and completion. But they do not provide

consistent information about the original targets set when the projects were approved or how the latest estimates compare to these original targets.

- Definitions are absent or ambiguous. For example, the reports do not say what is included or excluded from estimated capital costs. For some projects, the reported capital costs have not represented the total cost involved because they exclude items such as VAT, land acquisition costs or estimated inflation.
- Only estimated capital cost information is provided. The reports do not provide any information about the estimated long-term budgetary commitments arising under revenue-financed projects. There is no information to help assess the affordability or otherwise of such projects.

99. For the FRC project, Transport Scotland and the Scottish Government have ensured full and accurate public reporting of the estimated capital costs and how the estimate has changed over time. In 2009, as part of the Forth Crossing Bill, Transport Scotland and the Scottish Government also reported that the FRC project would result in an increase of £361 million operating and maintenance costs over a 60-year period, with annual costs of £6 million.²⁴ At April 2013, this estimate had not changed significantly. Transport Scotland's latest forecast, at April 2013, estimated the total annual operating and maintenance costs for the two bridges to be £18 million (£1,080 million over 60 years).

100. For the other four projects, Transport Scotland's and the Scottish Government's public reporting has been inconsistent and incomplete. Reports on the various project timescales and cost estimates have not been consistently based and have not been clear on what is excluded from these estimates. Previous reporting of these projects therefore presents the Scottish Parliament and general public with an ambiguous picture of progress against targets.

101. In relation to the capital cost estimates, we found the most important gaps or inconsistencies in the amounts publicly reported are as follows:

- **M8 bundle:** Transport Scotland's capital cost estimate in the outline business case was £611 million. Its current estimate is £23 million lower, at £588 million. However, the latest estimate significantly exceeds the publicly announced £415 million cost of the scheme. The reason for this difference is that the published estimate is restricted to the estimated construction cost for the main works. It excludes allowances for risk and inflation and certain costs excluded from the main construction works – such as costs for purchasing land and advance works.
- **Borders Railway:** Until April 2013, the publicly reported cost was £294 million at 2012 prices, excluding £54 million incurred in advance of the main works ([paragraph 32](#)). In April 2013, the Transport Minister announced the total costs of the project to be £350 million, including the £54 million funded separately. This figure is closer to the latest forecast estimate of £353 million. In addition, Transport Scotland has separately agreed an additional contingency to be included in the RAB to meet potential costs over the project's 30-year lifecycle. This contingency has not been publicly reported.

- **AWPR/B-T:** The £745 million cost estimate that is publicly reported differs from the £703 million cost as set out in the outline business case. This is because the estimates are prepared on different price bases and do not include the same cost elements.

102. In addition, Transport Scotland and the Scottish Government have not reported publicly the larger £5,154 million estimated spending commitments over 30 years for the four revenue-financed projects. The estimated budgetary commitments arising from these projects are not publicly reported in any single document. It is important to publicly report them when possible because of their size and the constraints they will place on future spending.

103. Two projects, the M8 bundle and AWPR/B-T, are expected to be financed through the NPD route. We are unable to report on the amount of money involved for the individual projects because they are currently in procurement and the anticipated contract payments for each project are commercially sensitive at this stage. The position is similar for the two RAB-financed projects, Borders Railway and EGIP, as Network Rail is managing the procurement for these and not all contracts have yet been finalised. Therefore, the longer-term estimated costs of these projects are also commercially sensitive. Once contracts are in place for all four revenue-financed projects, this information will no longer be commercially sensitive. Transport Scotland could then report the longer-term costs of individual projects publicly.

Endnotes



- ◀ 1 *The Government Economic Strategy*, Scottish Government, September 2011; and *Infrastructure Investment Plan 2011*, Scottish Government, December 2011.
- ◀ 2 The Scottish Government's total capital budget is £2,386 million in 2013/14 and £2,477 million in 2014/15.
- ◀ 3 Transport Scotland's remit also includes all of the Scottish Government's national transport policy and project responsibilities. These include overseeing the operation and improvement of the trunk road, ferry, inland waterway and railway networks in Scotland; the air passenger facilities and routes in the Highlands and Islands; the national concessionary travel schemes; and provision of travel information services.
- ◀ 4 We use the term 'project' in this report for simplicity although the five projects are actually combinations of projects, contracts and programmes.
- ◀ 5 *Review of Major Capital Projects in Scotland*, Audit Scotland, June 2008; and *Management of the Scottish Government's Capital Investment Programme*, Audit Scotland, January 2011.
- ◀ 6 See Part 2 for more information about the Infrastructure Investment Board.
- ◀ 7 *Scottish Draft Budget 2013-14*, Scottish Government, September 2012.
- ◀ 8 *Strategic Transport Projects Review*, Transport Scotland, 2008.
- ◀ 9 *Scotland's National Transport Strategy*, Scottish Executive, December 2006.
- ◀ 10 We explain business cases in paragraphs 53 and 54.
- ◀ 11 The three previously separate projects were the M8 Baillieston to Newhouse completion; M74 Raith interchange; and M8, M73 and M74 network improvements projects.
- ◀ 12 The Scottish Public Finance Manual (SPFM) sets out expectations for good governance in public bodies and guidance on the proper handling and reporting of public funds, including specific expectations for major investment projects costing £5 million or more. The Scottish Government's Construction Procurement Manual is also mandatory for major projects.
- ◀ 13 The Scottish Government published its latest Infrastructure Investment Plan in November 2011. In January 2013, it published a report on progress against the plan and updates on its forward investment plans.
- ◀ 14 The infrastructure projects database provides standardised information on all the Scottish Government's infrastructure projects with a capital value of £5 million or more.
- ◀ 15 For some very large projects, such as the FRC, the Chief Executive chairs the individual project board, which includes other senior managers on the IDMB, and the project board exercises the functions of the IDMB for the project.
- ◀ 16 *Scottish Transport Appraisal Guidance (STAG)* represents best practice transport appraisal guidance.
- ◀ 17 The ORR will determine whether the full cost estimate for EGIP is eligible to be added to the RAB in October 2013.
- ◀ 18 Network Rail has developed the cost estimates for the £93 million to GRIP stage 5 or above. This means the estimate for the work involved is based on detailed designs.
- ◀ 19 Network Rail has developed the cost estimates for the £453 million to GRIP stage 4. This means the estimate for the work involved is based on an outline design for a single option for the work involved.
- ◀ 20 Network Rail has developed the cost estimates for the £104 million to GRIP stages 1 to 3. This means the estimates for the work involved is based on initial idea development, feasibility or option appraisal stages.
- ◀ 21 Sources of good practice include: *Public Sector Business Cases using the five case model: toolkit and templates*, HM Treasury; *Scottish Public Finance Manual*, Scottish Government, June 2011; *Scottish Transport Appraisal Guidance*, Transport Scotland, 2008; *Value for Money Assessment Guidance: Capital Programmes and Projects*, Scottish Futures Trust, 2011; *Value for Money Supplementary Guidance for projects in £2.5bn Revenue Funded Investment Programme*, Scottish Futures Trust, 2011; *Validation of Revenue Funded Projects: NPD Programme Pre-Financial Close Key Stage Review*, Scottish Futures Trust, December 2011.
- ◀ 22 *EGIP Board report*, Network Rail, April 2013.
- ◀ 23 For the two rail projects, the cost of operating train services using the new railways is separate.
- ◀ 24 *Forth Replacement Crossing, explanatory notes and other accompanying documents, SP Bill 33-EN 1 Session 3 (2009)*, Scottish Parliament, 2009.

Appendix 1

Audit methodology



The focus of our work was to assess whether Transport Scotland is progressing five key transport infrastructure projects to meet time, cost and scope targets. We also aimed to report on whether governance structures and processes for each project are fit for purpose. We assessed Transport Scotland's cost estimation and financial management of the projects and how well the Scottish Government and Transport Scotland monitor and publicly report them.

We made an initial review of the governance, scope and the capital cost and time estimates for each of the five projects in 2012 as part of our annual financial audit of Transport Scotland. We reported the findings of this review to the Accountable Officer, aimed at providing assurance where possible about the projects' progress.

We completed the main audit work between February and April 2013. Building on the earlier review, key elements of our methodology included a detailed review of Transport Scotland's main documents for each project. These included business cases, project plans and monitoring reports, cost estimates – including assumptions and financial reports – and various governance and approvals documents. We did not reperform cost estimates. We conducted desk research to confirm key aspects of good practice.

We interviewed Transport Scotland leaders and people responsible for delivering or overseeing the projects, and people within the Scottish Government's finance team. We also reviewed relevant material from the Scottish Government, such as reports to the Scottish Government's Infrastructure Investment Board.

It was necessary to limit the scope of our report as follows:

- Our audit examined five live projects where the position is constantly changing and there will have been developments since we completed the audit. For this reason, our opinion and any assurance given at this stage do not provide absolute assurance that these projects will be delivered successfully.
- This report does not comment on ministers' decisions to proceed with these projects or the projects' relative priority, as these are matters of government policy. We did not look at detailed aspects of the project management arrangements, such as the methodology being used or project resourcing. We did not assess the choice of procurement method for each project, although we examined how well Transport Scotland is managing the risks related to the chosen method in each case.
- As part of the audit, we reviewed some detailed, commercially sensitive information. We used this information to reach conclusions but are unable to disclose it. Our commentary on these areas is therefore limited.

Appendix 2

Advantages and disadvantages of different financing methods



Traditional capital finance: This is the most common method of financing capital projects. Development and construction costs are paid for from public sector capital budgets at the time of building the asset.

Advantages

- Costs are lower than revenue-financed projects.

Disadvantages

- Reductions in Scotland's capital budget mean not all projects can be paid through capital.
- There is less certainty about the lifetime costs (and sometimes capital costs) than revenue-financed projects.

Non-Profit-Distributing (NPD): NPD is a form of Public Private Partnership (PPP). A private sector provider pays for the up-front construction and ongoing maintenance costs. The public sector pays an annual charge over the life of the asset from its revenue budget.

Advantages

- There is potential for innovation as the client specifies what output is required and the private sector provider comes up with a solution at the lowest lifetime cost.
- Lifetime cost estimates (and sometimes capital cost estimates) are more certain once the contract is signed than traditional capital-financed projects.
- Risks are allocated to whichever party is best able to manage them as part of the contract.
- The long-term contracts (typically 30 years) are an opportunity to get synergy and efficiency over the life of the assets.
- There are opportunities for reducing costs through employing techniques such as value engineering.
- There is a limit on the profits that the private sector provider may earn.
- The private sector provider is better able to exploit commercial opportunities that may arise in parallel with providing public services.

Disadvantages

- There are longer-term public expenditure commitments that may constrain future public spending decisions. To help control this, the Scottish Government decides which projects to take forward, within a five per cent spending limit on the DEL budget for revenue-financed projects.
- There is a risk that clients may accept deals that do not offer value for money in the long run.
- There is a risk that clients may accept reduced levels of service in order to compensate for higher financing costs.
- Changes in market conditions may affect procurement and prices.
- The financing costs for NPD projects are higher than traditional capital financing and RAB financing.
- Not all projects are suitable for NPD.
- There are costs associated with managing the complex procurement process.

Cont.

Regulatory Asset Base (RAB): This form of financing is used specifically for rail projects. Network Rail pays for the up-front infrastructure costs by borrowing against the value of its asset base. In exchange, Transport Scotland pays an annual charge to Network Rail over the lifetime of the asset – usually around 30 years.

Advantages

- The first five advantages under NPD also apply to the RAB.
- Financing costs are lower for RAB than for NPD.
- The Office for Rail Regulation assesses costs and ensures that only costs that have been incurred efficiently are added to the RAB.
- Network Rail has well-established governance.
- Network Rail has established safety and economic regulations.
- Grant payments to Network Rail do not attract VAT so no issues with irrecoverable VAT.

Disadvantages

- The first four disadvantages under NPD also apply to the RAB.
- Restricted to rail investment in Scotland. Financing using this method largely depends on the ability of Network Rail to borrow against its asset base.
- Reduced ability to benchmark and potentially improve Network Rail's costs and efficiencies.
- The client has less control over detailed designs and how projects will be delivered.
- Reclassification of Network Rail could pose risks around the treatment of RAB and associated debt.

Source: Audit Scotland

Scotland's key transport infrastructure projects

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