highways england

The project control framework

Handbook

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Acronyms and abbreviations

ASC	Asset delivery contract
BICC	Board Investment and Commercial Committee
CDM	Construction (design and management)
CIP	Complex Infrastructure Programme (division)
DfT	Department for Transport
ECI	Early contractor involvement
IAAP	Integrated assurance and approvals plan
IAN	Interim advice note
IAR	Independent assurance review
IDC	Investment decision committee
MP	Major Projects (directorate)
NIP	National Infrastructure Programme (division)
PCF	Project control framework
POPE	Post opening project evaluation
RCC	Regional control centre
RIP	Regional Investment Programme (division)
RPA	Risk potential assessment
RSA	Road safety audit
RTMC	Regional technology maintenance contractor
SGAR	Stage gate assessment review
SHARE	Highways England's records management system
SM	Smart motorways
SMP	Smart Motorways Programme (division)
SofS	Secretary of State for Transport
SRO	Senior responsible owner
TLG	(Operations) Technical Leadership Group
WebTAG	(DfT's on line) Transport analysis guidance

Contents

About this handbook

On 1st April 2008 we launched the project control framework in our Major Projects directorate. The framework sets out how we, together with the Department for Transport, manage and deliver major improvement projects.

It is designed to ensure that we deliver road projects which meet our customers' aspirations in a cost efficient and timely manner.

This handbook provides an overview of the project control framework. It explains the key things you need to know in order to use the framework to manage major projects – those projects costing more than £10 million.

This handbook is one element of the materials that you will need to use the framework. It should be read in conjunction with:

a) The electronic project control framework community that defines the detail of what must be produced and done. This is available on Highways England's:
   - Way we Work intranet site; and
   - Supply chain portal extranet

   The Way we Work and Highways England's supply chain portal will be your primary tools for using the framework and managing projects through it. These electronic sites are updated frequently to ensure that the project control framework remains accurate and up to date and it is important for users to refer back to them regularly. Paper copies of the product matrix, individual product description pages or templates should not be printed or stored electronically for future use as this creates version control issues and risks obsolete templates being used.

b) The terms of reference for the Highways England investment decision committee (IDC) and the licence defined within the Highways England framework document. This defines the financial governance arrangements applying to all Highways England investments.

c) The Highways England sponsorship manual.

About the project control framework

The project control framework is a joint Department for Transport (DfT) and Highways England approach to managing major projects. It is designed to help us work together to develop and deliver major projects. It comprises:

- A standard project lifecycle
- Standard project deliverables
- Project control processes
- Governance arrangements

The framework is not just for project managers within Highways England's major projects directorate. It is for everyone involved in developing and delivering a major road project. This includes DfT, other Highways England directorates and their suppliers.

Roles and responsibilities

There are seven key roles within the framework. These are detailed on page 57 but in summary they are:

Project manager

Manages the development and delivery of a major project. **This is a Highways England role throughout the framework**.

Senior responsible owner (SRO)

Has overall accountability for the delivery of the project ensuring the project remains focused on achieving its objectives. The SRO has the authority to make decisions concerning the delivery of the project within a certain delegation.

Sponsors

Sponsor roles at programme and at project level support, and are accountable to, the SRO.

For projects below the Tier 1 category (or projects that are novel and / or contentious irrespective of their value), the SRO delegates much of their responsibility to the Project Sponsor, who will chair the Project Committee.

The DfT sponsor

Has overall ownership of the transport problem that is being addressed by the project. They are accountable for ensuring that the project provides the right solution to that problem. **This is a DfT role throughout the framework** but is only applicable to tier 1 or novel and/or contentious projects irrespective of their value.

Senior users

Represent the interests of other Highways England directorates (for example the Operations directorate who will operate and maintain the road once the project has been completed and handed over) and act as focal points for liaison with their directorate.

Programme and project committees

The programme committee is the governance body responsible for driving a programme's progress and resolving issues that may compromise delivery/ realisation of outcomes and benefits.

About the project control framework

The project committee is accountable to the programme committee for the success of the project, and has the authority to direct the project within the remit set by the Programme committee as documented in the project business case.

Product consultees

Consultees (also sometimes known as product reviewers) are the key advisors or specialists whose input is likely to be required to help achieve the outcome of the product.

Engagement with them is critical to the successful delivery of a project and they should not simply be emailed to be asked for any comments.

The key is to identify these stakeholders early and engage with them often, utilising their expertise and maintaining frequent dialogue, holding face to face meetings wherever possible to obtain their feedback. Email should only be used as a last resort or as a practical way to share documents etc. Before circulating a product for consultation, it is vitally important to understand why each consultee is being contacted and their relevance to individual projects or programmes.

The core principles of the framework

The lifecycle

- All major projects follow a **standard lifecycle divided into stages**
- A project can only be in one stage of the lifecycle at any point in time
- The stages **align with key decision points** in the project's development and delivery i.e. the stage start and end points are all based around key milestones. See figure 4 on page 14.
- There is a **clear process for moving between stages**

The project deliverables

- **The framework focuses on what needs to be delivered** by a project within each stage of the lifecycle
- **The project's deliverables are called products**, for example a business case, an environmental management plan and a project management plan are all products
- **Each product has a standard product definition** describing its purpose, the content and quality criteria

About the project control framework

- There are clearly **defined roles and responsibilities** for product production, sign off and consultation
- The **product matrix defines which products are needed and at what stage(s) of the lifecycle they need to be produced**
- **As a general rule products tend to be mandatory** because they are a requirement of either legislation, standards or best practice / standard project management techniques. However, users are actively encouraged to identify products which may genuinely not be required and to engage with specialists to ensure that whatever is produced is proportional to the needs of their individual projects or programmes.

  If streamlining opportunities are identified and agreed during the collaborative planning process, they should be recorded in the stage management plan. This is outlined in more detail on page 24.

Processes

- Are only specified where:
  - They are statutory
  - They are needed to operate the project control framework
  - There is clear consensus that there is a single, best process that should be followed
- Where there is already established best practice process and guidance this sits with the project control framework. For example, the Design Manual for Roads and Bridges is linked throughout the framework where appropriate.

Governance

- The project control framework exists within the context of governance arrangements defined by the terms of reference of the IDC

Flexibility

- The project control framework is intended to be used flexibly within the context of these principles.

Major road projects

Major road projects

All major road projects are progressed through the project control framework which is split into three phases as shown below.

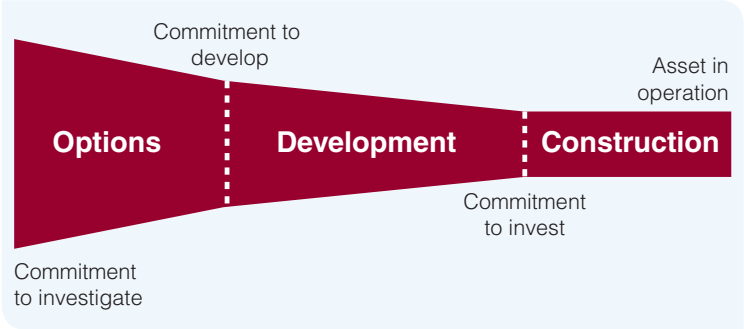

Figure 2: The three phases of the PCF

Options phase – identifies the preferred road solution to the transport problem. By the end of the phase there is certainty that, for example, the project will involve widening along a specific route.

Development phase – focuses on the design of the preferred solution taking it through the necessary statutory processes up to the point where a decision to commit to invest in building the road solution can be made.

Construction phase – is where the road solution is built, handed over for operation and the project is closed down.

Core principles

- Entry into each phase is subject to the approvals set out in Figure 8 on page 51.
- Funding for the project will typically be approved on a phase by phase basis but may sometimes be approved on a stage by stage basis depending on the project or programme specific requirements.
- Projects may drop out of the lifecycle at any point up to the commitment to invest if they fail value for money, affordability or other criteria.

Strategy, shaping and prioritisation

It is assumed that before a project enters the project control framework it will have completed a feasibility study during a strategy, shaping and prioritisation stage. Key activities in this pre-project phase (PCF stage 0) include:

- Identification and prioritisation of potential transport issues
- Shaping, investigation and assessment of the viability of transport scheme solutions to the problem, including road network solutions
- The initiation of a major road project (if deemed the most viable solution to the transport issue)

The Major Projects lifecycle

Major Projects lifecycle

Projects can only be in one stage of the lifecycle at any point in time but the framework is designed to be flexible and where justifiable, activities can be brought forward or moved back.

As the stages are aligned to specific milestones it is not physically possible to overlap them. Where justified and formally approved, work can potentially be started early and at risk on some products or activities more commonly associated with later stages in the process - but this does not constitute commencement of the next stage.

In most cases projects move through all seven stages in turn. However some stages may not be required depending on individual project circumstances and the requirements for single option projects are outlined in more detail on page 15. Where stages are combined or omitted:

- This must be agreed with the SRO or Sponsor as appropriate in advance.
- The project manager must agree with the SRO/ Sponsor and relevant specialists what to do with the deliverables required at that stage – in general, their delivery should be moved into another stage if they are still appropriate to the project.
- A record of this agreement must be documented in the Stage Management Plan.

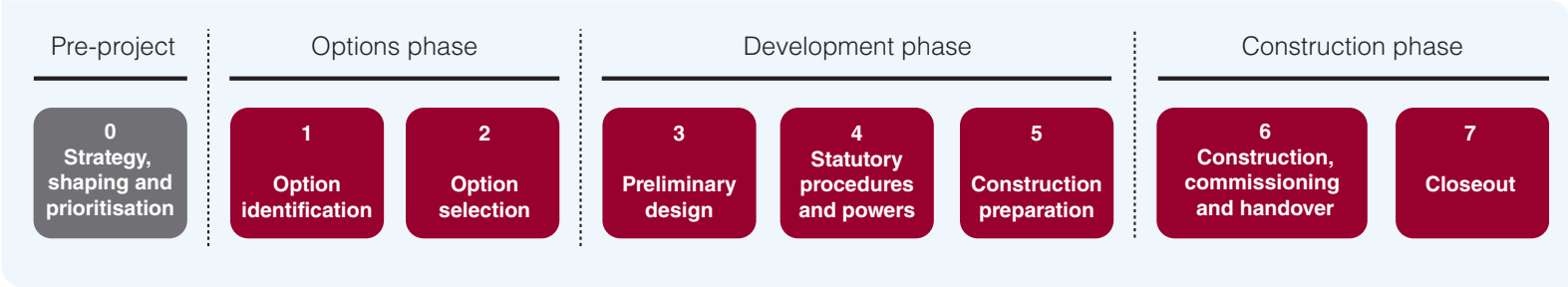

Figure 3: Major Projects lifecycle

The Major Projects lifecycle

The stages are:

0 Strategy, shaping and prioritisation	Identification and prioritisation of potential transport issues
	Shaping, investigation and assessment of the viability of transport scheme solutions to the problem, including road network solutions
	Produce a strategic outline business case
	The initiation of a major roads project (if deemed the most viable solution to the transport issue)
1 Option identification	Identify options to be taken to public consultation
	Assess options in terms of environmental impact, traffic forecasts and economic benefits
	Refine the cost estimate of options (including an allowance for risk)
2 Option selection	Carry out public consultation including exhibitions
	Analyse comments received and select a preferred option
	Refine the cost estimate for preferred option (including allowance for risk)
	Refine the environmental impact assessment, traffic forecasts, and economic benefits following public consultation if required
	Produce an outline business case
	Announce the preferred route
3 Preliminary design	If early contractor involvement procurement method selected, appoint contractor
	Carry out surveys (such as topographical, geotechnical, environmental)
	Undertake consultation, complete consultation report and resolve or rebut outstanding issues
	Complete and freeze the preliminary design of the preferred route
	Prepare orders (Planning Act 2008 or Highways Act 1980) as appropriate
	Complete the environmental assessment and prepare the environmental statement
	Agree initial target cost with ECI contractor (if applicable)

continued

The Major Projects lifecycle

4 Statutory procedures and powers	Publish notice of acceptance of Planning Act 2008 development consent order and notice of Highways Act 1980 orders and environmental statement as appropriate (exhibitions may be considered for Highways Act 1980 orders)
	Arrange public inquiry for Highways Act 1980 orders (if required)
	Under the Planning Act 2008 the Planning Inspectorate will decide on the preliminary meeting and examination of the application for development consent. We will need to register and comment as an interested party (the developer)
	Present evidence and rebuttals to objections for Highways Act 1980 orders at inquiry
	The planning inspectorate panel or inspector will make recommendations to the secretary of state
	Issue secretary of state's decision letter confirming a made DCO or HA80 orders for publication
5 Construction preparation	Respond to any high court challenges (if any)
	Obtain approval to any advance works or advance statutory undertakers diversions
	Agree costs of construction with the contractor. If ECI is procurement method, agree final target cost
	Produce the final business case
	For Planning Act 2008 schemes place details of land to be acquired on deposit and publish a notice to say where these can be inspected
	Obtain notice to proceed
6 Construction, commissioning and handover	Make general vesting declaration or issue notices to treat and enter and take possession of land (if applicable)
	Complete detailed design
	Construct and commission scheme
	Hand over asset for operation with as-built drawings and health and safety file
	Open scheme to traffic
7 Closeout	Agree final account with contractor
	Contractor completes outstanding works (or re-work)
	Complete a review of project delivery
	Initiate post opening project evaluation (POPE) process

The Major Projects lifecycle

Summary of the stages for traditional projects

Stage number and name	When should the SGAR take place?	High level overview of the stage
0 - Strategy, shaping and prioritisation	Prior to entry into the RIS and/or Project Control Framework.	Potential transport issues are identified and prioritised. Feasibility studies, initial analysis and appraisal are conducted to assess the viability of transport scheme solutions to the problem, including road network solutions.
1 - Option identification	Prior to non statutory public consultation.	Traffic modelling and economic assessment is undertaken on a number of options (ie potential road solutions to the transport problem). A robust traffic assessment is needed to tell whether a scheme will work now and in the future, to assess whether the proposed solution will mitigate an identified problem and whether there are any consequential impacts, for example on the environment. Economic appraisal of transport schemes is required in order to assist decision-makers prioritise between schemes and options and ensure that value for public money is achieved. A key output is the Technical Appraisal Report which ensures decisions on which options to consult the public on are supported by robust assessment and data.
2 - Option selection	Prior to the preferred route announcement.	A variety of online and public events are held at which the public are consulted and their views on the potential options are taken into account. Further refinements will be made to the traffic modelling and economic assessment and by the end of the stage, a decision on which option to progress is made and a public announcement is made on this preferred route.
3 - Preliminary design	Prior to submitting the Development Consent Order (DCO) application to the Planning Inspectorate or producing orders under the Highways Act 1980.	In order to produce any orders required under the Planning Act 2008 (DCO) or the Highways Act 1980, the scheme will need to be designed to the required standard to ascertain and justify the land needed and report on the impacts involved and propose mitigation. Topographical, geotechnical and environmental surveys are undertaken to help develop the design of the selected route. Assessment and design work takes place to develop the results of the surveys into the design in the order(s). Projects carry out further public consultation on the proposed design covered by the order(s), including the statutory consultation required under the Planning Act 2008. Documents supporting the relevant order need to be produced; where a DCO is needed these are likely to be numerous, for example a Consultation Report. In advance of the order submission, the preliminary design will need to be frozen, and all orders, plans, land requirements and assessment work to be in accordance with this design freeze.
4 - Statutory procedures and powers	Once the Secretary of State's decision on the Development Consent Order or draft orders (as appropriate) has been received.	Dependent on the order sought (DCO or Highways Act 1980 orders), the scheme will progress through the relevant planning process, whether examination or potentially a public inquiry (where objections remain in the latter case). This is likely to involve hearings and supplementary submissions to the examination / hearing, the scale of which will be determined by the requirements of the examining authority / inspector(s) and – as such – cannot be covered by PCF products. In the case of a DCO examination, PCF Stage 3 products may need to be updated, eg the draft DCO, Book of Reference and the various sets of plans

The Major Projects lifecycle

Summary of the stages for traditional projects

Stage number and name	When should the SGAR take place?	High level overview of the stage
5 - Construction preparation	Prior to the issue of the Notice to Proceed.	Orders/development consent are confirmed and high court challenges are responded to (if any). Pre-construction design is completed in line with the results of the legal processes, in sufficient detail to enable the contractor to construct the project. Contracts are awarded and final construction costs are agreed with the contractor. Contractors are instructed to start construction by way of a Notice to Proceed. If compulsory acquisition powers are to be used to get on site, General Vesting Declaration documents / Notices to Treat and Enter will need to be prepared with allowance made for the statutory notice periods before works on site can commence. In the case of a DCO, pre-construction requirements will need to be discharged with the involvement of the relevant consultees defined in the DCO
6 - Construction preparation	Approximately three months after road opening to coincide with the production of the as-built documentation. Although not mandatory, many project teams also choose to hold an interim SGAR 6 prior to opening for traffic to ensure that key deliverables such as the safety products are in place and that the consent to implement process has been followed where appropriate.	The project is constructed and (where applicable) technology is tested and commissioned. The road is opened to traffic and handed over to Operations Directorate to operate and maintain.
7 - Closeout	Prior to formal closeout of the project.	The final account is agreed with the contractor. The contractor completes any outstanding works (or re-work), corrects any defects and ensures that any environmental mitigation measures are successful. A review of project delivery/benefits analysis is undertaken and lessons learnt are identified and shared. Any residual actions are identified and a plan for their completion is implemented before formal project close down.

The Major Projects lifecycle

Key decision points in the Major Projects lifecycle

The stages reflect the significant decision points in the project's development and delivery.

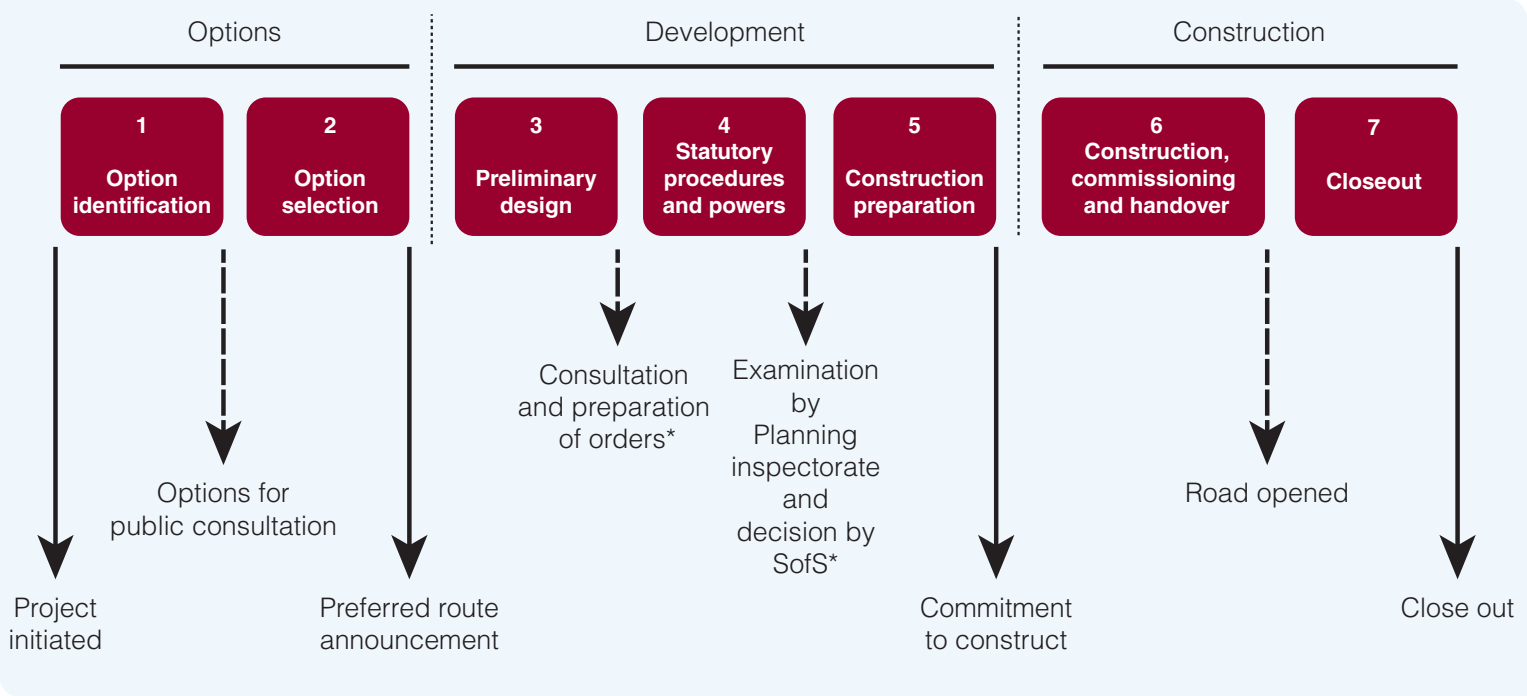

Figure 4: Key decision points within the Major Projects lifecycle

* Nationally significant infrastructure projects only. For projects under the threshold, Highways Act 1980 and Public Inquiry processes will apply.

The Major Projects lifecycle

Variations to the Major Projects lifecycle

The PCF is designed to be used flexibly and a revised lifecycle commencing in PCF stage 3 preliminary design has been developed for use on single option projects. A revised product matrix (available on the electronic PCF sites) is also in operation.

Single option projects

Single option projects are defined as follows:

a) Within the highway boundary and therefore with no requirement for land take or associated statutory processes

b) No requirement for an environmental statement

c) The route is already fixed ie an existing road is being modified.

NB Single option projects must meet the three criteria and should not be confused with projects that require land take or an environmental statement but only have one viable option.

The projects that are therefore most likely to fall within this category are:

- Online widening
- Controlled or smart motorways (including all lane running)

There is a common misperception that all smart motorway projects can adopt the revised lifecycle but this is only the case if they meet the criteria for a single option project ie no land take etc.

Taking the example of a smart motorway all lanes running project, it may have options with regard

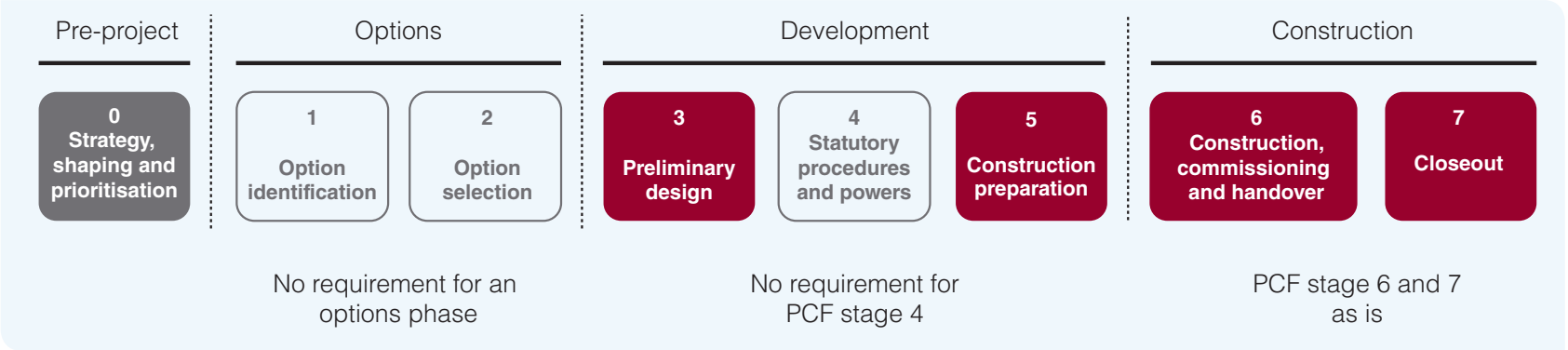

Figure 5: The revised lifecycle for single option projects (assuming no land take or need an environmental statement)

The Major Projects lifecycle

to the operating regime at specific locations (for example although through junction running is the design option there may be some locations whereby it is not appropriate) but this is not the same as assessing different routes or whether to widen or bypass as per the option identification and option selection stages of the traditional Major Projects lifecycle. It can therefore commence in PCF stage 3 preliminary design without the need for an options phase. The need for PCF stage 4 statutory procedures and powers stage is also negated as long as the project does not involve any land take or the requirement for an environmental statement.

The alignment of stage gate assessment reviews (SGARs) and design fixes on single option projects

Lessons learnt from the smart motorways programme identified that it would be helpful to future projects if SGARs were to be aligned with the design fixes and also specify which products are most relevant / required at each design fix.

The SGARs and Design Fix Products worksheet located on the Single Option Project product matrix sets out how the design fixes align to the SGAR process and which products are relevant to each.

Assumptions for adoption of the single option project lifecycle

It is assumed that before a project enters PCF stage 3 it will have previously obtained a commitment to investigate a single option such as all lane running or online widening. This will have been achieved either by the completion of a Strategic Outline Business Case during the strategy, shaping and prioritisation stage or by assessing options under the traditional PCF lifecycle before adopting the revised lifecycle.

It is also assumed that the project team will have agreed with their SRO or Sponsor as appropriate that it is appropriate to adopt a revised PCF lifecycle on their specific project. Additional early review should also be carried out jointly by Transport Planning Group and Strategy and Planning before MP agree to enter it into the stage.

Governance arrangements for single option projects

Approval of the development phase budget should be sought in the usual way in accordance with Figure 8 on page 51 prior to entering stage 3 preliminary design. Projects with a cost of £500 million or more or those that are novel and/or contentious irrespective of their value will also need to seek approval from the board investment and commercial committee (BICC) and HM Treasury.

Any projects with specific risks or issues identified in the Strategic Outline Business Case which may affect the decision to give a full development phase budget should be assessed to determine whether it would be more appropriate to apply for a limited initial Development Phase budget only, subject to prior endorsement of this approach by the SRO.

The Major Projects lifecycle

Independent assurance reviews for single option projects

As with any project, an updated risk potential assessment (RPA) and integrated assurance and approvals plan (IAAP) should be submitted to the Programme Assurance Team, detailing the specific assurance and approvals requirements. An Independent Assurance Review (see page 43) assessment meeting is held to identify which review should take place and at what point, to provide assurance of a robust business case, assess the delivery strategy and inform investment funding if appropriate.

The Major Projects lifecycle

Summary of the stages for single option projects

Stage number and name	When should the SGAR take place?	High level overview of the stage
When should the SGAR take place?	Prior to entry into the RIS and/or Project Control Framework..	Potential transport issues are identified and prioritised. Feasibility studies, initial analysis and appraisal are conducted to assess the viability of transport scheme solutions to the problem, including road network solutions.
1 – N/A	N/A	N/A
2 – N/A	N/A	N/A
3 - Preliminary design	After Design Fix 3 and/or the initial application of IAN 161/15 smart motorways (where applicable)	Fit to design. The operational concept is progressed to a preliminary design (design fixes 1-3 completed). Main activities include collation of existing asset data, commissioning of surveys and environmental assessment and the production of the Outline Business Case.
4 – N/A	N/A	N/A
5 – Construction preparation	Prior to Notice to Proceed	Fit to Build. The preliminary design is progressed to detailed design. Additional activities to the main design include ensuring consents are in place, public information exhibitions are held and the production of the final business case.
6 – Construction, commissioning and handover	Approximately three months after road opening to coincide with the production of the as-built documentation. Although not mandatory, many project teams also choose to hold an interim SGAR 6 prior to opening for traffic to ensure that key deliverables such as the safety products are in place and that the consent to implement process has been followed where appropriate.	The project is constructed and (where applicable) technology is tested and commissioned. The road is opened to traffic and handed over to Operations Directorate to operate and maintain.
7 – Closeout	Prior to formal closeout of the project.	The final account is agreed with the contractor. The contractor completes any outstanding works (or re-work), corrects any defects and ensures that any environmental mitigation measures are successful. A review of project delivery / benefits analysis is undertaken and lessons learnt are identified and shared. Any residual actions are identified and a plan for their completion is implemented before formal project close down.

Products and product matrices

Products

The project control framework focuses on what needs to be delivered at each stage of the project.

The deliverables which are produced are called products. For example, a construction phase plan, a business case or a ground investigation report are all products. They are the things we need to produce in order to plan, manage and progress a project.

Each product has a standard definition that specifies the product's:

- Purpose
- Content
- Quality criteria
- Roles and responsibilities relating to the product

For some products we may also include a mandatory process; templates; supporting topic information or guidance and links to other resources on the intranet and internet.

Many product definitions have been developed in line with current Highways England best practice process, guidance and standards. Where this is the case we will also link to these documents, for example, the Design Manual for Roads and Bridges is linked where appropriate.

A frequently repeated criticism of the PCF is that there are too many products but when challenged, users are usually unable to identify any that are genuinely superfluous because they are a requirement of either legislation, standards or best practice / standard project management techniques. A few examples are as follows (not an exhaustive list):

Legislation

- CDM Regulations 2015
- Equality Act 2010
- New Roads and Street Works Act 1991
- Planning Act 2008

Standards

- Design Manual for Roads and Bridges
- Interim Advice Notes (IANs)
- Traffic Signs Manual – Chapter 8
- WebTAG

Best practice and/or project management techniques

- Lessons Learnt
- Project Management Plan
- Project Schedule
- Risk Management Manual (Risk Register and Risk Management Plan)

Products and product matrices

Product production, consultation and sign-off

All products in the project control framework have a defined set of roles and responsibilities associated with them. These roles and responsibilities define who:

Produces the product	Generally, the person producing the product is free to choose who and how the product is produced provided it meets the criteria set out in the product definition. However, **if a product has a mandatory process then that process must be followed**. Evidence that the process was followed must be gathered and retained. In most cases the project manager is responsible for ensuring products are produced.
Is accountable for the product and signs it off	Every product has **one** single point of accountability and therefore **one** single final **sign-off** The person signing off the product is accountable for the product being fit for purpose. This means that the product has: – Been produced in line with the product definition content and quality criteria. – Identified consultees have been properly consulted.
Must be consulted in the production of the product	Consultation must take place as part of product development and **evidence of consultation must be retained.** There are three types of consultation: **For approval** – The consultee is asked to quality assure certain technical or operational aspects of the product and give approval. This includes for example, approving appraisal of the road solution by colleagues in the Highways England Professional and Technical Solutions directorate. However it also includes approval of other aspects such as traffic management plans – The product cannot be signed off as complete unless it has been approved by the identified consultees page 6. **For comment** – The consultee is asked to review the product and provide any comments. – These comments do not have to necessarily be acted upon. Whether they are taken into account is the decision of the person accountable for the product but reasons why should be documented. **For information only** – Consultees that wish to be copied in to specified products as they are developed but may not always have the capacity to comment and do not wish to be chased up for a formal response. They should therefore be invited to comment should they wish to but not be chased for a response.
The product must be distributed to	The product is distributed when sign off is complete. Evidence of distribution must be retained. Anyone who is consulted in the production of a product must be given a final copy of the product. Those named under the distribution column within a product definition are identified because they have not been involved in the production or consultation of the product but will have an interest in the final version of it. For absolute clarity those named on the distribution list do not wish to be consulted whilst the product is being developed, just sent a copy of the final version for their information after it has been signed off.

Products and product matrices

Product matrices

The product matrix defines which products are needed and when. If a product is required at a stage then it specifies if the product is:

Produced	The product is produced for the first time in the project lifecycle
Updated	The product is updated with up to date information but no new analysis, for example, the risk management plan is continually updated throughout the project lifecycle
Refined	As a project is developed and designed further analysis takes place reflecting the impacts of that design. Refining a product means adding detail as a result of further improved analysis to a product. For example, a cost estimate is progressively refined across the project lifecycle.
Reviewed	A review is carried out to confirm whether the product might need to be updated or possibly refined – although it is generally expected that no action is required and **review does not mean re-write**. For example, client scheme requirements generally remain stable throughout a project but it may be necessary to amend them in the event of any scope changes.

Figure 6 (page 23) shows an extract of the project control framework product matrix.

Products and product matrices

Critical products

Critical products are identified for each stage by way of amber colouring on both the product matrices and stage pages of the electronic PCF. These are products that are so critical to project/programme delivery in their own right that they will trigger an automatic red/amber outcome at the relevant stage end stage gate assessment review (SGAR) if they are not fully signed off.

Products that are not designated as critical remain just as important for internal assurance of projects/programmes and unless they are identified in your stage management plan as being legitimately not required, must still be completed for the SGAR. All products are important (particularly those that are legal requirements) but the purpose of critical products is to improve standards by identifying those products that simply must be fully complete before proceeding into the next stage.

A pragmatic approach should be taken at the SGAR when enforcing the automatic red/amber outcome, noting that there is a big difference between (for example) a product that has not been signed off by Transport Planning Group or Environment Group and that the Sponsor/SRO has not had sight of and a product which is 99% complete and simply requires minimal formatting or grammatical changes.

Product storage and retrieval

The ability to quickly and easily locate important project related documentation (for example safety critical products) electronically is extremely important for audit purposes.

An instruction was issued in August 2016 stating that 'all PCF products must be stored electronically in an appropriate location and hyperlinked to the IT system PowerSteering for ease of immediate retrieval' which remains valid today. Hyperlinks can be stored as URLs and so should be compatible with whichever system the products reside in.

A guide on where to save PCF products in Highways England's records management system SHARE is located on the front page of the electronic PCF community on the portal and it is important to ensure that all relevant documents are hyperlinked. Although a one page sign off sheet proving that a product was approved may be useful, the completed product itself must also be appended. Documents should also be finalised to make them a record in SHARE and avoid them being automatically deleted at a later date.

Products and product matrices

Product matrix

		Pre-project	Options		Development			Construction	
		0 Strategy, shaping and prioritisation	1 Option identification	2 Option selection	3 Preliminary design	4 Statutory procedures and powers	5 Construction preparation	6 Construction, commissioning and handover	7 Closeout
Scope	Client scheme requirements	Produced	Reviewed	Reviewed	Reviewed	Reviewed	Reviewed	Reviewed	
	Appraisal specification report	Produced	Refined	Refined	Refined				
Cost estimating	Order of magnitude estimate	Produced							
	Options estimate		Produced	Refined					
	Developing estimate				Produced	Refined			
	Final estimate						Produced		
Risk	Risk management plan	Produced	Updated	Updated	Updated	Updated	Updated	Updated	Updated
	Risk register	Produced	Refined	Refined	Refined	Refined	Refined	Refined	Refined

Figure 6: Product matrix extract

The columns across the top of the product matrix show all of the stages of the PCF. Users should read down the page to establish which specific products are required at each individual stage and whether they are to be produced, reviewed, refined or updated (page 21).

The rows down the left hand side of the product matrix show all of the products within the PCF. Users should read across the page to establish the requirement of each specific product at each individual stage.

Some products may be a requirement of one stage only and others may be a requirement of multiple stages depending on their purpose. The product requirements of each PCF stage are summarised into product checklists, which are used as part of the planning process and stage gate assessment reviews (page 37).

Products and product matrices

Product flexibility

All of the products on the PCF are on there for a reason, generally because they are a requirement of either legislation, standards or best practice/ standard project management techniques.

The framework pulls all of these requirements together into one easily accessible place for ease of identification and even if it was to be removed, project teams would still need to consider all of its requirements. However, very few projects would ever be required to complete all of the products as their applicability varies depending on whether the project is following the Planning Act 2008, Highways Act 1980 or is a smart motorway or tunnel and so on.

Users are actively encouraged to identify products which may genuinely not be required and to engage with specialists to ensure that whatever is produced is proportional to the needs of their individual projects or programmes.

Whether or not a product is produced is determined as part of the management of the stage. Project teams should review each product and establish for their own specific project whether it is:

a) required
b) fit for purpose and
c) whether the level of detail outlined in any supplied templates is appropriate for the size and complexity of their project

In some instances it may be acceptable to submit substitute products with the approval of the SRO/ Sponsor. For example, a section 278 agreement or Operations Directorate commissioning form would be acceptable substitutes for a client scheme requirements for those specific project types.

Where streamlining opportunities are identified and agreed during the collaborative planning process, they should be recorded in a stage management plan.

Stage management plans

The purpose of a stage management plan is to demonstrate that the delivery of products is robustly planned as an output from collaborative planning sessions, that desired outcomes are identified and understood and that ownership and accountability for product delivery is clearly defined in accordance with the three key principles of the PCF.

It is crucial that project managers take ownership of the development of the stage management plan and use it to inform the scope for their suppliers.

The stage management plan needs to be available on day one of the project, referred back to throughout the stage and developed for the next stage prior to each stage end SGAR. It is recommended that the best way to do this is for project managers to hold a half day workshop with their SRO/Sponsor and delivery team in the run up to each SGAR, during which the requirements

Products and product matrices

of the next stage will be robustly reviewed and formally documented in the stage management plan. Your local PCF assurance manager will be happy to attend the workshop and support you.

The stage management plan is not meant to be a weighty document in its own right. It poses a number of questions designed to help shape thinking and users do not have to provide a specific answer to every single question.

The output should be a plan / strategy demonstrating that the correct matrix and product set is being used and that the requirements of every product are understood in terms of:

- Whether it is needed and for what purpose
- Who needs to be involved in its development
- The level and complexity that it needs to go into
- When work needs to take place

Tips for the consistent and effective application of the PCF

Successful delivery of a large road project is a complicated and demanding challenge which needs to be expertly managed and it will not be achieved by simply producing documents and asking for comments on them.

The PCF is there to help project managers manage projects and the products are live documents designed to help projects to progress and for the range of issues identified in the documents to be managed. Those people that embrace the PCF and get the most out of it take a deep interest in what's in the products, whether they are an acceptable standard and what issues are being identified which need to be managed. They do this with a forward looking sense of what are the pitfalls and issues ahead which we need to address now?

If the PCF is approached as a paper based exercise where products are simply ticked off and put on the shelf, it will not be used in the way that is intended and no value will be added.

If users see themselves as mere post boxes sending products to consultees for comments and back again to their consultants, they will miss the point that the aim of the PCF is to empower project teams and aid delivery, not to unnecessarily hinder.

Please do

- See the PCF as a useful tool to facilitate delivery – not a barrier to it
- Think carefully about what **outcomes** products are designed to deliver, not just when they need to be produced
- Produce and sign off products early during the stage wherever possible to avoid a last minute rush in the run up to the stage gate assessment review
- Remember that the PCF did not introduce anything new – it merely formalised all of the existing documentation (much of it relating to statutory processes) that was being produced anyway

Please don't

- View the PCF as a hindrance or a box ticking exercise
- Apply it too rigorously or get bogged down in the detail – you will not fail a stage gate assessment review (SGAR) – (page 37) for producing a product in the wrong sized font.
- Focus solely on achieving a successful outcome at SGAR as although this is important, it should not be driving the project. Stage management plans should set out **how project objectives will be delivered within the scope in the most cost effective and appropriate manner using the PCF products to assist in the process**, not simply when products will be produced. Successful SGAR outcomes will then follow.

The three key principles of the PCF

1. Plan the coming stage properly focussing on what outcomes need to be delivered.

Proper planning is essential and fundamental to good project management. SGARs need to be balanced with equal focus on the stage that has just passed and the coming stage.

The PCF should be used to help deliver outcomes, not just products. The focus should be on the objective of the stage and what needs to be achieved, not just when products will be completed.

The word **framework** should be emphasised as templates can sometimes be followed too stringently. Project teams should review each product and establish for their own specific project whether it is required, fit for purpose and whether the level of detail outlined in any supplied templates is appropriate for the size and complexity of the project.

Any variations should be agreed with the SRO or Sponsor as appropriate at the start of the stage (not in the final run up to the SGAR) and be recorded in the stage management plan.

The most appropriate order of sequence between the stage gate assessment review, the investment authorisation process and independent assurance review should be determined as part of the stage planning process. This could be done as part of a SGAR (eg establish stage 2 requirements at SGAR 1) or as part of an independent assurance review assessment review meeting.

Project plans should include products but not be the sole focus, the emphasis should be on what each product is designed to deliver and not just be a box ticking exercise.

The implementation report for new standards is a good example of where the emphasis should be on what each product is designed to deliver. The template supplied is extremely basic but is designed to:

- Ensure integrated project teams are aware of any new standards that may have been introduced since their project started
- Ensure that the potential impact of any new standards are fully considered and understood
- Ensure that new standards are either adopted or departures from standards are sought as appropriate
- Ensure that Safety, Engineering and Standards directorate are kept fully consulted and informed on the impact of new standards on individual projects

The product is therefore not just about producing a piece of paper but should give confidence that any change of standards have been considered and incorporated into the design where practical and/or where cost savings may be achieved.

The three key principles of the PCF

2. Consultation is a vital component – not an afterthought

One of the most important areas to get right in terms of PCF is the consultation with product reviewers but it is usually the area that gets most overlooked. More PCF guidance has been written on this subject than any other but it consistently remains the biggest area for improvement.

There is often a misperception that the PCF is about e-mailing products around for comments but this is just one small element of the process and a poor substitute for face to face discussion.

Consultees are the key advisors or specialists whose input is likely to be required to help achieve the outcome of the product and this is most successfully achieved through early and regular liaison.

The key is to identify these stakeholders early and engage with them often, utilising their expertise and maintaining frequent dialogue, holding face to face meetings wherever possible to obtain their feedback.

Email should only be used as a last resort.

The most commonly repeated error with the PCF is where consultees are e-mailed unexpectedly in the run up to a SGAR with no prior warning or consideration as to why their comments are being sought.

Apply basic common sense before issuing a product for comments and identify why each individual reviewer's comments are important and what benefit their views will add to the product.

Or in other words don't just blindly follow the PCF because a product tells you to consult somebody, for example if a project does not have any structures then think carefully before demanding comments from your local structures advisor!

If a project does not have any significant technology aspects and traffic officers do not patrol the route, then it would be reasonable to expect Operations directorate to be less heavily involved than they would be on a complex smart motorway project. Again, early engagement is important to establish with them if, when and why they should be consulted. Early product consultation is the key to PCF success. Consultees should be identified at an early stage and told when and why their input will be required through the Stage management plan.

The three key principles of the PCF

An integrated project team should be established and include all key consultees. Full advantage should be made of named contacts such as senior users, who are familiar with the PCF and can advise who in their directorate need to be consulted on individual products.

Plenty of time for product review should be incorporated into project plans – it is not reasonable to expect consultees to comment on products that are sent to them shortly before a SGAR.

Product progress should be monitored at regular progress meetings and a last minute rush to get everything signed off should be avoided.

Project teams should review the content and quality of each product before it is circulated for comment. It is unfair to rely on consultees to pick up any errors.

There is no need to get all consultees to physically sign products off, just the person named under accountable and signed off by but evidence of conformity is also required from any consultees with 'For approval' after their name. This may take the form of an electronic minute or email as long as it clearly and unambiguously confirms the extent to which the product is fit for purpose and/or adheres to relevant guidance, procedures or legislation page 20.

The three key principles of the PCF

3. Eliminate waste and focus efforts where most needed

An often repeated criticism of the PCF is that there are too many products but it is designed to be flexible and users are actively encouraged to identify products which may genuinely not be required on their individual projects or programmes to ensure value for money and possible cost savings.

When pressed, users struggle to identify products that are genuinely not required but this will vary between projects / programmes and with careful consideration it may be possible to omit some. An alternative may be to combine products or move them between the stages if it is appropriate and there is good reason to do so, for example on a Design and Build project it may not be possible to finalise some of the stage 5 products until such time the contractor has been appointed in which case it may be appropriate to defer some of them until stage 6.

Where products can be omitted or combined, this should be agreed with the SRO or Sponsor as appropriate **at the start of the stage** and the justification noted in the comments column of the product checklist and Stage management plan.

Project teams are encouraged to consider whether they really need to outsource individual products or whether they could do all or some of it themselves.

Whether the level of detail outlined in any supplied templates is appropriate for the size and complexity of the project should be agreed with consultants before they produce anything.

Review does not mean re-write. If after review a product is still fit for purpose and does not require any further updating, time, money and effort should not be wasted re-writing it.

The PCF sets out the quality standard for what needs to be produced but there should be no issue if products are produced to an even higher standard if the project warrants it and it is providing value for money, for example more time spent on producing the risk register may ultimately result in greater cost savings. The key is to ensure that the SRO or Sponsor is content with whatever has been or will be produced.

It is important not to make SGAR packs too over complex. SGARs are not the place to present products as they should all have been signed off in advance of the meeting and there is no need for them to be expensively bound and laminated. The key SGAR document is the PCF product checklist and this usually consists of a handful of pages only. Paper copies of the product matrix, individual product description pages or templates should not be printed or stored electronically for future use as this creates version control issues and risks

The three key principles of the PCF

obsolete templates being used. The PCF is a live electronic site that is updated frequently and users should check back regularly to ensure that their products match the latest descriptions and templates. To help users keep track of any changes, they are publicised in both regular PCF newsletters and on the version control log.

In summary, PCF users are actively encouraged to:

- Trim away the fat from their products and avoid waffle and duplication
- Use the client scheme requirements as a central summary document to significantly reduce the size of some products and avoid having to repeat the same background over and over again
- Version control their documents and tell each individual reviewer why their comments are important and what benefit their views will add to the product
- Use the 'origins of PCF products' document to clarify why each product is required and where it originates from, often legislation or guidance

Regardless of whether projects are being taken forward individually or in programmes, the three key principles of the PCF remain equally applicable i.e.

1) **Plan the coming stage properly focussing on what outcomes need to be delivered.**
2) **Consultation is a vital component - not an afterthought.**
3) **Eliminate waste and focus efforts where most needed.**

Above all else - apply common sense!

Alignment of the project control framework with a programme approach to delivery

Although the PCF is designed for project delivery, its basic principles remain appropriate for a programme approach to delivery and its products largely continue to relate at both a project and programme level.

What is important is an even greater emphasis on planning and those projects / programmes that will be most successful are those that take the time to map out a strategy for the best way to navigate their way through the existing framework.

Regardless of whether projects are being taken forward individually or in programmes, the three key principles of the PCF described in detail in this handbook remain equally applicable i.e.

- Plan the coming stage properly focussing on what outcomes need to be delivered.
- Consultation is a vital component – not an afterthought.
- Eliminate waste and focus efforts where most needed.

Smart motorways programme (SMP)

Smart motorways tend to lend themselves most easily towards programme management principles where projects can often be packaged into programmes. Within these programmes, sub programmes can be formed so that groups of projects can be advanced together in tranches. Where appropriate, a number of techniques can be employed on each tranche which include:

- Delivering activities up to design fix 1 on each sub programme using a programmatic approach
- Utilising joint traffic models.
- Holding joint and / or programme level stage gate assessment reviews.
- Reviewing the PCF product list and categorising them as follows:
  - **Project specific products** – For example individual projects are likely to still require their own Health and Safety File, Geotechnical Design Report and As-Built Documentation.
  - **Programme products** – For example programme products covering multiple projects could potentially be developed for the Value Management Plan, Procurement Strategy and Risk Management Plan.
  - **New products required** – For example a Programme Risk Register is likely to be required to consolidate the project risk registers and identify Programme Level risks in addition to the project specific risk registers.

Alignment of the project control framework with a programme approach to delivery

Regional investment programme (RIP)

RIP projects can be harder to group together for a variety of factors including their geographical proximity to one another, their scope and design requirements, whether they have different suppliers and contractors and the speed at which they are progressing through the PCF stages.

However, there are examples (such as the package of multiple different options being considered along a long section of the A47) where the same principles outlined against the smart motorway projects above can potentially be applied and project teams are encouraged to consult the PCF team to help develop individual strategies for navigation through the existing lifecycle.

There are also other examples where a 'programmatic approach' is being adopted on packages of projects which are progressing at different speeds and with different suppliers but where a collaborative and consistent approach is being taken in terms of sharing lessons learnt and where specific individuals are producing similar PCF products across multiple projects to maximise efficiency and reduce duplication of effort.

Complex infrastructure programme (CIP) and National infrastructure programme (NIP)

These divisions have fewer but much larger projects with vastly differing requirements and therefore less scope for overarching programme management.

However, teams work closely together to share knowledge, experience, resources, procedures, best practice and lessons learnt and to enable the most efficient passage of each project through the process.

Regular collaboration helps to facilitate the successful navigation of each project through the lifecycle, ensure a consistency of approach and ease the burden at the stage gate assessment reviews.

Alignment of the project control framework with a programme approach to delivery

Best practice for all projects/programmes

Before entering a new phase of the PCF, ensure that you have completed the actions below. Most are best done right at the very start of the lifecycle but it is never too late to adopt the following:

- Where appropriate, identify your programme. It is important to recognise that every programme will vary depending on its specific requirements but the first step is to identify suitable projects that could be advanced together in a programme.
- Use the Major Projects Lifecycle Process Flow Maps (accessible via the front page of the electronic PCF Communities) to identify opportunities for accelerating the delivery of your project/programme and to ensure a consistency of approach.
- Develop and agree your strategy for the best way to navigate your project or programme through the PCF lifecycle with the PCF Team.
- Read this handbook and The PCF Best Practice Planning and Consultation Process guidance.
- Request access to the MPPCF community on the Supply Chain portal for your suppliers.
- Hold a PCF collaborative planning workshop and produce a stage management plan. PCF collaborative planning workshops are an effective forum for bringing together key members of the integrated project team from Highways England and its suppliers so that everybody can understand and agree who is going to do what on their project/programme during the next phase of the PCF lifecycle.

  Workshops often start with the standard 'Introduction to PCF' training and then move on to project / programme specific issues, giving attendees the opportunity to ask questions and challenge the inclusion of any products where appropriate.

  Feedback from workshops to date has been extremely positive as attendees receive the same consistent messages at the same time, have the opportunity to raise questions and understand and agree the need for every product, identify who is going to take responsibility for developing each product and establish timescales for their delivery.
- Put the three key principles of the PCF at the forefront of everything you do:
  - Plan the coming stage properly focussing on what outcomes need to be delivered.
  - Consultation is a vital component – not an afterthought.
  - Eliminate waste and focus efforts where most needed.

How stages are managed

Stages are managed on a plan; do; review; basis.

Plan: before the stage	Identify which products need to be produced during the stage at a collaborative planning workshop
	Ensure that the IT system PowerSteering is updated so that the product requirements match the most recent version of the product matrix
	Identify any products that are not appropriate to the project and record justification for not producing
	Produce a Stage Management Plan
	Agree the Stage Management Plan with the SRO or Sponsor as appropriate
Do: during the stage	Manage the stage against plan
	Produce products
	Consult on the products
	Get product sign-offs
	Record actions taken and store documents properly in SHARE
Review: at the end of the stage	Review delivery of products against plan and account for any variance
	Review time and cost against plan
	Undertake stage gate assessment review (page 37)
	Obtain necessary investment authorisation
	Undertake independent assurance review (if necessary)

Project assurance and governance

Governance of projects is provided through:

Project assurance

Project assurance provides the basic framework of controls that assure:

- the project is being managed and controlled as directed by the SRO
- basic standards are being followed
- the project is well-managed

The project assurance controls within the project control framework are:

- regular reporting (right)
- sign-off of products as they are produced (page 20)
- stage gate assessment reviews (page 37)
- independent assurance reviews (page 43)

Regular reporting

The Major Projects Programme Hub defines and maintains a schedule of regular reports that must be completed according to the schedule. The project manager is responsible for completing the reports on time.

Project assurance and governance

Stage gate assessment reviews

Stage gate assessment reviews provide basic assurance that:

- The stage is complete and is within tolerance
- The project control framework has been followed
- The project is ready to proceed to the next stage, subject to investment authorisation

It is an evidence-based review that is intended to draw on documentation and activities that the project team have already produced.

All projects must complete a stage gate assessment review:

- At the end of every project stage as part of the managing stage boundaries process (page 71)
- Every 12 months if a project stage is planned to last more than 18 months (see tips for a successful interim SGAR on page 42)
- Prior to seeking investment authorisation to move into the next phase (page 50)

All stage gate assessment reviews must be planned at the project outset and must be included in the integrated assurance and approvals plan, project schedule and project management plan.

This section provides a summary of stage gate assessment reviews. The Way we Work site provides detailed information regarding process, outcomes and how they are undertaken.

Who attends the stage gate assessment review?

Attendance at the stage gate assessment review should be as follows:

Minimum mandatory quorom
SGAR Chair - Either SRO (Tier 1 or novel and/or contentious projects irrespective of their value) or Sponsor as appropriate
Project manager
PCF manager or representative

Important but not mandatory
Senior users (as appropriate)
Highways England project team representatives (as appropriate)

Stage gate assessment review attendance may only be delegated in exceptional circumstances with the agreement of the Chair and cannot be undertaken by correspondence.

Suppliers are not invited to stage gate assessment reviews as the project manager is expected to be able to answer any questions posed.

Project assurance and governance

What is assessed in a stage gate assessment review?

For the stage being completed, the stage gate assessment review confirms that:

- The risk potential assessment has been reviewed and updated
- The products are approved and signed-off
- Any variance from the planned products are understood
- Cost and time performance are within acceptable tolerances
- There is evidence that project committee meetings have been held and plans, risks and issues have been regularly reviewed
- Lessons learned have been captured for the stage
- Documents have been properly stored in SHARE

For the next stage the stage gate assessment review confirms that:

- The project manager has identified in a stage management plan which products will be delivered
- Risks associated with any proposed stage derogations* are identified and assessed
- There is a plan and cost estimate for delivering those products
- The resources needed to deliver the plan have been identified and a plan is in place for securing the resources

The review does not:

- Seek to review every single product produced for the stage. This is done as part of the quality assurance when products are signed off during the stage (page 20)
- Make any assessment of the overall management of the project; this is done by the independent assurance review. (page 43)
- Make any assessment of the continued need for the project; this is done by the relevant decision maker in accordance with Figure 8 on page 51

Preparing for a stage gate assessment review

Stage gate assessment reviews are intended to be low cost and minimally disruptive as all products will have been produced, consulted on, approved and signed off in advance – keep this in mind when participating in a review.

Prior to the stage gate assessment review, the PCF Assurance Manager will carry out a quality assurance review to verify that the project is actually ready to hold one.
This review assists the SRO / Sponsor as

* A deviation or exemption from a rule or law.

Project assurance and governance

appropriate in making an overall assessment as to whether the project is ready to move to the next stage. The SRO / Sponsor can ask for additional products to be brought to the review. For example they may wish to look at those products on the checklist which have not been completed.

Project managers should also consider what other key documentation might need to be brought to the review. For example, project managers need to be prepared to evidence that all products have been signed off and that plans, risks and issues are regularly reviewed and updated. This might include sign off sheets for products and minutes from team/progress meetings.

Products looked at as part of the quality assurance review will vary depending on the SGAR but key documents that will almost always be included are:

All SGARs including interims:

- Stage management plan
- Completed product checklist for the current stage which must:
  - Be generated using PowerSteering and include all products listed on the most recent PCF product matrix
  - Give a clear account of current product progress, when sign off is expected to happen if it hasn't already and by whom, who has been consulted and any other relevant comments – for example a clear explanation as to why a product is not applicable to your specific project / programme
- Previous SGAR certificate with evidence that all actions have been completed
- Project schedule
- The risk register

Also required at full stage end SGARs (not applicable for interims)

- Product checklist for the next stage (which must be generated using PowerSteering and identify the products to be produced with baseline dates for completion)
- Cost estimate for the next stage
- End of stage report
- Business Case
- Safety Plan and Combined Safety and Hazard Log Report products, fully signed off by all consultees on the specific templates provided
- Certificate of compliance from the Operations technical leadership group (stage 3, 5 and 7 only)
- Consent to Implement process certification, fully signed off prior to open for traffic by all consultees on the specific templates provided (stage 6 only)

Project assurance and governance

Holding the stage gate assessment review

All stage gate assessment reviews must have a chair (usually the senior responsible owner for Tier 1 and/or novel or contentious projects irrespective of their value or the Sponsor for all other projects) who is accountable for determining the overall outcome of the review.

It is up to the chair to determine the structure of the review, the role of the reviewers and what specific questions might be asked to determine the outcome of the review.

However as an example of how the review might be held, the initial focus will be to review the product checklist for the stage. Where it shows all products are complete reviewers might ask questions to test this. Where the product checklist is incomplete reviewers will want to know the cause, what impact it has on the project progressing and what actions must be undertaken to ensure its completion.

In reviewing the current stage reviewers will also seek to understand how well change risk, cost and time are being managed on the project. This may for example, involve reviewing evidence of current risk register and change log.

The final part of the review then looks forward to see how prepared the project is to move to the next stage. This includes reviewing and agreeing the product checklist and stage management plan for the next stage.

In terms of behaviours, when holding the review:

- The focus of the review should not be about criticism, put-downs or point scoring
- The review should not be seen as something which will always stop a project moving to the next stage. In most cases, if products have been complete and plans are in place for the next stage, the review simply provides the project manager and SRO or Sponsor as appropriate with confidence that they can continue to progress the project (subject to investment authorisation) and that it is supported by their peers
- The review needs to create a positive environment where open and transparent discussions can take place
- Reviewers should not seek to delve into the detail within individual products. This will already have been done as part of the sign off of that product
- Reviewers are not there to determine if the project is still the right project to invest in. The focus must be on whether a project manager is complying with the framework

Project assurance and governance

Outcome of the stage gate assessment review
There are four potential outcomes:

Outcome		Basis for decision
Green	Proceed to next stage.	All products complete and quality/progress validated. Minimal actions have been identified and there is a clear plan in place for delivery of the next stage.
Amber	Proceed to next stage, but complete certain products or actions Report back on completion within a set timescale Chair to decide if follow up meeting is required or evidence of completion can be done via correspondence	Outstanding products and actions can be completed within a reasonably short period and identifiable time-scales which will not be programme critical or impact statutory or safety processes.
Red/ Amber	Do not proceed to next stage until required products and actions have been completed Then repeat the stage gate assessment review	The outcome of further work cannot be predicted or delivery is in doubt. Products critical to the successful delivery of the project are incomplete – for example no project is permitted to proceed into construction or open for traffic without demonstrating that the Safety Plan and Combined Safety and Hazard Log Report products have been signed off by all consultees on the specific templates provided.
Red	Do not proceed – stop	Factors critical to success cannot be resolved or outside actions require the project to stop at that point.

The outcome of the review is recorded on the stage gate assessment review certificate, including any agreed actions. By signing this certificate the review also provides sign off that the product checklist and schedule for the next stage has been completed and agreed.

Where the project is awarded an amber outcome it is at the discretion of the chair to determine how assurance is provided that outstanding products and actions are complete. This can be done by a follow up meeting or correspondence. The outcome of the review and the agreed actions must be recorded in the stage gate assessment review certificate.

Where a project is awarded a red/amber outcome a full stage gate assessment review must be repeated and another certificate produced.

NB SGAR outcomes may be downgraded retrospectively if evidence cannot be provided that any actions awarded have been satisfactorily completed.

Project assurance and governance

Tips for monitoring, booking and running a successful interim stage gate assessment review

- Whenever a stage is expected to span 18 months or more, interim SGARs should take place a year after the last full stage end SGAR. If the current stage is likely to take, say, 15 months, there is not a requirement to hold an interim after one year as the full stage end SGAR will occur three months later, unless of course the SRO or Sponsor as appropriate specifically wants to hold one.
- The purpose behind an interim SGAR is to hold a stock take of progress to date and to ensure that all products have either been produced or are on track to be produced by the end of the stage. The outcome that is awarded is a prediction of how the project is likely to fare at its full stage end SGAR based on evidence to date, and so even if no products have been fully completed or signed off, a green outcome could still be awarded if the SRO/Sponsor was confident and reassured that everything was on track to be completed by the full stage end. However, if there are any causes for concern at all at this point, an amber outcome should be awarded to highlight this.
- Interim SGARs can be held at any time at the discretion of the SRO/Sponsor to provide assurance and to 'bank' any products that have already been completed.
- The Planning Act 2008 introduced the requirement to carry out pre-application consultation and it is strongly advised that an interim SGAR should be held during PCF stage three prior to entering into the pre-application consultation process, to establish if the required products have been completed and to assess readiness to proceed.
- As SGAR 6 usually takes place approximately three months after road opening to coincide with the production of the as-built documentation, many project teams opt to hold an interim SGAR 6 prior to opening for traffic to ensure that key deliverables such as the safety products and consent to implement process are in place.

Project assurance and governance

Independent assurance reviews (IAR) – formerly known as OGC Gateway Reviews

An independent assurance review is a 'peer review' in which independent project managers from outside the project use their experience and expertise to examine the progress and likelihood of successful delivery of the project.

An independent assurance review provides assurance and support to the senior responsible owner that:

- Suitable skills and experience are deployed on the project
- All stakeholders understand the project status and issues
- There is assurance that the project can progress to the next phase
- Time and cost targets have a realistic basis
- Lessons are learned
- The project team are gaining input from appropriate stakeholders.

Independent assurance reviews are a mandated assurance process for all publicly funded major projects, although not all reviews will apply to all projects. Sponsors and project managers should engage early with Programme Assurance to agree which independent assurance reviews are require and when. The risk potential assessment (RPA) should be submitted 12 weeks prior to the expected review date to ensure effective planning, coordination and delivery (eg reviewer resourcing, stakeholder availability)

All major projects should usually undertake an independent assurance review as shown in the table on the next page.

Independent assurance reviews are undertaken as part of the managing stage boundaries process (page 71).

Integrated Assurance and Approvals means having a joined up approvals and assurance regime in line with organisational and client requirements , that is appropriate to the risk level, is planned and coordinated and is owned by the SRO/Sponsor. This should be defined and explained in the integrated assurance and approvals plan (IAAP). The IAAP details IARs, SGARS, IDC milestones as well as other key activities. It should also outline when and why a particular stage review is not taking place eg single option, combined, accelerated stages etc.

Additionally the IAAP should detail outcome requirements such as responses to IAR recommendations and SGAR actions with link to action plans. In the case of an Amber / Red IAR outcome being awarded, an Assurance of Action Plan review (AAP) may be required 3 months following the IAR. The IAAP also links to the RPA form which should be reviewed/updated at the same time as the IAAP itself.

Project assurance and governance

IAR delivery confidence and the IAAP are a key part of the management case assessments that inform investment decisions. Programme Assurance team performs the Management Case subject matter advisor (SMA) role, – combining all of the SMA comments on an IDC submission including IAR outcomes, highlighting key issues that IDC will consider. Programme Assurance will not recommend the granting of funding without an IAR in place. IARs are therefore aligned to key IDC decision points.

IAR outcomes and report findings and trends are reported to the Audit and Risk Committee where appropriate intervention is considered.

Independent assurance review	Major project phase/stage
1 Business justification	Entry to the options phase (undertaken on behalf of DfT) (option identification stage)
2 Delivery strategy	Entry to the development phase (preliminary design stage)
3a Investment decision	Entry to the statutory procedures and powers stage
3b Investment decision	End of the construction preparation stage
4 Readiness for service	Prior to open for traffic or consent to operate
5 Operational review and benefits realisation	Following the post opening project review (POPE)

Project assurance and governance

Differences between an independent assurance review and a PCF SGAR

The independent assurance review is an independent peer review, usually over three to four days to examine the progress and likelihood/ confidence of successful delivery of the project.

The reviews are intended to support government projects to achieve their intended outcomes.

The independent assurance review provides assurance and delivery confidence rating to the senior responsible owner that:

- Suitable skills and experience are deployed on the project
- All stakeholders understand the project status and issues and are providing appropriate input
- There is assurance that the project can progress to the next phase
- There is a delivery confidence rating
- Lessons are learned
- Suitable governance procedures are in place and are being followed

Further detailed guidance on the Independent assurance review process is available for Highways England staff on the portal.

How does an independent assurance review differ from a stage gate assessment review?

A stage gate a stage gate assessment review focuses on the **quality** assurance of a project. Whilst it does not review individual products, it assesses whether the PCF is being followed.

By definition this means the assessment of whether products have not only been completed, but also signed off as being fit for purpose, having followed the correct procedures in producing the products. This includes ensuring the correct consultation has taken place on those products.

Detailed quality assurance is carried out as products are signed off but this review acts as the overarching quality assurance, assessing the completion of the product set for the stage as a whole.

The assessment of whether a project is ready to move to the next stage is largely based on assurance that the current stage is completed and sufficient plans, such as a next stage product checklist, stage management plan and schedule are in place to move to the next stage.

Project assurance and governance

The stage gate assessment review is very much an inward facing review, chaired by the SRO or Sponsor as appropriate. The SRO/Sponsor has the overall responsibility for determining the outcome.

The independent assurance review provides a **strategic** overview at **key decision points** in the project lifecycle tailored to the project's current situation, issues and needs. It is carried out by independent peer reviewers to provide assurance to the SRO/Sponsor.

The review focuses on overall confidence that the project will deliver its intended outcomes in line with its business case and places emphasis on lessons learned from other similar projects and from its own earlier stages. To be effective, the review team can request to see any member of the integrated project team and specialists/stakeholders external to the team. Stage gate assessment reviews do not make any such assessment. Whilst independent assurance reviews also assess readiness to move to the next stage, this assurance is based on different assessment criteria to the SGAR, in particular whether the right skills and experience are deployed on the project and whether stakeholders are actively engaged.

The table on the following page demonstrates these differences in more detail.

Project assurance and governance

	PCF SGAR	Independent assurance review
Timing	Two to three hour review	Three to four day review
Composition	Reviewers are member of project team/organisation. The review is chaired by the SRO or Sponsor as appropriate	Reviewers are independent of the project team/ organisation and appointed on the basis of their skills and experience
Assessment criteria	For the stage being completed, the SGAR confirms that: The risk potential assessment has been reviewed and updated; the products are signed-off; any variance from the planned products are understood; cost and time performance are within acceptable tolerances; there is evidence that project committee meetings have been held and plans, risks and issues have been regularly reviewed; lessons learned have been captured for the stage For the next stage the SGAR confirms that: The project manager has identified which products will be delivered; risks associated with any proposed stage derogations are identified and assessed; there is a plan and cost estimate for delivering those products; the resources needed to deliver the plan have been identified and a plan is in place for securing the resources	The review team's delivery confidence of the project is based on its ability to meet its objectives and is assessed by drawing on the evidence, interviews and experience of project delivery
Type of preparation material	Prior to the SGAR the project manager must compile a review submission pack comprising of a current monthly management report; end of stage report; completed project checklist for the current stage; product checklist for the next stage identifying the products to be produced with baseline dates for completion; project schedule; change control log; the risk register; funding for the next stage (via the scheme cost estimate)	The project team must make available all relevant key documentation to the review team plus any other documents that they request to enable them to make their delivery confidence assessment
Personnel	May vary but typically the SRO or Sponsor as appropriate, the project manager, PCF manager, senior users and any other interested parties. Contractors/consultants do not attend.	The external review team, the integrated project team and other key stakeholders as requested by the review team to be interviewed
Outcomes	**Green**: Proceed to next stage **Amber**: Proceed to next stage, but complete certain products or actions **Red/amber**: Do not proceed to next stage until required products and actions have been completed – then repeat the stage gate assessment review **Red**: Do not proceed – stop	The report, giving findings and recommendations with categories of critical, essential or recommended as necessary and the delivery confidence assessment giving a colour status and a statement from the review team outlining what they believe to be the likelihood of success

Project assurance and governance

Operations Technical Leadership Group (TLG)

All projects are required to present their operational solution to the Operations Technical Leadership Group to ensure best practice is applied across relevant programmes of work. This will have a particular focus on operational, safety and maintenance issues, helping projects to develop consistent approaches. The review by the TLG will enable the sharing of knowledge and will achieve consistency of approach across designs and encourage embedment and understanding across project teams.

Presentation to the TLG should be undertaken at stage 3 Preliminary Design, stage 5 Construction Preparation and stage 7 Closeout to demonstrate an efficient, safe design that meets the requirements of the appropriate standards and aligns and contributes to best practice. This will demonstrate that the projects can be safely operated, maintained and constructed, whilst driving continual improvement.

Although not mandatory, all projects should normally present in the feasibility stage. For single option projects (eg most SMP projects) this would be within Design Fix 1. For RIP, NIP and CIP this would normally be ahead of presenting options to the public. The paper and presentation at feasibility stage should be considered as a health-check and no certificate will be issued, although written records of feedback will be prepared. The guidance and templates for stage 3 are broadly applicable for use at feasibility stage but should be applied proportionally as appropriate for the nature of the project and the early stage of design .

Presentation to the TLG will benefit every project as the TLG will provide knowledge, advice and best practice. The TLG will also benefit as a result of project specific knowledge and learning being shared which can be circulated to other projects accordingly.

It is considered best practice to present approximately 2-3 months before an SGAR through design stages 3 and 5, so that the project is relatively advanced with a clear understanding of their design process and challenges, but will also provide the opportunity for the project to reflect on and incorporate feedback from the TLG review.

Whilst TLG's role is not to approve the project, operational solutions presented will receive 'endorsement' through a certificate of compliance which will identify key actions for completion prior to the end of the stage.

Project teams will need to demonstrate that they have attended the TLG and successfully completed all of the actions before they can advance to their stage gate assessment review.

Project assurance and governance

Summary of stage gate assessment reviews, independent assurance reviews and Operations Technical Leadership Group (TLG)

The diagram below shows the relationship between the lifecycle and the stage gate assessment reviews, independent assurance reviews and Operations TLG.

The diagram is indicative and the timing of the independent assurance reviews may vary depending on the project specific circumstances. The most appropriate order of sequence between the project control framework stage gate assessment review, investment authorisation process and independent assurance review should be determined as part of the stage planning process. This could be done as part of a SGAR (eg establish stage 2 requirements at SGAR 1) or as part of a independent assurance review assessment review meeting.

NB: Independent assurance review 4 should take place prior to open for traffic or consent to operate. SGAR 6 should take place approximately three months after road opening to coincide with the production of the as-built documentation. The diagram below shows when independent assurance reviews should normally be carried out for individual projects. Programmes only ever have independent assurance review 0, which are repeatable, as and when required throughout the lifetime of the programme. If in doubt please contact programmeassurance@highwaysengland.co.uk for further advice.

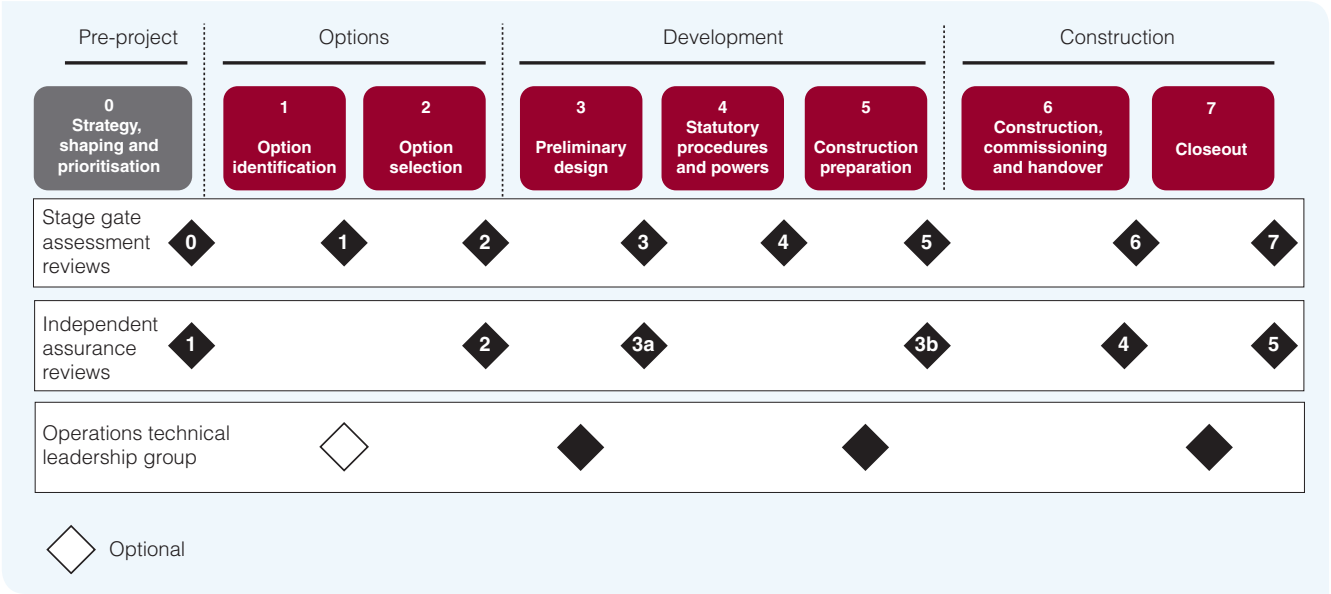

Figure 7: Summary of stage gate assessment reviews, independent assurance reviews and the Operations TLG

Project assurance and governance

Investment authorisation

All investment submissions must be approved by the appropriate investment board(s), which will vary depending on the value of the project. These are shown in Figure 8 on page 51. The specific requirement for investment authorisation and re-authorisation are determined by the Highways England framework document.

Investment authorisation is required at the beginning of each phase approving or noting (as a minimum):

- Budget and duration for the project phase (options, development and construction)
- Planned duration for the project as a whole, including planned start and end dates for the construction phase
- The outturn range estimate for the project as a whole (minimum, most likely, maximum)
- The expected Value for Money category for the project with the respective level of Analytical Assurance

As long as the project remains within the approved cost and timescale, there is no requirement to seek investment authorisation between stages other than those which correlate with the phase boundaries.

When to seek investment reauthorisation

In the event of a project forecasting to exceed its approved budget or deviating from the agreed programme or scope, an investment submission paper should be raised to the appropriate investment board(s).

Levels of clearance and authorisation

Phase by phase investment authorisation

All submissions must be reviewed by subject matter advisors (in accordance with the HM Treasury Green Book five-part business case model and Highways England framework document) before being submitted to the appropriate investment board(s). The appropriate level will depend on the overall cost of the project and whether it is novel and/or contentious irrespective of its value.

A stage gate assessment review must take place before the initial budget request at the beginning of the phase (but is not required if subsequent reauthorisation is sought). Confirmation of the outcome of this review must be included in any submission seeking clearances. If the outcome was not green, a brief explanation of the reason(s) why should be included.

An independent assurance review should also take place prior to the investment decision and submissions should detail what independent

Project assurance and governance

assurance has taken place so far and what is planned.

NB Prior to seeking investment authorisation, a stage gate assessment review and independent assurance review must be held.

Summary of investment authorisation decisions

The diagram below summarises the stages at which Highways England, DfT and HM Treasury decisions are required. Investment re-authorisation may also occur at any given point between the key investment decision milestones.

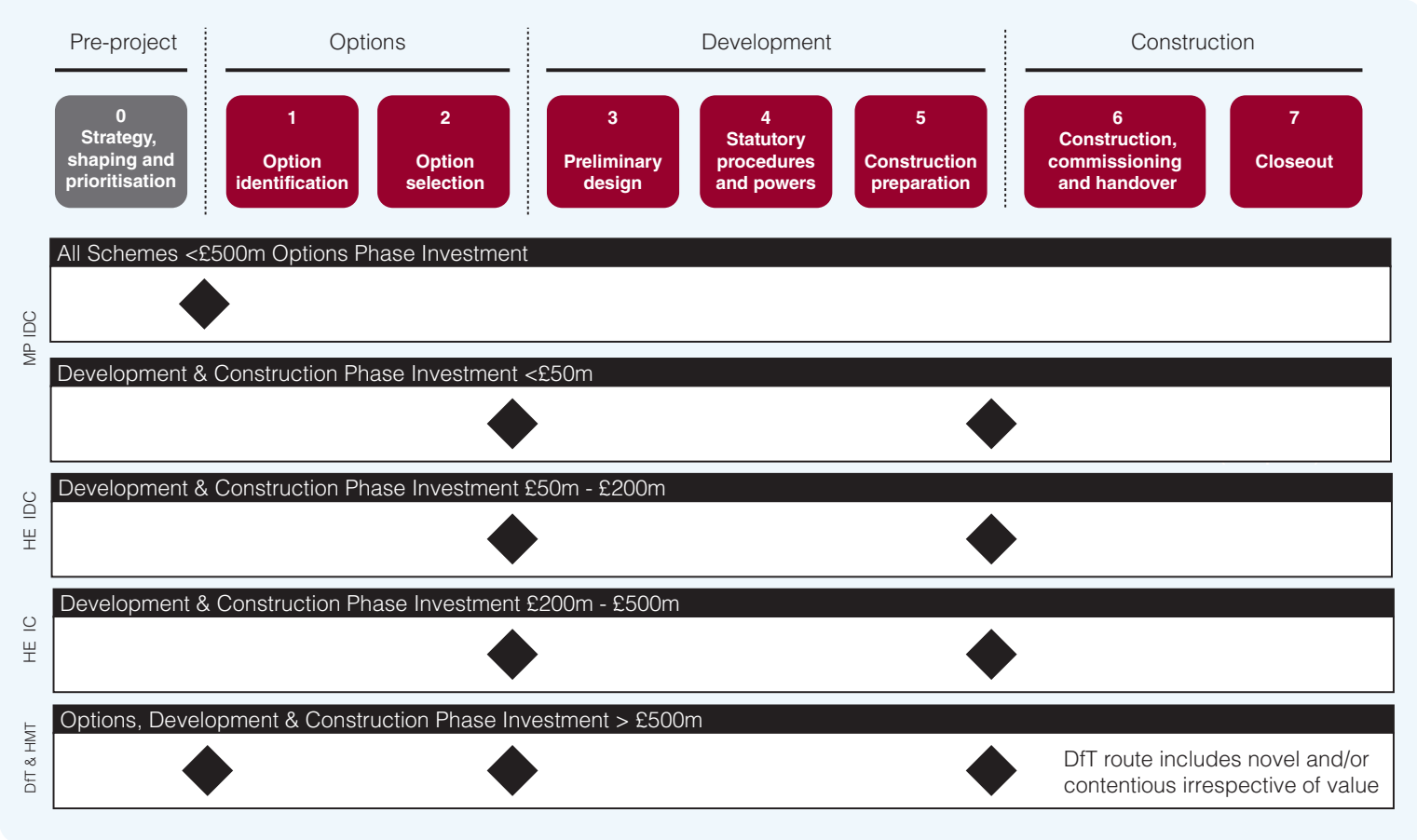

Figure 8: Summary of investment decision points

Project assurance and governance

To further clarify, the table below sets out the respective investment decision meetings to which the investment submission should be taken, in line with the financial delegations set out in the Highways England framework document.

Options phase

Total outturn	MP IDC	HE IDC	HE IC	BICC
<£200m	☑			
£200m to <£500m	☑			
Over £500m or N&C		☑	☑	☑

Development (including Lands and PRA*) and construction phases

Total outturn	MP IDC	HE IDC	HE IC	BICC
<£50m	☑			
£50m to <£200m	☑ (stage 3 nd 4 only)	☑		
£200m to <£500m	☑ (stage 3 nd 4 only)	☑	☑	
Over £500m or N&C		☑	☑	☑

Key

MP IDC	Major Projects Investment Decision Committee
HE IDC	Highways England Investment Decision Committee
HE IC	Highways England Investment Committee
BICC	DfT Board Investment and Commercial Committee
N&C	Novel and/or contentious irrespective of value
PRA	Preferred route announcement

* When PRA is presented to MP IDC for approval, the MP Executive Director may refer the decision to HE IDC for projects which may have a political and/or sensitive nature.

Project assurance and governance

Highways England design panel

The Highways England Design Panel was established in accordance with paragraph 5.27 of the Highways England: Licence (April 2015). The role of the panel is to independently advise Highways England and encourage design excellence in the landscape, engineering and built environment aspects of projects. The panel does not have any statutory function in its own right, but its advice should inform and support project development and the statutory consent process. The panel includes representation from credible experts and relevant stakeholders.

In accordance with paragraph 5.27(c) of the Licence, Highways England must seek advice from the panel:

i. on the design of road improvement schemes, where these are in sensitive locations or expected to have a substantial impact on the surrounding landscape;

ii. on the development of relevant design standards concerning the visual impact of schemes; and

iii. at any other time where required by the Secretary of State.

Highways England also has a duty to have due regard to the advice and general recommendations of the Design Panel, and the particular observations of the Panel on specific schemes (paragraph 5.27(d)).

The project design report PCF product provides a two stage process to meet the requirements of the Highways England licence in respect to engagement with the panel and to demonstrate due regard to relevant principles and guidance on good design (paragraph 5.26). At Stage 1, projects should provide initial project information to the panel which will allow the panel to determine their level of input into the scheme. At Stage 3, projects should produce a project design report which will confirm how regard has been had to any advice received from the panel (if applicable) and the principles of good road design (as set out in The road to good design).

Single option schemes should programme the completion of the two stage process within a single stage, allowing sufficient time for the panel to engage with the project team should they consider it necessary and for the principles of good design to be considered.

Where the panel identifies a need to review a particular scheme based on the information provided in the Stage 1 template, this should be undertaken as soon as possible to ensure that the advice of the panel can be properly factored into the design. Ministers may also request that certain schemes be reviewed, with

Project assurance and governance

such requests being directed through the Chief Highway Engineer. The Programme Delivery Director should seek to meet all such requests.

If required, presentation to the panel should be undertaken at stage 1 Option Identification and stage 3 Preliminary Design. The panel may also require a presentation during stage 2 Option Selection to support the refinement of options in advance of the preferred route announcement. Once schemes approach planning inquiry and construction – which is to say by stage 4 – the need for a single, stable design will limit the potential for further adaptation.

The panel may also review schemes after stage 7 Closeout, to provide, over time, a knowledge base to support future guidance and scheme advice and review.

Scope and design freeze events

All major projects that have not yet passed beyond either Stage 3 of the traditional PCF matrix or Stage 5 of the Single Option Project PCF matrix should complete scope and design freeze events.

The events are **mandatory** and should test **the response to** the Client Scheme Requirements.

It is the responsibility of the Highways England project sponsor to ensure that the events take place at the appropriate times. The events mark the freezing of the official scope or design and reasonable endeavours should be made to finalise them at that point, after consultation with key stakeholders such as Operations Directorate (OD) and Safety, Engineering and Standards (SES). Subsequent revisions can still be made but would be subject to the recognised formal change process.

This should be applied in the most appropriate fashion; there will need to be a degree of flexibility/ variation depending on the programme or project specific requirements. For example, for a Tier 1 project these may represent the minimum number of design freezes and it would be normal for additional freezes to be built into the plan.

Timing of the events

Projects requiring a Development Consent Order (DCO) or Highways Act Orders

A solution review and validation event should take place in PCF Stage 2 (recommended to be a minimum of 2 to 3 months prior to the non-statutory options consultation) to facilitate a review and validation of the emerging options and to be clear why these are the proposed option and confirm adequacy for consultation.

A scope freeze event should take place in PCF Stage 2 prior to the preferred route announcement (or preferred route selection for Highways Act schemes).

A design freeze event should take place in PCF Stage 3 after the statutory consultation and prior to the submission of the Development Consent Order or Highways Act powers.

Project assurance and governance

Smart motorway projects
A scope freeze event should occur at Design Fix 1.

A design freeze event should occur between Design Fix 4 and Design Fix 5, prior to the Final Target Cost negotiations.

Purpose of the events
To review and test proposed solution(s) for process and technical quality prior to non-statutory consultation, single option selection, statutory consultation or design freeze as appropriate.

The events should test how the proposed solution(s) respond to the following (indicative and non-exhaustive) areas?

Solution review and validation freeze/scope freeze
- Client scheme requirements/scope book (when introduced)
- RIS commitments
- Highways England strategic objectives and KPIs
- Highways England good road design – incorporating customer perspectives
- Operational performance
  - Ends of scheme (ie does the scheme work? Should we move the scheme boundaries ie are we simply moving a traffic jam from one spot to another?), junctions, known operational issues,other roads (non-strategic roads network)
- Maintainability
- Whole life safety
- Delivery timetable
- Affordability

Design freeze
- Client scheme requirements/scope book (when introduced)
- RIS commitments
- Highways England strategic objectives and KPIs
- Highways England good road design – incorporating customer perspectives
- Maintainability
- Traffic management proposals including

Project assurance and governance

diversion routes

- Asset renewal works
- Whole life safety
- Delivery timetable
- Affordability
- Efficiencies
- Buildability
- Risks to delivery

The events should record the technical basis for both the solution in terms of scheme design standards and evaluation models (traffic, economic etc) underpinning the solution at that stage.

Event attendance

- As required to test the relevant subject areas.
- The events should be independently chaired. Ideally this would be a sponsor or programme delivery director from another programme to bring a degree of independence.

Roles and responsibilities

There are 7 key project roles within the project control framework:

- Project manager
- DfT sponsor
- Senior responsible owner
- Sponsors
- Programme and Project committees
- Senior users
- Product consultees

The following sections set out the general responsibilities and accountabilities for each of these roles. In addition, specific roles associated with products are set out in the product definitions (page 20).

Project manager

The project manager is the individual responsible for managing the development and the delivery of a project on behalf of Highways England and the senior responsible owner or sponsor as appropriate.

The project manager leads and manages the project team with the authority and responsibility to run the project on a day-to-day basis.

The project manager is responsible for:

- Managing the project on a day-to-day basis within the remit and delegations provided by the senior responsible owner / sponsor
- Being aware of the business objectives of the project and ensuring that these are satisfied
- Ensuring that the project produces the required products, to the required standard of quality and within the specified constraints of time and cost
- Establishing the project organisation, defining roles and responsibilities and deliverables for each team member
- Where applicable, ensuring that the sponsor has relevant up to date information on the project and is involved in major decision making
- Establishing the safety ethic within the project team and ensuring that the project complies with safety regulations
- Providing a safe working environment for the execution of work directly under their responsibility
- Ensuring that statutory processes are followed and appropriate consents are obtained
- Ensuring compliance with Highways England's standards and processes – including the project control framework and the investment authorisation processes

Roles and responsibilities

- Managing and administrating any consultant or supplier contracts
- Managing project risks, including the development of contingency plans
- Initiating corrective action when necessary
- Reporting through agreed reporting lines on project progress
- Managing project resources, including project works contractors
- Where applicable, ensuring that the sponsor has relevant up to date information on the project and is involved in major decision making
- Leading and directing a multi-discipline project team which may consist of development, design and construction, commercial, planning, testing and commissioning and support personnel

DfT sponsor – only applicable to tier novel and/or contentious projects irrespective of their value

The DfT sponsor is responsible for representing DfT interests throughout the project life cycle of tier 1 projects. The sponsor owns the transport problem that is being addressed and ensures that the project provides an appropriate solution to that problem. There is only one DfT sponsor for any project.

The DfT sponsor is responsible for:

- At the initiation of a tier 1 or novel and/or contentious project irrespective of its value defining the project's objectives, scope and requirements, as set out in the scheme requirements document, consulting as necessary with other potential stakeholders
- Agreeing any changes to the client scheme requirements document during the course of the project
- Commissioning independent assurance review one and liaising with Highways England on the implementation of the recommendations
- Co-ordinating submissions to ministers seeking investment authorisation and re-authorisation throughout the project life cycle
- Assisting the project manager in the resolution of problems, issues and change control
- Managing DfT's relationship with external stakeholders with an interest in particular schemes

Roles and responsibilities

Senior responsible owner (SRO) and sponsors

The senior responsible owner has overall accountability for the delivery of the project ensuring the project remains focused on achieving its objectives. They have the authority to make decisions concerning the delivery of the project within a certain delegation.

For projects below the Tier 1 category (or projects that are novel and/or contentious irrespective of their value), the SRO delegates much of their responsibility to the sponsor.

The senior responsible owner (or sponsor where delegated) is responsible for:

- Providing clear leadership and direction through the life of the project
- Ensuring the project governance arrangements comply with the project control framework through:
  - review and sign off of key products
  - deciding the outcome of stage gate assessment reviews
  - ensuring change is effectively managed and escalated appropriately
- Ensuring that the project is technically and financially viable and compliant with Highways England's corporate standards and strategic business plans
- Ensuring the project is ready to seek investment authorisation
- Managing the interface with key senior stakeholders
- Commissioning appropriate assurance to determine that the project is fit to proceed to the next stage/phase, for example independent assurance reviews

Roles and responsibilities

Senior users

Senior user roles are undertaken by regional divisional directors (or their delegated representatives), representing the interests of Operations directorate.

The primary purpose of the role is to act as the client for major project schemes under development and delivery in their region.

Senior users are responsible for:

- Representing Operations directorate on project and / or programme committees and stage gate assessment reviews
- Ensuring scheme requirements have been clearly and completely defined
- Challenging design, maintenance and operational assumptions made by the project teams
- Being single points of sign off for the design from an Operations directorate perspective
- Ensuring that the scheme developed and delivered is fit for purpose and can be successfully operated
- Acceptance of the scheme being delivered and the handover into maintenance and operations

Programme and project committees

The programme committee is the governance body responsible for driving a programme's progress and resolving issues that may compromise delivery/ realisation of outcomes and benefits.

The project committee is accountable to the programme committee for the success of the project, and has the authority to direct the project within the remit set by the programme committee as documented in the project business case.

Product consultees

These are the key advisors or specialists whose input is likely to be required to help achieve the outcome of the product and this is most successfully achieved through early and regular liaison. Please see page 6 for more detail.

Other roles

This handbook focuses on the 7 key roles within the framework. We recognise that there are many other individuals who have an important role in developing and delivering a major project. This includes, for example:

- The integrated project team which includes consultants and contractors and Highways England project support staff

Project handover and closeout

The key to good project handover is engagement with Operations directorate throughout the project and not just as the project is coming to an end. Maintenance and operational handover of a scheme from the Major Projects project team to the Operations directorate service delivery team should take place on the date of scheme completion/road opening. However, the Major Projects project team will retain responsibility for issues arising from the construction during the one year defect period. Other outstanding work which may be completed by Major Projects and the contractor post handover includes work to side roads which can only be carried out once traffic has been removed, and the completion of the planting contract.

Queries received by the service delivery team on major project scheme issues prior to handover will be referred to the Major Projects project team. After handover the service delivery team will decide who should respond after discussion with the project team. The project team must always be prepared to assist service delivery team colleagues on these issues.

Handover notes for the service delivery team are to be prepared by the project team identifying any long term outstanding issues. Every effort should be made to resolve issues prior to handover. Close liaison with the senior user is advised.

A schedule is to be prepared for the service delivery team of any paper files to be sent to registry. The ownership of files held in SHARE should be transferred to the appropriate person to facilitate file management in the future.

Any scheme finance issues should be dealt with and settled by the project team.

The project team will be responsible for arranging a joint inspection of the project between the managing agent, the employers agent and the contractor before the end of the defect period ie nine months after completion in the case of a project with a one year defect period. Both Procurement and the ASC/AD, RTMC and other specialist suppliers should flag this up to the service delivery manager at the appropriate time. A further inspection should occur prior to the civils and technology handover of the asset.

Land to be disposed of and landscape maintenance areas and their contract requirements including the extent of any outstanding maintenance and defect periods must be specifically identified to property management; and disposal and service delivery teams by the project team prior to handover.

Projects often include new local access roads, altered side roads and junctions, and mitigation land, which will become the responsibility of the local highway authority to maintain. It is essential for early and continual liaison to take place with

Project handover and closeout

the local highway authority prior to and during construction to enable timely local highway authority handover to take place, preferably in advance of the civils maintenance (ASC/AD) handover certificate being signed. To aid this process, a memorandum of understanding with the local authority including a handover process flowchart has proved effective in the past. The timing of the local authority handover should be discussed and agreed with the senior user.

Handover and closeout process chart

The chart (figure 9 page 65) has a time line along which are listed the relevant documents and processes required to be completed at various times leading up to and following scheme completion (for example when the road is open to traffic and all traffic management has been removed). The chart is shown graphically to simplify the process and to highlight the need to ensure handover and closeout documents are developed and updated in good time, as and when appropriate throughout the lifecycle of a project.

The chart essentially follows the guidance already provided through the project control framework with the exception that project closeout follows maintenance and operational handover, rather than coinciding with it. Time needs to be allowed between handover and closeout to enable as many outstanding issues as possible to be resolved prior to project closeout.

Documents required for handover

Documents required for handover (these will normally be available in SHARE in which case links should be provided. Some documents may be stored in other relevant Highways England systems such as HAPMS, SMIS or IAMIS).

- As built drawings/documentation
- Updated health and safety file
- Template for handover schedule
- Civils maintenance (ASC/AD) handover certificate – including outstanding matters checklist
- Technology commissioning plan
- Technology maintenance (RTMC documentation and certificate
- Operational (RCC) handover documentation and certificate
- Updated permit to connect from PCF stage 5

Project handover and closeout

Maintenance and operational handover

To take place upon scheme completion, with the issuing of the certificate of completion timed to coincide with the signing of the civils maintenance (ASC/AD) handover certificate. If this cannot be achieved, then by agreement with the Highways England, a health and safety file sufficiently complete to enable effective operation must be available at the time of handover, together with an agreed outstanding matters checklist (which forms part of the civils maintenance (ASC/AD) handover certificate).

SGAR 6 should take place approximately three months after scheme completion, to coincide with the completion of the as built documentation and the health and safety file.

Early and continual liaison with Operations directorate (including maintenance service providers, regional control centres and traffic officer service) should take place to ensure that what is delivered meets the previously agreed requirements for handover. There should be one handover to Operations directorate, including technology. Caveats/exclusions to handover should be the exception and if found necessary, kept to a minimum.

On schemes where a phased/staged handover into operation and/or maintenance is proposed early agreement and approval should be sought from the senior user, project board and regional boards as appropriate.

Road safety audits (RSAs)

A mandatory audit report produced during the development and construction phases of a project to help identify potential safety issues and mitigate these where possible. Four audit reports are produced throughout the project lifecycle with RSA stage 3 and RSA stage 4 of particular relevance to the handover and closeout process. RSA stage 3 should be undertaken at the end of construction and preferably before the scheme is open to traffic to minimise any potential risks to road users. RSA stage 4 is undertaken at 12 months and 36 months after the scheme has opened to traffic and includes the analysis and reporting of accident data. Issues arising from the 12 month RSA should be discussed immediately with Operations directorate to agree a plan for their resolution.

Project handover and closeout

Project closeout

Project closeout is achieved when any outstanding works are completed and the final account is agreed with the contractor. This should be achieved as soon as reasonably practicable after handover and in any event no later than two years after scheme completion. SGAR 7 should take place at this point. At this time the closure checklist should be produced and agreed with Operations directorate, following which Operations directorate takes full responsibility for the new asset. This checklist, developed at a closeout review workshop, details all outstanding claims and issues (including any remaining issues from the outstanding matters checklist), and identifies who is to be responsible for these.

It is important to avoid a situation arising where all outstanding issues automatically revert to Operations directorate – it is anticipated Major Projects will still continue to be responsible for a number of issues if they are best placed to deal with them (eg property/lands issues).

New issues may arise following project closeout which are not identified on the closure checklist. In the first instance these should be directed to Operations directorate as network owner who will coordinate responses with support, as appropriate, from Major Projects and other delivery partners.

Good practice guide to handover

1. Set up early handover meetings to discuss and agree handover documentation with adopting bodies (internal and external).
2. Set up trackers to populate and monitor progress – link all documents to the tracker to make them easy to find.
3. Send sample handover packages at an early stage to establish an acceptable standard by the receiving authority.
4. Present the overall tracker at each monthly progress meeting with the client so that all parties are kept informed.
5. All information which will form the basis of the handover package should be stored electronically in the relevant scheme area on SHARE. Exceptions are where documents are A2 or larger (or over 50mb) and cannot be stored on SHARE.

Project handover and closeout

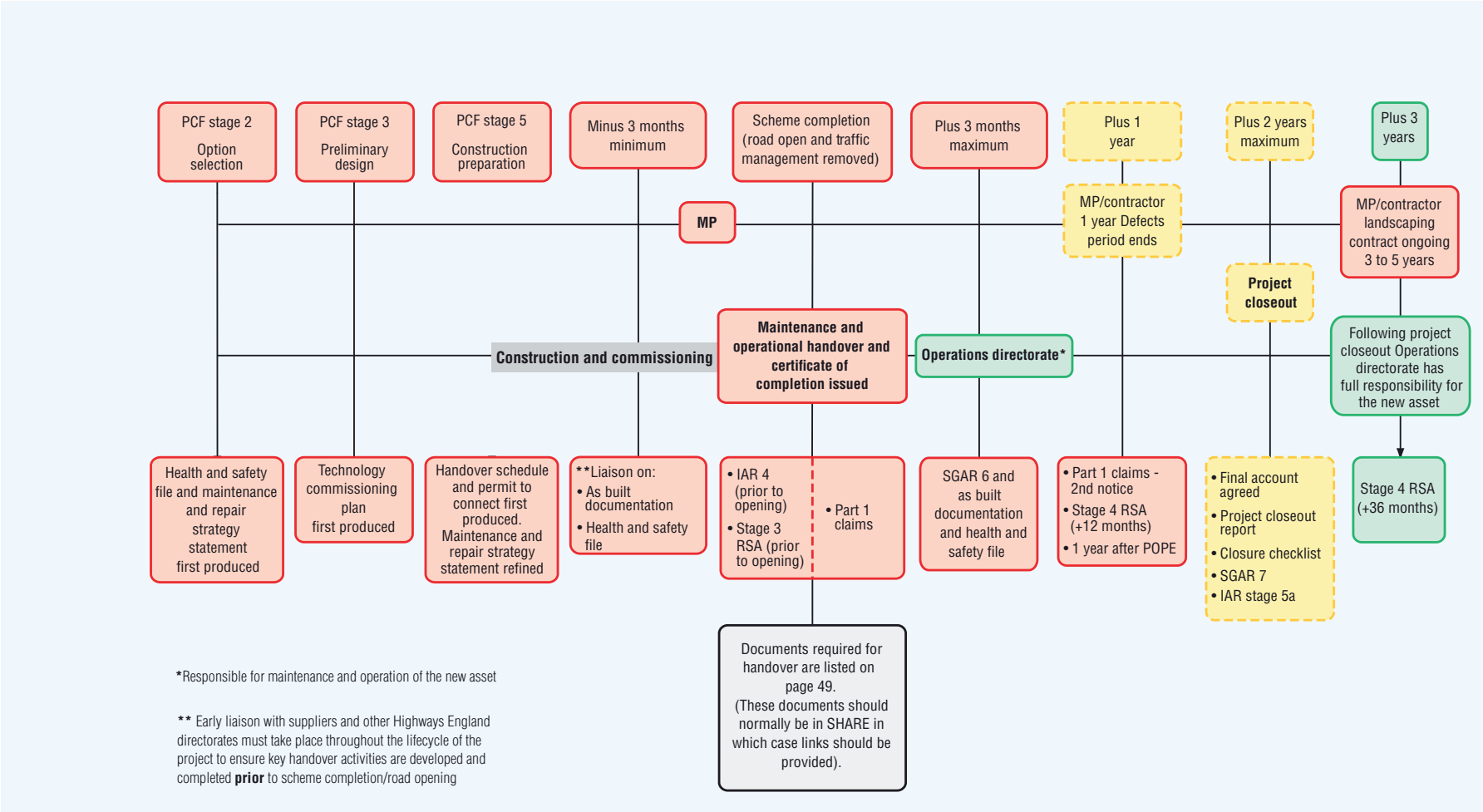

Figure 9: Based on the Major Projects lifecycle

KEY:
- Major Projects (MP) responsibility
- Major Projects/Operations directorate joint responsibility
- Operations directorate responsibility

SGAR Stage gate assesssment review

RSA Road safety audit

Annex A project control processes

Project control processes

The plan-do-review basis is implemented through five processes:

Initiating a project

Ensure that the project is adequately scoped and established prior to starting the first stage and that a 'plan' for the first stage is in place.

Controlling a stage

'Do' the stage – manage the project on a day to day basis – delivering products, monitoring progress, managing risk, etc.

Managing stage boundaries

As each project stage nears completion, 'review' the current stage and confirm that it is complete and 'plan' for the next stage.

Managing change

Is the process of managing ongoing change to the project in a controlled manner.

Closing a project

Ensure that the project is properly closed and that any residual issues are handed over into 'business as usual' as appropriate.

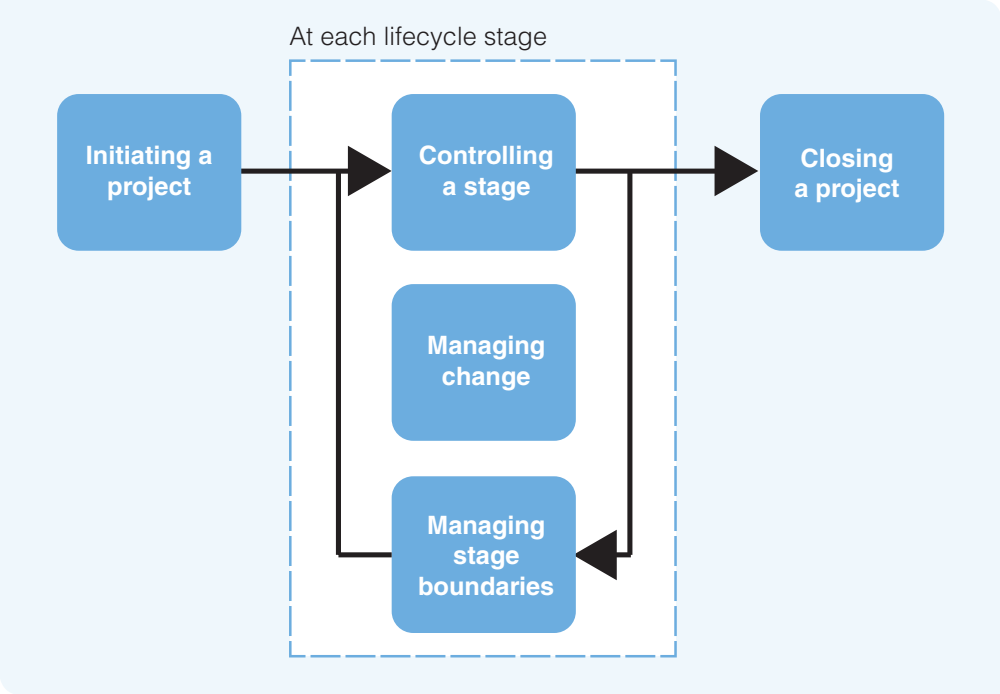

Figure 10: Project control processes

Annex A project control processes

Initiating a project

Initiating a project is a critical stage in the strategy shaping and prioritisation process and comprises three key activities:

Accepting the project brief

Ensure that the documentation used to initiate the project is complete, consistent and of acceptable quality. A checklist for this is provided on page 68.

Preparing for the first stage

Ensure that the project is properly established and all of the project management documentation needed to run the project is in place. A checklist for this is provided on page 68.

Seeking authority to proceed

Obtain the authorities needed to proceed into the first stage of the lifecycle. The required authorities are set out in the investment authorisation on page 50.

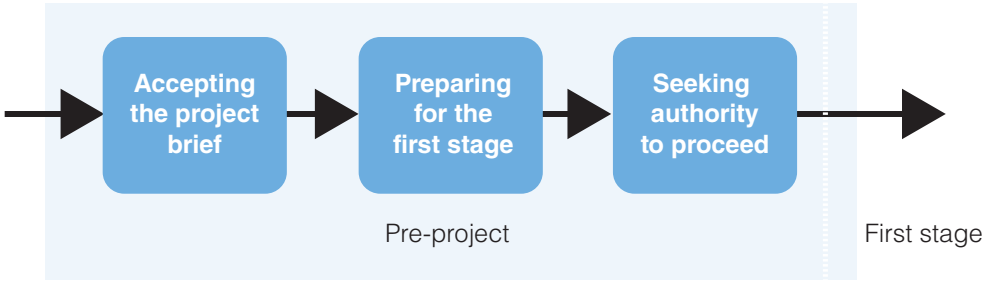

Figure 11: Initiating a project

Annex A project control processes

Accepting the project brief checklist

Review and confirm the acceptability of the following products which make up the project brief provided by the strategy, shaping and prioritisation process.

Accepting the project brief	✓
Client scheme requirements	
Value for money assessment	
Strategic outline business case	
Options phase budget	
Scheme estimate (order of magnitude estimate)	

Preparing for the first stage checklist

Preparing for the first stage	✓
Register the project with the Major Projects programme hub	
Complete a risk potential assessment for the project and send the resulting score to Programme Assurance	
Identify which products must be delivered during the options identification stage and complete the baseline dates in the product checklist for that stage and obtain sign off from the appropriate person	
Create and baseline the project management plan and project schedule for delivering those products	
Create and populate the risk register etc	
Provide copies of the baselined product checklist, project management plan and project schedule to the Major Projects programme hub	

Annex A project control processes

Controlling a stage

Controlling a stage consists of seven activities, some of these have specific products on the product matrix which are produced as part of the Major Projects lifecycle.

Controlling a stage adds some additional requirements around the regular project management activities that must be undertaken as part of the stage. For example, holding project progress review meetings.

The project manager must retain evidence that they have undertaken these activities and this will be reviewed at the stage gate assessment review at the end of the stage (page 37).

Figure 12: Controlling a stage

Controlling a stage checklist

Requirements for controlling a stage	✓
Hold progress meetings and update the schedule at least once a month.	
Comply, in a timely manner, with the requirements of the regular reporting schedule.	
Monitor costs and manage against the cost plan at least once a month.	
Actively review risks at least once a month.	
Ensure that risk mitigations are reflected within the project management plan (in the widest sense).	
Ensure that the document management process has been followed (below).	

Managing documents

The approach to managing documentation needs to support the basic principles of project control framework. For example, that all evidence of product production and sign off is retained.

Project managers have overall responsibility for the management of documentation. They must ensure that:

- Once a product is signed off and therefore completed that the product is frozen. This means that no further changes can be made to that product. Signed off products must be frozen before a stage gate assessment review.

Annex A project control processes

- It is up to the project manager to decide how to freeze a product, but this might include converting the document into a PDF document
- If a product is updated during a stage or stages each update must be retained. For example a risk management plan will be continually updated throughout the stage
- If a product is refined through the lifecycle each version must be retained and frozen for the stage gate assessment review. For example, by the end of a project there will be seven versions of the scheme cost estimate
- All products, documents, scheme information and supporting data produced by ourselves and our consultants, must be filed in SHARE, Documentation not compatible with SHARE may be stored using other suitable electronic storage mediums

Annex A project control processes

Managing stage boundaries

Managing stage boundaries overlaps with controlling a stage. It starts close to the end of a stage, carrying the project through the stage gate assessment review, investment authorisation and independent assurance review processes and into the next stage of the lifecycle. The following diagram is indicative and the timing of the independent assurance review may change depending on the stage and project specific requirements.

Preparing for stage end

Undertake a review of progress against plan and confirm that the stage is, indeed, complete. A checklist for this is provided on page 72.

Preparing for the next stage

Ensure that the plan is in place for the next stage. A checklist for this is provided on page 72.

Stage gate assessment review

Undertake a stage gate assessment review (page 37).

Seeking investment authority

Obtain the authorities needed to proceed to the next stage. The required authorities are set out in the investment authorisation on page 50.

Independent assurance review

Undertake any necessary independent assurance review (page 43).

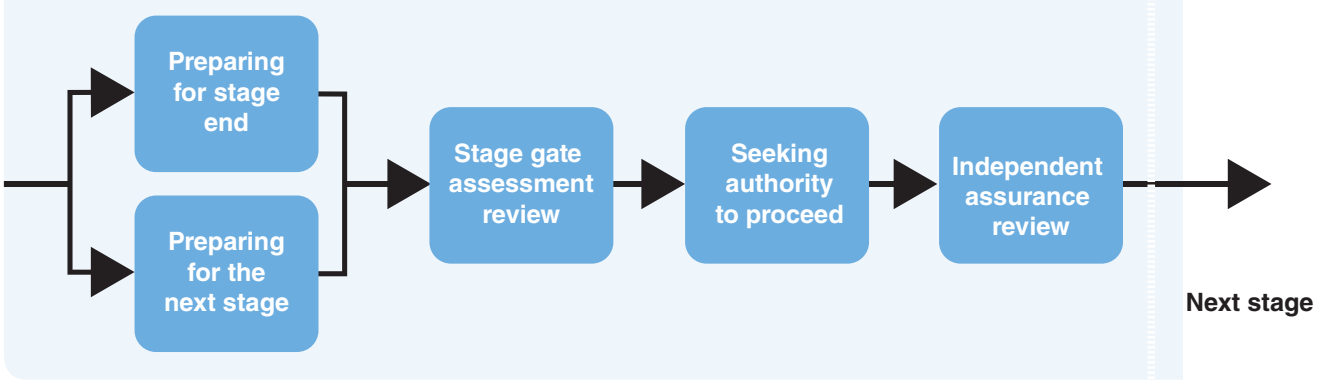

Figure 13: Managing stage boundaries

Annex A project control processes

Preparing for stage end checklist

Preparing for stage end	✓
Update a risk potential assessment for the project and send the resulting score to Programme Assurance	
Review the products produced against the baselined product checklist for the beginning of the Stage	
Confirm that products are signed-off and supported by proof of consultation	
Confirm that any variance in the products produced is understood and can be justified	
Confirm that there is evidence that mandatory processes have been followed	
Confirm that documents are properly stored in SHARE	
Complete the product checklist for the current stage indicating dates of completion and providing comment on any products not yet complete	
Ensure there is evidence that the requirements of Controlling a stage have been met	
Review cost and time against the versions baselined at the start of the stage	
Arrange the stage gate assessment review	

Preparing for the next stage checklist

Preparing for the next stage	✓
Complete the risk potential assessment for the next stage and send the resulting score to Programme Assurance	
Update the risk register, issues register, etc	
Identify which products must be delivered during the next stage and complete the baseline dates of the product checklist for that stage	
Update and baseline the project management plan and project schedule for delivering those products	
Provide copies of the baselined product checklist, project management plan and project schedule to the Major Projects programme hub	
Prepare and send out the stage gate assessment review submission pack	
Hold the stage gate assessment review	
Produce any necessary investment submissions (if needed)	
Complete an independent assurance review (if needed)	

Annex A project control processes

Closing a project

Closing a project ensures that the project has a distinct end point rather than drifts into operational management.

Closing a project	✓
Finalise all project documentation	
Confirm that all documents are properly stored in SHARE	
Archive	
Hand over financial documentation	
Hand over contract documentation	
Hand over any remaining as built drawings to the operator	
Hand over health and safety file to the operator	
Complete a project close out report and send to the Major Projects programme hub	
Hold post project review	
Obtain final stage gate assessment certificate	

Breaking projects into sub-projects

There are theoretically a number of circumstances where it may be appropriate to break a project into a number of sub-projects. For example where:

- Development and/or construction of elements of the project need to be progressed on significantly differing timescales – for example, a project that has significant traffic management issues associated with it or is subject to funding constraints
- The procurement strategy for the project seeks to reduce risk by letting significant elements of the work to different suppliers and, potentially, under differing procurement regimes
- It would lower the overall risk profile of the project to manage it as separate and distinct sub-projects

In such cases, a project may be divided into sub-projects at any stage or phase boundary with the agreement of the appropriate investment board; although it would usually be sensible to aim to split the project into sub-projects at phase boundaries.

Each sub project is then taken forward independently. This means that each sub project has its own project schedule, risk register, product checklist etc.

For more information please contact

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