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Infrastructure UK

Infrastructure Cost Review: Implementation Plan

March 2011



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Executive summary

The Infrastructure Cost Review published in December 2010 identified potential savings of £2billion - £3billion per annum from reducing the costs of delivery of the UK's economic infrastructure projects and programmes. This Implementation Plan sets out the measures to be taken by Government and industry to realise those savings.

The measures will enable Government and private sector infrastructure providers to work with the construction supply chain to develop new business models that will improve productivity, achieve better supply chain integration and promote innovation and growth.

The plan sets out a prioritised programme of activities targeted at the economic infrastructure sectors. To ensure consistency of approach and maximise the beneficial impact of measures across the wider construction sector, implementation of these programmes will be overseen by a cross-Government Joint Programme Management Board. The Board will help integrate the actions of this infrastructure implementation plan with other Government actions to improve public sector construction procurement and encourage growth.

To help ensure that departments and industry are fully engaged with the programme the Government will publish a Charter by the end of May 2011 that will set out the priorities and key components for reform and behavioural change, to be embedded into client and supply chain practice at all levels. The Charter aims to change behaviours and working practice for infrastructure delivery to:

- provide improved transparency and certainty around the infrastructure forward programme;
- group projects into more efficient longer-term programmes with clear outcome based objectives;
- encourage innovation and allow for earlier and integrated supply chain involvement through improved competition and procurement processes;
- seek the best whole life outcome rather than seeking the lowest cost for a given specification;
- select supply chain partners on the basis of their ability to deliver innovative solutions set against transparent and affordable cost targets and long-term outcomes;
- develop appropriate client technical expertise and intelligent commissioning capability and make better use of infrastructure data to support decision making and the setting of cost targets; and
- create the environment for industry to invest in new technologies and skills improvement to deliver greater outcome-based efficiencies.

To embed these goals into departmental and regulatory planning, departments will report annually on progress against these objectives, through the Joint Programme Management Board, the first report will be published March 2012. Overall progress against the objectives will be published annually by the Joint Programme Board. The Government will report at the end of

the programme in 2014 on the progress made in bringing about these behavioural changes, and the outcomes of the specific programme of activities set out in this Implementation Plan.

The Implementation Plan comprises six interlinked workstreams, visibility of forward programme, stronger governance, improved commissioning, smarter competition, industry integration and infrastructure data, building on the themes identified in the December report.

The Government has already announced in the Plan for Growth at Budget 2011 that it will:

- **publish the UK's long term forward view of infrastructure projects** and programmes in the autumn as part of the National Infrastructure Plan 2011;
- publish quarterly from Autumn 2011 **a rolling 2 year forward programme of public infrastructure** and construction projects where funding has been agreed; and
- work with industry between now and Budget 2012 to review the standards and codes in operation and **remove redundancy and duplication of standards** where the costs outweigh the benefits.

These measures are a critical starting point for the implementation plan and will help provide a better commercial environment that encourages construction businesses to invest in innovation, in skills and training, and in their own supply chains.

In addition, over the next twelve months:

- The Government will review measures to **smooth out the impact of stop-start investment**, for example, by optimising work planning periods with funding cycles and enabling grouping of projects into longer-term programmes:
 - in the public sector Infrastructure UK, working with the Department for Transport and the Department for the Environment, Food and Rural Affairs, will report on alternative approaches in collaboration with the Highways Agency roads and Environment Agency flood defence programmes; and
 - in the regulated sectors Infrastructure UK will start by pursuing alternative approaches with Defra and Ofwat, as part of the wider regulatory review of the water industry. In the energy sector Ofgem has already announced plans to extend the price control cycle from five to eight years.
- Infrastructure UK and the Cabinet Office Efficiency and Reform Group will develop new **model competition and procurement processes** in collaboration with Highways Agency and Environment Agency programmes.
- Infrastructure UK and the Cabinet Office Efficiency and Reform Group will publish, alongside these new models, **guidance on the selection of effective procurement models and contracting options** for different categories of infrastructure projects and programmes to encourage procurement approaches and contract form selection that properly consider clients' risk appetite and commercial capability.
- Infrastructure UK will develop in conjunction with the Efficiency and Reform Group Major Projects Authority **checklists of key features of success for major infrastructure projects** to complement the Starting Gate reviews.
- Infrastructure UK will publish a **common set of principles for the structuring and management of contingency and risk and mechanisms for embedding cost and risk**

control into a range of different project and programme scenarios. This will be tested in collaboration with a range of projects and programmes, including High Speed 2 and London Underground's renewals programme.

- Infrastructure UK will publish **guidance and template agreements for use between public sector stakeholders on major infrastructure projects** and programmes. These will be based on the models used for the Olympics, Crossrail and other complex infrastructure projects and will be tested on the High Speed 2 project.
- In order to create a sustainable basis for improving infrastructure asset data **Infrastructure UK has established a joint public sector and industry Infrastructure Data Group**. The Government will work through this group to establish means to strengthen the robustness of departmental asset and condition records. In addition, the Government will report on trials for the extended use of benchmarking in setting challenging cost targets, working in collaboration with Highways Agency, Environment Agency, Network Rail and London Underground.

The Government recognises that implementation of this plan will need to consider the different approaches between sectors, particularly for regulated and non-regulated infrastructure. Private sector investment already takes place within a policy and regulatory framework which itself should serve to incentivise improved delivery. The Government announced in the Plan for Growth at Budget 2011 that it will publish, in April 2011, a binding set of principles of economic regulation to provide greater certainty for long-term investors in UK infrastructure.

Infrastructure UK will continue to work with industry in implementing the key components of this plan, building on the successful partnership already developed between Government and industry in undertaking the Infrastructure Cost Review. **Industry leaders have been identified to act as champions** working alongside Government, for key components of the plan. These industry champions will be focal points for academia and industry professional and trade bodies.

The Government continues to encourage feedback and contributions directly from all stakeholders. Requests for further information on this implementation plan or feedback should be directed to InfrastructureCost@hmtreasury.gsi.gov.uk.

1

Introduction

Need for improved infrastructure delivery

1.1 Over the next five years between £15 billion and £20 billion per annum in the UK will be spent directly on renewals and capacity enhancement projects and programmes – principally civil engineering works. The Infrastructure Cost Review identified the opportunity to make efficiency savings on this spending of at least 15 percent, worth £2 billion - £3 billion per annum.

1.2 Reducing the costs of infrastructure delivery will allow the UK to renew and build more for less and provide more resilient infrastructure as a key plank for wider economic growth. It will also support growth by giving confidence to international investors in UK infrastructure, and improve the competitiveness of the UK construction industry by addressing concerns about higher costs, lower productivity and skills and wasteful processes.

1.3 Radically different delivery models are required to achieve integration in the infrastructure delivery process and in order to promote early involvement and innovation at all levels of the supply chain. Over many years in the UK, there has been fragmentation of the construction industry and a significant shift towards the use of subcontracting. Compounded by the problems of infrastructure pipeline uncertainty and overly complex procurement approaches, this has increased transaction costs and deterred industry from a more strategic approach to investment in skills, technology and innovation.

1.4 Successful adoption of the measures in this implementation plan will benefit all infrastructure projects and programmes at each stage of delivery. In the short term there are significant projects and programmes already underway or imminent. For example the main works on Crossrail, the continuing UK Waste Programme and the Network Rail investment programme. Looking forward, there is significant planned growth to come from the nuclear build programme and renewable energy sector, plus continued investment in water and rail, including the Thames Tideway Tunnel and continuing development of transport projects in highways, Mersey Gateway Bridge and High Speed 2.¹

Context for implementation

1.5 The Infrastructure Cost Review was published on 21st December 2010. The report concluded that there is no single overriding factor driving higher costs and that higher costs are mainly generated in the early project formulation and pre-construction phases. It provided evidence of a number of contributing factors, as set out in Box 1.A below, and proposed a range of actions for consideration to improve delivery.

¹ Some of these projects are the subject of ongoing public consultations and approvals, the outcomes of which will determine if and how they proceed.

Box 1.A: Summary of drivers of higher cost

- Stop-start investment programmes and the lack of a visible and continuous pipeline of forward work.
- Lack of clarity and direction, particularly in the public sector, over key decisions at inception and during design. Projects are started before the design is sufficiently complete. The roles of client, funder and delivery agent become blurred in many public sector governance structures.
- The management of large infrastructure projects and programmes within a quoted budget, rather than aiming at lowest cost for the required performance. If the budget includes contingencies, the higher total becomes the available budget.
- Over-specification and the tendency, more prevalent in some sectors than others, to apply unnecessary standards, and use bespoke solutions when off-the-shelf designs would suffice.
- Interpretation and use of competition processes not always being effective in producing lowest outturn costs, with public sector clients in particular being more risk averse to the cost and time implications of potential legal challenges.
- Companies in the supply chain typically investing tactically for the next project, rather than strategically for the market as a whole.
- Lack of targeted investment by industry in key skills and capability limiting the drive to improve productivity performance.

1.6 Since publishing the report, Infrastructure UK has continued to work with other parts of Government and with industry to develop this detailed implementation plan alongside the construction elements of the growth review that were announced at Budget 2011.

1.7 Crossrail, for example, has already examined the Infrastructure Cost Review and taken steps, where appropriate, to apply its findings to its contracting strategy. Infrastructure UK is working with the Highways Agency, High Speed 2 and the Environment Agency flood defence programme – amongst other projects - to help develop ways to reduce outturn costs. Through collaboration across Government, with Local Partnerships and with industry, the benefits arising from these measures will be realised across the public and private infrastructure sectors.

Wider construction benefits

1.8 This is an implementation plan for the economic infrastructure sector, in which some 70 per cent of the investment is from the private sector, including through regulated utilities. However, many of the issues that need to be addressed in the public sector – for example in procurement, project governance and budget discipline - are also issues for the wider construction sector.

1.9 Infrastructure UK is working with the Government's Chief Construction Adviser and with the Efficiency and Reform Group in the Cabinet Office to ensure that the arrangements for managing the infrastructure implementation plan support a consistent approach across Government that can maximise benefits across the whole construction sector.

2

Progress on implementation

Cross-government approach

2.1 Infrastructure UK will lead the delivery of this implementation plan, working in collaboration with Government departments, regulators, private sector infrastructure providers and other stakeholders. Improving the delivery of economic infrastructure remains a key objective for the Government and progress on this implementation plan will be overseen by the Economic Affairs Committee of the Cabinet in line with the commitment made in the National Infrastructure Plan 2010.

2.2 The Government is establishing a Joint Programme Management Board that will oversee the implementation of this infrastructure Implementation Plan, alongside the measures for improving wider construction procurement in the public sector announced as part of the Plan for Growth at Budget 2011. This will enable the actions for economic infrastructure and wider public sector construction to be introduced consistently.

2.3 The Joint Programme Management Board will be chaired by the Chief Construction Adviser, Paul Morrell, and report to the Minister for the Cabinet Office, Francis Maude. Membership will include Infrastructure UK, the Efficiency and Reform Group in the Cabinet Office, departments, their delivery bodies and infrastructure regulators.

2.4 The Joint Programme Management Board will support the coordination of industry involvement and the interfaces with Government departments in taking forward collaborative pilot initiatives.

Role of departments and regulators

2.5 To ensure that departments are fully engaged with the implementation programme, the Government has set out, as part of this plan, the key behaviours and actions to be embedded at board level into departments' business planning and decision making. These will also be set out in a Charter as set out in 2.12 below.

2.6 Delivery of a number of the Infrastructure UK actions is achieved through collaboration on specific projects or programmes. Infrastructure UK will work alongside departments and regulators and will be responsible for reporting progress against the implementation plan objectives. The projects themselves will remain under the control and direction of the commissioning departments and their delivery bodies.

2.7 The Government recognises that implementation of this plan will need to consider the different approaches between sectors, particularly for regulated and non-regulated infrastructure. Private sector investment already takes place within a policy and regulatory framework which itself should serve to incentivise improved delivery.

2.8 The Government announced in the Plan for Growth at Budget 2011 that it will publish in April 2011 a binding set of principles of economic regulation to provide greater certainty for long-term investors in UK infrastructure. These principles will shape the behaviour of Government into a more stable and predictable pattern. It will give greater clarity about the

cycle for review and amendment of the regulatory frameworks and a more transparent articulation of policy priorities and guidance for regulators.¹

Industry involvement

2.9 The Government very much values the positive engagement with industry achieved through the Infrastructure Cost Review and will continue to work with industry during the implementation phases. The Steering Group, previously chaired by Terry Hill (Arup) will be merged into the infrastructure Stakeholder Reference Group hosted by the Institution of Civil Engineers.

2.10 The role of the Stakeholder Reference Group will be to help coordinate wider industry engagement. Working with the Joint Programme Management Board, the Stakeholder Reference Group will coordinate the input of senior industry leaders, institutions and academics in support of the overall objectives. It will also help in coordinating specific sub-group activities, led by industry leaders. The Government will seek to maximise the use of existing groupings of industry experts and wherever possible will seek to incorporate their activities into the programme in order to avoid duplication.

2.11 Alongside publication of this plan the Government will identify the industry leaders who will act as champions and focal points for academia and industry professional and trade bodies.

Box 2.A: Key behavioural changes and actions to be set out in a Charter

Clients and the supply chain will work together to:

- provide improved transparency and certainty around the infrastructure forward programme;
- group projects into more efficient longer-term programmes with clear outcome based objectives;
- encourage innovation and allow for earlier and integrated supply chain involvement through improved competition and procurement processes;
- seek the best whole life outcome rather than seeking the lowest cost for a given specification;
- select supply chain partners on the basis of their ability to deliver innovative solutions set against transparent and affordable cost targets and long-term outcomes;
- develop appropriate client technical expertise and intelligent commissioning capability and make better use of infrastructure data to support decision making and the setting of cost targets; and
- create the environment for industry to invest in new technologies and skills improvement to deliver greater outcome-based efficiencies.

Implementation Charter

2.12 A key first step of this implementation plan will be to set out the key objectives and behavioural changes in a simple Charter for Government and industry, as set out in Box 2.A above. The Charter will be published by the end of May 2011 and measures taken to embed the principles of the Charter into client and supply chain practice at all levels.

¹ Postcomm, the Civil Aviation Authority, Office of Rail Regulation, Ofgem, Ofwat and Ofcom

2.13 Departments will report annually on progress in meeting the behavioural changes and specific actions set out in Box 2.A, as well as the specific actions set out in this plan, this will be done through the Joint Programme Management Board.

3

Implementation components

Key objectives

3.1 Building on the Infrastructure Cost Review Report, this implementation plan has been designed around five key interlinked objectives (Box 3.A below).

Box 3.A: Cost Review key objectives

- create better **visibility and certainty** of the infrastructure investment pipeline;
- implement **effective governance** of projects and programmes, particularly in the public sector;
- instil **greater discipline in the commissioning of projects and programmes**, for example by ensuring greater objective challenge to the specification of requirements and cost estimates;
- develop **smarter ways to use competition** by improving risk-based assessment of procurement options; and
- create an **environment that encourages industry and the advisory community to invest in efficiency** and reduce the direct costs of construction by developing cost effective delivery solutions.

Source: Infrastructure Cost Review, December 2010

3.2 Many of the issues are already well recognised and understood but will require concerted action between the Government, regulated companies, regulators and industry to deliver as part of a coordinated programme of intervention.

3.3 These overarching principles will be embedded into clients and the supply chain at all levels through the Charter described in Section 2.10 of this plan.

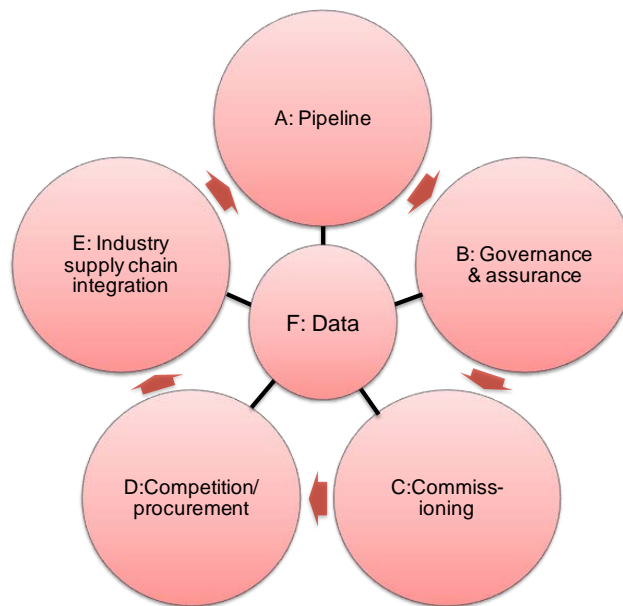
3.4 Infrastructure UK will work with the Efficiency and Reform Group in the Cabinet Office and other key stakeholders to implement a coordinated programme of activities. The Government will review progress and achievement against these objectives at the end of this programme in 2014.

Six component workstreams

3.5 The five key components described above will form the basis for the programme workstreams, with infrastructure data identified as the sixth component, as shown in Figure 3.A below.

3.6 The immediate actions for delivery in 2011/2012 have been set out below for each of the Components A to F (as listed in Figure 3.A). These immediate actions reflect the views provided by clients and industry in development of this implementation plan, including feedback from the Cost Review industry day held in February 2011. The Government will report on progress in implementing these actions in March 2012.

Figure 3.A: Cost review workstreams



3.7 A number of the immediate actions will scope out the need for further work and additional measures to be considered as future programme actions for 2012-14, these are also set out below for information.

3.8 A summary programme for implementing the six component workstreams is included as Annex A and includes both immediate actions for delivery in 2011/12 and future actions for consideration.

Component A: Pipeline visibility and certainty

3.9 There is strong evidence from the Infrastructure Cost Review that the stop-start investment over the last few decades is increasing costs and stifling investment in innovation and growth. The Infrastructure Cost Review demonstrated that where infrastructure plans are prepared setting out the long-term investment programmes alongside clear forward programmes of work, this generally results in lower outturn delivery costs.

Immediate actions for 2011/12

3.10 In the **public sector** Infrastructure UK will report by autumn 2011 on new programme delivery funding and approval models to be developed in collaboration with the Highways Agency and Environment Agency programmes and their respective sponsor departments.

3.11 In the **regulated utilities sectors** the Government will work with regulators and providers to align work planning and regulatory funding cycles or identify other means to ensure regulatory frameworks support longer-term planning and investment. In the electricity sector Ofgem has already announced plans to extend price control periods from five to eight years. In the water industry the Government will report on alternative approaches as part of the review of the water industry regulatory framework in spring/summer 2011. Infrastructure UK will work with Defra, Ofwat and the water industry in considering alternative approaches to smooth out the stop-start cycle effect.

3.12 In the **rail sector** the Government will work with the regulator and delivery bodies to consider the basis on which forward contract certainty and planning can be improved in response to the McNulty Rail Value for Money Study and as part of the wider reviews on rail franchising and the rail strategy paper to be published in autumn 2011.

3.13 The Government has set out in the Budget a **new system to allow a limited amount of inter-year spending flexibility** as a means of incentivising the improved planning of works.

3.14 The Government is **prioritising investment pipeline visibility** through the publication of the UK's long term forward view of projects and programmes in autumn 2011 as part of the National Infrastructure Plan 2011. This will provide long-term visibility across public, regulated and private investment in infrastructure.

3.15 The Government will, in addition, publish quarterly from autumn 2011 a **rolling 2 year forward programme of public infrastructure** and construction projects (workbanks) where funding has been agreed, providing improved supply chain certainty within spending review periods.

Future programme actions for 2012-14

3.16 The Government will provide further detail on the following potential future measures in March 2012:

- measures to allow extended commitment to defined programmes of work where value for money outweighs funding flexibility requirements, based on the outcome of the collaborative pilots in highways and flood defences;
- adoption of additional measures within regulated sectors as part of the planning for future control cycles to smooth out the stop-start cycle of current regulatory frameworks;
- embedding framework and incentive arrangements that encourage and support cross programme efficiency. This will include the identification of project opportunities for cross programme investment/purchasing of standard assets and the removal of blockers; and
- further measures to ensure that Government departments maintain prioritised lists of forward public sector projects capable of aggregation into a national database.

Component B: Effective governance and assurance

3.17 The creation of a clear governance structure for certain major public projects, with role separation between client, funder and delivery agent functions comparable to that seen in the private sector, has helped to develop positive tension between decisions on design specification and cost, which can reduce outturn cost. The Government intends to extend this approach into wider public sector projects and programmes to encourage greater cost discipline in decision making across sectors.

Immediate actions for 2011/12

3.18 The Government will implement the **Major Projects Authority (MPA) Integrated Assurance and Approvals Process (IAAP)**.¹ Mandatory Starting Gate reviews will test that all major projects and programmes are established with clear lines of accountability and that decisions vest through individuals or bodies capable of discharging their function as a 'single controlling mind' with appropriate delegated authority - ensuring also that they are suitably incentivised to optimise cost and programme outcomes.

¹ The Major Projects Authority (MPA) is responsible for defining and operating the assurance framework for major central government projects. It is sponsored by the Efficiency and Reform Group in the Cabinet Office and HM Treasury.

3.19 Infrastructure UK will develop in conjunction with the MPA **checklists of key features of success for major infrastructure projects** and where appropriate ‘templates’ to complement the now mandatory Starting Gate reviews. These will focus in particular on:

- **guidance and template agreements for use between public sector stakeholders on major infrastructure projects and programmes.** These will be based on the models used for the Olympics, Crossrail and other complex infrastructure projects and will be piloted on the High Speed 2 project (September 2011); and
- **standard principles for the structuring and management of contingency and risk** and a revised framework for embedding cost and risk control into a range of different project and programme scenarios. This will be developed in collaboration with the High Speed 2 project and London Underground (December 2011).

3.20 Infrastructure UK will undertake by September 2011 an initial review of the **appropriateness of current guidance and practice for the application of optimism bias in budgeting for publicly procured projects** which will scope out future actions for consideration. This will also include consideration of alternative portfolio assessment and management of contingency and cost risk across programmes and projects.

3.21 Infrastructure UK will also work with Department for Transport’s £6 million Highways Maintenance Efficiency Programme in identifying specific **geographically based pilot opportunities** to improve the governance and interface between local highways projects and other infrastructure investments. The Department for Transport will report in spring 2011 on specific pathfinders to be taken forward, in collaboration with this programme, that may also consider cross sector models consistent with the localism agenda, for example, through integration with the ‘funding for outcomes’ approach for flood defence.²

Future programme actions for 2012-14

3.22 The Government will provide further detail on the following potential future measures in March 2012:

- all departments to clearly define and publish governance structures and schemes of delegation for major projects/programmes;
- publication of an updated framework for competency and capacity assessment for key post holders to include proposals on incentivisation arrangements;
- guidance/mechanisms to assure that capital project delivery and operational/sustainability interests are effectively aligned from an early stage;
- pilot new guidance and templates on major projects starting with High Speed 2;
- alternative models for structuring risk and contingency management across projects and programmes; and
- publication of supplementary Green Book guidance on use of optimism bias and managing contingency and risk on projects and programmes.

² Future funding for flood and coastal erosion risk management, DEFRA November 2010

Component C: Commissioning

3.23 To ensure that infrastructure projects and programmes meet the required outcomes at the minimum sustainable cost, the Government will implement the following actions.

Immediate actions for 2011/12

3.24 The Government will introduce greater **objective challenge to the specification of requirements and budget cost estimates by improved early stage intervention**, through the new Integrated Assurance and Approvals Process (IAAP) process.

3.25 Through central assurance and approvals processes the Government will **promote the use of outcome based specifications and processes** that will encourage innovation and remove unnecessary prescription.

3.26 Infrastructure UK and the Efficiency and Reform Group will **review the capability and infrastructure data requirements required to improve effectiveness of local and central Government challenge functions** in support of setting and achieving acceptable performance and cost outcomes (See Component F for details). An initial review of benchmarking capability across central Government has already been undertaken by the Efficiency and Reform Group in the Cabinet Office.

3.27 Infrastructure UK will work with the Department for Business Innovation and Skills and with industry in drawing together groups of sector experts to identify and **reduce duplication, redundancy and inconsistency of standards, based on a cost benefit analysis of existing standards**, ensuring that operating performance and safety are not compromised. The Government will report on progress and make further recommendations by Budget 2012. This will be piloted initially in the roads and rail sectors and the terms of reference will include:

- the establishment of a transparent basis for cost-benefit assessment of standards and clear targets for reducing the number of standards; and
- implementing measures to ensure that standards bodies are properly integrated and incentivised to consider the implication of existing and new standards on costs and outcomes.

Future programme actions for 2012-14

3.28 The Government will provide further detail on the following potential future measures in March 2012:

- report on the effectiveness of pilot work to reduce standards and make proposals for roll-out to other sectors. Review ongoing role of sector based standards group(s) and establish a sustainable model for ongoing review;
- ensure incentives and measures are in place to encourage departments to adopt best practice principles for objective challenge into internal investment approval processes for projects not subject to central scrutiny; and
- further guidance and models to promote sustainable whole-life outcome based specifications as a means to encouraging supply chain innovation.

Component D: Competition/procurement

3.29 As part of its objective to improve procurement and fairness, the Government has already issued guidance on the use of competitive dialogue, mandated use of fair payment regimes for sub contractors and developed the use of standard pre-qualification processes.

Immediate actions for 2011/12

3.30 Infrastructure UK and the Cabinet Office Efficiency and Reform Group will report in December 2011 on **new model competition and procurement processes** developed in collaboration with the Highways Agency and Environment Agency's roads and flood defence programmes to:

- encourage innovation through earlier contractor involvement and supply chain integration;
- achieve the best whole life outcome rather than the lowest cost for a given specification;
- consider alternatives to current interpretation of procurement processes and application of EU directives;
- reduce wastage in the process;
- use benchmark data to set challenging cost targets; and
- allow industry to present alternative value for money variant proposals.

3.31 In order to encourage procurement approaches and contract form selection that properly considers clients' risk appetite and commercial capability, **Infrastructure UK and the Efficiency and Reform Group in Cabinet Office will publish guidance on the selection of effective procurement models and contracting options** for different categories of infrastructure projects and programmes (December 2011).

3.32 The Government will encourage more effective application of competition to realise cost savings, growth through the supply chain and minimise wastage in procurement processes. Infrastructure UK will work with the Efficiency and Reform Group in the Cabinet Office to ensure guidance and assurance processes **encourage greater risk-based assessment of competition and procurement options with more focus on innovation, cost and performance outcomes.**

3.33 The Government will report by autumn 2011 on the use of NEC3 and other standard form contracts for infrastructure and make **recommendations for further standardisation.**³ The review will include consideration of current approaches to risk transfer and incentivisation and the need for additional standard form agreements, for example, a public sector supplier alliancing template.

Future programme actions for 2012-14

3.34 The Government will provide further detail on the following potential future measures in March 2012:

- reducing reliance within the public sector on short-term competition as the primary means for driving efficiency and reducing the public sector's over-use of complex competitive dialogue processes for basic infrastructure projects;
- supplementary Green Book guidance on risk based assessment of competition and procurement options;
- issuing formal guidance on new procurement models and consider the removal of potential policy blockers to further improvements;

³ NEC is an integrated set of contract documents overseen by a panel of the Institution of Civil Engineers. NEC3 has also been used as the basis for development of the NHS Procure21+ national frameworks.

- developing competency frameworks for assessing client capability to deliver alternative procurement and contracting approaches and incorporation into assurance and approvals processes and measures to improve training programmes for public sector commissioners; and
- developing a standard form template for public sector alliancing, building on the existing NEC or similar standard form partnering agreements.

Component E: Industry/supply chain integration

3.35 Components A to D focused on the client side issues of commitment and improved pre-contract activity. These actions are all capable of being undertaken directly by or, in the case of private sector utilities, influenced by Government. The continued input of industry in support of this implementation plan is an essential component. The full benefit of available cost savings can only be achieved if industry responds in turn, for example by working with clients and at all levels of the supply chain to achieve better integration.

Immediate actions for 2011/12

3.36 Government is **establishing the Joint Programme Management Board** to integrate delivery of the Infrastructure Cost Review implementation plan with parallel programmes of activity within the Cabinet Office and the Department for Business Innovation and Skills and also taking on board actions arising from the Sir Roy McNulty's Rail Value for Money Study and similar studies in other sectors.

3.37 In establishing this Joint Programme Management Board, the Government will work with industry to **publish a Charter** before the end of May 2011 that will establish the basis of joint work to promote change and develop new models to improve integration and promote efficiency and growth (as described in Chapter 2.12).

3.38 As part of the review of infrastructure delivery models, set out in **Component D**, the Government will consider how the benefits of supply chain integration can be incorporated into procurement approaches and contracting models. To support this objective, the Government will identify infrastructure programmes suitable for alternative partnering models starting with the Highways Agency and Environment Agency programmes.

3.39 While government can take steps to create the right environment and encourage changed behaviour, industry must be relied on to respond positively and to co-operate with infrastructure clients in achieving lower cost outcomes by increasing productivity and reducing the direct costs of construction. Industry will be challenged to invest resources in the development of new skills and innovation, and to respond to the new technologies required to deliver cost effective solutions in the delivery of infrastructure across all sectors – energy, water, transport, waste and telecommunications.

3.40 Building on the December report's investigation of alternative European models for construction project insurance the Government will work with industry to consider their applicability in the UK. This work will include consideration of the impact and costs of construction performance bonds.

Future programme actions for 2012-14

3.41 The Government will provide further detail on the following potential future measures in March 2012:

- further measures with industry to promote an efficiency and integration programme across suppliers engaged in frameworks and alliances and consider trialling initiatives such as 'buying clubs' and plant pools;

- measures to encourage industry to work with the supply chain to improve logistics capability and encourage efficient use of assets, for example, collaboration with the supply chain on understanding the locations and availability of key plant assets; and
- alternative project insurance models and guidance on specification and scaling of performance bonds.

Component F: Infrastructure data

3.42 The Government recognises the importance of robust infrastructure asset performance and benchmark data, to make informed investment decisions and in setting challenging cost targets. The National Infrastructure Plan 2010 set out the Government's intention to improve the quality of, and access to, infrastructure data to support more informed decision making. The Infrastructure Cost Review identified pockets of best practice within Government and the regulated utilities sectors. Infrastructure UK will build on this best practice and introduce consistency in collaboration with industry.

Immediate actions for 2011/12

3.43 The Government will require departments to maintain a database of current and forward construction projects in a consistent reporting format for central consolidation in a construction database maintained by the Efficiency and Reform Group in the Cabinet Office (see also Component A).

3.44 As announced in the National Infrastructure Plan 2010 Infrastructure UK will publish by the end of spring 2011 a programme of work to improve the quality of data held in relation to economic infrastructure.

3.45 In support of this programme Infrastructure UK is establishing a joint public sector and industry Infrastructure Data Group to help coordinate the development and delivery of this programme with related activities within departments, regulators, infrastructure clients, industry and academia.

3.46 The Government will work with the Infrastructure Data Group to establish a top-down approach and protocols to assure the robustness of departmental asset and condition records.

3.47 The Infrastructure Data Group will report to the Joint Programme Management Board by December 2011 on pilots for the extended use of benchmarking in setting cost targets run by the Highways Agency, Environment Agency, Network Rail and London Underground.

3.48 Through the Infrastructure Data Group the Government will consider means to capture post project cost information and improve access to international data, working with the Construction Sector Transparency (CoST) initiative (by winter 2011).⁴

Future programme actions for 2012-14

3.49 The Government will provide further detail on the following potential future measures in March 2012:

- agree with public and regulated sector stakeholders the high level key performance indicators across infrastructure sectors to establish asset resilience and condition and consider approaches to link them to contractual incentive and performance mechanisms;

⁴ CoST is an international multi-stakeholder initiative designed to increase transparency and accountability in the construction sector supported by the Department for International Development and the World Bank.

- measures to embed a top-down approach and protocols to assure robustness of departmental asset and condition records;
- work with the Infrastructure Data Group to prepare a business plan for a sustainable industry led and Government supported platform for improving the transparent access of infrastructure data;
- consider extending the development and mandatory use of benchmarking and 'cost reduction toolkits' for public sector infrastructure; and
- ensure that central and departmental assurance and approval process require the completion of post-project reviews with emphasis on capturing and tracking cost and performance data.

A

Summary action plan

COMPONENT A	Action	Specific Actions & Timescales			Measures
		March 2011	March 2012	March 2013	
<p>A To increase the visibility and continuity of the committed pipeline of infrastructure investment</p> <p>Issues: <i>Stop-start investment; fragmentation; training; investment; innovation</i></p>	<p>A.1 In regulated sectors extend regulatory planning cycles or identify other means for longer-term planning of non-contentious investment</p>	<p>Ofgem has already extended the price control cycle from 5 to 8 years. Infrastructure UK to work with Defra and Ofwat to consider alternative approaches to optimising work planning and regulatory funding cycles as part of the water industry White Paper. (Summer 2011)</p>	<p>Infrastructure UK and Ofgem to work with regulated and unregulated providers to establish common approach to publication of forward funded projects (2012)</p>	<p>Electricity generators and the network provider to publish and maintain a list of prioritised funded projects on a rolling two year basis (2013)</p>	<ul style="list-style-type: none"> Optimise work planning and funding cycles Increased construction supply chain certainty Publication of forward programme of projects
		<p>Infrastructure UK to work with Defra, Ofwat and a pilot water company to report on value for money measures for extending commitment beyond agreed regulatory cycles for non-contentious works (Summer 2011)</p>	<p>Defra, Ofwat and water companies to consider implementing alternative approaches in advance of AMP6 planning cycle that would allow extended planning and commitment for non-contentious works (2012)</p>	<p>Consider extending model to other regulated sectors (2013)</p>	
		<p>DfT, ORR and Network Rail to consider basis on which forward contract certainty can be increased in response to the McNulty Rail Value for Money Review and as part of the rail White Paper (Autumn 2011)</p>	<p>Infrastructure UK to work with DfT, ORR and Network Rail to review its approach to publication of workbanks consistent with other sectors and explore value for money options for long-term planning and extended commitment to supply chains (2012)</p>	<p>Building on the current workbank publication model Network Rail to improve visibility and certainty of forward funded works (2013)</p>	
	<p>A.2 In the public sector, optimise planning and funding cycles for infrastructure programmes in conjunction with clear cost reduction targets</p>	<p>Infrastructure UK to consider alternative programme delivery funding and approval models working in collaboration with Highways Agency and Environment Agency programmes (Autumn 2011)</p>	<p>Based on outcome of collaborative pilots consider measures in Budget 2012 to allow extending commitment to defined programmes or work where value for money outweighs funding flexibility requirements (2012)</p>		<ul style="list-style-type: none"> Increased construction supply chain certainty Publication of forward programme of projects
		<p>DfT and Highways Agency to consider alternative programme delivery models as part of the Highways Agency Strategy Roads Review (Late 2011)</p>			
	<p>A.3 In the public sector remove blockers that impact on the ability to plan work efficiently across programmes and projects</p>	<p>Introduce a new system to allow a limited amount of inter-year spending flexibility as a means of improving work planning (Announced at Budget 2011)</p>			<ul style="list-style-type: none"> Effective planning of infrastructure investment by Government bodies Efficient buying of infrastructure components across programmes
		<p>Infrastructure UK to identify with Highways Agency and Environment Agency programmes opportunities for cross programme investment/purchasing of standard assets (Autumn 2011)</p>	<p>Consider publishing supplementary Green Book Guidance on cross programme bulk buying of engineering assets (2012)</p>	<p>Embed framework and incentives arrangements that encourage and support cross programme efficiency (2013)</p>	
	<p>A.4 Improve transparency of long-term investment and forward programme of infrastructure works</p>	<p>The Government will publish the UK's long term forward view of projects and programmes. The Government will also publish quarterly a rolling 2 year forward programme of public infrastructure and construction projects, where funding has been agreed (Autumn 2011)</p>	<p>Assure that departments are maintaining prioritised lists of forward public sector projects capable of aggregation into a national database (2012)</p>		<ul style="list-style-type: none"> Publish infrastructure investment pipeline across sectors Central visibility and publication of work programmes

COMPONENT B	Action	Specific Actions & Timescales			Measures	
		March 2011	March 2012	March 2013		
B To Implement effective governance of projects and programmes, particularly in the public sector. Issues: Leadership; accountability; incentivisation; governance; cost awareness; cost not budget	B.1 Develop measures to implement effective governance - so that key project decisions vest through individuals or bodies capable of discharging their function as a 'single controlling mind'	Infrastructure UK to develop with MPA checklists for major infrastructure projects to complement the new Integrated Assurance and Assessment Process, in particular: (1) earlier establishment of project governance and clear delegations of authority/ accountability to be assessed through the mandatory Starting Gate (August 2011) (2) establishing mechanisms for 'forensic' reporting on outturn cost and performance to inform subsequent projects (December 2011)	All departments to clearly define and publish governance structure and delegation of powers for major projects/programmes (2012) Publish framework for competency and capacity assessment for key post holders to include proposals on incentivisation arrangements (2012) Guidance/mechanisms to assure that capital project delivery and operational/ sustainability interests are effectively aligned from an early stage (2012)	Standardised approach and shared best practice – embedded through central assurance processes on major infrastructure projects (2013) <i>As above</i> <i>As above</i>	<ul style="list-style-type: none"> • Transparent, incentivised governance of projects • Publication of governance structures for all projects • Improved stakeholder management and investor confidence 	
		Infrastructure UK to develop guidance and template agreements for use between public sector stakeholders on major infrastructure projects and programmes (September 2011)	Implement and pilot guidance and templates on major projects starting with HS2 (2012)	<i>As above</i>		
		B.2 Review the ways in which contingency is assessed and managed in delivering infrastructure projects and programmes	Infrastructure UK to publish a common set of principles for the structuring and management of contingency and risk and measures for embedding cost and risk control into a range of different project and programme scenarios (December 2011)	Consider implementing alternative models for the structuring and management of contingency and risk across publicly funded projects and programmes (2012)		<ul style="list-style-type: none"> • Appropriate allocation of contingency and risk • Incentivise cost reduction on projects
		Infrastructure UK to review the appropriateness of current guidance and the application of optimism bias in budgeting for publicly procured infrastructure projects (September 2011)	Consider developing supplementary Green Book guidance on use of optimism bias and managing contingency and risk on projects and programmes (2012)			
	B.3 Consider governance/delivery models for integration of local infrastructure delivery projects	Infrastructure UK will work with DFT's Highways Maintenance Efficiency Programme in identifying specific geographically based pilot opportunities. (Spring 2011)	Report on possible pathfinders and approaches to regional infrastructure demand aggregation and delivery (2012)	Measures to develop/extend demand aggregation and integrated delivery of local infrastructure (2013)	<ul style="list-style-type: none"> • Regional demand aggregation/delivery 	

COMPONENT C	Action	Specific Actions & Timescales			Measures	
		March 2011	March 2012	March 2013		
C To instil greater discipline in the commissioning of projects and programmes Issues: signature architecture; overdesign; prescriptive specifications; cost awareness; cost not budget	C.1 Introduce greater objective challenge of the specification of requirements and budget cost estimates	Improved early stage intervention and objective challenge, through the new ERG MPA Starting Gate process, MPRG and Treasury Approvals Process (Announced February 2011)	Departments to adopt best practice principles for objective challenge into internal investment approval processes for projects not subject to central scrutiny (From March 2012)		<ul style="list-style-type: none"> Objective challenge introduced earlier in projects More use of whole-life outcome specifications Enabler for supply chain innovation Improved central and local access to data and expertise to assist challenge processes 	
		Ensure guidance and assurance processes encourage the use of outcome based specifications and processes that support innovation and remove unnecessary prescription (Ongoing 2011)	Departments to consider new guidance and models to promote whole-life outcome based specifications as a means to encouraging supply chain innovation (From March 2012)			
		For infrastructure projects establish capability and data requirement to improve effectiveness of central challenge functions in support of projects (See component F)				
	C.2 Remove unnecessary prescription and duplication of infrastructure standards	Infrastructure UK and BIS to work with a pilot sector group in establishing sector based standards group(s) tasked with removing wastage and duplicate standards and to integrate and incentivise standards setting bodies (Spring 2011)	Report on effectiveness of pilot work in reducing standards and proposals for roll-out to other sectors (2012)	Review ongoing role of sector based standards groups and establish sustainable model for ongoing review (2013)		<ul style="list-style-type: none"> Reduced number of standards across sectors Outcome based approach to standards against clear benefits:cost ratio measures
		Standards group(s) to establish a transparent basis for cost-benefit assessment of standards and clear target for reducing the number of standards, working with a pilot sector (Autumn 2011)				

COMPONENT D	Action	Specific Actions & Timescales			Measures	
		March 2011	March 2012	March 2013		
D To develop smarter ways to use competition <i>Issues: Competition/procurement processes; legislative compliance; risk transfer</i>	D.1 Encourage more effective application of competition to realise cost savings and growth through the supply chain and minimise wastage in procurement processes	Infrastructure UK to work with ERG and issue guidance to encourage greater risk-based assessment of competition and procurement options with greater focus on innovation, cost and performance outcomes (To be agreed 2011)	Consider incorporating supplementary guidance into Green Book on procurement option risk assessment (2012)	Reduced reliance within the public sector on short-term competition as the primary means for driving efficiency (2013)	<ul style="list-style-type: none"> • Appropriate use of competition and increased adoption of long-term partnering arrangements • New procurement models that promote innovation and remove wastage • Lower transaction costs • Improved supply chain growth and efficiency 	
		Government to work with industry and Procurement Lawyers Association to encourage a more pragmatic approach to compliance. Engage with EU consultation on procurement directive to ensure revisions are consistent with UK objectives to remove wastage and procurement legislation that stifle innovation (Ongoing through programme)				
		Infrastructure UK and ERG to develop new model competition and procurement processes in collaboration with Highways Agency and Environment Agency programmes (December 2011)	Consider issuing formal guidance on new models and consider removal of potential policy blockers to further improvements, for announcement at Budget 2012 (2012)	Reduced public sector over-use of complex competitive processes dialogue for basic infrastructure projects and optimise use of competition (2013)		
	D.2 Encourage procurement approaches and contract form selection that properly consider clients' risk appetite and commercial capability	Government to publish guidance on the selection of effective procurement models and contracting options for different categories of infrastructure projects and programmes (December 2011)	Consider developing competency frameworks for assessing capability to deliver alternative procurement and contracting approaches and incorporate into assurance and approvals processes (2012)	Departments to implement frameworks and improve training programmes for public sector commissioners (2013)	<ul style="list-style-type: none"> • Appropriate use of alternative procurement and contract forms • More equitable and VfM risk transfer arrangements that promote growth and SMEs 	
		Infrastructure UK to review the ways in which risks are currently analysed and allocated in different infrastructure contracts (Summer 2011)	Consider the adoption of alternative models for improved value for money risk transfer in some sectors e.g. indexation risk (2012)			
	D.3 Where appropriate encourage further standardisation of infrastructure contracts	Infrastructure UK to review the use of NEC3 and other standard contracts for infrastructure and make recommendations for further areas for standardisation or the development of a standard public sector alliancing agreement (by Autumn 2011)	Consider development/further standardisation of NEC and other standard form contract (2012)	Publish guidance or template standard form for public sector alliancing (2012)	<ul style="list-style-type: none"> • Further standardisation of contracts • Greater accessibility for SME direct participation 	
			Consider development of a standard form public sector partnering agreement that can encourage integration of project teams and the supply chain (2012)			

COMPONENT E	Action	Specific Actions & Timescales			Measures
		March 2011	March 2012	March 2013	
E To create with industry and environment that encourages innovation and growth <i>Issues: Bespoke designs; standard assets; sub-contracting; fragmentation; training; investment; innovation</i>	E.1 Improve and develop communications and collaboration between industry and Government	Government to work with industry to develop and publish a Charter for changing client and supply chain behaviours (April 2011)	Government to continue to work with industry to achieve consolidation of institutional and industry lobby groups (2012)	Establish coordinated and sustainable framework of collaborative programmes organised through a reduced number of public and industry bodies (2013)	<ul style="list-style-type: none"> Reduced number of industry bodies Sustainable sources for funding research and innovation
		Alongside the Charter establish with industry proposals for joint funding of programmes and sustainable models for future collaboration and development activity (December 2011)	Consider proposals for sustained investment in construction innovation, growth and skills for incorporation into Budget 2012 (2012)		
	E.2 Encourage industry collaboration and joint venturing as a means to improve efficiency and growth	As part of a wider review of infrastructure delivery models consider how the benefits of supply chain integration can be incorporated into procurement approaches and contracting models that encourage supply chain integration (See D.1 and D.2)	Consider building on initial pathfinders and issuing formal guidance encouraging greater flexibility for consortia bids and larger contract packages. Consider bundling approaches and improved efficiency through shared resources across projects (2012)	Sectors identify industry partner(s) and support industry supply chain collaboration through joint ventures or joint working arrangements that support innovation (2013)	<ul style="list-style-type: none"> Increased examples of industry joint venturing
		Identify infrastructure programmes suitable for structured alliances, starting with the Highways Agency and Environment Agency programmes (See D.1 and D.2)			
	E.3 Encourage industry to put forward innovative proposals for reducing costs	Encourage industry to put forward innovative variant proposals for standardisation, the use of off-site fabrication and other means of improving efficiency (See D.1 and D.2)			<ul style="list-style-type: none"> Integrated working through industry joint ventures Increased use of contractor variant proposals
	E.4 Industry to develop specific measures to improve efficiency and productivity	Industry to promote an efficiency programme across suppliers engaged in frameworks and alliances through initiatives such as 'buying clubs' and plant pools, consider trialling for example on the Highways and Environment Agency programmes (Ongoing)			<ul style="list-style-type: none"> Increased use of regional buying clubs and pooled resources Increased number of apprentice and investment in skills training
		Work with supply chain to improve logistics capability and encourage efficient use of assets starting with collaboration with the supply chain on understanding the locations and availability of key plant assets. (Ongoing)			
		Alongside more effective planning of infrastructure investment industry will need to consider the future programme requirements for supply chain skills and resources (Ongoing)			
	E.5 Undertake with industry a review of alternative 'insurance' based models	Establish a joint Government and industry group to review benefits of alternative European models for construction risk management and project insurance (Winter 2011)	Report on proposals for implementation of alternative models for project insurance (2012)		<ul style="list-style-type: none"> Reduce costs of project insurance and performance bonds

COMPONENT F	Action	Specific Actions & Timescales			Measures		
		March 2011	March 2012	March 2013			
<p>F To improve the quality and accessibility of infrastructure asset and cost modelling data</p> <p>Issues: poor asset knowledge; cost awareness</p>	F.1 Improve the availability and transparency of infrastructure asset and performance data	<p>Infrastructure UK to publish a programme of work to improve the quality of data held in relation to economic infrastructure. (Spring 2011)</p> <p>In support of this Infrastructure UK will establish a joint public sector and industry Infrastructure Data Group to support the development and delivery of this programme. (April 2011)</p>	<p>Infrastructure UK to agree with stakeholders key performance indicators across infrastructure sectors to establish asset resilience and condition (2012)</p> <p>Government to consider establishing top-down approach and protocols to assure robustness of departmental asset and condition records (2012)</p> <p>Report on a sustainable industry led and Government supported platform for improving the transparent access of infrastructure data (2012)</p>	<p>Embed use of key performance indicators into sectors and consider approaches to link them to contractual incentive and performance mechanisms (2013)</p> <p>Consider implementing audit regime to assure the ongoing quality of infrastructure asset data (2013)</p>	<ul style="list-style-type: none"> Improved asset performance data to inform investment prioritisation Sustainable approach to providing transparent infrastructure data Platform for implementing technology enabled condition reporting and maintenance strategies 		
		F.2 Improve the availability, transparency and use of infrastructure benchmarking and post project evaluations	<p>Through the joint Infrastructure Data Group establish and publish guidance to support the extended use of benchmarking across infrastructure sectors (Winter 2011)</p>	<p>Report on pilots for the extended use of benchmarking in setting cost targets with Highways Agency, Environment Agency, Network Rail and London Underground (2012)</p> <p>Consider extend the development and mandatory use of benchmarking and 'cost reduction toolkits' for public sector infrastructure (2012)</p>			<ul style="list-style-type: none"> Embedded use of benchmarking to set challenging cost targets Transparent reporting of project performance to inform future projects and programmes
			<p>Through the joint infrastructure data group develop a means to capture post project cost and performance information and improve access to international data, working with the Construction Sector Transparency (CoST) initiative (Winter 2011)</p>	<p>Ensure that ERG, HMT and departmental assurance and approval process require the completion of post-project reviews with emphasis on capturing and tracking cost and performance data (2012)</p>			

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