Management of the Scottish Government's capital investment programme

AUDIT SCOTLAND

Prepared for the Auditor General for Scotland
January 2011

Auditor General for Scotland

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Investing in Scotland’s public infrastructure is essential to providing high-quality public services.

Introduction

1. Investing in Scotland's public infrastructure is essential to providing high-quality public services. The Scottish Government is responsible for shaping, directing and delivering much of this investment activity. It does so through spending directly on major capital projects and providing financial and other support to other bodies to enable investment.[1] Between 2007 and 2010, public bodies, excluding local government, completed 55 major capital projects valued at £2 billion (Appendix 2).[2] In addition, projects valued at £13–15 billion are planned or in progress, though few of these are firm contractual commitments.

2. In 2008, Audit Scotland published *Review of major capital projects in Scotland*.[3] This was the first systematic review of publicly funded major capital projects in Scotland. Our report concluded that:

- better information is needed about costs, timescales and intended benefits at the early stages of projects, to help decision-makers and to give more clarity about value for money
- once contracts are awarded, information about costs and timetables is more accurate and the performance against contract timetable and budgets is generally better
- management and governance of individual projects are broadly effective, although there is some room for improvement. A more strategic approach to managing the programme of capital projects could improve value for money.

3. At the time of our last report, the Scottish Government's capital investment budget had been steadily increasing but the economic and financial climate has changed markedly since then. Over the next few years, the public money available for capital investment is forecast to reduce significantly. It will be vital for the Scottish Government to provide strong leadership and effective management of its capital programme.

About this report

4. This report examines how well the Scottish Government is managing its capital investment programme and associated risks. It considers the implications for the investment programme now that the outlook for public spending has changed considerably. It is organised into three parts:

- Capital investment in Scotland (Part 1).
- The performance of recently completed major capital projects (Part 2).
- Managing the capital investment programme (Part 3).

5. The main focus of our work is on the overall management of the Scottish Government's capital investment programme. In Part 1 we consider all areas of capital investment spending including funding towards local government projects. Part 2 focuses on evidence obtained from organisations that were responsible for managing recently completed projects. This includes information from Transport Scotland, the Scottish Prison Service, eight NHS bodies, 14 further and higher education institutions and the Scottish Government. Our analysis in Part 3 focuses primarily on the four main capital spending areas – transport, health, justice and further and higher education – and the work of the Scottish Government centrally in helping to manage the capital programme.

6. Our report provides a high-level review of the performance of recently completed projects against targets for cost, time and quality and what progress has been made since our 2008 report. We have extended the analysis of our 2008 report to cover both traditionally financed projects and those that the private sector has financed (for example Private Finance Initiative and Non-Profit Distribution projects).[4] The report provides an overall assessment of the management of the programme and its risks. It does not provide an in-depth review of individual projects.

7. This report draws on various sources, including:

- a survey of public bodies to gather key information about the delivery of all recently completed major capital projects
- interviews with staff and review of papers to assess programme management and other related activities in the four main spending areas of the Scottish Government and its finance directorate
- published good practice in programme management.

Appendix 1 provides further information on our methodology.

1 We define a major capital project as having a cost of £5 million or more.
2 Public bodies includes the Scottish Government, its agencies, non-departmental public bodies, NHS bodies and colleges. It does not include local government. Universities that received significant funding towards projects from the Scottish Funding Council are also included.
3 *Review of major capital projects in Scotland*, Audit Scotland, June 2008.
4 Private Finance Initiative (PFI) and Non-Profit Distribution (NPD) are variations of the Public Private Partnership model and are explained in more detail in Exhibit 7 on page 13.

Summary of key messages

- Capital investment directly met from the Scottish budget will decrease by over a third between 2010/11 and 2014/15, from £3.3 billion to £2.1 billion. It is unlikely to return to current levels for at least another decade. The Scottish Government has a number of capital projects, planned or in progress, that will place significant pressure on the money available. The Scottish Government will need to make difficult decisions about investment plans over this period including affordability and priorities.
- The accuracy of cost estimating has improved in recent years. Slippage continues to affect many projects; however, the longest delays occurred in the earlier stages rather than during the delivery stage (which would be more costly). Cost increases and slippage, when they happen, affect both revenue-financed (including PFI) and traditionally financed projects. However, there are some significant gaps in the availability of information to measure whether projects are completed to budget and on time.
- The Scottish Government is improving its project monitoring and management of the capital programme through developments such as the new Infrastructure Investment Board. However, the pace of change of some improvements has been slow, including the implementation of a new infrastructure projects database.
- The Scottish Government is strengthening leadership and oversight of its capital investment programme. An overarching investment strategy that sets out clearly the long-term investment needs and constraints would help provide key information for prioritising and planning.

Summary of recommendations

The Scottish Government should:

- regularly and systematically assess the ongoing affordability of its capital investment programme
- assess the overall appropriateness of using alternative finance as part of a wider investment strategy. Its strategy should balance the costs, risks and rewards associated with using alternative finance to ensure value for money is achieved
- review and update its Infrastructure Investment Plan (IIP) to reflect the recent economic recession and subsequent reduction in capital budgets
- extend its IIP to become an overarching investment strategy (as outlined in paragraph 75 of this report)
- develop comprehensive information on the whole-life costs of all capital projects and assess their impact on future revenue budgets
- clearly align roles and responsibilities to ensure effective scrutiny and challenge occurs at all levels within the capital programme
- establish a more active role for the newly formed Infrastructure Investment Board in providing information to ministers on priorities and the balance of associated costs, risks and rewards within the capital programme in the light of reducing capital budgets
- publicly report on all major capital projects against time, cost and quality to improve transparency
- develop standard criteria for inclusion in post-project evaluations and ensure that they are completed for every major capital project and lessons learned are shared across all relevant public bodies.

Public bodies should ensure that they:

- improve early-stage estimating of the cost and time of projects by ensuring assessments and quantification of risk and uncertainty are carried out
- carry out post-project evaluations within six months of project completion to determine whether projects have delivered, or are on course to deliver, the initial benefits intended. Evaluations should consider performance against cost, time and quality targets

- regularly review projects to ensure they remain relevant to strategic objectives
- achieve economies by pulling together individual project budgets into a capital programme and managing costs at this higher level
- consider alternative forms of financing and ways to improve value for money from their capital programmes
- develop objectives and targets for their capital investment programme to improve design quality and sustainability
- establish strong links between capital spending and desired outcomes
- report systematically on their current and future capital investment plans.

Part 1. Capital investment in Scotland

Despite budget reductions, spending on major capital projects will continue to be significant.

Key messages

- After steady growth since devolution, the amount available for capital spending is set to reduce significantly over the next few years. The Scottish Government's annual capital budget will fall by 36 per cent from £3.3 billion to £2.1 billion between 2010/11 and 2014/15. The Scottish Government plans to extend the use of private finance to assist capital spending plans during this period.

- Despite the falling budget, the level of capital spending will continue to be significant. The Scottish Government is legally committed to spend at least £2.1 billion on capital projects over the next four years within its four main capital spending areas of health, justice, transport and further and higher education. Another £5.4 billion may be required for other planned projects. The Scottish Government will need to make difficult decisions about investment plans over the period to 2014/15 and beyond, including affordability and priorities.

- Since devolution, revenue-financed schemes such as Private Finance Initiative (PFI) and Non-Profit Distribution (NPD) have provided around £4.8 billion worth of capital projects in Scotland. This is equivalent to an extra 20 per cent of traditional financing each year. This extra investment has revenue commitments over the long term.

- Projects financed directly from the capital budget also have annual running costs. However, there is a lack of comprehensive information available on whole-life costing for traditionally financed assets and we are unable to assess their impact on future revenue budgets.

Between 2000 and 2010 the total capital budget increased by 41 per cent in real terms

8. In 2010/11, the Scottish Government's capital budget is £3.3 billion.[5] Since devolution, the capital budget has increased by 41 per cent (in real terms) to 2010/11, representing an average increase of around four per cent each year. The capital budget finances most capital projects in Scotland. It is used by public bodies to finance the construction and development of many types of infrastructure projects, including hospitals, prisons, colleges, railways and roads.

9. The UK Spending Review completed by HM Treasury largely determines Scotland's capital budget. Following this, the Scottish Government allocates a capital budget to each portfolio in accordance with its priorities. Portfolio allocations are subject to Scottish Parliamentary approval through the annual budget process. Although the Scottish Government is responsible for allocating the capital budget, the level of direct control it exercises over capital spending within each portfolio varies. Around £2.8 billion (85 per cent) of money available is allocated to health, finance and sustainable growth (mainly transport) and local government.[6]

10. The allocation to local government is for projects that individual councils have full responsibility to deliver (including schools, local roads and waste treatment facilities). It is provided in the form of grant payments and accounts for around a third of total local government capital spend. Councils finance the remainder of capital spending mainly by using borrowing, capital receipts and transfers from revenue budgets.[7]

11. The Scottish Government is responsible for the overall delivery and direction of the capital investment programme, excluding local government. Individual portfolios are responsible for spending in their areas. The main areas of spending are – Transport Scotland (Finance and sustainable growth portfolio), the NHS (Health and wellbeing), the Scottish Funding Council (Education and lifelong learning) and the Scottish Prison Service (Justice). These organisations are responsible for managing and delivering projects within their remit.[8]

The capital budget is expected to fall significantly over the next four years

12. In October 2010, the UK government's Spending Review set out UK public spending plans, including grants to be allocated to devolved administrations between 2011/12 and 2014/15. It confirmed that between 2010/11 and 2014/15, the Scottish capital budget will decrease by £1.2 billion (36 per cent) in real terms, with the largest reduction (£800 million, 24 per cent) occurring in the first year, 2011/12 (Exhibit 1, overleaf). Within the overall Scottish budget, the fall in capital budgets is likely to be significantly greater than the fall in revenue budgets. The magnitude of these reductions will significantly reduce money available to spend on capital projects. It could take until 2025/26 for the Scottish budget to return to 2009/10 levels.

5 This is the Departmental Expenditure Limit (DEL) budget. This represents the element of the capital budget that the Scottish Government has discretion over how it is spent.
6 Based on 2010/11 budgets.
7 The focus of this audit is on the overall management of the Scottish Government's capital investment programme. Therefore, our report does not consider capital investment that is the responsibility of local government.
8 Individual institutions – colleges and universities – are responsible for managing and delivering projects within further and higher education. The Scottish Funding Council is responsible for the direction of the capital programme within the sector.

Exhibit 1

The Scottish Government's allocated capital and revenue budgets to 2014/15 (real terms)

The allocated capital budget is anticipated to decrease by £1.2 billion (36 per cent) over the next four years.

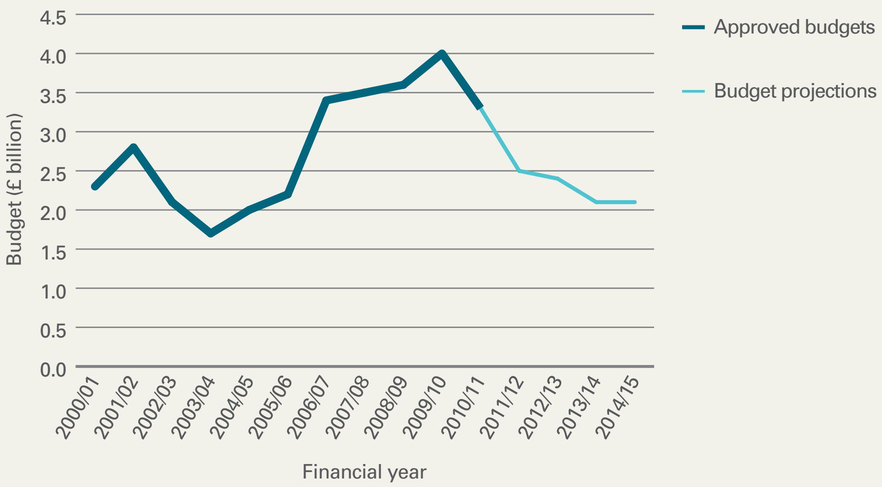
	2010/11 £bn	2011/12 £bn[1]	2012/13 £bn	2013/14 £bn	2014/15 £bn	Change 2010/11 to 2014/15 £bn	Change 2010/11 to 2014/15 %
Revenue (DEL)	25.9	24.9	24.8	24.3	23.8	-2.1	-8
Capital (DEL)	3.3	2.5	2.4	2.1	2.1	-1.2	-36

Note:
1. Excludes £100 million capital transferred from 2010/11 to 2011/12 as proposed in the draft Scottish budget 2011/12.
Source: Scottish Government

Exhibit 2

The growth and decline of the Scottish Government's capital budget 2000/01 to 2014/15 (real terms)

The capital budget is anticipated to return to 2004/05 levels by 2014/15.



Note: All figures adjusted to 2010/11 prices using the GDP deflator.
Source: Scottish Government (various budget documents)

13. Within the Scottish Government's allocated budgets for the period 2010/11 to 2014/15:

- revenue spending is estimated to fall by an average of two per cent a year in real terms
- capital spending is estimated to fall by an average of 9 per cent a year in real terms.

14. In effect, the capital budget will return to around the same level as at 2004/05 (Exhibit 2).

15. In November 2010, shortly after the UK Spending Review announcement, the Scottish Government set out its own draft capital spending plans for 2011/12 (Exhibit 3).[9] The draft budget also included an agreement with HM Treasury to transfer £100 million from 2010/11 to 2011/12 to help offset the size of the reduction. Capital budgets were reduced in all portfolios between 2010/11 and 2011/12, with Health and wellbeing having the largest cash reduction (£171 million, 19 per cent). Justice received the largest percentage reduction (60 per cent, £108 million), which largely reflects the Scottish Government's announcement to review the timing of future investment in the prisons estate. Within the Finance and sustainable growth portfolio, the Scottish Government announced that existing transport projects would take priority over new projects, while spending would be reduced in maintaining motorways and trunk roads.

The Scottish Government may be able to borrow to finance capital projects in the future

16. Public borrowing is currently not available to the Scottish Government. In 2009, the Commission on Scottish Devolution recommended that Scottish ministers should be given borrowing powers that will allow them to increase capital investment in any one year.[10] In November 2010, following the recommendations of the Commission, the UK government introduced the Scotland Bill, which

9 *Scotland's Spending Plans and Draft Budget 2011/12*, Scottish Government, November 2010.
10 *Serving Scotland Better: Scotland and the United Kingdom in the 21st Century*, Commission on Scottish Devolution, June 2009.

Exhibit 3

The Scottish Government's capital budget 2010/11 and 2011/12 – by portfolio[1]

The majority of the capital budget is allocated to health, finance and sustainable growth, and local government.

Portfolio	2010/11 DEL capital budget £m	2011/12 DEL capital budget (draft)[2] £m	Change 2010/11 to 2011/12 %
Finance and sustainable growth	1,009	855	-15
of which transport	*742*	*737*	*-1*
Health and wellbeing	915	744	-19
of which health	*578*	*488*	*-16*
of which housing	*321*	*240*	*-25*
Local government[3]	843	692	-18
Education and lifelong learning	228	162	-29
Justice	179	71	-60
Rural affairs and environment	70	50	-29
Office of the First Minister	28	20	-29
Others (including Administration)	21	13	-38
Total	3,293	2,607	-21

Note:
1. All figures in cash terms.
2. Includes transfer of £100 million from 2010/11 to 2011/12.
3. This accounts for around a third of total local government capital spend.

Source: Scottish Government

would give borrowing powers to the Scottish Parliament. The Bill is expected to be passed through the UK Parliament by November 2011.

The Scottish Government faces difficult decisions about the affordability of investment plans

Despite budget reductions, spending on major capital projects will continue to be significant

17. Over the next Spending Review period, spending on major capital projects will continue to be significant. The number and range of projects funded from the Scottish Government's capital budget reflects the varying investment needs and priorities within each area.

18. At the time of our audit, the Scottish Government had no comprehensive list of major capital projects in progress. Each spending area maintains independent records of its projects in progress. The Scottish Government has recently developed a database to record this information (discussed in Part 3). Based on the available information, however, we estimate that the Scottish Government has around 182 major projects planned or currently in progress, with a combined estimated cost of between £13.3 billion and £14.7 billion phased over a number of years, including some very large and high-profile projects.[11] Projects planned and currently in progress include:

- eleven projects costing more than £300 million each, with a combined estimated cost of £7.9–8.6 billion (Exhibit 4, overleaf)
- thirty-four projects costing more than £50 million each, with a combined estimated cost of £3.7–4.1 billion
- 129 projects each costing between £5 million and £50 million, with a combined estimated cost of £1.7–2.0 billion. A further eight projects had yet to have estimated costs determined.

11 Information for all projects with a value above £50 million mostly comes from the Permanent Secretary's update to the Public Audit Committee of December 2010. We have not included projects that local government is responsible for, except the schools programme and Edinburgh Trams, which receive significant funding from the Scottish Government. Information on projects below £50 million comes from both the Infrastructure Investment Plan 2008 and the Scottish Government's Infrastructure Projects Database.

Exhibit 4

Projects in progress at December 2010 costing more than £300 million each

The Forth Replacement Crossing is the largest project currently in progress.

Project	Status (see Exhibit 5)	Purchaser	Cost/cost range £m	Estimated completion
Forth Replacement Crossing	Procurement	Transport Scotland	1,700–2,300	2016/17
Scotland's Schools for the Future, the school building programme	Various, mostly inception – ongoing programme	Individual councils	1,250[1]	2017/18
Edinburgh to Glasgow Rail Improvement	Inception	Transport Scotland	1,135	2016
Southern General Hospital	Delivery	NHS Greater Glasgow & Clyde	842	2015/16
M74 Completion	Delivery	Transport Scotland	692	2011
Edinburgh Trams	Delivery	City of Edinburgh Council	545[2]	2012/13
Monklands General Hospital	Inception	NHS Lanarkshire	400[3]	yet unknown
A90 Aberdeen Western Peripheral Route (AWPR) and A90 Balmedie	Inception	Transport Scotland	350–450	2012/13[4]
Airdrie to Bathgate rail link	Completion and operation	Transport Scotland	375	2010
A80 Stepps to Haggs – upgrade to M80	Delivery	Transport Scotland	320	2011/12
M8 Bundle[5]	Inception	Transport Scotland	280–335	2016/17
Total			7,889–8,644	

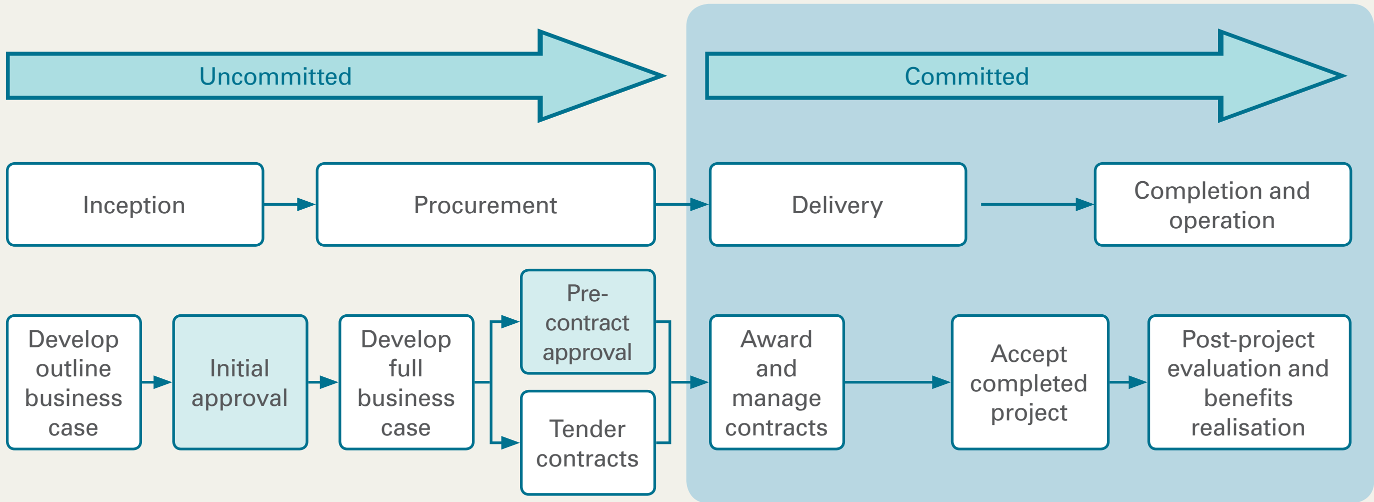
Notes:
1. The Scottish Government is providing £800 million towards the £1.25 billion required for the Scottish school building programme and local government is funding the remaining £450 million.
2. The Scottish Government is providing £500 million funding for the Edinburgh Trams project but its delivery is the responsibility of the City of Edinburgh Council.
3. Subject to review by business case process
4. The programme for completing the A90 project is to be reviewed once legal challenges to it in the Court of Session have been resolved.
5. M8 Bundle includes M8 associated network improvements, M8 Baillieston to Newhouse and M74 Raith junction.

Source: Scottish Government

Exhibit 5

Key stages in major capital projects

Projects are classed as legally committed once contracts are signed.



Note: Initial approval and Pre-contract approval are the two key decision points in any project (see paragraph 34).

Source: Audit Scotland

19. Projects in progress include those which are in the early planning stages through to projects that are contractually committed and in construction (Exhibit 5).

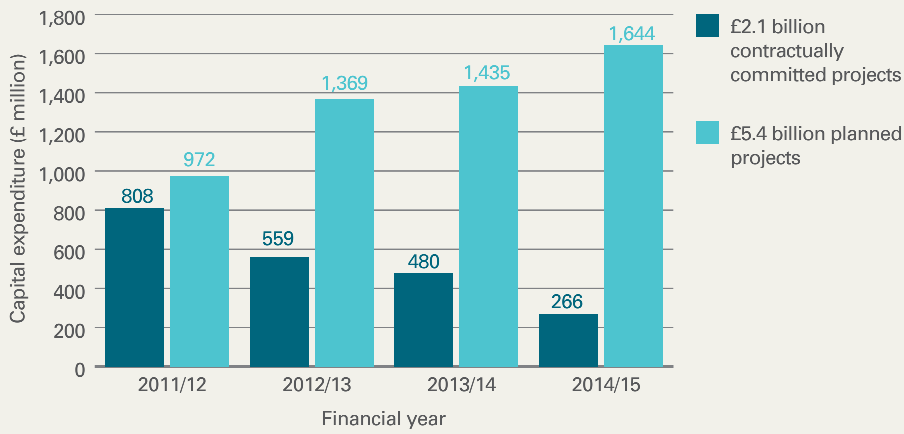
The Scottish Government is legally committed to spend at least £2.1 billion on capital projects over the next four years

20. The Scottish Government is investing significant amounts of money in capital projects. The Scottish Government has contractual commitments to spend around £2.1 billion on capital projects over the next four years in its four main capital spending areas of health, justice (prisons), transport and further and higher education. It also has plans for a further £5.4 billion on other projects, including the Forth Replacement Crossing, which are planned but as yet are not contractual commitments (Exhibit 6).

Exhibit 6

Potential phasing of capital spending within the main spending areas of health, prisons, transport and further and higher education (cash terms)

Contractually committed projects account for £2.1 billion between 2011/12 and 2014/15. Planned projects that are not yet contractually committed account for £5.4 billion.



Note: Figures include spending on projects funded by Transport Scotland, Scottish Prison Service, NHS Scotland and the Scottish Funding Council from the Scottish capital budget. They do not include spending on projects by other public bodies that receive contributions from the Scottish capital budget, including local government and Scottish Enterprise or projects that are revenue-financed. In addition, contributions from individual further and higher educations institutions are not included.

Source: Audit Scotland from Scottish Government

21. In 2012/13, the level of commitments and planned capital spend within the four main spending areas will be over £1.9 billion. This represents approximately 80 per cent of the expected Scottish capital budget for that year. However, this does not include plans or commitments for any other spending areas funded from the Scottish capital budget, including funding to local government and Scottish Enterprise. In 2010/11, the local government capital allocation is around 25 per cent of the Scottish capital budget. Therefore, based on this analysis, the Scottish Government may need to consider re-prioritising or re-phasing projects, or seek alternative sources of financing them.

22. The Scottish Government has not set firm plans for capital spending beyond 2011/12. As budgets reduce, the level of existing commitments considerably reduces flexibility in the capital programme, reducing amounts to spend on maintaining current assets or to cover any unforeseen project cost increases. Therefore, there is a need for the Scottish Government to regularly and systematically assess the ongoing affordability of the capital investment programme. This should help inform decisions about priorities and plans by identifying necessary funding requirements to deliver the programme. This should help to avoid costs that may arise from re-phasing or delaying projects.

23. Capital projects also have annual running costs, such as depreciation charges, general maintenance and facilities costs. However, there is a lack of comprehensive information available on whole-life costs for traditionally financed assets and we are unable to assess their impact on future revenue budgets.

24. Despite increased levels of spending on capital projects since devolution, the current estimate of backlog maintenance and repair remains significant across the whole public sector estate at around £4 billion. In 2009, it was identified that around £500 million of this is needed to address backlog maintenance and repair across the NHS estate, and a further £713 million is needed to bring Scotland's major trunks roads and motorways up to standard.[12] Most of the rest of the backlog relates to assets that are the responsibility of local government including local roads and property. Recent and current investment plans will address part of this. However, it is unclear how long it will take to address all backlog maintenance and repair.

Alternative sources of financing are available but may add to cost pressures in the longer term

A range of alternative sources of finance is available

25. The Scottish Government is considering a number of different financing methods to support capital investment activities during the period of reduced capital budgets. The different methods cover a broad range of activity with many involving the use of private sector finance. However, there is no 'one-size fits all' alternative to the traditional finance method of paying up-front construction costs using capital budgets. Each method must be considered on its own merits and according to the circumstances of each project (Exhibit 7).

26. The most common method of financing capital projects is by using capital budgets to pay the up-front costs of building infrastructure. An alternative method of financing capital projects is to use private sector finance which involves transferring the up-front costs to the private sector and paying instead for the infrastructure as it is used over a number of years. The most common methods of using private finance are PFI, NPD and Regulated Asset Base (RAB) for rail projects. These can all be used to increase levels of capital investment above those financed using traditional public sector capital budgets.

27. There are a number of advantages and disadvantages associated with using private finance that must be considered when assessing overall value for money (Exhibit 8, page 15).

28. In November 2010, the Scottish Government reaffirmed its commitment to use the NPD method as its preferred method to fund a number of projects including Borders Railway (£230–290 million) and the Scottish Schools for the Future programme (£800 million).[13] Plans to use NPD also include future projects such as the City of Glasgow College (£200 million) and the Royal Hospital for Sick Children in Edinburgh (£148 million) that were originally earmarked to be financed directly from the capital budget. In total, the Scottish Government plans to build around £2.5 billion of assets using this method.

12 *Scotland's public finances: preparing for the future,* Audit Scotland, November 2009. The Scottish Government provided the backlog figure for motorways and trunk roads.
13 The Scottish Schools for the Future programme will also have a contribution of around £450 million from local government.

Exhibit 7

Methods of financing capital investment

The Scottish Government is considering a number of different financing methods to support capital investment activities during the period of reduced capital budgets.

Methods of financing capital investment	Potential
Traditional capital finance This is the most common method of financing capital projects. Development and construction costs are paid from public sector capital budgets at the time of building the asset.	Will provide financing for most infrastructure projects. However, with Scotland's capital budget expected to fall by 36 per cent to £2.1 billion in 2014/15, it may not be enough to pay for current plans.
Revenue budgets Money can be transferred from revenue budgets to capital budgets in order to finance capital investment. Revenue budgets, however, are used to meet the annual payments associated with PFI and NPD schemes but do not involve any budget transfers.	The scope to transfer money to capital budgets will depend on by how much the Scottish Government is willing to reduce its revenue budget.
Private Finance Initiative (PFI) PFI is a form of Public Private Partnership (PPP) where a contract is established between the public sector and private sector partners to construct and maintain an asset for use by the public sector. The private sector partners will pay the up-front costs of construction and ongoing maintenance over the life of the asset in return for annual revenue payments from the public sector. Contracts are usually for a period of around 30 years, after which the asset will either remain the property of the private sector partners or is transferred to the public sector depending on the agreement at the time of contract award. There is no pressure on capital budgets from using PFI, as annual payments are paid using revenue budgets.	The current Scottish Government does not plan to use PFI to finance future projects, although it continues to operate previously signed PFI contracts.
Non-Profit Distributing (NPD) NPD is a form of PPP. As with PFI, there is a partnership with a private sector provider, which pays the up-front construction and on-going maintenance costs. However, there is a limit imposed on the profits that the private sector operator may retain. Any surplus profit is re-invested in the public sector. The public sector pays an annual charge over the life of the asset from its revenue budget.	This is the preferred model of PPP of the Scottish Government. In November 2010, the Scottish Government announced £2.5 billion worth of future investment using this model.
Regulated Asset Base (RAB) This method of funding is used specifically for rail projects. Network Rail pays for the up-front infrastructure costs by borrowing against the value of its asset base. It repays the loan using payments made by the Scottish Government over the lifetime of the asset – usually around 30 years.	Restricted to rail investment. To date, Scotland has not used RAB financing as much as the rest of the UK. Financing using this method largely depends on the ability of Network Rail to borrow against its asset base.
User charging However the project is financed, the public sector can help pay for it over time by charging the public to use the asset. Examples of user charging include road tolls and waste disposal charges.	Restricted to certain assets and services, eg road/bridge tolls, use of public facilities.

Exhibit 7 continued on page 14.

Continued from page 13.

Methods of financing capital investment	Potential
Tax Incremental Financing (TIF) Under TIF public bodies finance capital projects by borrowing against anticipated future increased tax receipts that the project is forecast to generate (such as non-domestic rates). The model is designed to 'unlock' economic growth in areas that have been earmarked for regeneration. It can be applied to many forms of infrastructure including local roads and retail development. In October 2010, the regeneration of Edinburgh Waterfront became the first TIF project in the UK.	Initially, TIF is planned for use within three councils, City of Edinburgh, Glasgow City and North Lanarkshire. The projects are expected to be worth £250 million but are forecast to have the potential to 'unlock' around £1 billion of regeneration investment.
National Housing Trust (NHT) The NHT initiative is intended to allow councils to create more affordable homes for those on low or moderate incomes who cannot afford market rate rents. The initiative targets areas where there is demand for affordable homes. Investment is financed jointly by councils and their selected private sector development partners, who are responsible for building the houses. The Scottish Government has offered a guarantee to underwrite the loan should any participating council(s) default on repayments.	Restricted to housing. In its first phase, NHT is expected to generate around £130 million and provide 1,000 affordable homes for rent in Scotland. Although the Scottish Government provides a loan guarantee, this will not be a charge to its capital budget unless the guarantee is called.
Hub The Hub initiative is led by the Scottish Futures Trust on behalf of the Scottish Government. Its purpose is to improve collaboration and joint working between public sector bodies through shared accommodation. Scotland is divided into five Hub territories that, when combined, aim to deliver around £1 billion of community infrastructure. Councils, health boards, police and fire services are expected to work together with the private sector to deliver these assets.	Aims to deliver around £1 billion worth of community infrastructure. This will mostly be new assets but will also include the refurbishment and upgrades of current assets. The Scottish Government intends to provide revenue support to help finance these projects.
'JESSICA' Holding Fund A fund held by the European Investment Bank. It is a source of loans and guarantees aimed at supporting capital projects that are not commercially viable or too risky for the private sector to provide finance for.	The JESSICA fund in Scotland has £50 million of funds available (£26 million from Scottish Government, £24 million of European Structural Funds). The fund is to be used to support urban regeneration projects including wireless technology zones and green energy for social housing.

Note: Local government can also finance capital projects by exercising its public borrowing powers to access low-cost finance from the Public Works Loan Board. Public borrowing is currently not available to the Scottish Government, but draft legislation before the UK Parliament could give borrowing powers to the Scottish Parliament (see paragraph 16).
Source: Audit Scotland

Exhibit 8
Advantages and disadvantages of using private finance

Private finance may offer value for money ...
Innovation in how services are delivered. The client specifies what is required not how it is to be delivered, and competing suppliers have the scope and the incentive to innovate to provide the best service at lowest cost.
Better management of the risks associated with projects. The principle in contracts which include private finance is that risks are allocated to whichever party is best able to manage them. For example, in a contract for accommodation services over 30 years, the company responsible can better manage the risks of providing and operating the buildings at lowest cost. They are best placed to ensure at the outset the building design minimises whole-life costs. Later, if necessary, they can mitigate the risk of higher than expected maintenance and energy costs by further changes to the building fabric or the way it operates.
Stronger financial control. Banks and investors protect their long-term investment in respect of the construction and operation of a private finance contract by setting specific financial tests and limits for the private contractors responsible for delivering the project. The same controls have not traditionally been applied to publicly financed projects.
Better management. The clear focus on strong financial control by management means the private sector provider will seek a management team with strong skills in these areas.
More effective exploitation of opportunities. Sometimes a commercial opportunity arises in parallel with providing public services. With private finance, the private sector supplier's ability to exploit commercial opportunities can be harnessed.
But private finance is not risk-free and does not guarantee value for money ...
The benefits of innovation and risk transfer may be inadequate to offset the higher cost of private finance. The opportunity for innovation in a project may be constrained and risk transfer may not be easy to achieve at a reasonable price. However, the Scottish Government plans to use the NPD model of contract to help contain and reduce the level of profits private sector investors may take as dividends from the project.
Service levels may be reduced to compensate for higher finance costs. It is possible that clients will accept reduced levels of service in order to make the deal affordable.
Avoiding current capital outlay at the expense of future revenue commitments. When funds are tight, private finance looks attractive because the client avoids investment up-front, but there are longer-term public expenditure commitments in the form of contractual payments to the private sector service provider. These commitments may constrain clients' future public spending decisions and reduce flexibility. There is a risk that clients may accept private finance deals that do not offer value for money in the long run.
Private finance may be too expensive. A good specification of requirements and a competitive procurement process may still yield a private finance deal that is too expensive. Clients must ensure that their evaluation of the cost of traditional financing provides a reliable benchmark against which to judge the cost of the private finance deal.
The costs of managing the more complex procurement process are high. Because the process is considerably more complicated than traditional financing the costs of procuring and negotiating private finance deals can be significantly greater. Clients must therefore maintain tight control over their own costs and those of their professional advisers.

Source: Audit Scotland

The use of alternative finance has allowed increased investment spending but has significant revenue costs in the future

29. Since devolution, revenue-financed schemes have provided £4.8 billion worth of capital projects in Scotland (Exhibit 9). This is equivalent to an extra 20 per cent on top of traditional financing each year.

30. The Scottish Government and public bodies pay the full cost of revenue-financed projects by annual unitary payments to the private sector partners to cover up-front construction costs, lifecycle maintenance and facilities management. In 2010/11, annual payments for private finance schemes will be £838 million.[14] This is equivalent to around three per cent of the Scottish Government's revenue budget. By 2024/25, annual payments for projects completed and currently in progress, will peak at over £1.1 billion (cash terms).[15]

31. Unitary payments are generally fixed for the term of the contract and are paid from revenue budgets. However, as budgets reduce, unitary payments will increase as a proportion of available budgets. This will put additional pressure on the amount that public bodies have available to spend. In the draft budget 2011/12 announcement, the Scottish Government introduced plans to place a limit on the maximum percentage of annual revenue budgets that can be used for unitary payments.[16] This is likely to be around three per cent of the revenue budget.

32. The Scottish Government has a role to play in assessing the potential of private financing as part of a wider investment strategy. Such a strategy should balance the costs, risks and rewards associated with using alternative finance to ensure value for money is achieved.

Recommendations

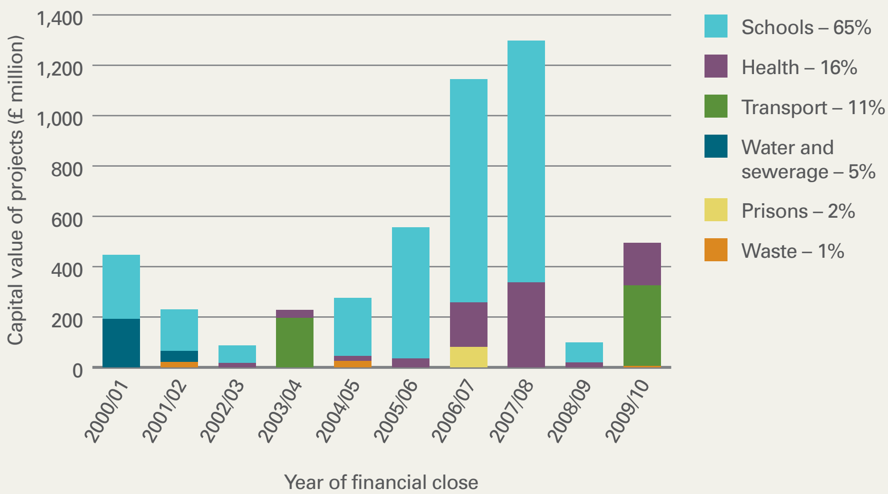
The Scottish Government should:

- regularly and systematically assess the ongoing affordability of its capital investment programme
- assess the overall appropriateness of using alternative finance as part of a wider investment strategy. Such a strategy should balance the costs, risks and rewards associated with using alternative finance to ensure value for money is achieved
- develop comprehensive information on the whole-life costs of all capital projects and assess their impact on future revenue budgets.

Exhibit 9

The capital value of PFI and NPD projects since devolution (by sector)

Schools projects account for the majority of the revenue-financed investment since devolution.



Note: Local government, with financial support from the Scottish Government, was responsible for schools, waste and one transport project (2003/04: A92 upgrade, £62m). The Scottish Government was responsible for all other projects except for water and sewerage.

Source: Scottish Government

14 Approximately £439 million of this relates to local government private finance schemes.
15 Source: Scottish Government.
16 *Scotland's Spending Plans and Draft Budget 2011/12*, Scottish Government, November 2010.

Part 2. The performance of recently completed major capital projects

Estimating is improving, although there are some significant gaps in the availability of information to measure the performance of projects.

Key messages

- There are some significant gaps in the availability of information to measure whether projects are completed to budget and on time. Where information was available, cost estimating for traditionally financed projects has improved in recent years with 59 per cent of projects completed within the initial estimate. The majority of projects (86 per cent) were completed within contract award estimates. The accuracy of cost estimating for revenue-financed projects was similar to traditionally-financed projects.
- Most projects, however financed, experienced delays compared to initial time estimates. Only around a third of projects were completed on time compared to estimates at both initial approval and pre-contract stages. This is similar to the position reported in 2008. The longest delays, however, occurred in the earlier stages rather than during the delivery stage (which would be more costly).
- To assess performance against cost and time targets, formal post-project evaluations are required by the Scottish Public Finance Manual. However, their completion remains variable. Only 40 out of 55 recent projects had completed or were planning to undertake post-project evaluations with performance varying across the main spending areas.
- The majority of projects have been assessed to evaluate initial benefits, including post-occupancy evaluations and design quality assessments.

33. This part of the report examines the performance against cost, time and quality targets of all major projects completed between 2007 and 2010, together with a few earlier projects. In total, we examined 55 projects with a combined cost of £2 billion (see Appendix 2 for a list of the projects included).[17, 18]

Estimating is improving, although there are some significant gaps in the availability of information to measure the performance of projects

34. There are a number of stages to each capital project (see Exhibit 5, page 11); however, there are two key decision points in any project:

- Initial approval stage:
  At this stage there needs to be clarity about the overall value and purpose of the project, its contribution to business goals and the optimum balance of cost, benefit and risk for its effective delivery. Accurate cost and time estimates at this stage support effective appraisal and value for money. An Outline Business Case is often a formal document at this stage. Where we mention 'initial approval' in this chapter we are referring to the Outline Business Case stage.
- Pre-contract award stage:
  The estimate just before awarding the contract is vital because it provides a basis for confirming the value for money before the main financial commitment (the construction or service contract) is accepted. Once a contract price is agreed, significant changes to a project are likely to be costly, disruptive and reduce value for money. A Full Business Case will be developed at this stage. Where we mention 'pre-contract' in this chapter we are referring to the Full Business Case stage.

35. We examined the latest reported costs and completion time compared to the estimates made at these two key stages for 55 recently completed major capital projects. This included 44 traditionally financed projects completed between April 2007 and March 2010. We also examined 11 revenue-financed projects (projects funded using alternative forms of finance such as PFI) that were completed between April 2005 and March 2010.[19]

36. Forty-three projects took at least two years to go from initial approval to completion, with the average completion time being three and a half years. One project, NHS Greater Glasgow and Clyde's Local Forensic Psychiatric Unit at Stobhill, took over nine years to complete.[20] Nine projects were completed in two years or less.[21] Consequently, the guidance on project management and cost estimating that applied to the development of each project varied in some cases.[22] For example, seven projects changed the rate used to calculate project costs (the discount rate) between initial estimate stage and pre-contract stage following guidance issued by HM Treasury.[23] This affects the reported variances in cost performance in some cases.

17 This extends our analysis from our report in 2008, where we reviewed 43 traditionally financed projects completed between April 2002 and March 2007. We examined all traditionally financed projects completed between April 2007 and March 2010. For revenue-financed projects and further and higher education projects, we extended the period of coverage to between April 2005 and March 2010 as we had not previously examined projects within these areas.
18 Cost for traditionally financed projects is the actual or estimated outturn capital cost. Cost for revenue-financed projects is the estimated lifetime contract cost at financial close.
19 See footnote 17.
20 NHS Greater Glasgow and Clyde reported that the lengthy timescale was the direct result of it having to conduct a series of consultation exercises involving local residents and other stakeholders over a period of years.
21 The remaining three projects could not provide any time data.
22 This includes the introduction of adjustments for optimism bias and changes to discount rates from 2003.
23 The seven projects were NHS Ayrshire and Arran's Crosshouse Maternity Hospital; NHS Fife's St Andrews Community Hospital; NHS Forth Valley's Clackmannanshire Community Health project; NHS Greater Glasgow and Clyde's Modernisation of Mental Health Acute Inpatient Services and Local Forensic Psychiatric Unit at Stobhill; South Lanarkshire College's new build project; and the Scottish Prison Service's HMP Addiewell.

37. There are some significant gaps in the availability of cost and time information. For 11 out of 55 projects (20 per cent) the project owners could not provide a cost estimate at initial approval stage, either because project costs were not estimated at this time or data were unavailable. Similarly, 21 of 55 projects (38 per cent) could not provide a time estimate at initial approval stage. This is worse than our findings in 2008 where 14 of 43 completed projects (33 per cent) did not estimate a completion date at point of initial approval. Appendix 2 includes details of projects with incomplete data.

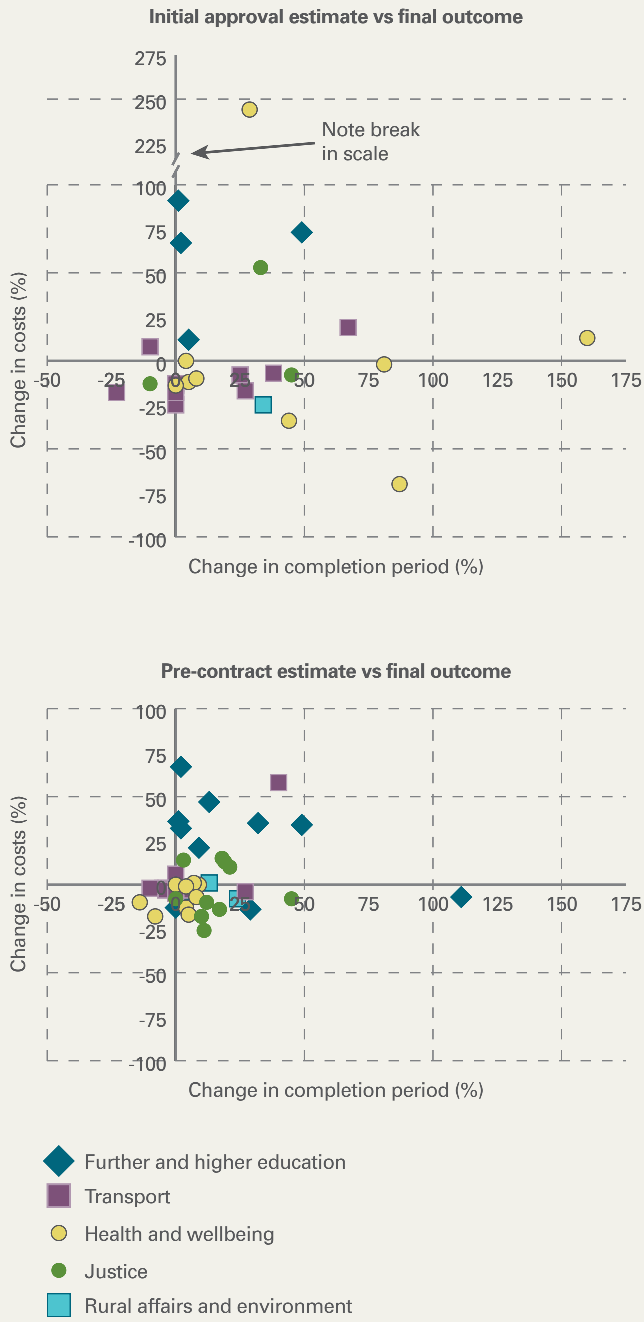
38. Exhibit 10 shows the performance of each of the main spending areas against cost and time targets at key stages. It shows that:

- initial estimates of time and cost (top chart in Exhibit 10) were often inaccurate. However, while there was some under-estimation, most initial cost estimates proved to be too high
- later estimates of time and cost at the pre-contract stage (bottom chart in Exhibit 10) were also inaccurate in many cases, although there were fewer outliers at this stage, as plans should be more certain and risks clearer
- further and higher education projects were more likely to experience cost increases after the pre-contract estimate stage.

Exhibit 10

Time and cost outturn compared to estimates

Achievement of time and cost estimates improves as projects progress.

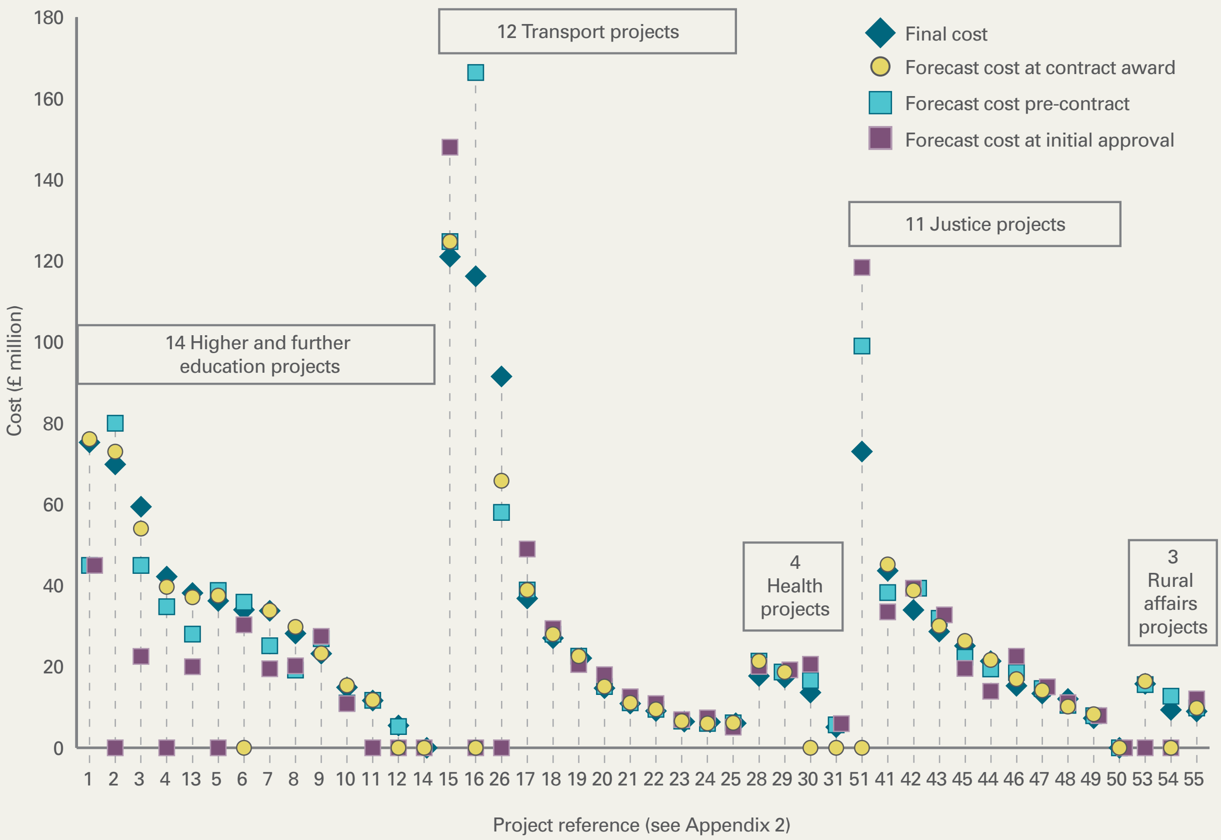


Notes:
1. Base: initial estimate – 27 projects with complete information; pre-contract estimate – 46 projects with complete information.
Source: Audit Scotland

Exhibit 11

Traditionally financed projects – final cost compared to forecasts at earlier stages

The majority of projects were completed within initial approval cost estimates.



Note: Symbols at '0' on the horizontal axis indicate that data are not available at these stages.
Source: Audit Scotland

Cost estimating for traditionally financed projects has improved in recent years

39. Exhibit 11 shows the final cost of each project completed between 2007 and 2010 compared with initial cost estimates and contract award estimates.[24] Forty-four projects were completed using capital funding from the Scottish budget at a cost of £1.3 billion.

40. In further and higher education only part of the cost of projects is financed from the Scottish Government's capital programme. This funding is channelled through the Scottish Funding Council, which is responsible for the overall direction of the capital programme in this sector. Each institution is responsible for its own project delivery.[25]

Almost 60 per cent of projects were completed within initial cost estimates

41. The analysis in this section is based on 29 traditionally-financed projects. The remaining 15 projects were only able to provide partial cost data.

42. The combined final cost of the 29 traditionally financed projects that could provide initial approval and contract award cost data was £734 million. This was £14 million (two per cent) higher than the combined initial approval estimate of £720 million. This is an improvement from 2008 where final project costs were 13 per cent higher than initial estimates.

43. Seventeen of these projects (59 per cent) were completed within the initial approval cost estimate, compared to 39 per cent of projects that did so between 2002 and 2007.

44. Of the 17 projects completed within the initial approval cost estimate, eight were roads projects managed by Transport Scotland and five were building projects managed by the Scottish Prison Service. Two health projects that were traditionally financed were delivered within the initial cost estimate. For example, the Aberdeen Dental School project managed by NHS Grampian was delivered 12 per cent under the initial

24 Cost figures for each project have been adjusted for inflation.
25 The proportion of SFC funding ranged between 11 and 82 per cent of the costs of the projects included in this review.

cost estimate (an outturn of £17.7 million compared to an initial approval cost estimate of £20 million). NHS Grampian reported that a key reason for this was strong competition and other market related factors.

45. All spending areas except health and rural affairs had at least one project that overran. For 12 projects the final costs exceeded the initial estimate. The average cost increase for these projects was 57 per cent, and varied from eight per cent (an increase of £1 million) to 164 per cent (an increase of £36.9 million from an initial approval cost estimate of £22.5 million). Further and higher education projects had the least reliable estimates with six out of seven projects experiencing cost increases of between 37 per cent and 164 per cent.[26] However, in five out of the six cases, the cost increases did not result in additional funding being made available from the Scottish Funding Council. The Scottish Funding Council introduced new project monitoring and support arrangements in 2006 to help colleges and universities improve their project performance. Due to the time lag between project inception and completion it is too early to assess the impact of these changes.

46. We did not undertake an in-depth review of individual projects but asked the organisations responsible to self-report the reasons for cost and time overruns. They reported a wide range of reasons. For example, within further and higher education, eleven distinct factors contributed to cost and time increases affecting five projects (Exhibit 12). The largest overruns in

Exhibit 12

Reasons for cost and time increases of more than 25 per cent from initial estimate in further and higher education projects

The most common reasons reported for cost and time overruns were unforeseen delays or extra costs from third party action, changes in project scope, weak competition, insufficient allowance for risk or over-optimistic estimates.

Reasons for cost and time increases	Queen Margaret University – relocation	Borders College – Scottish Borders campus refurbishment	John Wheatley College – East End campus	Jewel and Esk College - Refurbishment of Milton Road campus and construction of new facilities at Eskbank	Dumfries and Galloway College - New Campus Dumfries
Unforeseen delays or extra costs from third party action, including utilities providers	X	X	X		X
Change in scope reflecting client needs and requirements	X			X	X
Weak competition or other market-related factors		X	X	X	
Insufficient allowance for risk and uncertainty		X		X	X
Over-optimistic base estimates		X	X	X	
Change in the availability of project funding				X	X
Contractor or consultant under-performance	X				
Unforeseen ground conditions			X		
Lower project revenues, eg reduced income from asset disposals	X				
Change in scope reflecting legislation such as Health and Safety				X	
Higher inflation than allowed for				X	

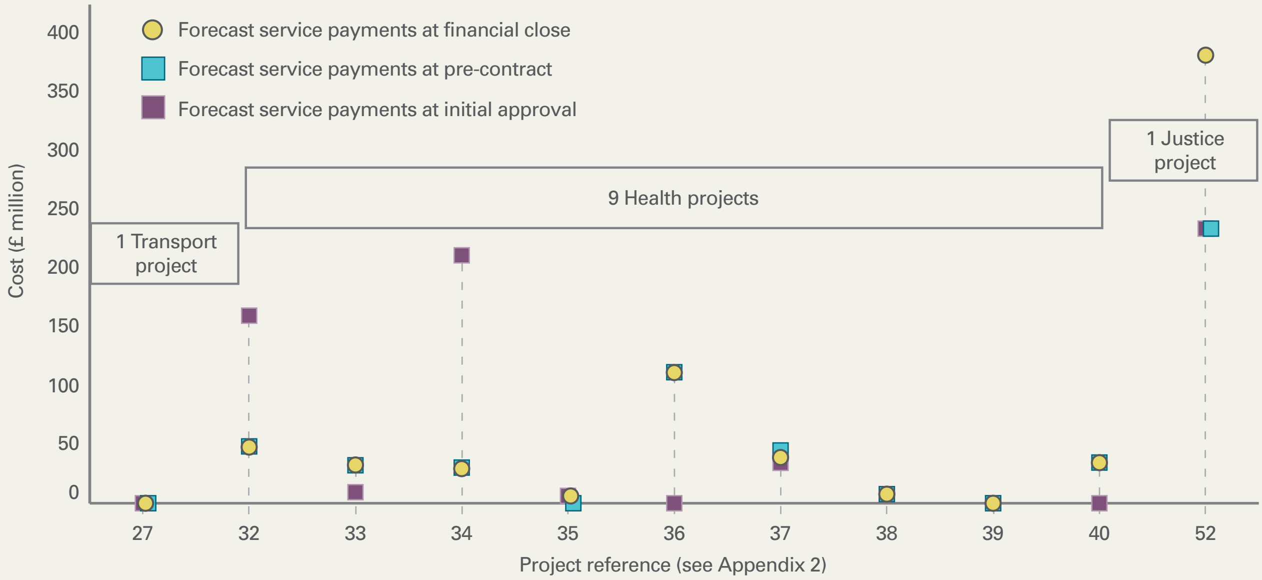
Note: South Lanarkshire College did not report reasons for cost increases from initial estimate to final outturn.
Source: Audit Scotland

26 Initial estimates are those approved by the individual institutions prior to Scottish Funding Council approval.

Exhibit 13

Revenue-financed projects – final contract cost compared to earlier estimates

Five projects provided full cost information. Two projects were delivered within the initial approval cost estimates, three were not.



Notes:
1. Symbols at '0' on the horizontal axis indicate that data are not available at these stages.
2. Forecast service payments are the estimated value of contract payments to the private sector supplier over the contract life.
3. NHS Ayrshire and Arran provided full cost information for their Crosshouse maternity project (project 34). However, the costs are not comparable between initial approval stage and financial close due to a change in the way costs are calculated.
4. The Scottish Prison Service (HMP Addiewell, project 52) reported that the difference between early estimates and financial close is attributable to an accounting change by HM Treasury in the discount rate used to calculate lifetime project costs.

Source: Audit Scotland

further and higher education affected two projects:

- The refurbishment of Jewel and Esk College campus had a cost of £59.4 million, 164 per cent higher than the initial estimate of £22.5 million. The college cited that cost increases were due to a significant change in scope to reflect a full, rather than partial, refurbishment and new larger-scale buildings on both Edinburgh and Midlothian campuses.
- Queen Margaret University's relocation project cost £75.2 million, 67 per cent more than the £44.9 million initial estimate. £11 million of the final project cost was provided by the Scottish Funding Council. The University cited third party costs (such as costs related to utilities) as an important factor for higher costs, along with changes in scope reflecting client needs and requirements.

Eighty six per cent of projects were completed within contract price

47. Cost overruns compared to contract estimates were relatively rare and low. As with initial cost estimating, the performance of cost estimating at contract stage has improved since our last report. Eighty-six per cent of projects completed between 2007 and 2010 came within contract award estimate, compared to 58 per cent of projects that did so between 2002 and 2007.

48. The combined final cost of the 29 traditionally financed projects completed between 2007 and 2010 was £734 million. This was £65 million (8 per cent) lower than the combined approved contract price of £799 million. Of the four projects that had a final cost higher than contract award estimate, the final cost was between three and 18 per cent higher (a range of £332,000 to £5.3 million).[27]

Cost estimating for revenue-financed projects was similar to traditionally financed projects

49. Between 2005 and 2010, eleven major capital projects were completed using revenue financing, the majority of which were health projects. The projects had a combined value of £690 million.[28] For these projects we have used the estimated value of contract payments to the private sector supplier over the contract life as the best measure of final cost. The

27 These projects were Transport Scotland's A76 Glenairlie Improvement; Jewel and Esk College refurbishment; Dumfries and Galloway College campus and Scottish Court Service's Dumbarton Sheriff Court project.

28 The value is based on data from nine projects. NHS Highland could not provide cost data. Transport Scotland provided cost estimates for the Glasgow to Kilmarnock rail project but did not provide sufficient time information to allow us to adjust costs for inflation.

two largest projects, measured on this basis, were NHS Greater Glasgow and Clyde's Ambulatory Care project, valued at £111 million, and HMP Addiewell, valued at £382 million.

50. Five projects provided full cost information and we found that initial cost estimating was similar to traditionally financed projects (Exhibit 13). Two projects were delivered within initial approval cost estimates, NHS Greater Glasgow and Clyde's Modernising Mental Health project and NHS Tayside's Loch Leven Health Centre project.[29, 30, 31] Three projects came in over the initial estimate:

- NHS Fife's St Andrews Community Hospital at 13 per cent (£4.5 million) over. NHS Fife reported that the main reason for this was unforeseen delays and changes arising from the planning process as a result of significant local consultation and challenge.

- Scottish Prison Service's HMP Addiewell at 63 per cent (£147.8 million) over. The Scottish Prison Service reported this increase was due to a change in rate used to calculate project costs (discount rate) between early estimates and financial close. The change in discount rate was determined by HM Treasury.

- NHS Greater Glasgow and Clyde's Local Forensic Psychiatric Unit at Stobhill at 247 per cent (£23.2 million) over. NHS Greater Glasgow and Clyde reported that original plans for the Stobhill facility were for Greater Glasgow patients only and it was to be traditionally financed. This was subsequently changed to a PFI arrangement. The project was also extended to cover patients from all west of Scotland health boards, resulting in significant cost increases.

Most projects, however financed, experienced delays

51. We examined the actual completion time of all projects compared to estimates made at the initial approval stage and pre-contract stage (Exhibits 14 and 15, overleaf).[32] We found that around a third of projects were completed on time compared to estimates at both stages. This is very similar to the position we reported in 2008 for earlier completed projects.

52. The analysis of initial time estimates in this section is based on 34 projects while the analysis of pre-contract time estimates is based on 49 projects. The remaining projects were not able to provide time estimates at one or both stages.[33, 34]

53. Twenty-four projects took longer to complete than had initially been planned, with an average overrun compared to their initial time estimate of 38 per cent (an average of 13 months). These overruns ranged from one per cent (one month) to 160 per cent (46 months).

54. Most projects also took longer to complete compared to the time estimated to be required at the pre-contract stage. However, in most cases, the overruns during the contract phase were smaller, with an average overrun of 13 per cent (six months), and ranging from one per cent to 111 per cent (one month to 18 months).

55. Delays did not necessarily result in higher project costs. For example, four out of ten roads projects had time overruns between 25 per cent (nine months) and 67 per cent (ten months), yet three came in within the initial cost estimate. Where significant delays arose, they mostly occurred during the initial planning stages of projects, rather than the delivery phase where delays are more costly. Delays at initial stages can arise due to unforeseen circumstances such as planning enquiries or legal challenges rather than specific project management issues.

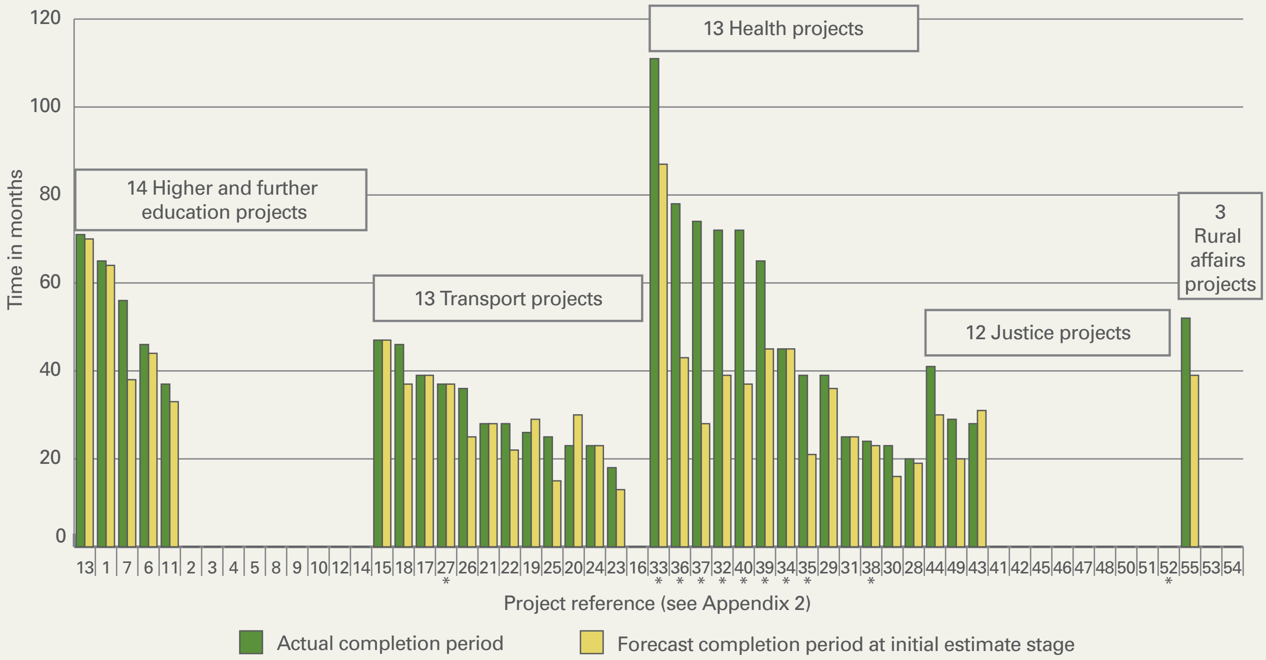
56. Transport projects were completed most quickly, on average within 31 months, while health projects were completed over the longest period, on average 53 months. Transport projects were also the most likely to be delivered on time with seven of 13 projects completed on time or quicker than the estimate at initial approval stage. Health projects and Justice projects had the least reliable estimates at initial approval stage. Eight out of 13 health projects were delivered 25 per cent or more later than the estimate made at this stage (an average of 27 months late), and two out of three Justice projects (an average of ten months late). Further and higher education projects had the least reliable estimates at the pre-contract stage with four out of 13 projects taking 25 per cent or longer than the pre-contract estimate (an average of 13 months late).[35]

29 Cost figures for each project have been adjusted for inflation.
30 The initial estimate for the NHS Greater Glasgow and Clyde's Modernising Mental Health project was based on three sectors North/East, West and South. The subsequent pre-contract estimate only covered one sector (West).
31 NHS Ayrshire and Arran provided full cost information for their Crosshouse Maternity project; however, it has not been included in our analysis as the costs are not comparable between initial approval stage and financial close due to a change in the way costs were calculated.
32 By pre-contract we mean full business case approval stage.
33 The formal contracting authority for Firelink (project reference 51) was the UK government (Department of Communities and Local Government). Therefore, the Scottish Government does not hold, or was unable to provide, all the project information requested.
34 NHS Lothian's University Hospitals Division Emergency IM&T services (project reference 35) did not produce a separate full business case (pre-contract estimate). This was advised by the Scottish Government on the basis that the outline business case (initial estimate) contained detailed information normally associated with the full business case.
35 Reid Kerr College did not provide any information, therefore they are excluded from this analysis.

Exhibit 14

Completed projects – completion time compared with initial estimates

Most projects experienced delays compared to initial estimates.

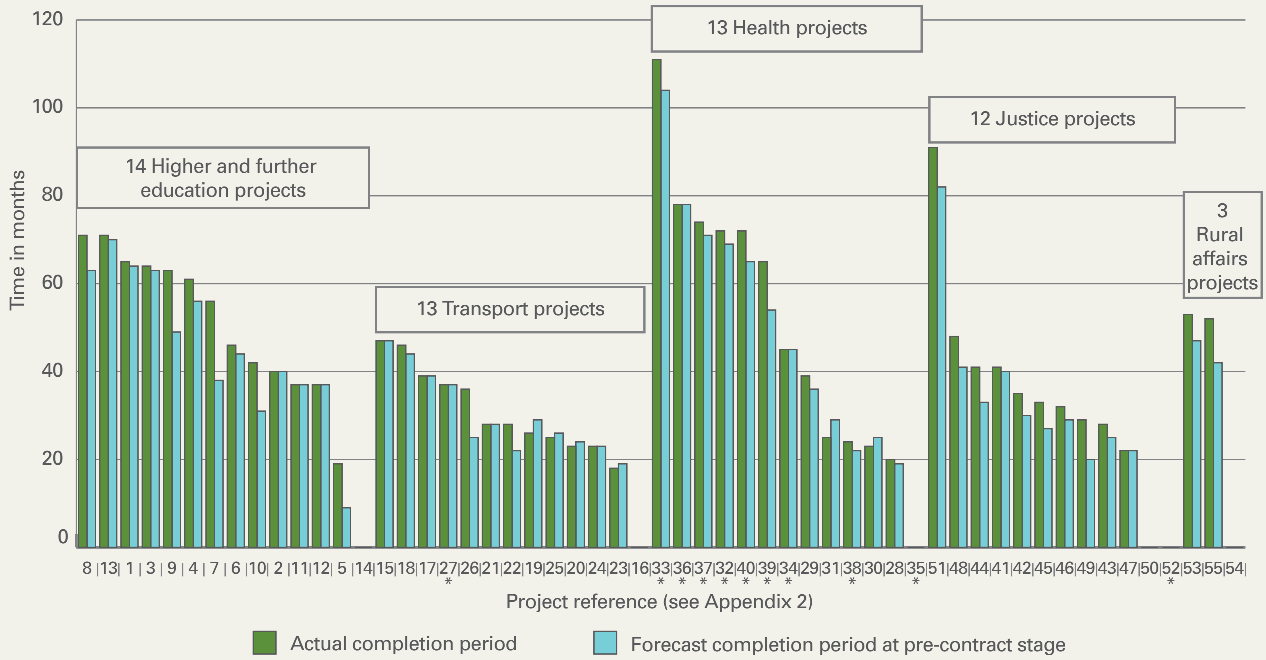


Note:
1. (*) denotes projects that were revenue-financed. All other projects were traditionally financed.
2. Gaps show where data were incomplete.
Source: Audit Scotland

Exhibit 15

Completed projects – completion time compared with pre-contract estimates

Projects experienced delays compared to pre-contract estimates, though less than compared to initial estimates.



Note:
1. (*) denotes projects that were revenue-financed. All other projects were traditionally financed.
2. Gaps show where data were incomplete.
Source: Audit Scotland

57. The longest delay from initial estimate to completion was NHS Fife's St Andrews Community Hospital. This took 46 months longer than the initial estimate, a 160 per cent overrun. NHS Fife reported that the main reason for this was unforeseen delays and changes arising from the planning process as a result of significant local consultation and challenge. The next longest delays were NHS Greater Glasgow and Clyde's Ambulatory Care project and NHS Forth Valley's Clackmannanshire Community Health Services project. Both took 36 months longer than planned, an 83 per cent and 98 per cent overrun respectively. NHS Greater Glasgow and Clyde reported the delay was mainly attributable to the additional time required to create a public sector comparator against which the value for money of the sole bidder could be assessed.

A number of initiatives are under way to improve estimating reliability

58. Within individual areas a number of initiatives are under way that aim to increase the reliability of cost and time estimating and otherwise improve value for money. It is too early to assess the impact of these initiatives. For example:

- In January 2008, the NHS in Scotland established the Frameworks Scotland initiative to appoint a number of Principal Supply Chain Partners (PSCPs) to undertake capital projects on behalf of NHS boards and special health boards. The NHS has appointed five PSCPs who are responsible for providing a 'one-stop shop' integrated supply chain to deliver both design and construction projects. The aim of the initiative is to achieve improvements in design, quality, client satisfaction, health and safety and sustainability of all NHS capital funded schemes. The framework currently has 38 projects under way with a combined estimated cost of £892 million.
- Within the further and higher education sector, the Scottish Funding Council developed a Property Support Service (PSS) in 2006 to provide specialist advice on estate developments. This is a group of external professional advisers who provide monitoring and reporting to the council on the progress of the capital programme. The advisers are available for use by colleges, universities and the Scottish Funding Council. Since 2006, the PSS has provided advice on several major capital projects and has also provided workshops for colleges preparing estates strategies and business cases.

The majority of projects have been evaluated to assess benefits

59. It is important that the expected benefits of every project and how these are to be assessed are identified at the outset. It is good practice to set out specific benefits in the business case, with responsibility assigned to track, monitor and measure the delivery of benefits. The finished project can then be assessed to ensure that it meets the business requirements and provides good quality design and functionality. Any lessons and learning should be applied to other projects that are under development.

60. Most completed projects have been evaluated to assess whether they have delivered the benefits intended. This compares favourably to the findings from our 2008 report where few projects had been evaluated:

- Twenty-six projects have undertaken (or are scheduled to undertake) a post-occupancy evaluation (POE) to assess how well the building operates (70 per cent of projects that responded to this question and where a POE is applicable). The majority of projects in all spending areas have undertaken POEs where relevant.
- Thirty-three projects (67 per cent of projects that responded) have formally assessed project design using design quality measures.[36] This compares to only seven projects (16 per cent) in 2008. Almost all projects scored 'high' on a scale of high to low.
- Sixteen projects (39 per cent of projects that responded to this question and where this assessment is applicable) have been assessed against environmental (BREEAM) criteria with the vast majority of projects rated good, very good or excellent. Justice and rural affairs projects were most likely to have undergone this type of assessment.

36 Base size of 49 projects.

The Scottish Government has made a commitment to improve the use of post-project evaluations

61. To assess performance against cost and time targets, the Scottish Public Finance Manual (SPFM) requires post-project evaluations (PPEs) to be carried out within six months of project completion. PPEs are essential to improving the future performance of managing projects by identifying lessons learned from recently completed projects. However, our survey showed that only 75 per cent (40 out of 53 projects that responded to this question) of completed projects reported completing, or planning to complete, a PPE, and only eight projects could provide a copy of the report.[37]

62. This is an improvement from the position reported in 2008, but coverage across spending areas varies. Twelve out of 13 transport projects, ten out of 11 justice projects and nine out of 13 health projects reported completing or planning to complete PPEs. This compares to only seven out of 13 further and higher education projects.[38]

63. The format of PPEs also varies as there is no standard template for what they should cover. For example, of the eight PPE reports that we reviewed most included an assessment of project cost and timescale but this was not reported consistently.[39]

64. The Scottish Government is currently developing a standard PPE programme to be applied across all project types and values. In the health sector, the Scottish Government has revised guidance requiring PPE reports for projects over £5 million to be submitted to the Scottish Government's Health Directorates and an annual summary report to be submitted for all capital projects less than £5 million.

Recommendations

The Scottish Government should:

- develop standard criteria for inclusion in post-project evaluations
- ensure that post-project evaluations are completed for every major capital project and lessons learned are shared across all relevant public bodies.

Public bodies should ensure that they:

- carry out assessments and quantification of risk and uncertainty to improve early-stage estimating of the cost and time of projects
- carry out post-project evaluations within six months of project completion to determine whether projects have delivered, or are on course to deliver, the initial benefits intended. Evaluations should consider performance against cost, time and quality targets.

37 These were Transport Scotland's Glasgow-Kilmarnock Enhancement project; NHS Fife's St Andrews Community Hospital; NHS Greater Glasgow and Clyde's Local Forensic Psychiatric Unit at Stobhill and the Modernisation of Mental Health Acute Inpatient Services' projects; NHS Ayrshire and Arran's Crosshouse Maternity Hospital project; Scottish Prison Service's HMP Addiewell project; Loch Lomond and the Trossachs National Park Authority new HQ project and SEPA's Inverdee House project. Six projects did not respond to this question.

38 These figures exclude projects with no response – this includes one further education project and one justice project.

39 The eight PPE reports reviewed are noted in footnote 37.

Part 3. Managing the capital investment programme

An overarching investment strategy that clearly sets out long-term investment needs and constraints would help provide key information for prioritising and planning.

Key messages

- The Scottish Government has improved its framework for managing capital investment since our 2008 report although there is still room for further improvements in control of capital spending.
- The Scottish Government is responsible for the overall development and direction of the capital investment programme. It delegates a significant degree of responsibility to individual spending areas and bodies for the delivery of projects within its capital programme. Each of the four main capital spending areas – health, justice, transport and further and higher education – has well-established, but separate, systems for directing and controlling investment spending.
- The Scottish Government's Infrastructure Investment Plan was published in 2008, setting out investment plans for the ten years ahead. Although the plan is not quite three years old, the recent economic recession and subsequent reduction of public sector spending, particularly capital budgets, mean that it needs to be reviewed and updated.
- An overarching investment strategy, that clearly sets out long-term investment needs and constraints would help provide key information for prioritising and planning.
- The Scottish Government is improving project monitoring through the development of an infrastructure projects database and its gateway and key stage review processes. However, the pace of implementing some improvements has been slow.

65. The scale of the Scottish Government's capital investment programme requires sound management, in particular it is important that spending organisations set clear direction and manage delivery at a range of levels. This means:

- the overall purpose and justification for spending – and the benefits it will deliver – should be clear. There should be a clear understanding of the links between investment, performance and outcomes
- there is a basis for establishing priorities between investment proposals. Spending decisions for new infrastructure are linked to the availability and the allocation of the funds and take into account the condition of current assets and the maintenance requirements
- a long-term, holistic view is taken so that spending can be planned and coordinated effectively
- there is a clear and effective organisation structure and within it responsibilities are clearly defined, allocated and understood. The structure should provide scope for constructive challenge at all stages of the programme
- financial and risk management is robust
- benefits are clearly defined and managed. Outcomes are monitored and reported and lessons learned.

Appendix 1 provides more information on good practice in capital programme management.

The Scottish Government is strengthening its framework for managing the whole capital investment programme

66. In our 2008 report, we highlighted that the NHS, Transport Scotland and the Scottish Prison Service have their own systems and programmes for investment. We reported that, in relation to the delivery of individual projects, these systems were effective in many respects. But we also identified risks with that approach; in particular that devolving responsibility to individual areas could make it harder to maintain common standards.

67. We recommended that the Scottish Government should reinforce strategic direction and investment planning, by establishing a senior, government-wide, professionally led, investment coordination and challenge function.

68. In-year budget management is an essential part of running an investment programme. This may involve adjusting the timing of projects within the programme as budget pressures emerge. In recent years the Scottish Government has adopted the practice of deliberately allocating more money to budgets than is available. In the three years 2008/09 to 2010/11, the planned over-allocation each year was £100 million. This contributed to reducing the annual underspend of the overall Scottish budget (revenue and capital combined). However, using this approach may become more difficult when budgets are reducing, leading to a greater risk of overspending by the end of the financial year.[40]

69. Since 2008, the pressures and uncertainties in relation to the capital programme have been increasing. They include:

- uncertainty about capital and revenue budgets in the medium term (as outlined in Part 1)
- the decision to boost capital spending by bringing forward capital budgets from 2010/11 into 2008/09 and 2009/10 as part of the Scottish Government's economic recovery programme, and the requirement to manage the consequent reduction in 2010/11

40 *Scotland's public finances: preparing for the future*, Audit Scotland, November 2009.

- uncertainty around private financing options, as a result of the recent recession and uncertainty over UK budgeting rules under International Financial Reporting Standards

- the decision to bring the new Forth Crossing into the capital programme, with major financing implications arising from the project.

70. Partly in response to these and other challenges, the Scottish Government has developed its framework for managing investment by:

- setting up, in September 2010, an **Infrastructure Investment Board** (IIB) for the Scottish Government. This small and senior group is intended to provide greater central scrutiny, direction and oversight of the largest investment projects. It builds on and extends substantially the work of the Infrastructure Investment Group (IIG) (see paragraph 71), which provided a forum for sharing information and best practice between government portfolios. The Scottish Government has also created a new **capital and risk division** of seven staff within its finance directorate to provide support for infrastructure investment. The new division also provides secretariat support to the IIB

- developing a centrally maintained **infrastructure projects database** to help financial planning and scrutiny of projects. The Scottish Government and its agencies, together with NDPBs and NHS boards, have populated the database with information including project value, financing method, procuring body and current status. At November 2010, they were populating the database with budget information and performance of projects against key milestones

- establishing the **Scottish Futures Trust** (SFT). The SFT is a limited company owned by, but operating at arms-length from, the Scottish Government, which is working in partnership with other public bodies seeking more efficiency from the investment programme.

These areas are discussed in more detail below.

The Scottish Government is increasing early scrutiny and oversight of major capital projects

71. In 2006, the then Scottish Executive established the IIG.[41] This was a cross-government committee intended to improve coordination of investment activity. It comprised representatives from each main spending area and other key stakeholders and provided a useful platform for sharing information and good practice. However, the group was too large for it to provide an effective forum for strategic scrutiny or leadership of the Scottish Government capital investment programme. The group did not have any role in, or powers to make, major capital investment decisions.

72. The Scottish Government has recognised the need to strengthen governance arrangements for the capital programme. In September 2010, the IIG approved proposals to establish a new IIB to take on specific responsibility in two areas: early strategic scrutiny of major capital projects; and oversight of the delivery of the capital programme.

An overarching capital investment strategy would help provide key information for prioritising and planning

73. The IIB has senior membership, including Strategic Board members and therefore should help strengthen scrutiny and challenge of major capital investment decisions.[42,43] Over time, the Scottish Government expects that the IIB will oversee work across government to enhance information on the public infrastructure asset base in Scotland, and also help broker and assist in collaborative investments. The IIB plans to meet on a quarterly basis and held its inaugural meeting in November 2010. (See Exhibit 16, overleaf)

74. Despite these important improvements, it is not clear that control of investment spending is yet as strong as it could be. The Scottish Government's Infrastructure Investment Plan (IIP) was published in 2008, setting out investment plans for the ten years ahead.[44] Although the plan is not quite three years old a lot has happened since then. The economic recession and subsequent reduction of public sector spending, particularly capital budgets, mean that it needs to be reviewed and updated. It does not currently provide the basis for making the necessary difficult decisions about priorities within a period of reduced capital budgets.

75. The Scottish Government could extend the IIP to become an overarching investment strategy that would help:

- set out the long-term investment needs and constraints for capital investment in Scotland

- provide key information to help Scottish ministers decide on priorities within the capital programme

41 The Scottish Executive existed between 1999 and 2007 when it was renamed the Scottish Government. When dealing with the earlier period this report refers to the Scottish Executive but in all other instances to the Scottish Government.
42 The Strategic Board of the Scottish Government.
43 The IIB's remit will extend to all Scottish Government projects costing £100 million or more. It will not cover local government infrastructure projects or Scottish Water.
44 *Infrastructure Investment Plan*, Scottish Government, March 2008.

Exhibit 16

Decision-making and governance for the Scottish Government capital programme

Ultimately Scottish ministers are responsible for making decisions on capital investment spending. The recently established Infrastructure Investment Board has a key role to play in coordination and advice to decision-makers.

Decision-makers – Scottish ministers and officials

Scottish Cabinet

- Collectively approves draft budgets and spending review plans, including capital budget.
- The Cabinet Secretary for Finance and Sustainable Growth published the Infrastructure Investment Plan (IIP) in March 2008, following the Scottish Spending Review.

Individual Scottish ministers

- Decide on whether to take forward individual projects within their portfolios, consistent with budget, spending review and IIP.

Accountable officers:

- Responsible for delivering projects within delegated limits and within the allocated capital budget where applicable.
- Typically an investment board may advise and support individual accountable officers on project decisions.
- Provide information to ministers on the management of the capital programme within each portfolio.

Advice, guidance and coordination

Infrastructure Investment Board

- Established November 2010, includes three members of the Scottish Government's Strategic Board (see note).
- Will provide oversight of the management and governance arrangements of the capital programme and a scrutiny role in relation to investment plans at portfolio and project level.
- Will contribute to prioritisation of the forward capital programme by scrutinising projects costing more than £100 million early in their lifecycle, though final decisions remain a matter for ministers and individual accountable officers.

Scottish Government Finance Directorate

- Scottish Government corporate service, advises on budgeting and affordability and other issues key to managing the capital programme
- Coordinates spending plans and draft budget

Scottish Government Procurement Directorate

- Scottish Government corporate service, advises delivery bodies on construction projects and procurement policy
- Coordinates gateway reviews and post-project evaluations

Scottish Futures Trust

- Arms-length company, owned by the Scottish Government
- Works with the Scottish Government and public bodies on the development and delivery of infrastructure, providing a range of expert advisory functions across five core activities (see also Exhibit 17).

Note: The members of the IIB are Director General Finance, Director of Procurement, Deputy Director – capital and risk division, Director General Environment, a representative nominated by the Chief Economic Adviser, a representative of the Scottish Futures Trust and a non-executive member from the Scottish Government's Strategic Board.
Source: Audit Scotland

- identify, coordinate and inform investment plans across the main capital spending areas
- provide clear links between projects, programmes and strategic objectives
- provide a strategic assessment of the revenue financing options available to it, in the light of the coming reductions in the capital budget
- provide high-level analysis of the overall condition of the public sector estate. Without such information, it will be difficult to establish the correct balance between building new infrastructure and maintaining current assets
- strengthen debate within the public sector on the direction of the capital programme.

76. Ultimately, Scottish ministers are responsible for making decisions on capital investment spending. Current practice is for individual spending areas to provide information about their own investment programme directly to the relevant minister. It is then the role of the Scottish Cabinet to discuss and determine priorities within the investment programme. Below cabinet level, there is no overarching forum to assess priorities and the balance of associated costs, risks and rewards in the programme as a whole. The Scottish Government through the IIB, could take a more active role in providing information to ministers about priorities within the capital programme. This is particularly important when there is a significant reduction in capital budgets over the foreseeable future.

77. By adopting such a framework, the Scottish Government would be able to coordinate investment and clearly set priorities, therefore ensuring a more transparent approach to capital planning across all portfolios. The publication of an overarching investment strategy would help inform the Scottish Parliament about overall capital investment in Scotland.

78. In making improvements to its current governance arrangements, the Scottish Government needs to clearly align roles and responsibilities of the IIB, Strategic Board and individual spending areas, to ensure effective scrutiny and challenge occurs at all levels. Improved governance arrangements should be transparent and ensure clear leadership and vision for the capital programme against which both the benefits and risks can be assessed.

The Scottish Government has developed an Infrastructure Projects Database (IPD)

79. A central component of the Scottish Government's improvements is the development of an IPD. The aim is to provide a central source of information on infrastructure projects with a capital value of £5 million or more and for which an outline business case has been prepared. The IPD will also include information on other non-project related elements of capital spending (such as spending on maintenance, grants, etc) so that it can be fully reconciled to the Scottish capital DEL budget. The IPD should, therefore, be a valuable tool to inform and monitor capital planning and programming and delivery of major infrastructure projects across all portfolios.

80. The IPD has been designed to record information relating to, and promote the use of, both gateway reviews and post-project evaluations. However, the IPD will not cover local government or Scottish Water infrastructure projects; and it does not currently include information about any projects in the further and higher education sector.

81. At the end of 2009, the Scottish Government decided to develop an IPD. It is a web-based system and the Scottish Government started to populate it in autumn 2010. At the time of our audit, the IPD had data for 109 individual projects including, for each project, estimated value, financing method, current status and the procuring body. The Scottish Government was collecting further data on project budgets and performance against key milestones and was undertaking checks to ensure the IPD was complete and data were valid. The IPD will be an additional tool to inform decisions about the capital programme; however, the delay in establishing this database meant that it was too late to inform the draft 2011/12 Scottish budget. Discussions around the 2011/12 budget were informed by a review of all portfolio capital budgets for the next four years.

82. In the absence of the IPD there has been no central systematic information available to the Scottish Government about the progress of major capital projects against time, cost and quality targets. Our survey results are incomplete because there is no systematic approach to recording project progress against key targets and milestones. For several completed projects, public bodies could not readily provide basic information such as the estimated total cost of the project at initial approval or the current estimated outturn cost compared to the contract cost estimate.

The Scottish Futures Trust is supporting efforts to improve the efficiency of investment

83. The Scottish Government established the SFT in 2008 to help deliver value for money from public infrastructure investment.[45] The SFT has a remit to examine and develop new financing arrangements for investment and to work in partnership with other public bodies to secure more efficiency from the investment programme. After initial work to establish the organisation and recruit staff, SFT published its business plan in May 2009. This defined five core activities contributing to its aim to improve the efficiency and effectiveness of infrastructure investment in Scotland by working collaboratively with both public bodies and commercial enterprises (Exhibit 17, overleaf).

84. The primary financial target of the SFT is to free up between £100 million and £150 million each year for increased investment in Scotland's infrastructure. In working towards this target the SFT aims initially to deliver £7 of benefit for every £1 it spends. In 2009/10, it spent £3.3 million.

85. In September 2010, the SFT reported it had achieved around £111 million worth of net benefit to infrastructure investment in Scotland during 2009/10.[46] The SFT reported that the majority of benefits, £86 million, came from efficiencies that it had helped to identify. The most significant component of this was in relation to the schools programme (£69 million) from standardisation of design and space allocation. The SFT reported that the remainder of the estimated benefits, around £27 million, was mainly attributable to the additional investment created by using different techniques, for example Tax Incremental Financing or the National Housing Trust.[47] We have not audited these estimates or the Scottish Futures Trust.[48]

45 The Scottish Futures Trust is a limited company, wholly owned by Scottish ministers, established in September 2008. The Scottish Government has approved its Management Statement and Financial Memorandum, which sets out its functions, purpose and planning and budgeting procedures.
46 *Statement of Benefits 2009/10*, Scottish Futures Trust, September 2010.
47 SFT has obtained external advice and review of its estimated savings from advisers Grant Thornton and the London School of Economics, who have concluded its estimation methodology was reasonable.
48 The Scottish Futures Trust is subject to external audit as required by the Companies Act. It has appointed Scott-Moncrieff to undertake this work.

Exhibit 17

Scottish Futures Trust core activities

The Scottish Futures Trust has five key areas of activity.

Area of activity	Planned actions
Centre of expertise	SFT will collaborate with others and develop new and better ways of doing things. This will include support to specific projects in the waste sector, support to existing operational PPP projects and developing project/programme management methodologies more generally.
Aggregation and collaboration	SFT will seek economies of scale through aggregating projects. This will include developing a new schools investment programme (where three councils will collaborate in a pilot project), and the Hub initiative (where some councils and health bodies will collaborate in pilot projects to provide community facilities).
Funding and financing	SFT will seek to make more efficient use of investment funds, initially by research and advice on new funding and financing approaches.
Delivery	SFT will support selected individual projects, including taking the lead responsibility for initial procurement of the Hub initiative, and board-level participation in other public sector projects.
Validation	SFT will provide validation and assurance services to the Scottish Government on selected projects, including the Forth Replacement Crossing and the Borders rail link.

Source: SFT Business plan 2009/10

There are well-established but separate systems for managing capital spending within individual areas

86. Scottish ministers are responsible for overarching decisions relating to the Scottish Government's capital programme. Responsibility for managing projects within the programme is delegated to the relevant Scottish Government portfolio and Accountable Officer of the relevant body, eg NHS, Transport Scotland, Scottish Prison Service. Each body has its own programme of projects that together make up the Scottish Government's capital investment programme.

87. We assessed systems for managing investment spending within the four main spending areas – health, education (universities and colleges), justice (prisons) and finance and sustainable growth (transport). Capital spending by these areas accounts for over 50 per cent (£1.7 billion) of the Scottish Government's capital budget (Exhibit 3, Part 1).

88. We found that each area has well-established systems for directing and delivering its capital investment programme. Although controls and practices vary between each spending area, they generally comply with good practice.[49] While each area has strengthened arrangements in recent years, there remain areas where improvements should be considered (Exhibit 18).

The Scottish Government is improving project management but progress in some areas has been slow

The Scottish Government is continuing to develop its gateway and key stage review processes

89. A gateway review is a short, focused review of a project carried out at key decision points in its life cycle by a team of independent experienced practitioners. Gateway reviews provide an independent stocktake at key points in a project, with an opportunity to identify and correct any deficiencies. The Scottish Government sponsors and provides resources to enable independent gateway reviews to take place. A key stage review is carried out at the key stages of a project's development and procurement (such as pre-invitation to tender) to recommend improvements and increase confidence in outturn predictions. It can be carried out as a self-assessment exercise or conducted externally.

90. Since January 2008, the Scottish Government has carried out 51 gateway reviews covering 34 major infrastructure and construction projects. This does not represent a significant change in the number and coverage of reviews compared to results we reported in 2008.

91. We reviewed 12 gateway reviews that took place between 2008 and 2010, covering nine major capital projects. In total, 78 recommendations had been made across three categories, critical (red), essential (amber) and recommended (green).[50] Of this total, 57 recommendations had been implemented or were under

49 We appointed Jacobs Consultancy to establish a good practice framework and help assess each of the areas examined and to analyse our findings. The good practice framework reflects guidance issued by the Office of Government Commerce. See Appendix 1.

50 Recommendations are classed as either 'critical' (the project should take action immediately), 'essential' (the project should take action before the next gateway review) or 'recommended' (the project is on track to succeed but may benefit from uptake of recommendation).

Exhibit 18

Potential improvements in managing capital programmes

There are a number of improvements that individual spending areas can make to the management of their capital programmes.

Improvement	Details
Regular review of projects within each programme	The Strategic Transport Projects Review outlines long-term plans for investment in transport infrastructure. It is important that Transport Scotland regularly assesses that individual projects within the plan remain relevant to strategic objectives and national outcomes.
Establish programme level risk budgets	Financial management could be strengthened by establishing programme level risk budgets within the Scottish Prison Service and Transport Scotland. Current practice focuses on individual project budgets; however, by establishing programme level budgets, this would provide an incentive to achieve minimum cost in individual projects.
Consideration of alternative methods of financing	All main spending areas should consider alternative financing routes and ways to improve value for money and efficiencies from their programmes as a whole.
Development of objectives and targets for the investment programme	NHS boards' Local Delivery Plans identify needs and measure and report performance against HEAT targets. However, specific objectives and targets should be set for the capital programme that complements HEAT targets. This would help drive initiatives such as design quality and sustainability, assist in defining benefits and risks and allow the performance of the programme to be measured directly. In September 2010, the Scottish Government issued a mandatory requirement for NHS boards to address these issues as part of their property and asset management strategies.[1] Historically, the Scottish Funding Council's capital programme has been driven by the need to bring the estate into a condition that is 'fit-for-purpose'. Now that many of these compliance issues have been largely addressed, the SFC should consider establishing a long-term vision and programme for the future development of further and higher education estates.
Stronger links between funding and desired outcomes	The SFC allocates a significant amount of funding to institutions on a formula basis. The SFC should establish stronger links between funding and objectives to ensure funding is directed effectively.
Systematic reporting of the programme	The SFC recently published reports outlining the benefits of capital investment in both further and higher education estates. However, there is no systematic information gathering by the SFC in relation to current and future capital projects. The SFC, with support from its Property Support Service, should consider developing suitable information gathering arrangements so it can obtain a strategic overview of the programme.

Note: 1. *NHS Scotland Policy on Property and Asset Management*, Scottish Government, September 2010.
Source: Audit Scotland

way, representing 88 per cent of all applicable recommendations. Only five recommendations had yet to be acted upon. The results from our sample suggest the gateway review process is having a positive impact on the management of major capital projects (Exhibit 19, overleaf).

92. Following the development of the IPD (paragraph 79), there is now a stronger basis for measuring progress against the Scottish Government's target to use gateway reviews at the key stages of all high risk or critical major capital projects. This reflects the two stage process for gateway reviews, under which a stage 1 review (for all projects) should assess whether a stage 2 (full gateway) review is required. The IPD will record the outcome of the stage 1 assessments for all projects and should provide better information about gateway coverage.

93. The Scottish Government is currently working with the SFT to provide guidance on how projects should engage with both key stage review and gateway review processes. The SFT has taken ownership of the key stage review process and is now responsible for carrying these out on a number of large-scale Scottish Government projects. To date, the SFT has carried out 21 key stage reviews covering a wide range of projects from the schools programme to large-scale transport projects such as the Forth Replacement Crossing and Borders railway.

There is scope to strengthen public reporting of projects in progress

94. Every six months since June 2009, the Scottish Government provides an update to the Scottish Parliament's Public Audit Committee on major capital projects currently in progress. The updates provide the committee with high-level summary information on estimated cost and time targets, as well as current progress. Reporting is limited to projects with an estimated capital value greater than £50 million. The combined value of the projects in the latest report (December 2010) was between £9.6 billion and £10.4 billion. This represents a high proportion by value but it only gives a snapshot of each project rather than systematic analysis of progress. Most projects that are the responsibility of local government are excluded from the update, as are projects with a capital value of less than £50 million, which number around 129 and cost approximately £1.7–2.0 billion.

95. There is scope for the Scottish Government to improve its reporting to Parliament on the progress and performance of its investment programme. Regular reporting should include:

- commentary concerning the progress of projects, as well as information on estimated cost and timescales
- a high-level summary of the total number and value of major projects under way, distinguishing between committed and uncommitted projects, different sources of financing used, and any significant changes in these areas
- significant changes in the status, progress, costs and timescales of individual projects
- commentary on the progress and outcomes of recently completed projects, including summary information on completion rates for post-project and post-occupancy evaluations, the results of evaluations and any lessons learned
- a summary of the benefits achieved from completed projects.

Exhibit 19

Breakdown of gateway review recommendations and progress to date

From our sample of 12 gateway reviews, around 88 per cent of applicable recommendations had been implemented or were under way.

Recommendations	Red	Amber	Green	Total
Implemented	10	28	8	46
Under way	2	6	3	11
Not started	–	3	2	5
Planned but not yet due	–	2	1	3
No longer applicable	–	11	2	13
Total	12	50	16	78

Source: Audit Scotland

Recommendations

The Scottish Government should:

- review and update its IIP to reflect the recent economic recession and subsequent reduction in capital budgets
- extend its IIP to become an overarching investment strategy (as outlined in paragraph 75 of this report)
- clearly align roles and responsibilities to ensure effective scrutiny and challenge occurs at all levels within the capital programme
- establish a more active role for the newly formed IIB in providing information to ministers on priorities and the balance of associated costs, risks and rewards within the capital programme in the light of reducing capital budgets
- publicly report on all major capital projects against time, cost and quality to improve transparency.

Public bodies should ensure that they:

- regularly review projects to ensure they remain relevant to strategic objectives
- achieve economies by pulling together individual project budgets into a capital programme and managing costs at this higher level
- consider alternative forms of financing and ways to improve value for money from their capital programmes
- develop objectives and targets for their capital investment programme to improve design quality and sustainability
- establish strong links between capital spending and desired outcomes
- report systematically on their current and future capital investment plans.

Appendix 1.

Audit methodology

The main focus of our work was on the overall management of the Scottish Government's capital investment programme. For Part 1 we considered all areas of capital investment spending including funding towards local government projects. For Part 2 we focused on evidence obtained from organisations that were responsible for managing recently completed projects. This included information from Transport Scotland, the Scottish Prison Service, eight NHS bodies, 14 further and higher education institutions and the Scottish Government. Our analysis in Part 3 focused primarily on the four largest spending areas – transport, health, justice and higher and further education – and the work of the Scottish Government centrally in helping to manage the capital programme.

Our audit had three main components:

- a data survey of a range of public sector bodies (project owners) to collect data on all major capital projects mainly completed between 2007 and 2010
- review of capital programme management arrangements
- desk research of existing information relating to the Scottish Government's capital programme and sources of funding.

Data survey of major capital projects

We analysed quantitative and qualitative data on major capital projects completed between 1 April 2007 and 31 March 2010. We extended coverage to between 1 April 2005 and 31 March 2010 for revenue-financed projects and further and higher education projects as we had not previously examined these. Appendix 2 provides a full list of the projects included. The survey was issued to the relevant project owner requesting data on project cost, time and quality. Recipients included: Transport Scotland, Scottish Prison Service, eight NHS bodies, the Scottish Government and 14 further and higher education institutions.

All participants completed the survey except Reid Kerr College and the Scottish Government (in relation to Dundee Forensic Science Laboratory). The majority, however, could not provide all data requested as they are either not held or could not be accessed.

Review of capital programme management arrangements

We examined capital programme management arrangements in four areas: Transport Scotland, Scottish Funding Council, Scottish Prison Service and the Scottish Government Health Finance Directorate.

We appointed Jacobs Consultancy to establish a good practice framework and help assess each of the areas examined and to analyse our findings. The good practice framework reflects guidance issued by the Office of Government Commerce. (See Exhibit 20 overleaf)

Using the good practice framework, we interviewed a number of staff in these organisations examining topics such as management of investment need, improvements in programme management and capital programme governance arrangements. We also reviewed a number of relevant documents provided as part of these discussions.

We also interviewed staff in the Scottish Government Finance Directorate (including Director General Finance) and the Scottish Futures Trust.

Desk research

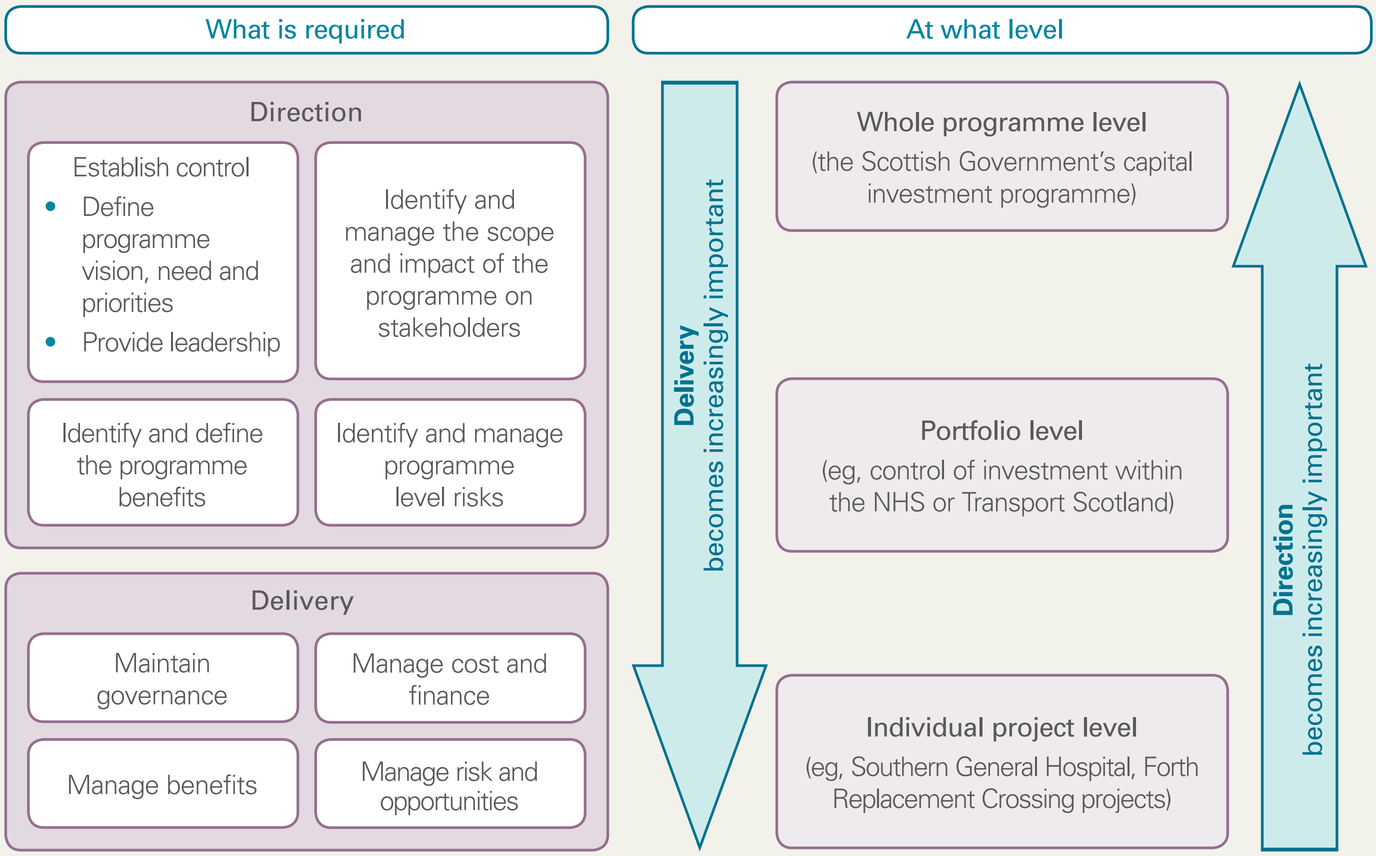
We researched existing information to examine areas such as projects currently in progress, alternative forms of financing capital projects, good practice guidance in capital programming and Scottish capital budget projections.[1]

1 The Office of Government Commerce guidance *Managing Successful Programmes* describes a set of principles and processes for use when managing a programme. Its *Portfolio, Programme & Project Management Maturity Model* may be used to gauge an organisation's approach to the management of its portfolio, programmes and projects.

Exhibit 20

Good practice for managing capital investment spending

Effective control of major capital investment requires spending organisations to set clear direction and manage delivery at a range of levels.



Note: The Office of Government Commerce guidance *Managing Successful Programmes* describes a set of principles and processes for use when managing a programme. Its *Portfolio, Programme & Project Management Maturity Model* may be used to gauge an organisation's approach to the management of its portfolio, programmes and projects.

Source: Audit Scotland from Office of Government Commerce

Appendix 2.

List of 55 completed projects 2007–10[2]

Note: Purple (darker) shaded cells indicate projects that were revenue-financed. All other projects were traditionally financed.

Project reference	Body and project		Final cost £m[3]	Year completed
Education and lifelong learning				
1	Queen Margaret University	Relocation to new campus	75	2007
2	Motherwell College	New college	70	2009
3	Jewel and Esk College	Refurbishment of Milton Road Campus and construction of new facilities at Eskbank	59	2008
4	North Glasgow College	New campus	42	2008
5	Langside College	Campus redevelopment	36	2009
6	Clydebank College	Queens' Quay Campus	34	2007
7	South Lanarkshire College	New build	34	2008
8	Borders College	Refurbishment of Scottish Borders Campus	28	2009
9	Cardonald College	Campus redevelopment project	23	2008
10	John Wheatley College	East End Campus	15	2007
11	Cumbernauld College	Estates development	12	2006
12	University of the West of Scotland	Collaborative library and associated space within Dumfries and Galloway College building	6	2009
13	Dumfries and Galloway College	New Campus – Dumfries	38	2010
14	Reid Kerr College	Renfrew North building	Did not respond	Did not respond
Finance and sustainable growth				
15	Transport Scotland	A876 Upper Forth crossing at Kincardine	121	2008
16	Transport Scotland	Waverley Station redevelopment	116	2008
17	Transport Scotland	A68 Dalkeith Northern bypass	37	2008
18	Transport Scotland	A830 Arisaig to Loch Nan Uamh	27	2009
19	Transport Scotland	A77 Haggstone to Glen app improvement	22	2008
20	Transport Scotland	A9 Ballinluig junction	15	2008
21	Transport Scotland	A75 overtaking opportunities	11	2008
22	Transport Scotland	A7 Auchenrivock	9	2009
23	Transport Scotland	A9 Helmsdale to Ord of Caithness improvements – Phase 2	6	2008
24	Transport Scotland	A76 Glenairlie improvement	6	2008
25	Transport Scotland	M8 Harthill Footbridge	6	2008
26	Transport Scotland	Stirling-Alloa-Kincardine railway project	92	2008
27	Transport Scotland[4]	Glasgow – Kilmarnock enhancement project	29	2009

2 Between 1 April 2005 and 31 March 2010 for revenue-financed projects and further and higher education projects.
3 For traditionally financed projects final cost is actual outturn. For revenue-financed projects final cost is estimated value of contract payments (at financial close) to the private sector supplier over the contract life. All figures have been rounded.
4 Final cost is based on start of service as figures at financial close were not available.

Project reference	Body and project		Final cost £m[3]	Year completed
Health and wellbeing				
28	NHS Grampian	Aberdeen Dental School	18	2009
29	NHS Greater Glasgow & Clyde	Renfrew Health and Social Work Centre	17	2010
30	National Waiting Times Centre Board	Delivering West of Scotland Regional Heart and Lung Centre	14	2007
31	NHS Tayside	Perth & Kinross specialist palliative care service	5	2009
32	NHS Greater Glasgow & Clyde	Modernisation of mental health acute in patient services/west sector reprovision of mental health services	48	2007
33	NHS Greater Glasgow & Clyde	Local forensic psychiatric unit at Stobhill – now Rowanbank Clinic	33	2008
34	NHS Ayrshire and Arran	Provision of new maternity unit, Crosshouse Hospital	30	2006
35	NHS Lothian	University Hospitals Division Emergency IM&T Services	6	2008
36	NHS Greater Glasgow & Clyde	Ambulatory Care & Diagnostic Centres (ACAD)	111	2009
37	NHS Fife	St Andrews Community Hospital	39	2009
38	NHS Tayside	Reprovision of Loch Leven Health Centre, Kinross	8	2009
39	NHS Highland	The modernisation and re-design of primary and community health and social care in mid Argyll	Unavailable	2006
40	NHS Forth Valley	Clackmannanshire Community Health Services	35	2009
Justice				
41	Scottish Prison Service	HMYOI Polmont – development plan phase 3 & 4	44	2009
42	Scottish Prison Service	HMP Perth – development plan – phase 2	34	2007
43	Scottish Prison Service	HMP Glenochil – development plan phase 2 – houseblock and health centre	29	2007
44	Scottish Prison Service	HMP Glenochil – development plan phase 3	21	2009
45	Scottish Prison Service	HMP Edinburgh – redevelopment phase 3	25	2009
46	Scottish Prison Service	HMYOI Polmont – development plan phase 5	15	2009
47	Scottish Prison Service	HMP Edinburgh – redevelopment phase 4	13	2008
48	Scottish Court Service	Dumbarton Sheriff Court	12	2009
49	Scottish Prison Service	HMP Glenochil – development plan phase 2 – staff & visitors facilities	7	2007
50	Scottish Government	Dundee Forensic Science Laboratory	Did not respond	Did not respond
51	Scottish Government	Firelink	73	2010
52	Scottish Prison Service	HMP Addiewell	382	2008
Rural affairs and environment				
53	Royal Botanic Garden Edinburgh	John Hope Gateway	16	2009
54	Scottish Environment Protection Agency	Inverdee House, Aberdeen	9	2010
55	Loch Lomond and the Trossachs National Park Authority	New HQ project	9	2008

Projects with incomplete data

We could not get definitive estimates of time and cost for the following projects:

Project reference	Body and project		Project cost estimate available?		Project time estimate available?	
			Initial approval	Pre-contract	Initial approval	Pre-contract
Education and lifelong learning						
2	Motherwell College	New College	No	Yes	No	Yes
3	Jewel and Esk College	Refurbishment of Milton Road campus and construction of new facilities at Eskbank	Yes	Yes	No	Yes
4	North Glasgow College[5]	New Campus North Glasgow College	No	Yes	No	Yes
5	Langside College	Langside College – campus redevelopment	No	Yes	No	Yes
8	Borders College	Refurbishment of Scottish Borders Campus	Yes	Yes	No	Yes
9	Cardonald College	Campus redevelopment project	Yes	Yes	No	Yes
10	John Wheatley College	East End campus	Yes	Yes	No	Yes
11	Cumbernauld College	Estates development	No	Yes	Yes	Yes
12	University of the West of Scotland	Collaborative library and associated space within Dumfries and Galloway College building	No	Yes	No	Yes
14	Reid Kerr College	Renfrew North building	No	No*	No	No*
Finance and sustainable growth						
16	Transport Scotland	Waverley Station redevelopment	No	Yes	No	No*
26	Transport Scotland	Stirling-Alloa-Kincardine railway project	No	Yes	Yes	Yes
27	Transport Scotland[6]	Glasgow – Kilmarnock enhancement project	No	No*	Yes	Yes
Health and wellbeing						
35	NHS Lothian[7]	University Hospitals Division emergency IM&T services	Yes	No	Yes	No
36	NHS Greater Glasgow & Clyde	Ambulatory Care & Diagnostic Centres (ACAD)	No	Yes	Yes	Yes

* Actual outturn data also unavailable
5 North Glasgow College provided a cost estimate at initial approval stage but did not provide time information to allow us to adjust costs for inflation.
6 Transport Scotland provided cost estimates but did not provide sufficient time information to allow us to adjust costs for inflation.
7 NHS Lothian were not required to produce a separate Full Business Case (pre-contract estimate). This was advised by the Scottish Government on the basis that the Outline Business Case (initial estimate) contained detailed information normally associated with the Full Business Case.

Project reference	Body and project		Project cost estimate available?		Project time estimate available?	
			Initial approval	Pre-contract	Initial approval	Pre-contract
39	NHS Highland	The modernisation and re-design of primary and community health and social care in mid Argyll	No	No*	Yes	Yes
40	NHS Forth Valley	Clackmannanshire community health services	No	Yes	Yes	Yes
Justice						
41	Scottish Prison Service	HMYOI Polmont – development plan phase 3 & 4	Yes	Yes	No	Yes
42	Scottish Prison Service	HMP Perth – development plan – phase 2	Yes	Yes	No	Yes
45	Scottish Prison Service	HMP Edinburgh – redevelopment phase 3	Yes	Yes	No	Yes
46	Scottish Prison Service	HMYOI Polmont – development plan phase 5	Yes	Yes	No	Yes
47	Scottish Prison Service	HMP Edinburgh – redevelopment phase 4	Yes	Yes	No	Yes
48	Scottish Court Service	Dumbarton Sheriff Court	Yes	Yes	No	Yes
50	Scottish Government	Dundee Forensic Science Laboratory	No	No*	No	No*
51	Scottish Government[8]	Firelink	Yes	Yes	No	Yes
52	Scottish Prison Service[9]	HMP Addiewell	Yes	Yes	No	No
Rural affairs and environment						
53	Royal Botanic Garden Edinburgh	John Hope Gateway	No	Yes	No	Yes
54	Scottish Environment Protection Agency	Inverdee House, Aberdeen	No	Yes	No	No

* Actual outturn data also unavailable

8 The Scottish Government does not hold, or was not able to provide, all the project information requested as the formal contracting authority was the UK government (Department of Communities and Local Government).

9 The Scottish Prison Service provided time estimates as a range; therefore we could not include this in our analysis.

Appendix 3.

Project advisory group membership

Audit Scotland would like to thank members of the project advisory group for their input and advice throughout the audit.

Member	Organisation
Kirstin Baker	Deputy Director of Finance, Capital and Risk Division, Scottish Government
Tim Banfield	Director, Value for Money Studies, National Audit Office
Mike Baxter	Deputy Director, Capital Planning and Asset Management Division, Health Finance Directorate, Scottish Government
Karen Chapman	Deputy Director, Property and Capital, Scottish Funding Council
Sharon Fairweather	Director of Finance, Transport Scotland
Willie Pretswell	Director of Finance, Scottish Prison Service
Peter Reekie	Director of Finance and Structures, Scottish Futures Trust

Note: Members of the project advisory group sat in an advisory capacity only. The content and conclusions of this report are the sole responsibility of Audit Scotland.

Management of the Scottish Government's capital investment programme

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ISBN 978 1 907916 10 6 AGS/2011/1

Printed on Revive 100 Uncoated, a Forest Stewardship Council (FSC) certified recycled grade containing 100% post consumer waste and manufactured at a mill certified with ISO 14001 environmental management standard. The pulp used in this product is bleached using an Elemental Chlorine Free process (ECF).