Streamlining:
Reducing the cost of
FRM project development

Business case

Contents

1 Streamlining Summary

The objective of the Streamlining project is to reduce the proportion of expenditure on Flood Risk Management projects that we are spending on Project Development. Project Development has been defined as all work up to the point of investment decision, where we enter into a contract to deliver a Flood Risk Management benefit. The Office of Government Commerce refers to this decision point as "Gateway Three". Beyond gateway three we are making a discernable change to flood-risk, usually by making some sort of intervention (e.g. constructing a wall or embankment) in order to reduce the probability of an event having negative impacts.

Project Development therefore includes all of the following: The initial identification of need; Prefeasibility study and report; Viability study and report; Strategy Study and report; Project Appraisal Report (PAR); project planning, packaging, detailed design and procurement.

Engineering consultants carry out the majority of the above activities. In addition, project development often involves some or all of the following before Gateway Three: Topological, hydro-geological and archaeological surveys and other intrusive site investigations; Environmental surveys and impact assessments; and Cost consultants.

NCPMS and/or Regional/Area staff manage the above project development work supplied by external partners and some assessment of the internal cost of this needs to be included. There is a significant amount of expenditure on Project Development that is funded from revenue budgets and/or local levy and as a result is not included as part of the "capital programme".

Project Delivery (post Gateway 3) covers the cost of the contractor as well as a number of overhead costs, such as project supervision, cost consultants and the management of the Delivery phase.

Baseline and current position

There are two parts to FRM Project Spend: external expenditure through framework and other suppliers and the internal cost of staff who manage the programme. We do not currently track the cost of project development and the current implementation of financial systems cannot provide an accurate figure.

1B1S gives detail of expenditure against over 300 category codes, of which 12 are most likely to cover the majority of FRM project spend. By only considering expenditure by NCPMS, Area Asset System Management or Operations Delivery, there is a total external FRM project spend of £217m in 2005/06 and £199m in 2006/7. The estimated cost of Environment Agency staff is an additional £10m.

Using information from framework partners and our understanding of the programme we apply an estimated proportion of each category code and staff cost to project development and project delivery. This gives us a baseline position based on the last two years as follows:

	2005/06	2006/07
Total FRM Project Development	£66.0m	£70.7m
Total FRM Project Spend	£232.3m	£214.5m
% Project Development	**28%**	**33%**

Diagnosis and Root Cause analysis

The first stage of Streamlining was a full diagnosis of the existing approach to the programme and projects. This consisted of tracing back types of waste associated with the approach, the observable sources of this waste, and identifying the key root causes. In addition, we highlight a number of weaknesses of the current approach that are of concern.

The types of waste identified were: Overprocessing (number of steps); Overproduction (too many

projects); Excess work (too much detail and "gold-plating"); Delay (handovers, waiting); and Rework (off-specification, rescoping). The sources of waste were system wide and affected three different areas: Process & Products; Roles & Responsibilities; and Controls & Tools.

This waste is occurring because of three root causes that need to be addressed:

- The 'push' system – there is a 'bubbling up' of demand for capital funding with individual projects, areas and regions competing against one another for limited funds. This compares to a pull system, where a national strategic assessment of risk would result in locations being objectively selected for appraisal;

- Risk aversion – both at a programme level, where an unrealistic desire for cost certainty drives higher spend too early in the process, and at a project level, where political pressure can result in appraisal expenditure on projects that are unlikely to receive FDGIA funding in the near-term; and

- Organisational complexity – parts of the organisation operate in 'silos', with multiple handovers between Area, Region, and NCPMS, each of which contributes to additional cost. This root cause also contributes to a lack of clarity about accountability for expenditure on appraisal, some overlapping responsibilities, and contradictory views about the process and products.
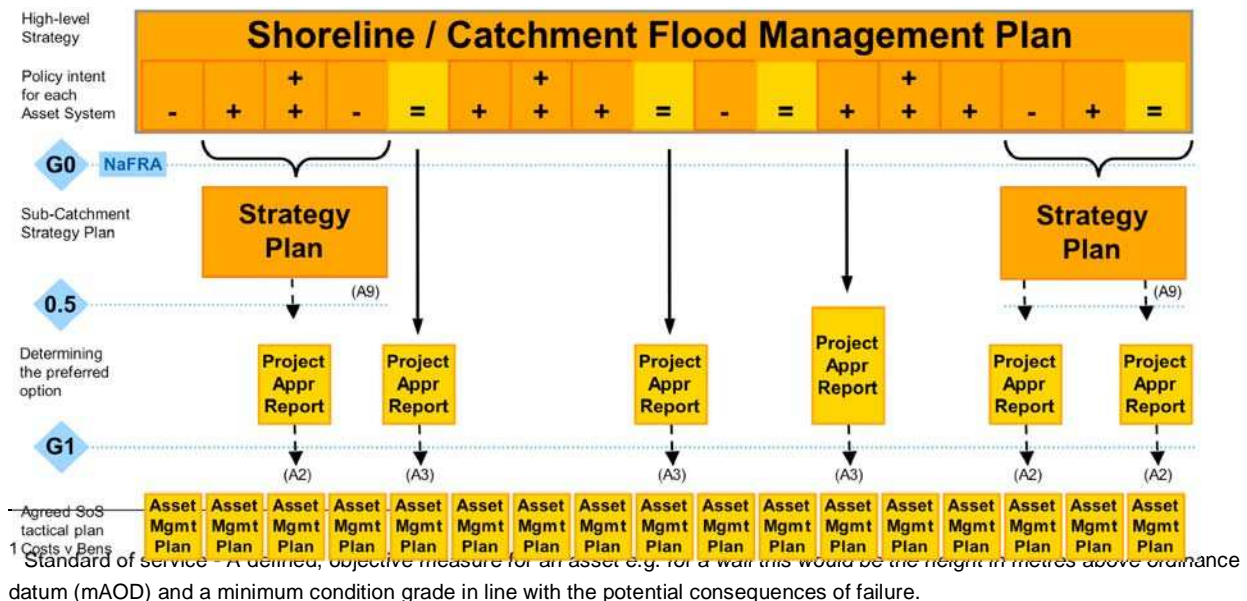
Due to the fundamental nature of the root causes, as well as other weaknesses with the current approach, the solution requires a holistic system-wide approach including culture change as well as changes to processes and procedures.

The Streamlining Improvements

Implementing Streamlining will require significant change in three areas: Process & Products; Roles & Responsibilities; and Controls & Tools.

Streamlined product hierarchy:

- Removing two products (prefeasibility and viability reports);

- Clarification of the scope and boundaries of the each of the four products, as shown below.

- Strategy Plans and/or PAR only where a *change* to the Standard of Service[1] is proposed;

- Cost Effectiveness Appraisals based on Asset Management Plans for *sustain* replacement projects.

Standard of service - A defined, objective measure for an asset e.g. for a wall this would be the height in metres above ordinance datum (mAOD) and a minimum condition grade in line with the potential consequences of failure.

Streamlined process

- Introduce an early attrition of candidate projects using available national datasets;

- Provide a simplified Cost Effectiveness Appraisal route for asset replacement projects; and

- Better use of Gateway Zero to control the initiation of appraisals, Gateway One to give technical approval of the preferred option, and Gateway Three to make the final investment decision.
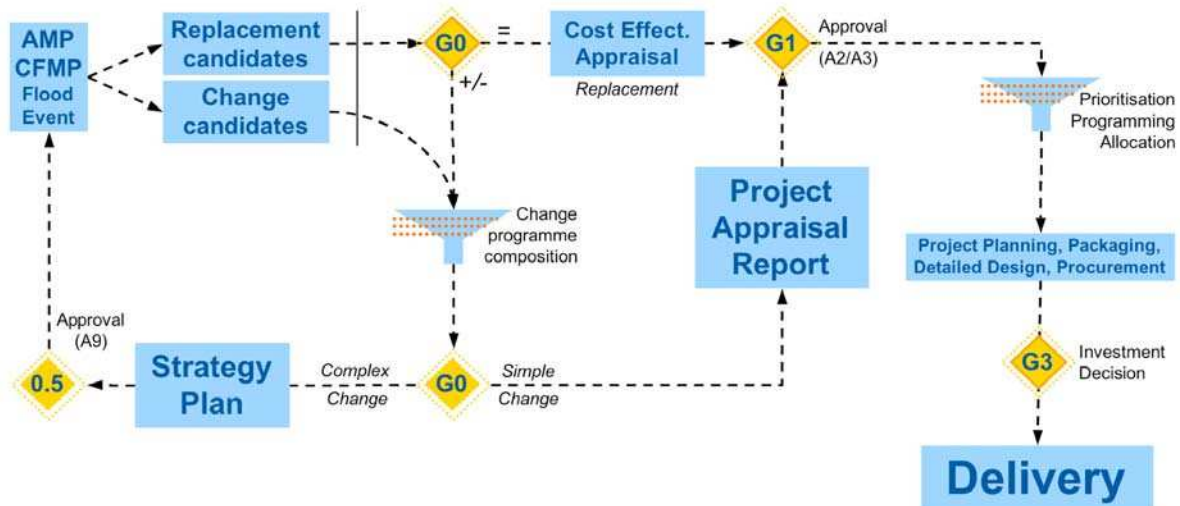
Streamlined roles and responsibilities

- Centralisation of the accountability and budget for appraisal of changes to the Standard of Service;

- Local accountability for whole-life costs - Increased local decision-making and accountability for the long-term cost of sustaining the agreed Standard of Service[1].

Streamlined controls & tools

- Collect and record the required data once to support decision-making and enable better control using appropriate technology in line with industry best-practice;

- Provide project, programme and portfolio management tools for practitioners at all levels.

The business case for Streamlining

In addition to the strategic case outlined above, significant annual savings have been identified based on a £200m programme, predominantly from reduced expenditure on engineering consultants:

Key Streamlining Activity	Estimated Savings
Remove pre-gateway 0 studies (prefeasibility, inception reports etc)	1.75% (£3.5m)
Remove viability product (some work still carried out within Strategy or PAR)	0.45% (£0.9m)
Simplified replacement route (reduced option appraisal)	0.65% (£1.3m)
Fewer change projects started (attrition at gateway 0)	1.25% (£2.5m)
Total savings (per annum)	**4.10% (£8.2m)**

The cost of implementing Streamlining has three main components:

- The **process and products** workstream - detail design, testing, guidance;

- The **controls and tools** workstream – information technology to support and provide visibility;

- The **roles and responsibilities** workstream - developing training and embedding the skills required.

Alongside the above is the cost of programme management and governance of the implementation. The degree of external support required depends on the approach and speed of implementation. We have estimated the cost of implementing Streamlining to range from **£1.8m** over 18 - 24 months.

2   Introduction

2.1   Case for change

The Streamlining project started in response to the 2004 Spending Review, when the Environment Agency agreed to reduce by 15% the proportion of total FRM project expenditure spent on project development. This reflected the requirements of the Gershon review, to increase the proportion of public funds spent on value-adding activity and was specified in DEFRAs 2004 Delivery Plan and the Environment Agency's 2005 Corporate Plan.

The Streamlining Project was initiated to address this target. The objective of the Streamlining Project is to deliver greater outputs (reduced flood risk) from the same input (money) by spending less on project development, and more on activities that directly reduce flood risk. The Environment Agency has defined project development expenditure as that incurred pre-Gateway 3. This includes identification of need, appraisal and detailed design activities. 'Delivery' refers to the construction or other deployment of capital which achieve value adding results.

The Strategic Case for Streamlining is presented in section 3

2.2   Baseline

The Environment Agency's finance and project management systems are not constructed in such a way to enable us to accurately calculate the proportion of development expenditure. In addition:

- We cannot establish expenditure for each part of the process;

- There is no reconciliation between budgeted and actual expenditure at programme level; and

- The total expenditure developing FRM projects is unknown, especially locally incurred expenditure.
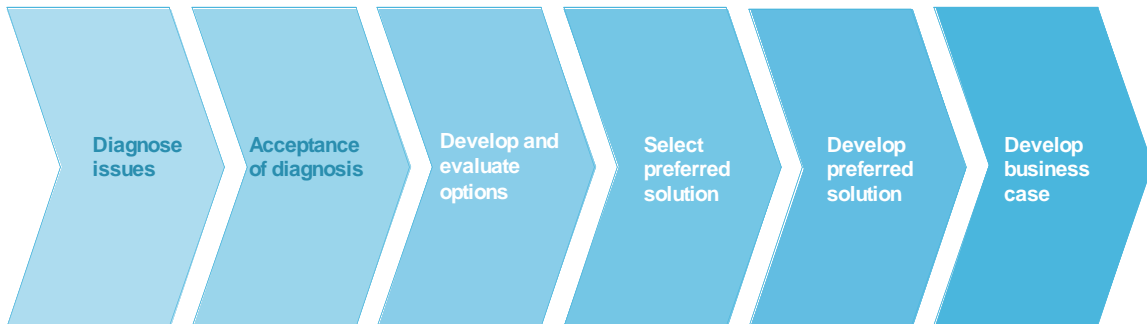
In order to establish a baseline we have used the actual expenditure on third parties and attributed additional costs based on staff remuneration.
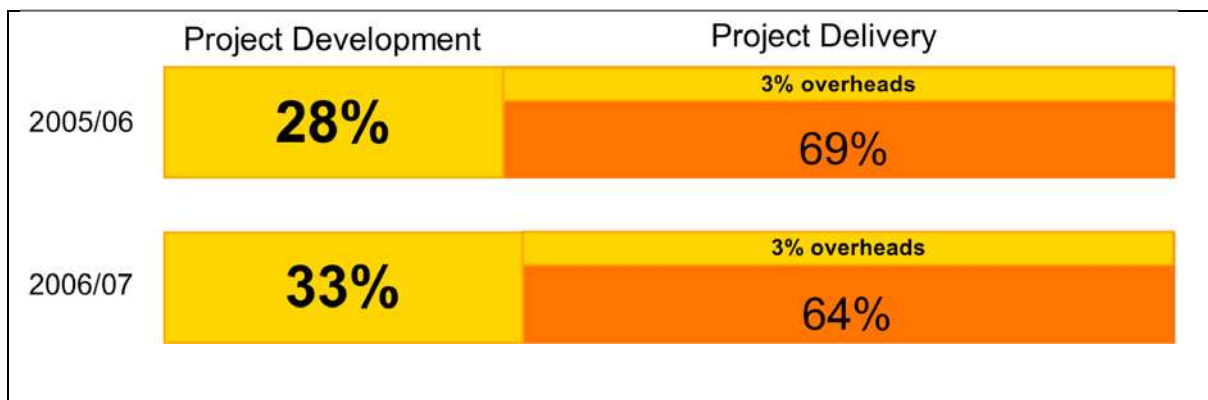
The methodology and assumptions behind the baseline are discussed in Appendix 4 to this report.

2.3 Approach

The diagram below summarises the approach we have adopted to undertake this piece of work.

The key stages have been:

- Diagnose issues - A diagnosis phase was undertaken to understand how the current system works and identify the key factors driving the high proportion of expenditure on project development. This was informed by meetings and workshops with stakeholders and a fieldwork exercise to examine 32 projects in greater detail.

  – Acceptance of the diagnosis - A meeting with four Directors was held in March 2006 to present the root cause analysis. At this meeting the Directors asked the project team to develop an action plan to address the identified sources of waste, but also to consider more fundamental change to address the root causes, including alternative organisational designs for more efficient delivery of FRM.

- Develop and evaluate options – An options development phase was undertaken during which we developed an action plan alongside three potential organisational models – a centralised model, a devolved model and a hybrid version. The action plan consisted of nine individual actions, each designed to address the sources of waste identified in the diagnosis, but not capable of addressing the root causes.

  – Initial preferred solution – We presented these options to Directors in June 2006, when they accepted all nine actions but decided that the three structural models should not be pursued due to the recent IFRM changes. Instead, the Directors asked the team to develop the nine actions into a holistic solution which delivered the benefits of the hybrid model, but without involving major organisational change

- Develop preferred solution - A solution development phase was undertaken to develop and test the holistic solution including further consideration of the key features of the solution and the qualitative and quantitative benefits and risks. This phase involved numerous interviews and workshops with key stakeholders as set out in Appendix 2.

  – Initial reactions - Once sufficient detail of the holistic solution had been developed we took the solution to each of the Directors in November 2006 and explained key features taking feedback and incorporating this into the solution. A key aspect of the Streamlined model is the distinction between investment that *sustains* the agreed standard of service and investment that seeks to potentially *change* the standard of service.

  – Option choice - This solution development phase was completed with a meeting with Directors in February 2007 to decide on the proposed solution. At this meeting Directors accepted the proposed product hierarchy, process and allocation method and requested more work be done on the roles and responsibilities alongside developing the business case.

- Develop Business Case - The team subsequently spent time with key stakeholders to address remaining issues by putting greater detail into various parts of the model and adjusting the process to address concerns. More detailed expenditure data was made available to reduce the uncertainty of the baseline and savings so that a benefits realisation plan could be developed. Alongside this we have put together the business case and evaluated the solution against "do-nothing" and "do-minimum" in order to test the preferred solution.

  - Draft Business Case - On April 13th 2007 we presented a draft business case to Directors. This raised a few key outstanding issues that needed to be addressed and on May 15th 2007 Directors were presented and agreed to a number of amendments to the Streamlining model, which have been incorporated into this business case.

The approach has involved numerous interviews and workshops with key stakeholders, including 5 steering meetings with Directors as well as numerous meetings with Area, Regional and NCPMS representatives and specific stakeholders on specialist subject areas. A list of the stakeholders we have engaged with is included in Appendix 2.

In Summary, Directors and stakeholders have been consulted throughout the diagnosis, option development and preferred solution development stages and have provided guidance to the project in reaching the preferred option.

The remainder of this section sets out the rationale behind selecting the preferred option.

2.4 Purpose of the business case

The purpose of this business case is to:

- Set out the case for change by considering the findings of the work undertaken to date to identify the root causes of the high level of development expenditure. This is covered in **Section 3 – Strategic Case**;

- Evaluate the solution developed in stages over the last 12 months against the "do-nothing" and "do-minimum" options using both qualitative and quantitative criteria. This is covered in **Section 4 – Appraisal of Options**

- Explain the solution in greater detail: how investment decision products relate, the process, roles and responsibilities and how expenditure is controlled. We also set out the key benefits and risks of operating the new approach. This is covered in **Section 5 – Preferred Solution**

3 Strategic case

This section sets out the case for change, starting with restating the original diagnosis accepted by Directors in March 2006. In addition, we set out a number of external pressures which are relevant to delivering major efficiencies. Finally, we set out the resulting objectives of the Streamlining work in order to fix the problems identified and deliver the efficiencies required.

3.1 The diagnosis

In March 2006 Directors were presented with a full diagnosis of the approach to the programme and projects that make up the capital programme. This consisted of tracing back types of waste associated with the approach, the observable sources of this waste, and identifying the key root causes. In addition, we highlight a number of weaknesses of the current approach that are of concern.

3.1.1 Types of waste and their observable sources

The types of waste inherent in any system:

- Overprocessing (number of steps);

- Overproduction (too many items);

- Excess work ("gold-plating");

- Delay; and

- Rework.

Via interviews with staff and a sample of projects, we found a number of sources of the above waste that we grouped into three categories: Process & Products; Roles & Responsibilities; and, Controls and Tools.

Process and Products

- There has been a growing process burden because:

  - When project "errors" occur, we have introduced additional processes and intermediate products in an attempt to prevent the potential for repeat; and

  - Poor ownership and overview of the end to end process, with no effective means of challenging the introduction of additional steps or products;

- Wide variation in the degree to which process and procedure guidance is followed, because it is confusing, inadequate, or non-existent;

- Lack of clarity about how each of the investment decision products fit together, the scope of each product and the detail required.

- An unknown number of investment decision products are in development at each stage with expenditure only visible locally.

Roles and Responsibilities

- There are "silo" behaviours due to organisational complexity, with numerous handovers and multiple project managers;

- A lack of clarity about responsibilities, resulting in poor accountability;

- Poor line of sight from inception to completion both for each project and the whole programme - and lack of ownership for the end-to-end process;

- Staff turnover and variable skill-base have an adverse effect on the organisations ability to act as an 'intelligent client' and manage input from consultants in the most efficient way;

- Local political pressure can lead to high expenditure on projects with low benefits; and

- Process & guidance providers too are remote from both practitioners and approvers.

Controls and tools

- Lack of ability to track financial expenditure on projects from inception to completion across the programme as a whole;

- There is a lot of reporting by NCPMS and Area Project Managers, but few effective tools to help them manage projects;

- Controls are predominantly focused on preventing the potential to repeat previous errors, rather than detection and management, which increases the process burden;

- There is a lack of ability to identify at a programme level when a project is unlikely to deliver benefits in proportion to the expenditure and therefore limit the expenditure at an early stage;

- No apparent link between budgeted cost of appraisal and the scale of potential benefits and budgets inflated to avoid having to request budget increases (Form G);

- There is 'gaming' to circumvent current controls, due to national competition for resources, e.g. engaging consultants to undertake additional detailed work to increase benefits;

- Strategic decision makers have little control over expenditure at the early stages of project development as this expenditure is not visible at a national level; and

- The requirement for pre-construction cost-certainty coupled with a need to spend the budget and penalties for overspend, leads to one of two consequences – budget inflation at the start of the project to ensure all risks can be managed within the budget, or a sacrifice of quality if the budget proves insufficient.

3.1.2 Root cause analysis

The sources of waste identified above arise because of deeper root causes identified below:

- The 'push' system – there is a 'bubbling up' of demand for capital funding with individual projects, areas and regions competing against one another for limited funds. This compares to a pull system, where a national strategic assessment of risk would result in locations being objectively selected for appraisal;

- Risk aversion – both at a programme level, where an unrealistic desire for cost certainty drives higher spend too early in the process, and at a project level, where political pressure can result in appraisal expenditure on projects that are unlikely to receive FDGIA funding in the near-term; and

- Organisational complexity – parts of the organisation operate in 'silos', with multiple handovers between Area, Region, and NCPMS, each of which contributes to additional cost.

This root cause also contributes to a lack of clarity about accountability for expenditure on appraisal, some overlapping responsibilities, and contradictory views about the process and products.

Directors accepted the diagnosis and root cause analysis in March 2006. At this meeting the directors also acknowledged that due to the fundamental nature of the root causes, the solution requires a holistic system-wide approach including culture change as well as changes to processes and procedures.

3.1.3 Other weaknesses with the current approach

In addition to the above sources of waste and root causes that result in a high proportion of expenditure on project development there are also a number of other weaknesses associated with the current system.

The existing system is focused predominantly on controlling access to capital so as to ensure that for each project we make the economic "optimum" decision. This means subjecting all potential capital investment to a rigorous appraisal. Since we cannot afford to deliver all the projects identified by these appraisals, a priority score is used to ration the number of projects that can proceed past Gateway 1.

This approach fails on a number of fronts:

- Threshold competition - The current approach encourages increased appraisal expenditure in order to achieve the priority score funding threshold e.g. undertake further investigations with the aim of trying to identify additional benefits and reduce delivery costs;

- Sub-optimal programme - The current approach encourages the investigation of economically optimum decisions in every location, while in reality we cannot afford to deliver these projects. The result is that we deliver an optimum reduction in flood risk to relatively few locations.

- Perverse prioritisation –all capital investment competes on the basis of a priority score but this does not take into account of the cost of disposing of an existing asset. In some cases, not funding the timely replacement of existing assets means we are effectively allowing them to deteriorate without proper consideration of either the immediate or strategic impacts (social, environmental or financial). In locations where this reactive approach is out of the question, we may incur excessive maintenance costs to maintain the standard of service and/or reactive emergency works; and

- Portfolio sustainability - the Environment Agency does not have a clear understanding of the long-term cost associated with the current FRM asset portfolio – both in terms of maintenance and eventual replacement. There is no systematic mechanism for accounting for this portfolio viewpoint in making investment decisions.

In developing a holistic solution to address high development costs the above weaknesses must be taken into account.

3.2 Other pressures and context

Since the Streamlining project was initiated there have been a number of developments in the political landscape that raise the profile of this work:

- The potential result for failing to deliver the required Gershon efficiencies, this affects our reputation and questions our competence;

- The likelihood that the Comprehensive Spending Review 2007 will increase pressure to deliver significant efficiencies; and

- The requirement to demonstrate external stakeholders that the Environment Agency is capable of delivering savings by improving efficiency.

As always, there remains the risk of FRM asset failure, with potentially catastrophic consequences. The Environment Agency would face intense scrutiny by the media and potential public enquiry. If the competence of the Environment Agency is questioned, the politics could demand major change in

responsibility for FRM, especially since FRM is a very different function from the core business of environmental regulation. On risk grounds alone, the arrangements for FRM must be brought up to a standard which would pass scrutiny based on good practice, including the efficiency and effectiveness in delivering an FRM service and developing projects.

In summary the case for Streamlining is strong:

- Baseline demonstrates that the proportion of expenditure remains high;
- Sources of waste require action to rectify;
- The root causes of waste remain;
- Other weaknesses with the current approach;
- Other political and funding pressures to deliver significant efficiencies; and
- The need for the Environment Agency to be seen as a competent FRM delivery mechanism.

3.3 Objectives of the streamlining project

The solution must address the failures in the current system by:

- Recognising that until we have carried out an appraisal, we cannot change our commitment to an existing 'standard of service'[2];

- Understanding the scale and future costs of these existing commitments in order to inform our investment strategy – asset portfolio management;

- Accepting that we cannot afford to carry out an appraisal to change the standard of service in all locations; and

- Focussing appraisal of change on those locations where we are likely to deliver the greatest contribution to our targets.

The solution should be aimed at achieving value for money at a *programme level* rather than individual project level and optimising the programme within the boundaries of affordability.

In order to achieve a significant reduction in project development costs, the solution needs to address the root causes of the high level of expenditure on development identified in the diagnosis phase. Therefore, the objectives can be broken down further as follows:

- To increase the attrition rate of projects at an earlier stage in the capital programme;
- To produce a less complex, more consistent framework of investment decision products;
- To facilitate a culture shift towards risk management rather that risk elimination;
- To lead with a national approach in managing flood risk rather than reactive and demand led;
- To take a holistic view of the longer-term programme and asset portfolio sustainability; and
- To provide better visibility of expenditure

Finally, the solution must also be achievable, deliverable and operate within acceptable risk levels.

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[2] See glossary for terminology description

4 Appraisal of options

The following section sets out the criteria for assessing the options and gives a brief description of 3 options and a qualitative and quantitative assessment before selecting a preferred option. The preferred option will be explained in greater detail in section 5.

4.1 Assessment Criteria

Drawing from the objectives set out in the previous section and the parameters identified at the Directors meeting in March 2006, we have developed the following set of criteria which we have used to evaluate the options:

Assessment Criteria	Description
Financial efficiency	Does the option result in a less complex, more consistent framework of investment decision products?
	Does the option increase the attrition rate of projects at an earlier stage?
	Does the option facilitate a culture shift towards risk management rather that risk elimination?
	Does the option reduce the proportion of FRM capital expenditure spent on Development by 15% p.a.?
Management information	Does the option provide improved information of expenditure at each project stage for all FRM expenditure (from inception to completion)?
Sustainability	Does the option seek to capture and recognise the long-term costs of existing commitments before adding to them?
Risk / deliverability	How complex and risky will the solution be to implement and operate?

4.2 Assessment of the Options

Based on the findings of the diagnosis phase, the objectives set out in the previous section and the parameters set out above, we have identified the following three options for consideration:

1. Do nothing – retain existing approach;

2. Do minimum – retain the existing approach, but alongside this make the necessary changes to the way information about expenditure is collected and analysed. The objective of these changes would be to provide greater transparency and control of where expenditure is incurred in order to establish a baseline and mechanism for estimating potential savings of future changes to the approach; or

3. Streamline existing system – Implement the changes necessary to move from a 'push' to a 'pull' system for initiating project appraisal, develop a simplified project development route for replacement projects and improve management information systems.

Other sub-options for option 3 were considered and the preferred option narrowed down based on feedback from the Steering Group as discussed in section 2.3.

4.2.1 Option 1 - Do nothing

The do nothing option involves retaining the existing approach as described in Appendix 3. The table below sets out how the do nothing option performs against the qualitative criteria set out above:

Qualitative assessment

Criteria	Description	Comments
Financial efficiency	Does the option result in a less complex, more consistent framework of investment decision products?	No improvement
	Does the option increase the attrition rate of projects at an earlier stage?	No impact
	Does the option facilitate a culture shift towards risk management rather that risk elimination?	No impact
	Does the option reduce the proportion of FRM capital expenditure spent on Development by 15% p.a?	The Environment Agency would fail to meet this DEFRA target as continuing with the current approach will not result in a real reduction in development expenditure.
Management information	Does the option provide improved information of expenditure at each project stage for all FRM expenditure (from inception to completion	No improvement
Sustainability	Does the option seek to capture and recognise the long-term costs of existing commitments before adding to them?	No improvement – there would still be a risk that the capital programme is not financially sustainable in the long-term. When in place, AMPs will capture the long term costs associated with maintaining and replacing the Environment Agency's existing assets. However, there are currently no plans to integrate this information with the funding allocation process for the FRM capital programme. Therefore, there would still be a risk that the FRM asset portfolio is financially unsustainable.
Risk/ deliverability	How complex and risky will the solution be to implement and operate?	While the implementation risks are non existent, the existing system will continue to represent some operational risks. For example: *i) An unsustainable portfolio of assets is developed* - The current system does not factor in the affordability of maintaining the existing assets. This is not sustainable in the context of fixed budgets. *ii) Failure of existing assets* - The prioritisation system is weighted towards improvement. Maintenance activity is not systematically assessed to ensure it is delivering value for money. Consequently there are asset systems awaiting replacement capital where there is a high risk of failure. This means that in some cases, we are effectively allowing existing assets to deteriorate without proper appraisal of the consequences.

		iii) *Incoming investment decision products do not add value to organisation* - There is no existing or proposed hierarchy for the new products. There is a high risk that the additional cost in these areas will not reduce costs in others (e.g. appraisal). There is no shared view about the role of existing products such as strategies. iv) *National Audit Office review* - Potential questions from the National Audit Office and Public Accounts Committee regarding the ability to measure savings and improve efficiency.

This section sets out the potential financial benefits and costs of the 'do nothing' option. Obviously, the do nothing option would cost nothing to implement but it would also fail to generate any benefits. This would mean that the Environment Agency would fail to meet its DEFRA target to reduce the proportion of FRM capital expenditure spent on Development by 5% each year for 3 years.

4.2.2   Option 2 - Do minimum

The do minimum option involves improving the existing management information systems to provide greater transparency around where expenditure is incurred, in particular:

- The ability to track expenditure by project and location for all appraisal activity – whether by Area, NCPMS or any other party;

- The ability to record the cost incurred in each stage of project development;

- The ability to track actual expenditure and compare it to budget for all FRM asset expenditure and for all appraisal and delivery activity; and

- Provide a way of measuring both the current proportion of the programme spent on development and any future progress against the target.

Qualitative assessment

The table below sets out how the do minimum option performs against the qualitative criteria set out above:

Criteria	Description	Comments
Financial efficiency	Does the option result in a less complex, more consistent framework of investment decision products?	No improvement
	Does the option increase the attrition rate of projects at an earlier stage?	No impact
	Does the option facilitate a culture shift towards risk management rather that risk elimination?	Greater visibility of expenditure will not in itself create a shift towards a risk management approach. However, improved management information may facilitate more error detection and management methods rather than more process.
	Does the option reduce the proportion of FRM capital expenditure spent on Development by 15% p.a?	The Environment Agency would fail to meet this DEFRA target.

Management information	Does the option provide improved information of expenditure at each project stage for all FRM expenditure (from inception to completion)	The option would improve the amount and quality of management information available in relation to expenditure on the FRM asset projects.
Sustainability	Does the option seek to capture and recognise the long-term costs of existing commitments before adding to them?	Minimal improvement via AMPs but without changes to process there is no means to recognise the long-term costs and managing this systematically. Therefore there would still be a risk regarding the long-term financial sustainability of the FRM asset portfolio.
Risk/ deliverability	How complex and risky will the solution be to implement and operate?	The implementation risks associated with improving the Environment Agency's management information are: - issues with reconfiguring the current financial system - issues with re-implementing the projects module - links to other systems In addition, whilst this option would address current issues with management information, most of the operational risks relating to the current approach will remain as discussed in the "do-nothing" option: *i) An unsustainable portfolio of assets is developed* *ii) Failure of existing assets* *iii) Incoming products do not add value to organisation*

Quantitative assessment

This section sets out the potential financial benefits and costs of the do minimum option.

Implementing the do minimum option would not explicitly lead to any financial benefits and this would mean that the EA is likely to fail to meet its DEFRA target.

However, this option can be seen as a first step to realising potential efficiency savings in that by improving the visibility of expenditure, the EA would be in a position to gain greater control over expenditure and consequently put measures in place to reduce levels of spend (These measures are proposed in Option 3). It is also possible that the process of improving transparency around expenditure would alter behaviours so that expenditure falls.

The implementation costs associated with the do minimum option are in the region of £0.5m over 6 months. This relates to consultancy costs for a gap analysis and specification, with the likely requirement of resource for reconfiguring key parts of the Oracle Financials as well as re-implementing the Oracle Project module within the system. It does not include any additional license costs or customization, assuming that a standard specification of the Projects module will be sufficient.

4.2.3   Option 3 – Implement Streamlining

This option involves implementing Streamlining as described in detail in the following section 5. There are four key changes to the existing system:

1) Separating FRM asset projects into two development processes based on decision risk – one for replacement projects (replacement candidates) and one for projects which are proposing a change to the standard of service (change candidates). One aim of separating the programme into two different processes is to provide greater transparency around the level of funding associated with maintaining and replacing the existing asset portfolio over the coming years. This would therefore enable the Environment Agency to make more informed judgements about when and where to seek changes to the agreed standard of service and the size and shape of the change programme required.

2) Developing a streamlined project development route (prior to Gateway 1) for replacement projects - For projects where replacement is in line with the policy intent in the Catchment Flood Management Plan, and benefits identified in the Asset Management Plan justify the long term cost of the existing standard of service, a streamlined project development route would be available.

The streamlined pathway for replacement projects would mirror the latter stages of the current appraisal process i.e. cost effectiveness appraisal to identify the preferred technical solution to deliver the agreed standard of service defined in the Asset Management Plan. It would therefore not require evaluation of different options to change the standard of service. Responsibility for this channel would be held at the Area level.

3) Moving from a 'push' to a 'pull' system for initiating project appraisal for change candidates - Change projects would be initiated only after being given a mandate at a programme level, based on an assessment of risk at Gateway 0.

This approach recognises that the Environment Agency cannot afford to appraise all potential change candidates. A filter would operate at Gateway 0, using nationally held data, to prioritise potential projects based on a number of criteria such as the extent to which the project contributes towards outcome measures and the urgency of intervention. The number of change projects that proceed past this stage would be constrained by an assessment of the amount of funding available given the level of commitment required to fund the replacement programme. This would reduce the amount of work undertaken on change projects pre Gateway 0 and would also reduce the number of projects proceeding past Gateway 0.

Responsibility for the appraisal of change candidates would be held centrally.

4) Improving the existing management information systems to provide greater transparency around where expenditure is incurred. For this option, the management information solution would need to go beyond that described in the do minimum option in order to support the new model. A key requirement of the enhanced management information system would include the ability to track all expenditure related to the FRM asset portfolio against either the cost of sustaining the standard of service, or the cost of changing the standard of service:

– for expenditure relating to the *sustain* programme:

▪ the cost of producing Asset Management Plans;

▪ the cost by asset system - whether maintenance, repair or replacement;

▪ both historic and planned future expenditure in order to understand the whole-life cost; and,

▪ any consultant expenditure relating to supporting the sustain programme.

– for expenditure relating to the *change* programme:

▪ the cost of producing SMPs, CFMPs and other high-level strategies (e.g. TE2100);

▪ location of the all proposed change to the standard of service (pre-gateway 0);

▪ record expenditure at each stage of developing a project from inception to completion (G0 > G0.5 > G1 > G3 > Delivery); and,

▪ the type of expenditure (consultant, contractor, site investigation, cost consultant etc).

The table below sets out how the 'Implement Streamlining' option performs against the qualitative criteria:

Criteria	Description	Comments
Financial efficiency	Does the option result in a less complex, more consistent framework of investment decision products?	There are two new key products which will be introduced from 2007: • Catchment Flood Management Plans (CFMPs); and • Asset Management Plans (AMPs). The current approach to project development does not currently relate to either of these products. In particular there are differing opinions about the boundaries between CMFPS and project appraisal, as well as between project appraisal and AMPs. This model will provide a clear framework within which these products operate. The key benefit is that the model will use the investment channelled into these products to support decision-making, for example: • Using CFMPs as an additional filter in selecting projects for appraisal; and • Using AMPs as a means to provide visibility of expenditure by asset system and manage their whole life costs. This option would bring more clarity and distinction to the roles and responsibilities of Areas and NCPMS in relation to the development of capital projects and would reduce the number of handovers and also the complexity of multiple client relationships.
	Does the option increase the attrition rate of projects at an earlier stage?	The move from a push to a pull system for initiating projects would result in a greater attrition rate of projects at Gateway 0. A filter would operate at Gateway 0 to select those projects which contribute most to outcome measure targets or are most urgent. This assessment would take place at a programme level and be guided by assumptions around the number of projects that can be funded by the capital programme budget over the coming years. Currently, projects are filtered at Gateway 1 and would have undergone significant investment prior to reaching this stage. Therefore reducing the number of projects initiated would lead to significant savings.
	Does the option facilitate a culture shift towards risk management rather that risk elimination?	Implementing Streamlining would facilitate the shift toward risk management in a number of ways: • By clarifying accountability for project expenditure and decisions Streamlining would simplify the ownership of decisions, reducing the ability to hide behind committee-style collective decisions. • By providing training for project managers and decision-makers in the use of tolerance as a method of managing risk as part of delivering projects. • By providing improved management information and tools

Criteria	Description	Comments
		for managing risks at both the programme and project level, facilitating more error detection and management methods rather than more process. Better controls would provide comfort for managers that both potential and realised risks are being detected and acted upon.
	Does the option reduce the proportion of FRM capital expenditure spent on Development by 15% p.a?	The quantitative analysis later in this section shows that the estimated savings associated with this option are in the region of £8.2m per annum. This represents approximately a 4% reduction in the proportion of the investment programme spent developing projects.
Management information	Does the option provide improved information of expenditure at each project stage for all FRM expenditure (from inception to completion	This option would provide significant improvements to the amount and quality of management information available in relation to expenditure on the capital programme.
Sustainability	Does the option seek to capture and recognise the long-term costs of existing commitments before adding to them?	AMPs would provide information on the whole life cost of existing asset systems. They also provide a forward analysis of when asset systems would require a large injection of investment in order to continue providing the current standard of service. Collectively AMPs would provide important information as to the financial sustainability of the current FRM asset portfolio and indicate the affordability of making additional acquisitions and enhancements.
Risk/ deliverability	How complex and risky will the solution be to implement and operate?	Set out below are a number of the key risks associated with operating this option which would need to be managed: • The new model recognises that the Environment Agency cannot afford to appraise all potential change candidates. However the Environment Agency will need to accept that the trade off associated with reducing the number of projects which undergo appraisal is that in some cases there may be less optimal decisions made. For example, in the new model there may be instances where an existing asset is not considered a priority to undergo appraisal (i.e. undergo an assessment of whether the level of protection should change). In this case the asset may end up being replaced to the same standard of protection. Whereas if an appraisal had been undertaken there is a possibility that it could have concluded that a higher cost: benefit ratio could be achieved by improving or reducing the level of protection. • The replacement route would represent a significantly simplified version of the change route. There is a risk that projects which should be change candidates take the replacement route in order to increase the speed of delivery and reduce the level of input required. This is mitigated be a series of controls and checks on this route, set out in section 5.2. • There is a risk that AMPs and CFMPs are not of sufficient quality to provide the planned controls of potential replacement and change candidates in a reliable and robust manner. A recent review of CMFPs has highlighted quality

Criteria	Description	Comments
		and consistency issues. Equally AMPs do not yet exist. This means the specification and production of the two products are a key focus of the implementation.
		The Environment Agency needs to consider whether the reduced level of expenditure on project development justifies these increased risks. These operational issues and proposed mitigating actions are considered in more detail in Section 5.

Quantitative analysis

This section considers the financial benefits and costs of the 'streamline existing system' option. In summary, we have identified the potential for approximately £8.2m of annual savings, predominantly in reduced expenditure on consultants. The cost of implementing the streamline option has been estimated at £1.8m.

Financial benefits

Significant annual savings have been identified based on a £200m programme, predominantly from reduced expenditure on engineering consultants:

Activity	Estimated Savings
Remove pre-gateway 0 studies (prefeasibility, inception reports etc)	1.75% (£3.5m)
Remove viability reports	0.45% (£0.9m)
Simplified replacement route (reduced option appraisal)	0.65% (£1.3m)
Gateway 0 mandate (fewer change projects initiated)	1.25% (£2.5m)
Total savings	**4.10% (£8.2m)**

The detailed assumptions underpinning these savings are set out in appendix 5.

Implementation costs

The main changes are associated with:

- Removing current redundant investment appraisal products (pre-feasibility and viability);

- Prototyping and piloting each of the proposed change gateway 0 and the sustain gateway 0;

- Developing fit for purpose product specifications for investment appraisal products (AMPs, CFMPs, Strategy Plans, Project Appraisal Reports, Cost Effectiveness Appraisals);

- Introducing and embedding the new process for projects and decision making;

- Changing roles and responsibilities to support the above changes; and

- Changing the management information system to support the above changes.

We have set out the estimated resource requirements and costs based on an assumed approach to implementation that uses in-house resource where possible and leverages external support where required. The cost of implementing has been estimated at £1.8m, depending upon the level of external support required.

4.3   Conclusion

Option 1 – "do nothing" should be rejected as it fails to meet any of the objectives of the project. In addition, the Environment Agency would remain exposed to a number of existing risks, such as the sustainability and affordability of the capital programme and the risk that some assets are effectively being allowed to deteriorate without proper appraisal of the consequences. Most importantly, this project has highlighted that the Environment Agency's management information systems and aspects of its portfolio and programme management is inadequate for the scale of public investment and adverse risk associated with the programme. Maintaining the status quo would leave the Environment Agency exposed to scrutiny from a number of external bodies and the public.

Option 2 – "do minimum" makes no proactive attempt to reduce either the sources of waste identified in section 3.1.1, the root causes in section 3.1.2, or address any of the identified failings of the current approach detailed in section 3.1.3. As such it is unlikely to directly result in a reduction in the cost of project development. This option could potentially represent a first step towards implementing the preferred option by delivering improved programme and project information. It is estimated that the implementation costs associated with this option would be approximately £0.8m and would not directly result in any measurable reduction of the cost of project development.

Option 3 – "streamline existing model" is the preferred option, as it is the option that performs most strongly against the criteria. It has been specifically designed to address where possible the sources of waste identified in section 3.1.1, the root causes in section 3.1.2, and address the identified failings of the current approach detailed in section 3.1.3. It is estimated that the total implementation costs associated with this option would be approximately £1.8m over 18 - 24 months. In return it is estimated that this option would make an initial reduction in the cost of project development of 4.1% generating approximately £8.2m of annual savings on a £200m FRM project programme.

Taking the average project development cost over the last two years of 30%, this provides an expected reduction due to streamlining to just under 26% within two years. The payback period for the initial implementation of Streamlining is less than two years.

In addition, by implementing Streamlining there is the potential for future reductions in the cost of project development toward the target of 20%, as we develop greater knowledge of the programme and further reduce some aspects of project development expenditure to suit. Implementing Streamlining would result in significant improvements to the Environment Agency's management information systems in order to provide greater transparency and control of expenditure. Implementing Streamlining also facilitates the drive for improved Asset Management by providing important information as to the financial sustainability of the current FRM asset portfolio as well as indicating the affordability of making additional asset acquisitions and improvements.

5 Preferred option

This section describes of the preferred option in more detail and considers the key implications, benefits and risks of pursuing this solution.

5.1 The Streamlined model

The streamlined model would divide FRM activity relating to assets broadly into:

- A 'Sustain' Programme – activity and investment required to sustain the existing portfolio where we wish to continue providing the agreed standard of service; and

- A 'Change' Programme – to investigate strategic options for further reducing flood risk.

The Sustain Programme would focus on delivering, for the best value for money, the current commitment – measured by meeting performance specifications whilst minimising the whole-life cost. It is proposed that responsibility for the sustain programme would be held at the Area level and include:

- Producing Asset Management Plans setting out the costs and benefits of existing assets;

- Managing the maintenance, repair and replacement of assets to minimise whole-life cost; and

- Identifying candidate change projects and submitting them for investigation.

The Change Programme would be concerned with delivering changes to further reduce flood risk – measured by outcome measures. It is proposed that national teams would hold responsibility for the change programme, including:

- Analysing potential locations for changing the standard of service and consulting with regions and stakeholders on which change projects to appraise;

- Commissioning the investment appraisal of change projects, and holding the budget for this; and

- The delivery of change projects that receive approval and funding.

At the heart of the model is the programme level activity to enable these two functions to deliver on their areas of responsibility. The model has four elements that are inextricably linked:

- The hierarchy of products;

- The process for projects going through the system;

- The allocation method; and

- Roles and responsibilities.
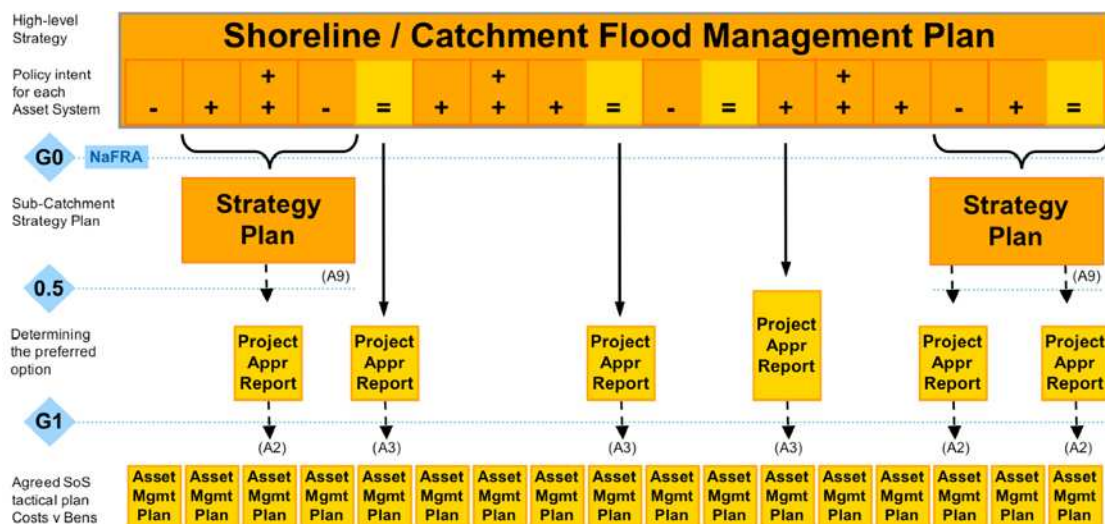
5.2 Asset investment decision products

Taking account of the different views and responsibilities and addressing the needs of the many stakeholders and partners in developing an FRM project is not simple – there are a plethora of interested parties including RFDCs, Local Authorities (highways, drainage, land management, asset management, emergency teams), regeneration partnerships, Natural England, Water Companies, British Waterways, Network Rail, emergency services and others.

Shoreline & Catchment Flood Management Plans (S/CFMP) are one important element of the planning framework and bring some coherence to the complex environment. These are vital and implementation of streamlining will require significant effort to ensure that S/CFMPs are fit for purpose within the Streamlining context.

Equally, Asset Management Plans will be critical in the Environment Agency's ability to manage its commitments over the long term. The organisation needs to ensure that the specification and cost of delivering these are well controlled, and that they are effectively leveraged as a means to define and measure the service the Environment Agency provides in terms of managing flood risk.

The proposed model attempts to incorporate both of these products within the context of the requirement to reduce development costs.

The Streamlined product hierarchy

The diagram above shows how the four investment appraisal products that inform our investment decisions would relate, with high-level strategic plans at the top and more tactical plans at the bottom.

5.2.1 Shoreline / Catchment Flood Management Plans

S/CFMPs would set the *policy intent* that can be translated as one of four policy objectives for each asset system:

-   Reduce the current standard of service (with disposal of assets where required);

=   Continue with current standard of service (sustain standard of service);

+   Improve current standard of service to meet climate change risk etc. (maintain standard of protection; and

++   Improve or enhance the current standard of service by improving the standard of protection.

In addition, S/CFMP would identify (at a macro-level) appropriate grouping of asset systems where there are interdependencies. S/CFMP would not contain sufficient detail to make an investment decision, as it would not develop options (and therefore costs) to a sufficient level of detail - but S/CFMP would lay appropriate boundaries within which a more detailed investment appraisal can operate. S/CFMP would take a wider view of flood risk considering both actions that reduce the *probability* of flooding as well as actions that reduce the *consequences* of flooding.

The result of a S/CFMP would be a high-level plan of the basket of measures by which the Environment Agency would undertake to reduce flood risk in the catchment. Some of those measures would require further investigation, most commonly where an expensive hard engineering solution may be required. Other measures, such as flood warning, development control, land-use planning, incident management plans etc. do not require rigorous investment appraisal. More specific plans to deliver these other measures would be part of regional plans and justified by other means, usually as part of a national strategy for each type of intervention.

Being high-level, S/CFMPs are not the appropriate vehicle for making investment decisions; they inform the boundaries within which we then plan and carry out our activities. Major decisions to change the standard of service requires more rigorous justification and must follow the gateway process, beginning with Gateway 0 and leading to a Project Appraisal Report. For more complex or contentious changes a Strategy Plan considers the wider context, long-term, up/downstream effects as well as long-term financial and environmental sustainability. More simple changes to the standard of service would not require a Strategy Plan. The decision about whether a Strategy Plan is required or not rests with the Project Sponsor at Gateway 0.

5.2.2   Strategy Plan

As described above, where a change to the standard of service is complex or contentious the options for managing flood risk are often best considered at the sub-catchment or estuary-wide level. In these cases a higher-level Strategy Plan may be necessary.

Because of the variability of the nature of flood risk and the methods available in each situation for managing flood risk the Strategy Plan needs to be flexible. This flexibility will be reflected in scope and approach, although there will remain fundamental similarities in the structure and contents. An example of this would be the difference in approach for a fluvial sub-catchment with an urban conurbation compared to a coastal management unit or an estuary.

In addition, as additional information about the flood risk and the possible management options are gathered the business case needs to be reassessed. In this way the Strategy Plan must be able to absorb new information and detail as it arises, and the impact on options for managing flood risk. For example, if the geology of an area proposed for a possible storage reservoir is unsuitable and is likely to require significant treatment the business case should be updated to reflect this, potentially making this option not viable. The decision to continue with investigating options for changing the current standard of service must be taken with reference to the relative priority of the resulting investment. In some cases it may be necessary to curtail the Strategy Plan and concentrate on other means of reducing the consequences of flooding via improved flood warning, incident management, land use planning and development control.

A Strategy Plan is not required to justify the replacement to the same standard of service of existing FRM assets, unless the AMP, CFMP or some other source suggests that the current standard of service is inappropriate (either too high, or too low). Having considered the potential to change the standard of service via a Strategy Plan that does not in any way restrict the result of a Strategy Plan to contain a mix of both sustain and change projects – especially where a Strategy contains multiple FRM systems that are hydraulically interconnected at the sub-catchment level.

The Strategy Plan product is not essentially different to the current Project Appraisal Guidance (PAG) "Strategy Plan". In analysing the current approach we have found that we cannot cut corners with appraisal, but that the process and guidance needs to be more coherent and clear. Having said that, we need to take a new approach to choosing *where* and how much we spend developing this product, based on:

- An impartial and objective national perspective of risk;

- The long-term financial sustainability of the current asset portfolio, and;

- More closely matching the supply of justified change projects in line with funding.

Future changes to Project Appraisal Guidance would need to be taken into account to ensure the Strategy Plan continues to fit within the framework of investment decision products and continue to adhere to the relevant guidance.

The process for starting (at Gateway 0) and completing (at Gateway 0.5) of a Strategy Plan will be discussed in greater detail later.

5.2.3 Project Appraisal Report (PAR)

There are essentially three different types of PAR depending on the route taken, but all begin at Gateway 0 and all finish at gateway 1. One of these is specifically for projects that seek to sustain the current standard of service whilst the other two relate to potential changes to the current standard of service and are alternatives depending on whether a Strategy Plan is required or not.

Replacement PAR (seeking either A3 or A2 approval)

For those projects that have been given a mandate via Gateway 0 for replacement to the current standard of service, these projects would be the subject of a relatively short "cost effectiveness" appraisal. Various options for delivering the agreed standard of service are compared and the one with the lowest whole-life cost, whilst satisfying other requirements, is selected as the preferred option.

Change PAR (seeking A2 approval)

An A2 Project Appraisal Report is required for those projects where a change to the Standard of Service (SoS) has been determined within a Strategy Plan that has been given A9 approval. If the Strategy Plan has been able to determine the SoS this PAR will be similar in nature to the above replacement PAR, in that it will be a cost effectiveness appraisal. The difference will be that A2 approval allows a change to the SoS and therefore the appraisal will need to be more detailed, in recognition of the increase in investment decision risk inherent in changing the standard of service.

Change PAR (seeking A3 approval)

An A3 Project Appraisal Report is required for those projects where a change to the SoS is proposed but the flood risk problem is not considered to be complex or contentious and a Strategy Plan is not required. This PAR will need to consider the wider strategic implications (up/downstream effects and long-term) of the potential action. In determining the preferred option many different standards of service will need to be appraised. This PAR will be the most detailed as it will need to consider the strategic issues of upstream/downstream effects and long-term financial sustainability of the proposed change to the standard of service.

In this way, a PAR is the route from gateway 0 to 1, sometimes via a strategy plan (and gateway 0.5).

5.2.4 Asset Management Plan (AMP)

Asset Management Plans have been a critical part of best-practice Asset Management for at least a decade. For FRM, Asset Management Plans are about to be introduced and will eventually be completed for all systems. AMPs would be completed first for those asset systems where we are incurring expenditure. For the purposes of Streamlining, it is necessary the AMPs provide a measurable agreed standard of service and contains details as to the expenditure required to sustain this. Our minimum requirements for AMPs are as follows:

1) Problem description - <u>Why</u> we have an asset system in place;

2) Standard of Service – define in a measurable way <u>what</u> the assets are designed to do and their minimum condition grade;

3) Current Condition - Whether the assets are currently delivering the agreed SoS;

4) Action Plan - What we plan to do in order to provide the defined Standard of Service;

5) Costs - How much it is <u>costing</u> us over the life of the asset system; and,

6) Benefits - An indication of the <u>benefits</u> that are derived from the standard of service.

AMPs need to be short and to the point and the knowledge required for their production and upkeep retained in-house. AMPs are a prerequisite for the streamlining process and are vital to the streamlined model for the following reasons:

a) Collectively, AMPs will provide important information as to the financial sustainability of the current FRM asset portfolio and indicate the affordability of making additional acquisitions and enhancements;

b) AMPs will provide an indication of those asset systems for which we need to undertake a change to the SoS (via Strategy and/or PAR) in order to possibly dispose of or hand-over assets;

c) AMPs would provide a forward look of which asset systems may require a large injection of investment in order to continue providing the current standard of service – so we can better plan for the required investment appraisals in locations where we may wish to either improve or reduce the standard of service; and

d) As a default mechanism and means for managing our assets for those locations where we would like to carry out an investment appraisal to change the SoS, but cannot afford to do so due to other higher potential and more urgent locations.

AMP and S/CFMP would also be important filters in the process by which we intend to make the first sift of potential change candidates. This process will be explained more fully in the next section.

5.2.5 Feedback and reviews

Each of the products discussed above would necessarily have an impact on each other. The policy intent within an S/CFMP should inform the boundaries of the Strategy Plans and/or PAR. S/CFMP would also inform the AMP – especially in locations where we would like to possibly increase or decrease the current standard of service provided by the existing assets. Future reviews of S/CFMP would be able to draw on information about the costs and benefits of the existing assets from the AMPs and would also be better informed by Strategy Plans, especially where these have been curtailed. In these locations we need to manage flood risk using methods other than raised walls or embankments by increasing our efforts in reducing the consequence part of the risk equation. Similarly, wherever a Strategy Plan and PAR results in a change to the standard of service, clearly the AMP needs to be revised to reflect the new standard of service.

S/CFMPs would need to be reviewed on a 5-10 year basis.

The development of a full picture regarding the asset portfolio would take some time, with a few iterations of AMPs required as we gather better information. Once these are more mature, some parts of the AMP would need to be updated annually to inform business plans and the allocation. On a less frequent basis (3-5 years) we would need to review the agreed standard of service in light of changes in the source of flood risk as well as any changes in benefits.

There are also a number of feedback loops that result from projects progressing through the process, which are discussed in the next section.

5.3   The Streamlined process

In each section we have highlighted a different stage of the process to explain how it would operate.
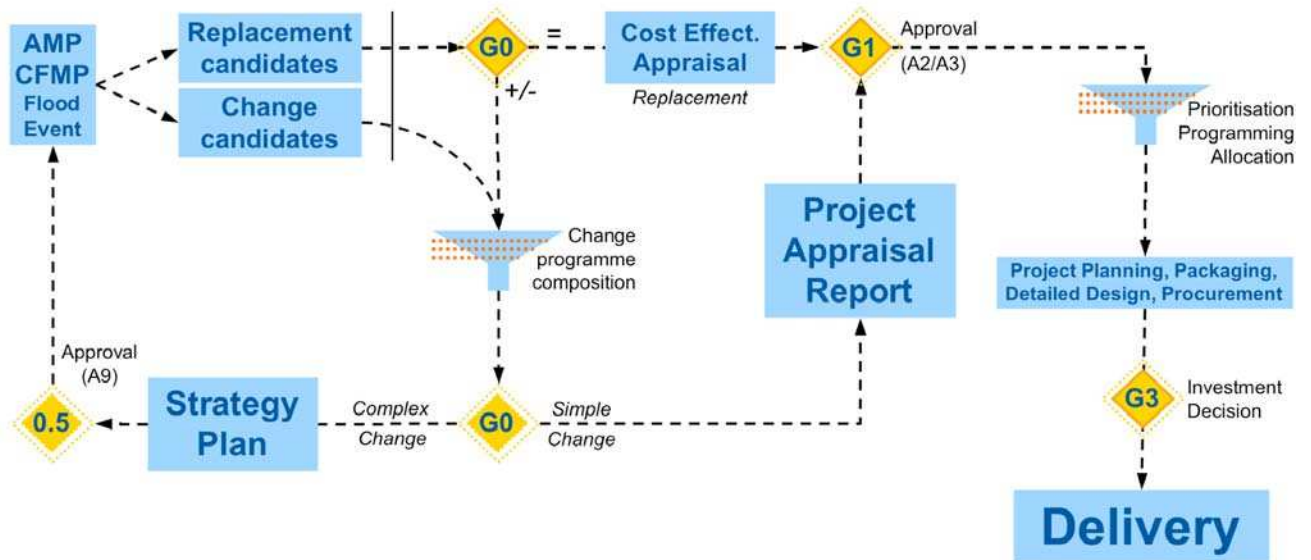
5.3.1   Control of the system - the Gateways

As can be seen in the above diagram, there are three key control points for all projects, with an additional gateway 0.5 for Strategy Plans:

Gateway 0 - Strategic Review: The selection of candidate projects to be given a mandate for further investment appraisal and development. Only after a candidate project receives a mandate at gateway zero would appraisal expenditure be incurred. This is also the point where for change projects the decision about whether a Strategy Plan is required is made.

Gateway 1 - Business Justification: Technical approval of the preferred option. Gateway 1 would *not be* concerned with affordability, programming or packaging of projects or the specific detail of how the preferred option would be achieved - only whether the business case of the proposed solution is sufficiently robust. In this manner, Gateway 1 would be a check to ensure that the preferred option represents good value for money, is technically feasible and the risks have been adequately identified and accounted for. It is at Gateway 1 that Scheme of Delegation approval is given.

Gateway 3 - Investment Decision: Contract Award. This is the point beyond which we would be delivering a real reduction in flood risk, where the contractor mobilises and delivers the specified FRM asset, subject to the appropriate stage boundaries and managing environmental, health and safety and other project risks.

Gateways 1 and 3 would be the same for both sustain/replacement and change projects. Gateway 0 would be different, because the information we have to make the decision is different, and the result if a project is rejected is different.

Gateway 0.5 – Strategic Direction: In addition to the three main gateways, for locations where a change to the SoS would be complex or contentious and a Strategy Plan is required, which is subject to a review and approval (A9) at Gateway 0.5.

5.3.2   Identification of need
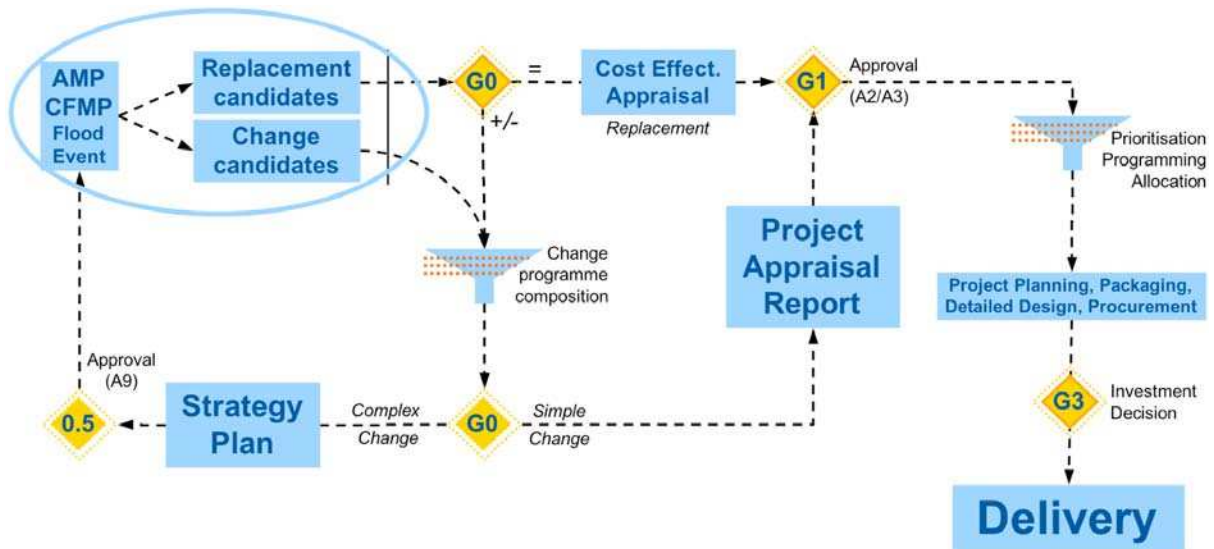
The first stage of the process would be the identification of need. The diagram above shows that the new model separates potential projects into two categories from the outset – replacement candidates and change candidates.

Replacement candidates are those where:

*   Benefits identified in AMP can justify the long-term cost of the existing standard of service;

*   Policy intent as stated in the CFMP is to continue the current standard of service; and

*   There are no proposals to raise or lower the current standard of service.

Change candidates are those where:

*   AMPs demonstrate that costs and benefits do not justify the continuation of investment;

*   CFMP policy intent is to change the current standard of service (increase or decrease); and

*   There are proposals to appraise potential alternative options.

Where do the candidates originate?

Candidate replacement projects would be planned for within AMPs under the heading of "Replacements". Where a replacement has been identified as necessary within the next three years the NFCDD asset reference would be specified. In addition, an asset may deteriorate faster than predicted (e.g. due to an event) and therefore require replacement sooner than planned.

A candidate replacement project would be identified by its NFCDD reference and would be supported by information in the AMP.

Candidate change projects would come from a number of sources:

*   CFMP identified locations where we have a policy intent to reduce flood risk and that is most likely to be achieved by improving the standard of service to reduce the probability of an event;

*   CFMP identified locations where we have a policy intent to increase flood risk to an area;

*   Previous strategic studies have identified locations where risk may be high or locations where the costs are high in relation to the benefits;

- AMP identified locations where the benefits that can be attributed to an asset system are low in comparison with the long-term cost of providing the standard of service;

- A flood event indicates a location where risk may be high;

- Local knowledge of the catchment has identified locations where risk may be high;

- Local knowledge of the asset systems has identified assets where the costs are high in relation to the benefits; and

- NaFRA or other high-level analysis has identified locations where risk may be high.

A candidate change/improvement project would be submitted as a simple GIS shape-file of the location at risk. This mechanism and how it works will be explained in more detail in section 5.3.4.

It is important to recognise that the Streamlined model would not lock the Environment Agency into continuing the status quo. There are undoubtedly many assets where the Environment Agency must consider reducing the current standard of service. The current system does not adequately select and prioritise the appraisal of potential disposal projects. Consequently, decisions to reduce the level of service either arise reactively due to lack of funding or assets continue to attract revenue expenditure for maintenance work, where the controls are much less stringent. The existing system therefore poses the risk that urgent or emergency works force a poor long-term decision without proper consideration of the strategic context. Within the Streamlined model the separation of replacement and change candidates means that there is more transparency around the implications of deciding the replace existing assets and a systematic method for dealing with all desired changes to the standard of service – whether this is an increase or decrease.

In order to ensure that projects take the correct route and provide senior decision-makers with visibility of the future investment need to sustain the agreed SoS and demand to change the SoS, all candidate projects would be managed via a single database. Replacement candidates will be referenced against their NFCDD reference and potential change candidates will be referenced via a unique identifier related to its location. In this way it will be possible to ensure that a replacement candidate is not also being considered as a change candidate as well as predict and programme for future investment. This is represented in the process as a vertical line before gateway 0.

5.3.3   Replacement Gateway 0 - strategic review: the first 'sift' of potential replacement projects.
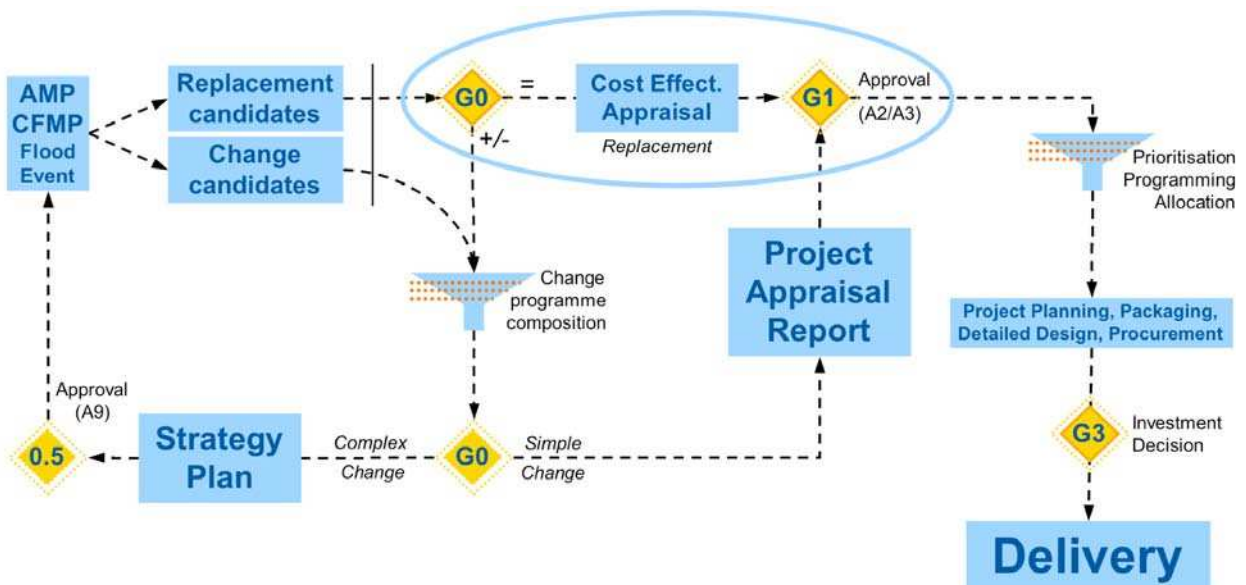
At gateway zero, replacement projects would be subject to three key challenges:

    a)   Confirm that the benefits and whole-life costs in the AMP demonstrate that the agreed

standard of service is economically justified.

b) Confirm that the policy intent identified in the CFMP matches the proposed replacement.

c) Confirm there is no demand for a change to the standard of service in this location.

Candidate Replacement projects that satisfy the above criteria would be given a mandate to take the simplified replacement route and conduct a "cost effectiveness appraisal" as discussed in PAG3. The key difference from the change route is that the replacement route would not involve considering alternative standards of service, but rather the most cost effective way of delivering the agreed standard of service. Because of this, the value of expenditure required for a cost effectiveness appraisal of a simplified replacement project is expected to be much less than that required for change projects.

Projects not given a mandate to take the simplified replacement route must therefore be considered as a candidate change project, where depending on the urgency of investment they may be more likely to be pulled forward as the subject of a PAR or Strategy Plan.

Replacement projects that take this route would then arrive at Gateway 1 via a relatively short "cost effectiveness" PAR, where the various options for delivering the standard of service specified in the AMP are compared with with a more robust cost estimate. In order to avoid potential double-counting of benefits and costs of a mutually dependent system of assets, the system-wide appraisal would be contained within the AMP, where the cost of sustaining the asset system to the agreed standard of service can be compared to the benefits attributable to the asset system.

5.3.4 Change Gateway 0 - strategic review: the first 'sift' of potential change projects.
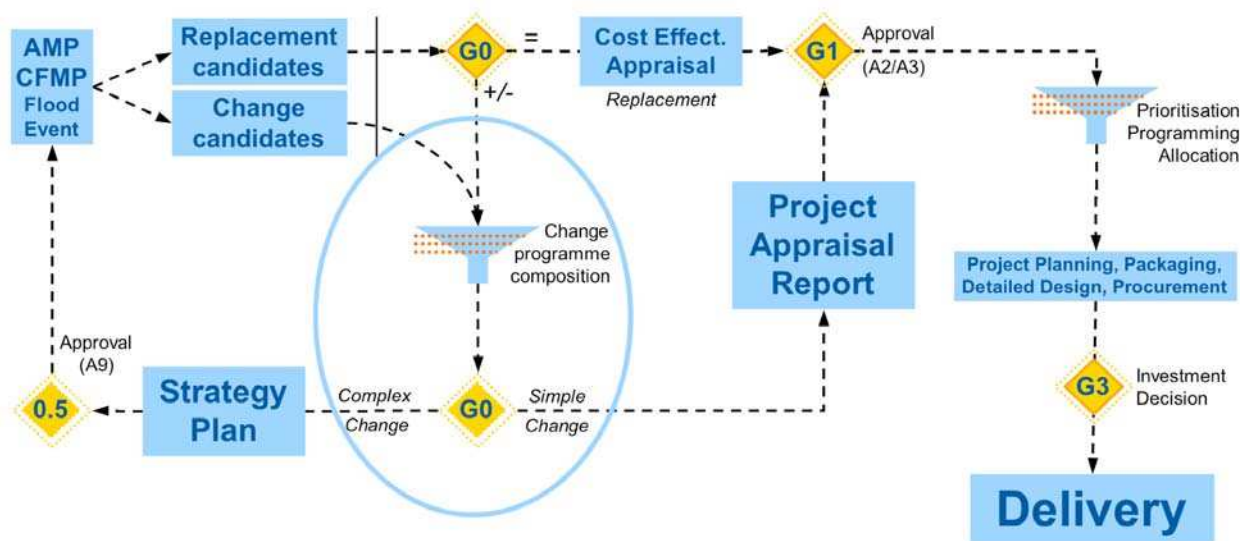
Because we cannot afford to fund the appraisal of an infinite number of potential change candidates, a filter would operate at gateway 0 to ensure we are selecting those which contribute most to outcome measure targets or are most urgent.

A key feature of the proposed process is a sharp initial decline from a large number of potential candidate change projects before gateway 0 to a much reduced number that are given a mandate to be investigated further. This initial cut is carried out on an impartial basis without external expenditure on consultants and using objective analysis of national information such as NaFRA and other existing datasets. The cost to make a candidate visible for selection would need to be kept as low as possible and as simple as possible to keep the initial hurdle low for these savings to be realised.

Further reduction of these potential change projects that have been given a mandate would occur during appraisal, most significantly during the early stages as part of an initial desktop study of each change project with only the most promising continuing through to gateway 1. The following diagram illustrates the proposed attrition of candidate projects.
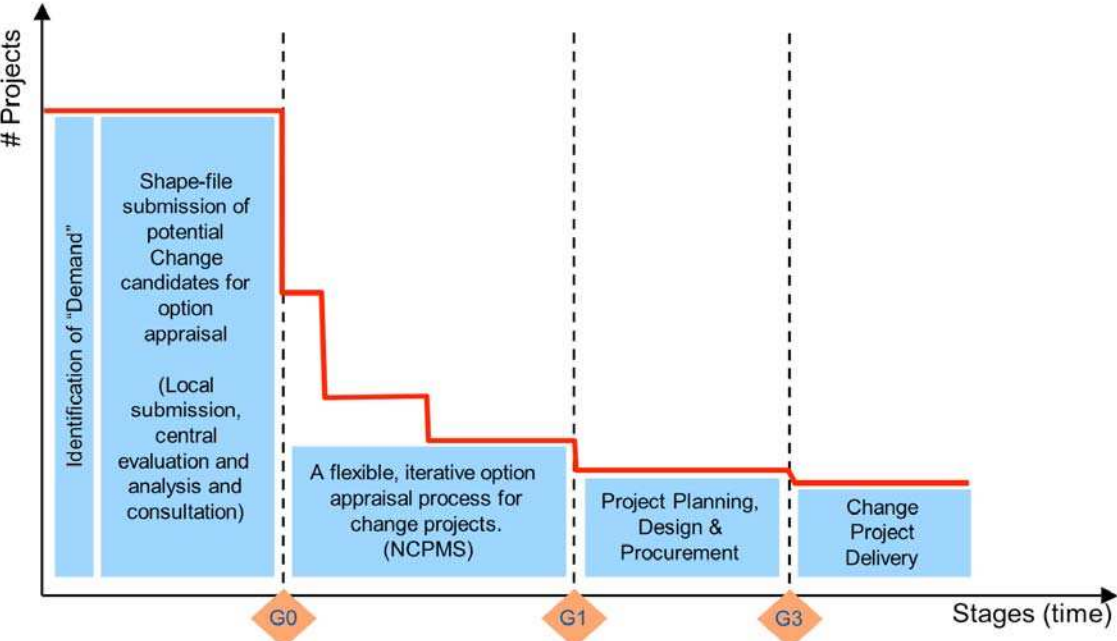
The diagram below illustrates the proposed filtering of change projects at gateway zero.
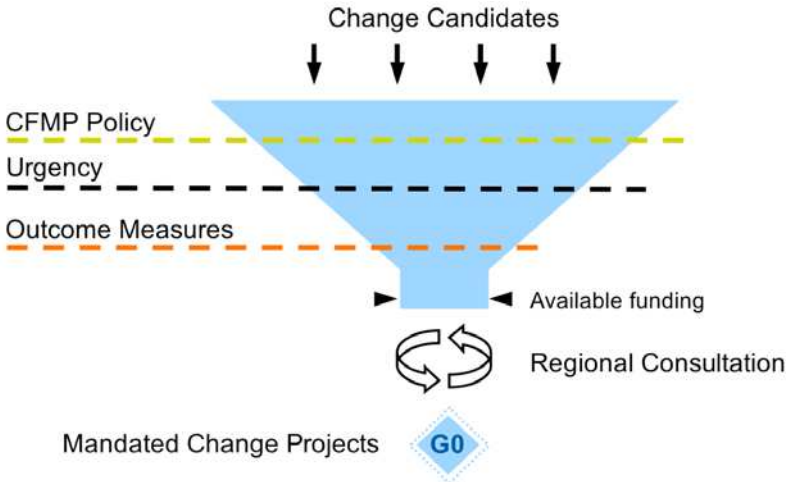
The proposed filter for change projects would operate on the basis of:

- *CFMP policy intent* – This identifies the fit with established policy, which has been agreed with RFDCs.

- *Urgency of intervention* - The urgency of the investment. For existing asset systems where a change is proposed, this information would be provided in the AMP. For all candidate locations, information would refer to whether there had been an event, any political / strategic imperatives (e.g. commitments previously made that the Environment Agency must honour) and other relevant information. This would be contained within the submission made alongside a shape-file of the location.

- *Contribution to outcome measures* – A shape-file for each location where a project is proposed

would be used to query against NaFRA and other datasets to provide an indicative scale of the risk in within that location. This would enable the Environment Agency to identify the relative priority of the various candidate project locations for which there is a demand for a change to the current standard of service. The following data provides an example of how this would work in practice using a theoretical shape-file against the existing NaFRA dataset:

The picture on the left shows an area of Wraysbury with the NaFRA risk bands and properties overlaid. The shape-file is the black polygon in the centre for which we can determine the following information:

Risk band	Area (m2)	Properties
Low	138,967	69
Moderate	41,945	21
Significant	954,576	13
No Result	60	135
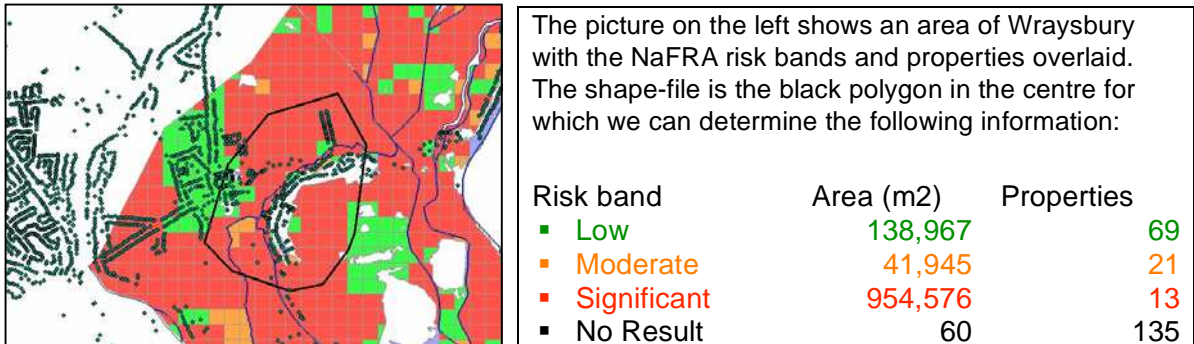
Additional national datasets (e.g. Flood Vulnerability Mapping) provide another level of information to be collated on the types of properties (e.g. care homes, schools), infrastructure (e.g. electricity substations, telephone exchanges) and other factors such as social deprivation scores. Whilst there would inevitably be inaccuracies with this information, it gives us a sufficient indication of the scale of flood risk in a given location, and therefore the scale of potential benefits in simple, objective and easily comparable terms.

Analysis of potential change candidates and subsequent prioritisation using this information would be undertaken centrally. A prioritised list would then be shared with regions and RFDCs who would make suggestions regarding the re-ordering based on a greater knowledge of the locations and taking account of other issues not considered in the analysis, for example, due to other regional development pressures, political sensitivity, etc. Following this consultation about the relative priority of the change candidates, candidates on the approved list are then given a G0 mandate to begin an investment appraisal - either a Strategy Plan where changing the SoS would be complex or contentious or an A3 PAR where the change is more simple.

Candidate replacement projects that are not selected for investment appraisal in any single year may be selected in the future. However, in the meantime, for locations where there is an existing asset, there needs to be a feedback loop to ensure that the necessary maintenance is carried out to continue providing the agreed standard of service. Candidates that are rejected on the basis of an incompatibility with the CFMP policy intent are unlikely to be considered again until such time as the CFMP is reviewed. Candidates that are rejected on the basis of a low contribution to the outcome measures can remain in the funnel for consideration in future years when funding for investment appraisal of change candidates may be increased. Given that the analysis of candidate shape-files is a relatively simple low-cost analysis, and that future improvements to NaFRA and other datasets would continue to improve the accuracy of the analysis, there is no reason why these lower-priority candidates cannot remain in the funnel. In addition, this would provide an indication to DEFRA and HM Treasury of ongoing "demand" for reducing the probability of flooding.

It is important to note that the rationing part of Gateway Zero would only be applied to FDGIA funded appraisals. Where a Flood Defence Committee wishes to spend local levy or other external contribution on appraising a project this rationing is not necessary. A project funded by means other than FDGIA must still follow the same process, and the resulting project will be considered alongside other potential projects when making the allocation beyond Gateway One.

5.3.5   G0 – G0.5 Strategy Plan Process

As described previously, a Strategy Plan is the mechanism by which we assess the strategic direction for locations where changing the SoS is complex or contentious. The decision about whether a Strategy Plan is required will be taken at Gateway 0.
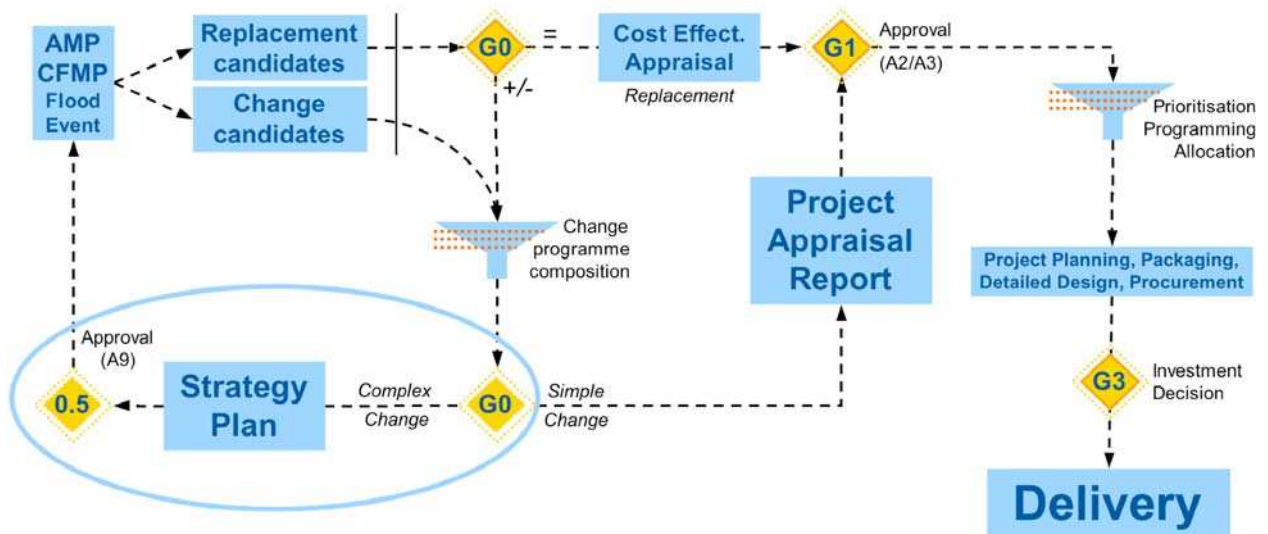
A Strategy Plan would start only after receiving a mandate to undertake an investment appraisal after the filtering of potential candidates at Gateway 0. The initial stage of a Strategy Plan would be to investigate the problem in greater detail based on existing information and a long-list of potential solutions with rough estimates of cost. If at this stage the cost is prohibitive or the scale of benefits in relation to the cost is lower than that expected in order to attract funding then a decision to curtail the Strategy Plan would be made. The Project Sponsor would confirm the curtailment and the decision recorded to prevent revisiting or repackaging the problem.

If the initial business case proves sufficient, a second iteration would follow. Depending on the project, it may be at this point where the consultation process is started, either just internally, or if necessary, externally. The Strategy Plan would take the appropriate approach given the risks and the potential benefits. It would be constrained though by ensuring that the cost of the Strategy Plan does not get out of balance with the potential benefits in terms of reduced flood risk.

A further iteration in the Strategy Plan process would be where there is a short-list of a few potential options for solving the problem and we then need to investigate in greater depth both the potential side effects as well as the cost. It is with this short-list that we would perform the full economic appraisal in order to determine the optimum solution to be taken forward as the preferred option.

If a change to the current standard of service can be justified, then A9 approval of the Strategy Plan would be given after review at Gateway 0.5.

At all points in the process, before and after gateway 0, NEAS would have visibility of project progress and would review the locations and advise likely requirements to satisfy environmental legislation, as well as provide input as to potential opportunities for environmental improvements.

A Strategy Plan ends at gateway 0.5, with A9 approval of the long-term strategic direction. A Strategy Plan would not include:

- Approval of expenditure required for implementing the Strategy Plan. Change Projects that are suggested by a Strategy Plan are required to have a Project Appraisal Report and gain A2 approval of the proposed expenditure at Gateway 1.

- Packaging similar work across areas that aren't hydraulically connected, this is done post gateway 1, when we do project planning of those projects that we have chosen to fund – otherwise we risk

packaging higher value for money projects with lower value for money projects, and sacrificing other high priority projects as a result.

- Detailed design – whilst outline design may be necessary to develop the Strategy Plan in order to assess the likely cost of options, this should not be developed any further than necessary to reach a decision about the preferred strategic option. Since optimism bias or other cost adjustment to take account of the unknowns is applied to the cost part of the benefit cost ratio, unnecessary detail within the Strategy Plan is premature.

As is the case now, A9 approval (at Gateway 0.5) of the strategic option would *not* mean that we are necessarily going to fund the works identified in the Strategy Plan. After Gateway 0.5, potential projects would be compared at Gateway 0 and funding allocated to projects that deliver the greatest overall contribution to the outcome measures and are deemed high priority in a particular year in line with available funding.

If all remaining options for making a change to the current standard of service are ruled out the Strategy Plan should be curtailed. In this case other means for managing increasing flood risk will be used aimed at reducing the consequences of flooding rather than reducing the probability. The type of actions available includes flood warning, incident management, land-use planning and development control.

A risk to be managed in future is excess expenditure investigating or developing Strategy Plans where the result is either "do-nothing", or low priority projects. The risk of these Strategy Plans not being curtailed early enough, due to political and local pressure, would remain. However, there are a number of key features that would be put in place to control expenditure on Strategy Plans:

- More visibility of expenditure on Strategy Plans, highlighting where relatively high costs have occurred;

- A national central budget holder for all appraisal activity, incentivised to minimise nugatory development spend and maximise outputs to inputs;

- One project budget holder, aware of the trade-off between increased detail and increased costs;

- Nationally based appraisal teams, able to take a more balanced, objective view; and

- Clearer accountabilities allowing performance management of individual project managers.

Most importantly, the scale of benefits that are likely to result would guide expenditure on a Strategy Plan. For example, as a guide, the production of a Strategy Plan should cost no more than £2,000 per benefiting property.

Individual candidates that come out of a Strategy are separated into change and sustain candidates and subject to a national assessment at the respective gateway zero for each of these. Where for reasons of better procurement a package includes both sustain and change candidates, these would be considered together as a single change candidate project.

5.3.6 G0 – G1 Project Appraisal Report (PAR) for Change Projects
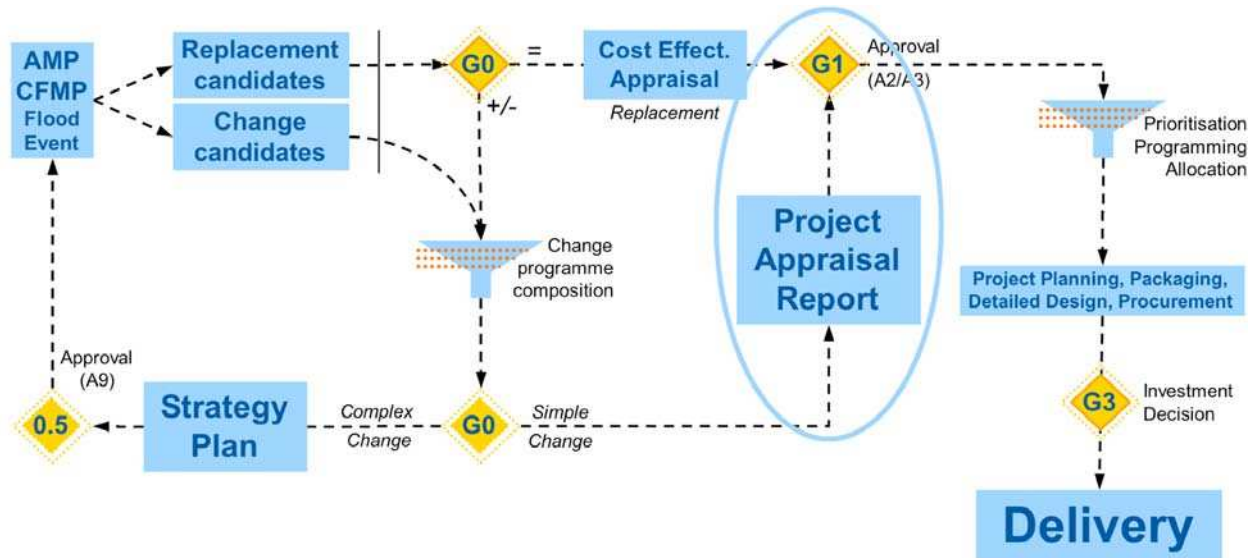
There are two types of PAR for change projects depending on whether a Strategy plan has been completed and approved (A9). Change projects that do not require a Strategy will be seeking A3 approval at Gateway 1. Change projects supported by a Strategy will be seeking A2 approval at Gateway 1. The process for each of these is fundamentally different.

There are essentially three different types of PAR depending on the route taken, but all begin at Gateway 0 and all finish at gateway 1. One of these is specifically for projects that seeks to sustain the current standard of service whilst the other two relate to potential changes to the current standard of service and are alternatives depending on whether a Strategy Plan is required or not.

Change PAR (seeking A2 approval)

An A2 Project Appraisal Report is required for those projects where a change to the SoS has been determined within a Strategy Plan that has been given A9 approval. Typically the Strategy Plan will have determined the standard of service of the system (e.g. the line, length and height), but not the specific treatment or means for providing the new standard of service (e.g. whether the increase in height will be achieved with a new earth embankment or a cantilevered steel sheet-pile wall). The PAR then assesses the various options available to deliver the strategy defined standard of service choosing the most cost effective method that still satisfies the requirements set out in the Strategy. In this way, the A2 change PAR is similar in nature to the replacement PAR. The difference will be that A2 approval will result in approval of a change to the SoS and therefore may need to be more detailed in recognition of the increase in investment decision risk inherent in changing the standard of service.

Change PAR (seeking A3 approval)

An A3 Project Appraisal Report is required for those projects where a change to the SoS is proposed but the flood risk problem is not considered to be complex or contentious and a Strategy Plan is not required. This PAR will need to consider the wider strategic implications (up/downstream effects and long-term). In determining the preferred option many different standards of service will need to be appraised. This PAR will be the most detailed as it will need to consider the strategic issues of upstream/downstream effects and long-term financial sustainability of the proposed change to the standard of service.

For both of these PARs there will be cases where the business case for making the change to the standard of service is challenged by new information, and

As for Strategy Plans, expenditure on Project Appraisal Reports would be guided by the scale of benefits that are likely to result e.g. a rule of thumb might be it should cost no more than £2,000 per benefiting property for an A3 PAR, and significantly less than this for an PAR that is supported by a Strategy Plan.

5.3.7 Gateway 1 - Business justification: technical approval of the preferred option.
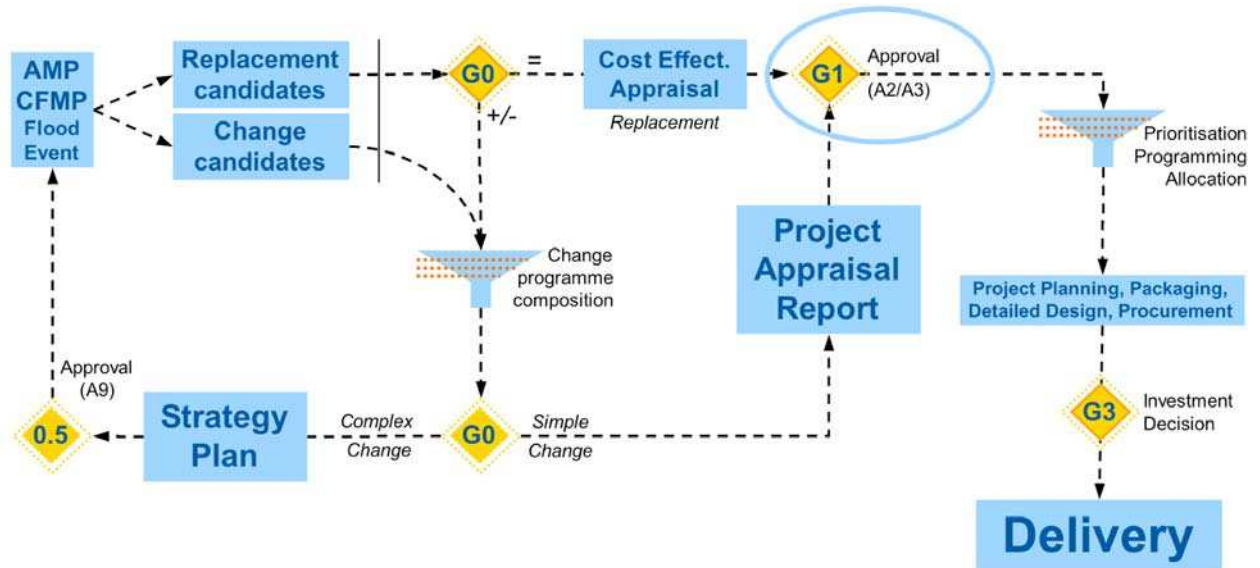
At Gateway 1 the completed Project Appraisal Report is subject to technical QA and either recommended for technical approval or not. NRG and PABs would continue to provide an independent check on the business case and highlight risks to the Project Executive. The Project Executive in consultation with the relevant SoD officer can then decide whether the costs of reducing those risks merits further investigation, or whether the risk can be managed during delivery and therefore not investigated further at this stage.

Together with replacement projects, change projects that are selected for delivery undergo project planning, packaging, detailed design and procurement before making a final investment decision at gateway 3.

5.3.8 Programming and allocation for Gateway 1 to Gateway 3

After receiving technical approval at Gateway One, all projects with technical approval of the option choice are compared and prioritised, taking into account both urgency and relative contribution to outcome measures. In this way projects are again pulled forward for project planning, packaging, detailed design and procurement. There is a need at this point to prioritise effectively between looking after existing assets that reduce flood risk and making efforts to further reduce flood risk by changing the standard of service.

The allocation of funding at this point is only for the cost of gateway 1 to gateway 3, although it is unlikely at this stage to see much attrition of projects – but to comply with OGC procedures there must be a final decision point at gateway 3 before a project can progress. This final Gateway also gives decision-makers an opportunity to check that the project is still on track and within the tolerances of the business case presented at Gateway 1.

As discussed later the allocation is a calendar event that occurs at a single time each year. The programming and allocation decisions need to take longer-term view rather than just a single point process view, taking into account the whole FRM asset portfolio, the forward programme as well as the next 12 months.

5.3.9 Project delivery and Gateway 3 (Investment Decision: Contract Award)

There are no proposed changes to these stages of the process and so both replacement and change projects would proceed through Gateway 3 and on to project in the same way as they do under the current system.

5.4 The Streamlined allocation method

There are three distinct management activities relating to expenditure on FRM assets: Allocation of funding, Programme Management and Portfolio Management.

- Allocation is the process of prioritisation and rationing the short-term (12 months) funding available across many competing opportunities. This has typically involved regional bidding for funding according to "need" alongside allocation to capital projects with sufficiently high priority score;

- Programme management is the short-medium term (1 - 5 years) decisions, pipeline management. Previously this has been a regional responsibility but has benefited from greater central scrutiny and challenge. The key part of the overall programme that would benefit from increased central responsibility are for expenditure on projects that seek to change the current standard of service – from the initial proposal through to the delivery and hand-over of the delivered asset improvement; and

- Portfolio Management is the medium-long term (5 - 50 years) drive to minimise the cost of providing an agreed standard of service alongside decision-making about where we should be developing projects to change the standard of service. This evaluates the financial sustainability of the Asset Portfolio and an assessment of the relative priority between building new and improving assets alongside investment to reduce the consequences of flooding.

Because of the annual allocation cycle the allocation of funding to specific projects is an event that currently occurs at a particular point in time rather than a function of the process itself. It also occurs at a number of key points in the process rather than a single point. As such, allocation is an "overlay" to the process of an individual project and considers the pipeline of projects. The "pipeline" from a change programme perspective refers to the number of projects within various stages in their development and delivery cycle and the projected costs of their completion.

The diagram below illustrates how Streamlining would group the allocation of funding and expenditure according to the different investment requirements of the sustain and change programmes.
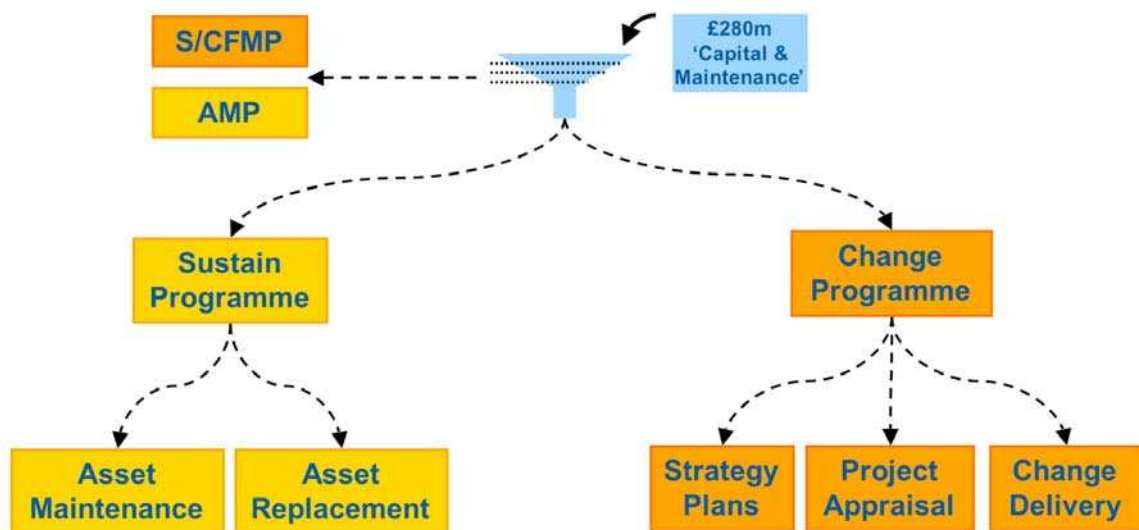
Optimise the management of *existing* FRM assets   Optimise the programme to *further* reduce flood risk

- The annual allocation becomes a more high-level process where funding is separated into different groups depending on the outcome. Within FRM there are two parts to flood risk, probability and impact/consequences. Activities that reduce the consequences of flooding (flood warning, flood forecasting, incident management, etc.) would form one group and activities that reduce the probability of flooding (asset maintenance, replacement, improvements, new assets) would form another. Within this second group that are focused on reducing the probability there

are two main groups:

> Asset Sustain Programme: activities and investment in assets to sustain their agreed standard of service. This includes the whole-life cost and activities such as maintenance, repair, refurbishment and eventually replacement of an asset. The cost of the asset sustain programme can be considered the true "need", since these are assets for which the Environment Agency typically is responsible for or at least has some "duty of care" responsibilities.

> Asset Change Programme: activities and investment in projects to change the agreed standard of service of existing assets, as well as constructing new assets. This would include all project development activities as well as the project delivery. Since each of the change projects represents an opportunity, the cost of the asset change programme can be considered a "demand".

- Programme management over the short-medium term (1 - 5 years) of each of the above Asset Sustain and Asset Change programmes have different objectives.

> The Asset Sustain Programme is focussed on reducing the risk of failure by delivering the agreed standard of service (which includes a minimum condition grade) whilst reducing the whole-life cost of the asset base. Challenge to the cost base for the Asset Sustain Programme is achieved by comparison of asset system benefits and costs, with the high-cost, low-benefit asset systems being subject to greater scrutiny and possible reduction in the minimum condition grade, or asset disposal. Due to the variability and geographical spread of the asset base, the responsibility for the Asset Sustain Programme is likely to remain within the region, with a key role for the Regional Asset Investment Planning teams in reducing the volatility of the forward investment profile. During implementation both the regional and area FRM teams will require significant guidance from Head Office Asset Management to help embed the new approach.

> The Asset Change Programme is focussed on delivering the improvement targets in terms of reducing the probability of flooding in locations where that represents the best value for money. In addition, it is important to manage the pipeline of asset change projects to ensure that future delivery is in line with likely funding levels. The current approach has overproduced in this area and needs to be carefully managed down.

The role of NCPMS straddles these two programmes, and they will need to respond to the needs of each programme and consider operational efficiencies in supporting the business.

- Asset Portfolio Management over the medium-long term (5 - 50 years) will be focussed on determining what shape and size the asset portfolio needs to be in order to deliver the government strategy for managing flood risk in England and Wales. Should we be growing the asset portfolio? Should we be focussed on urban or rural areas? Where are the opportunities for attracting additional funding? Is the focus on probability reducing assets too great or too little? And other more strategic questions about the FRM Asset Portfolio. At the most simple though, we need to continually evaluate the financial sustainability of the Asset Portfolio make an assessment of the relative priority between building new and improving assets alongside investment to reduce the consequences of flooding.

The Streamlined system provides greater flexibility in managing the programme both in year and over the longer term. Funding allocated to the Change Programme can be managed across the different stages of change projects in a more flexible way, pulling forward additional change projects at gateway 0 for investment appraisal as funding originally allocated to contingency is made available. Likewise funding allocated to a region's Sustain programme can be managed in a more optimal way to deliver the agreed standard of service for the least cost, by taking a whole-life cost approach.

The balance of the proportion spent on Sustain and Change would be dependent on the financial sustainability of the portfolio as a whole. If future funding allows we may be in a position to afford wide-ranging enhancements and new acquisitions. If future funding is less generous we may need to prioritise

more asset disposal and simple replacements alongside select few enhancements in order to further reduce flood risk in the most beneficial locations in a sustainable manner.

The change programme needs to be compiled with a long-term view based on a good understanding of the long-term costs of the existing portfolio alongside projected funding levels. With an eye on near-term funding realities, the allocation to investment appraisal needs to be flexible to suit the budget in any one year, both in ramping up and ramping down activities. It is much easier to stall or go slowly with an appraisal than it is to stall the delivery phase where contractual obligations have been entered into.

The sustain programme needs to be managed with an equally long-term view based on providing the agreed standard of service for the least whole-life cost. As a transition, AMPs would need to be informed by likely funding levels. The result would be a combination of "smoothing" investment profiles, delaying some investment, as well as the reality that some asset systems would be under-funded. Where this is the case, a percentage of assets within some systems are likely to be below the agreed minimum condition grade. In deciding which asset systems to fund, we can use the benefits identified in AMPs to identify higher priority asset systems. In some cases this would prompt a review of the minimum condition grade defined in the SoS so that it is more affordable and sustainable in the long-term.

Together, these two parts of the Streamlined approach show how the Environment Agency can make more considered decisions about how to invest the total FRM budget in relation to its assets. Alongside this we need to also consider the relative benefits of consequence reducing investments such as flood warning, land use planning, flood awareness campaigns, development control and other facets.

5.5   Streamlined roles and responsibilities

The section below sets out the proposed changes to the arrangements for managing the FRM programme within the Streamlining model. This is not an exhaustive list of all groups involved in projects, or the full job description of the various teams, but we have detailed some of the changes to the key roles involved in managing expenditure on FRM assets.

In summary, Streamlining results in some centralisation, some decentralisation and some simplification of roles and responsibilities. These changes have been limited only to those necessary to deliver streamlining and do not optimise the FRM structure where to do so would alter significantly the overall Environment Agency structure.

A key change is that responsibility and budget for all appraisal activity would be centralised. At present, the development phase is concluded with strong central control at gateway 1. The proposed structure retains this, but in addition brings this control earlier in order to limit development costs and ensure all projects under development are aligned with national priorities. Area input would remain important in identification of potential change candidates, as well as ongoing consultation throughout the project lifecycle.

Once projects are given a mandate at GW0, budget and responsibility is held by NCPMS, again with strong area input but with the double client (Area plus NCPMS) being eliminated.

Development activity resulting in the construction of an asset would require ongoing maintenance. Responsibility for the maintenance and operation of the asset would continue to rest with the Area, as is currently the case.

For capital maintenance and replacement projects, which maintain the agreed standard of service, responsibility and budget would be wholly with the Area. The appraisal of the agreed standard of service would be contained within Asset Management Plans. No option appraisal would be required for replacement projects. Technical appraisal would be undertaken where alternative technical solutions are feasible.

The scheme of delegation requires capital projects over £2m to be approved by The National Review Group. This would continue. For projects of this scale, NCPMS would be internally commissioned to undertake the project and to appraise alternative technical solutions, where necessary.

The vital responsibility for all other aspects of FRM – flood incident management, development control, land-use planning and public awareness campaigns - would remain as now.

Group	Current role	Changes
FRM Directors sub-group (DSG) and Board FRM finance committee	• Decide the allocation of the overall FRM programme including the proportion of expenditure on maintenance and replacement alongside the appraisal and delivery of change projects to best deliver the outcome measure targets.	• Agree the criteria for making the first cut of potential change candidates at Gateway 0. • Agree the criteria for controlling potential replacement projects at Gateway 0 • Approve the list of change projects which would be taken forward for appraisal as presented by the NCPG.
Regional Flood Defence Committees (RFDCs)	• Approval of their region's capital and revenue budget • [cross check with new agreement]	• Consultation and final approval of their region's list of change projects for appraisal. • Agree the regional AMP summary • Agree CFMPs

FRM Investment & Funding Team (I&F)	• Recommend the allocation of the overall FRM programme including the revenue and capital budget for each region in order to deliver the targets.	• Recommend the allocation of the overall FRM programme including the proportion of expenditure on maintenance and replacement alongside the appraisal and delivery of change projects to best deliver the outcome measure targets. • Prepare Strategic Investment Plan with long-term approach on the appropriate apportionment between asset management and the change programme. • Report to DEFRA on the delivery of outcome measures targets. • Develop with NCPG the criteria for the first cut of candidate change projects and recommend to the DSG.
National Capital Projects Group (NCPG)	• Collate the regional capital programmes • Scenario planning for different possible funding environments • Monitor the delivery of the regional capital programmes	• Compose and recommend optimal Change programme to deliver the outcome measure targets agreed with DSG and DEFRA. • Consult with the regions about the relative priorities of candidate change projects • Monitor the resulting Change Programme (Strategy Plan and Change PARs) post GW0 and the delivery of change projects post GW1 and GW3 • Develop with I&F the criteria for the first cut of candidate change projects. • Commission NCPMS to deliver the appraisal of agreed change projects. • Act as Project Sponsor for all Strategic Investment Appraisals
National Review Group	• Quality Review and recommend the SoD approval of capital expenditure in excess of £2m.	• Technical QA and recommend the SoD approval of Strategic Investment Appraisals. • Decide on the curtailment of investment appraisals as recommended by NCPMS project executive
National Capital Programme Management Service (NCPMS)	• Act as Project Manager for the Appraisal and Delivery of capital projects. • Programming and packaging of capital projects to gain procurement efficiencies • Manage health & safety and environmental risks of FRM projects.	• Act as Project Manager for the Appraisal and Delivery of change projects. • Programming and packaging of agreed change projects (and high-value replacement projects) to achieve procurement efficiencies. • Provide project support to local asset managers for the delivery of replacement projects. • Provide project support to regional Strategic Planning teams to enable the timely delivery of CFMPs to the required specification. • Recommend to NRG the curtailment of investment appraisals that do not meet certain minimum criteria.

Regional Flood Risk Management	• Act as "client" for Strategies • Collate the regional capital programme • Prepare the regional bid	• QA and technical approval of AMPs. • Collate and smooth the medium-term regional Asset Management expenditure profile. • Discuss with the NCPG their region's priority candidate change projects. • Prepare overall regional business plans as the submission for the allocation decisions.
Area Asset Managers and Asset System Management Teams	• Identify need and produce prefeasibilities. • Produce AMPs • Act as the client for the delivery of capital projects. • Other responsibilities as detailed in the IFRM handbook.	• Submit potential change candidates for central analysis and prioritisation. • Act as the client for Strategic Investment Appraisal • Deliver the agreed standard of service detailed in the AMP • Responsible for expenditure on maintenance, repairs and replacement as specified in the AMP • Deliver the actions specified in AMPs and are the single point of accountability for whole-life cost.
Head Office FRM Asset Management	• Responsible for process and policy relating to Asset Management. • Produce AMP work instruction, guidance and templates in accordance with specification. • Provide assistance to local teams in the interpretation of guidance.	• Provide assistance to local teams in the interpretation of guidance. • Audit the production of AMPs to ensure they are fit for purpose. • Monitor regional delivery of Asset Management outcome measures.

The above roles concentrate on how the programme and asset portfolio is managed. There are a number of options for the governance arrangements for individual projects. The PRINCE2 definition of these roles and how our current approach differs is outlined below.

Project Role	Current role	OGC definition
Project Sponsor	Partially covered with the business sponsor role.	Senior manager who provides the mandate and authority for the project.
Project Executive	Line Manager of the project manager	Holds the budget and is directly responsible for the delivery of the project to time, cost, and quality. Not necessarily the line manager of the Project Manager.
Senior User	Somewhat similar to the current Business Sponsor role	Represents the end-user on the project board ensuring that the products are fit for purpose
Senior Supplier	Not formally represented, but responsibilities are usually handled by either the consultant project manager or the client manager.	Represents the supplier (consultant or contractor) on the project board, ensuring that the project plan is deliverable to cost and time.

Project Manager	Typically duplicated, with NCPMS as the contract manager and the area client acting as quality manager. Responsibility for budget is shared. Consultant will typically appoint a project manager as a single point of contact for their involvement.	Tasked with managing quality, risk and budget of the project. Responsible for the day-to-day management of the project within clear tolerances set by the Project Executive and the Project Board. Receives ad-hoc direction from the Project Executive (but not necessarily line managed by them)

There are a number of options to consider including the best location for each of the project sponsor, executive, and manager roles, as well as the senior user and senior supplier roles where necessary. The various options will be considered in the first stage of implementation.

5.6   Streamlining model key benefits

The benefits of the operating model can be split into:

- Qualitative benefits

    - Providing greater control and visibility of expenditure;

    - Providing a coherent framework for new FRM products; and

    - Enabling the Environment Agency to live within its means with an Asset Management perspective.

- Financial benefits i.e. reducing development costs:

5.6.1   Qualitative benefits

Providing greater control and visibility of expenditure

The recent request from the NAO for expenditure on capital projects broken down by stage demonstrates that the current operating systems are not sufficient to provide management information. In particular there is no agreed baseline from which the DEFRA target can be measured.

Alongside this, our fieldwork demonstrated a lack of programme level financial information, particularly reconciling actual expenditure against budgeted. There was also no information about expenditure per asset system, so judgements could not be made about the effectiveness of the maintenance regime or its contribution to a reduced whole-life cost.

The new operating model provides a much clearer set of project and programme accountabilities, for the change and asset management regimes. It also identifies the key requirements for a management information system, allowing the collection and management of financial information.

Key benefits arising from the enhanced management information system would include the ability to:

- Track expenditure at any stage, on any project, and on any location;

- Manage budgets and asset systems by gaining a more detailed understanding of the cost profile associated with the existing portfolio;

- Record clearly the expenditure on delivery and development, and provide detailed information to third parties such as the National Audit Office;

- Tracking of expenditure against risk by linking GIS systems to expenditure systems; and

- Build up knowledge of the costs of appraisal and delivery of different asset systems.

There are two main products which will be 'live' from 2007:

- Catchment Flood Management Plans (CFMPs); and

- Asset Management Plans (AMPs).

The current approach does not currently relate to either of these products. In particular there are differing opinions about the boundaries between CMFPS and strategies, as well as between strategies and AMPs.

The model provides a clear framework within which these products operate. The clear benefit is that the model uses the investment channelled into these products to support decision-making, for example:

- Using CFMPs as an additional filter in composing the change programme; and

- Using AMPs as a means to provide visibility of expenditure by asset system and manage their whole life costs.

Enabling the Environment Agency to live within its means

Within the new model, AMPs would provide information on the whole life cost of existing asset systems. They would also provide a forward analysis of when asset systems require a large injection of investment in order to continue providing the current standard of service.

Collectively AMPs would provide important information as to the financial sustainability of the current FRM asset portfolio and indicate the affordability issues associated with making additional acquisitions and enhancements.

5.6.2 Financial benefits

Reducing development costs

The key benefit of the new operating model is that it should reduce the level of expenditure on development activity.

The key financial benefits arise from:

- Replacement projects: implementing a streamlined process for replacement projects which means that they only require technical options analysis; and

- Change projects: filtering potential candidates earlier, using nationally available data, so that fewer projects undergo appraisal and streamlining the appraisal process so that it is all undertaken by NCPMS.

A key point is to note is that most of the anticipated expenditure savings are through reduced third party expenditure as Environment Agency staff typically commission, rather than perform, most appraisal activity.

Reducing development costs: replacement projects

The use of CFMP and AMP products, together with other potential central controls, allows comfort that those projects meeting the criteria to avoid option appraisal do not present undue risk of making poor investment decisions. Projects where there is policy intent to change the current standard of service, community demand for a change, increased risk or low cost-benefit would not meet this criteria.

The reduced development cost would be expenditure on appraisal currently spend on projects that would go through the new process in future. The scale of costs saved is an unknown, as the current system:

- Does not distinguish between different types of capital replacement activity; and

- Distorts demand for improvements, through using one process to assess both types of project –

i.e. as full appraisals are required, teams carry out the investigative work to review options.

However, since development cost has been shown to be 30% of project-related expenditure, relatively few projects would need to go through this route to have a significant impact.

Reducing development costs: change projects

A significant driver of expenditure is the number of potential projects put forward. This is not constrained or controlled centrally. The volume of expenditure incurred and number of projects initiated is not known. Together with local pressure on the Area officers and arbitrary cut-off of the priority score system, there is implicit encouragement to push each project as far as it will go.

The model solution is to introduce an early attrition of demand for improvements based on national datasets. This allows the composition of the programme based on objective, national criteria, followed by regional consultation and input from RFDCs. This effectively allows Head Office to allocate a central team a set budget to spend on appraisal.

As this appraisal is centrally managed, there is greater opportunity to control costs and manage change projects as a programme. This means products such as Pre-Feasibility and Viability are no longer required.

5.7 Financial benefits

The following is an analysis of indicative potential cash releasing savings that we estimate to come from implementing the streamlined model. It is important to note that there is an inherent lack of information available centrally about baseline expenditure on the different stages of project development and delivery within the capital programme. For example, Area expenditure on capital projects is only visible centrally on an overall basis and NCPMS expenditure can be identified at a project level but it is not possible to identify expenditure on a stage by stage basis, e.g. viability, appraisal, delivery. Directors have therefore accepted that these savings are indicative only and should not form the basis of a target regime until such time as improvements to the management information system facilitate the development of more robust estimates.

The potential savings for some parts of the streamlined model are entirely dependent on the extent to which the Environment Agency wishes to leverage certain capabilities of the model and as such is difficult to predict in advance – much like the 'top speed' of a car is dependent on road and weather conditions as well as the driver's ability and willingness to take calculated risks.

A key point is to note is that most of the expenditure savings are through reduced third party spend as Environment Agency staff typically commission, rather than perform, most appraisal activity.

Potential financial savings

The table below sets out the estimated savings (based on £200m total expenditure on FRM Projects) that are potentially achievable by pursuing the 'streamline existing system' option:

Key Streamlining Activity	Low Estimate	Best Estimate	High Estimate
Remove pre-gateway 0 studies (prefeasibility, inception reports etc)	£2.5m	£3.5m	£4.7m
Remove viability	£0.5m	£0.9m	£1.3m
Simplified replacement route (reduced option appraisal)	£1.0m	£1.3m	£1.5m
Gateway 0 mandate (fewer change projects proceed past G0)	£1.2m	£2.5m	£3.6m
Total savings (per annum)	**£5.2m**	**£8.2m**	**£11.1m**

The £8.2m represents a 4.1% reduction in the cost of Project Development. The detailed assumptions underpinning these savings are set out in appendix 5:

5.8 Operating risks associated with the preferred option

It is important to recognise that there are a number of risks associated with the operation of the new

model which will need to be managed. In particular:

- The new model recognises that the Environment Agency cannot afford to appraise all potential change candidates. However, we will need to accept that the trade off associated with reducing the number of projects which undergo appraisal is that in some cases there may be less optimal decisions made. For example, in the new model there may be instances where an existing asset is not considered a priority to undergo appraisal (i.e. undergo an assessment of whether the level of protection should change). In this case the asset may end up being replaced to the same standard of protection. Whereas if an appraisal had been undertaken there is a possibility that it could have concluded that a higher cost: benefit ratio could be achieved by improving or reducing the level of protection;

- The replacement route would represent a significantly simplified version of the change route. There is a risk that projects which should be change candidates take the replacement route in order to increase the speed of delivery and reduce the level of input required. This is mitigated be a series of controls and checks on this route, These include the fit with CFMP policy objective, the costs and benefits contained in the AMP which is centrally reviewed for any proposed replacement activity, and the potential to identify nationally or at local level potential locations as candidates change projects; and

- There is a risk that AMPs and CFMPs are not of sufficient quality to provide the planned controls of potential replacement and change candidates in a reliable and robust manner. A recent review of CMFPs has highlighted quality and consistency issues. Equally AMPs do not yet exist. This means the specification and production of the two products is a key dependency within the implementation, with the requirement for the incoming products to meet the specification to the required quality. This is a defined workstream in the implementation.

The table below sets out the some of the key risks associated with implementing the preferred model and proposed mitigating actions to address the risks.

Ref.	Risk	Impact	Probability	Overall	Action	Mitigation
1	Not making optimum decisions means losing high cost: benefit projects	Medium	High	HIGH	Tolerate	The new perspective involves accepting that we cannot afford to ensure we have made the optimum decisions in all locations, merely that we can prioritise where we do so.
2	Asset management plans reveal we cannot afford current system	Medium	Medium	MEDIUM	Tolerate	The model requires the Environment Agency to confront the scale of existing commitments, this may be a problem but it is not attributable to the model, which would still operate just with fewer appraisals
3	The focus on existing commitments will lose bargaining power with Defra	Medium	Medium	MEDIUM	Treat	Nafra can be used to identify risk. However the Environment Agency's existing approach is not sustainable and continuing it for this reason is not appropriate.
4	Inadequate CFMP / AMPs will mean poor decisions taken	Medium	Medium	MEDIUM	Treat	The quality assurance of the products would be important especially early on. However even a poor framework would be an improvement to the current system
5	RFDCs and Regional bodies will dislike limited input into change programme	HIGH	HIGH	HIGH	Treat	This is balanced by increasing regional control over the asset management programme. RFDCs need to be signed up to the change and this would require strong communications work

6 Implementation

This section considers the delivery issues associated with implementing the preferred solution and is broken down into the following sections:

- Managing the Implementation of Streamlining;

- Implementation cost estimate;

- Benefits realisation; and

- Implementation risks

6.1 Managing the implementation of Streamlining

Directors have noted consistently through the design of the new operating model, that although major organisational change is not prescribed, implementation would require significant effort and commitment. The main changes are associated with:

- Removing current redundant investment appraisal products (pre-feasibility and viability);

- Specifying and influencing the delivery of new investment-decision products;

- Introducing and embedding the new process for projects and decision making;

- Changing roles and responsibilities to support the above changes; and

- Changing the management information system to support the above changes.

6.1.1 Outline Programme Plan

The Streamlining Programme will affect three key areas where changes are required, each of which will be managed as an individual workstream:

- Process and Products;

- Controls and Tools; and

- Roles and Responsibilities.

These three workstreams will together deliver the overall change required and the relationships between each will need to be managed during implementation. The Streamlining programme has three main stages:

- Stage 1: Building and Testing;

- Stage 2: Transition and Operating; and

- Stage 3: Embedding and review.

Key Workstreams

| Process & Products |
| Controls & Tools |
| Roles & Responsibilities |

| Stage 1 (Building & Testing) | Stage 2 (Transition & Operation) | Stage 3 (Embedding & Review) |

Stage 1: 60% / 30% / 10%
Stage 2: 20% / 60% / 20%
Stage 3: 10% / 30% / 60%
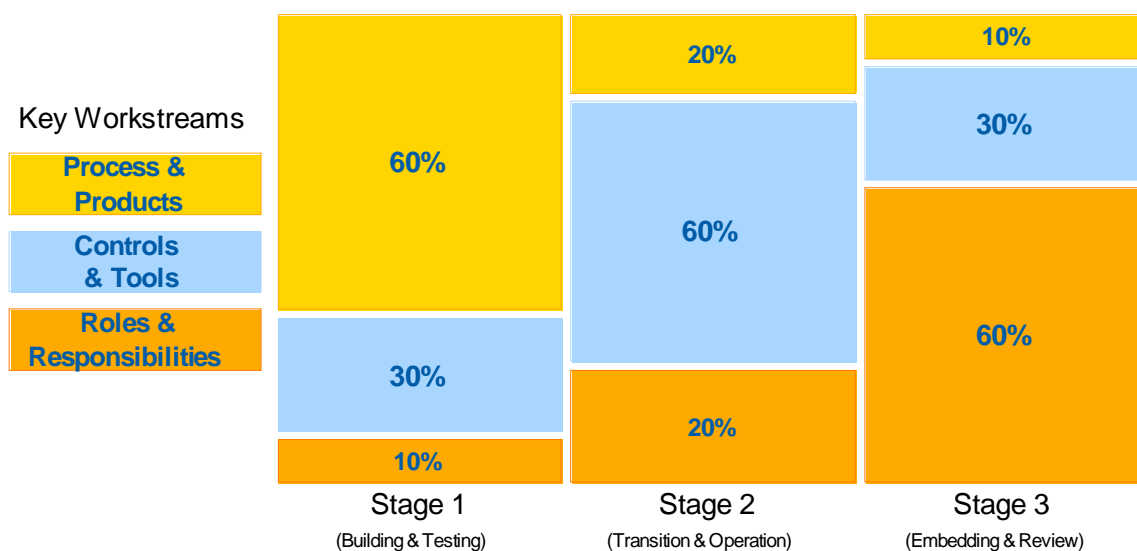
The graphic above illustrates the proportion of resources dedicated to each activity within the stage.

6.1.2 Stage 1 – Building and Testing

In **Stage 1** the main activity is to put the right process and products into place, so that the building blocks for the new model are specified and tested.

Stage 1 key activities within each workstream are:

Process and Products

- Design and test the process design, especially:

    o Shape-file submission process, analysis and prioritisation methods – this is a key risk to implementing Streamlining. If this is not possible in the short-term this will reduce the quantum of savings.

    o Compliance with EU directives, environmental requirements etc.

- Set out the interface between the FRM policy and process teams

- Identify relevant user groups, and engage front line officers in the design

- Carry out the product specification and testing of:

    o S/CFMP – Shoreline/Catchment Flood Management Plan

    o AMP – Asset Management Plan

    o Cost Effective Appraisal Report (Sustain projects)

    o Strategy Plan (Change Projects)

    o A2 Project Appraisal Report (Change Projects)

    o A3 Project Appraisal Report (Change Projects)

- Develop the guidance, frequently asked questions and support material for the new processes

- Remove the pre-feasibility and viability products

Controls and tools

- Develop product acceptance criteria for the incoming products including:

    - Checklists

    - Quality measures

    - Approval requirements

    - Sign off arrangements

- Produce the specification for the upgraded IT system

Roles and responsibilities

- Identify key user groups and stakeholders to engage in the design process

- Finalise the revised roles and responsibilities – in terms of:

    - Agreeing sign off arrangements

    - Producing guidance and detailed role breakdown

- Gain approval of revised roles and responsibilities

- Conduct organisational skills and capability assessment

6.1.3   Stage 2 – Transition and Operation

In **Stage 2** the focus is on ensuring the controls and tools designed to manage the new processes and products are in place and understood, and have begun to operate.

Stage 2 key activities within each workstream are:

Process and Products

- Develop the supporting materials, including if required 'help desk' and online tools

- Produce the guidance and communicate through user groups with FRM officers

Controls and Tools

- Procure necessary IT tools based on the specification

- Manage the delivery and migration to the new system

- Finalise the governance arrangements and undertake testing

- Operate the early filter of change projects

- Operate the gateway zero for replacement projects

- Operate the Streamlined allocation method

Roles and Responsibilities

- Train key staff in each part of the system, using where appropriate a 'train the trainers' methodology

- Develop training modules for other staff and link with existing practise

- Communicate the changes and start redeploying resources

6.1.4 Stage 3 – Embedding and Review

In **Stage 3** the focus is on ensuring that the new process and controls and tools are working effectively, embedding them into operational behaviour and handing over the new model to operational management.

Stage 3 key activities within each workstream are:

Process and Products

- Carry out final review of the products, including noting any ongoing issues raised and resolving where possible

Controls and Tools

- Conduct training on the IT tools for programme and project management

- Reviewing and adjusting control and roll out across relevant users

- Operate the new system to measure expenditure and assess achievement of the business case identified savings

Roles and Responsibilities

- Complete redeployment of resources

- Roll-out and operate new training modules

- Continue to communicate the changes

- Facilitate communication lines and team interactions

- Identify remaining skill-gaps and handover assessment to operational management

The overarching project plan is summarised below:

6.1.5 Proposed implementation timeline

The proposed timeline is for Streamlining to be operational within two years from the date of mobilisation. The following timeline assumes approval and mobilisation in December 2007, with partial usage by December 2008 and completion by December 2009 as follows:

STAGE	Activity	Dec 07	Mar 08	Jun 08	Sep 08	Dec 08	Mar 09	Jun 09	Sep 09	Dec 09
STAGE 1	Project mobilised	■								
	Stakeholder groups identified	■								
	Products specified	■	■	■						
	Process designed and tested		■	■	■					
	Pre-feasibility and viability removed		■	■	■					
	IT specification produced	■	■							
	Roles and responsibilities specified			■						
	Organisational skills reviewed				■					
STAGE 2	IT commissioned and migrated				■	■	■	■		
	Governance arrangements tested					■	■	■		
	Shape file process operational					■	■	■		
	Gateway 1 method operational					■	■	■		
	Allocation method operational						■	■		
	Training programme complete						■	■		
STAGE 3	Final product review complete								■	■
	IT PPM training complete								■	■
	New training modules operational								■	■
	Post-project review complete									■

6.1.6 Streamlining Programme Governance

The costs, risks and quality of the streamlining programme would be managed via a typical Programme Board consisting of senior managers who would meet regularly to review the progress of the implementation of Streamlining and provide guidance on issues that are raised.

A Programme Sponsor provides the mandate for the work and would typically be a Director for this. The Programme Board would be accountable to the Programme Sponsor for ensuring the delivery to time, cost and quality. The Programme Board would consist of:

- A Programme Executive – Chairs the Programme Board and carries overall responsibility to the Programme Sponsor for achieving the objectives and the benefits. Also provides ad-hoc direction to the Programme manager;

- A Senior User – representative of the end-user who will need to operate the Streamlined system and is most concerned with quality of the deliverable, that it is to the agreed specification. This should be a senior person within the Operations team; and

- A Senior Supplier – representative of the resources implementing the change required. This role is to ensure that the programme is deliverable in terms of cost and time and that the quality specified is achievable.

A detailed stage plan would be completed for each stage before starting. At the end of each stage the board would then review progress on the previous phase and approve the plan for the subsequent phase. This approach:

- Allows management of potential overruns and risk mitigation; and

- Recognises that realistic, detailed planning can only be completed for a short advance period

The Programme Board agree the overall Programme Plan submitted as part of the business case at the project initiation. They then receive Stage Plans for each subsequent phase of the programme. The Programme Manager is responsible for delivering the stage plans. The Board agree with the Programme Manager the arrangements for a range of project functions, including:

- Reporting exceptions – this is where tolerances agreed before each stage have been breached;

- Risk and issue logging – this is the capture of risks and issues which need to be highlighted to the Project Board; and

- Progress and updates – this is the recording of activity and progress against the project plan.

6.2 Implementation cost estimate

There are three key components of cost in the implementation of Streamlining:

1. The cost of making the necessary changes to improve management information, reporting and programme and project management tools;

2. The cost of managing of the implementation; and

3. The cost of training to operate the new approach.

In addition, there are costs associated with operating the new Streamlined system. Predominantly this involves the operation of the gateways and developing CFMP and AMPs to cover all asset systems. This has not been quantified as this cost is not dependent on streamlining and will be incurred anyway. Any additional resource required to operate the gateways will be covered by redeployment of existing resources.

In terms of the cost of training to operate the new approach, we have allowed for some work in developing the training modules as part of the Roles and Responsibilities workstream. We have assumed that the cost of training staff is accounted for elsewhere in the Environment Agency's spending programme, since both Asset Management and Project Management is effectively a core function of providing a Flood Risk Management service.

6.2.1 Improving management information and project management tools

A major contributor to the cost of implementing streamlining is the necessary review of IT tools in both providing management information as well as the collection and input of that information via a project management software suite. A key requirement of a future system is integration of the project management tools with Oracle Financials so that we have a single source of data and can measure expenditure at each stage in the project lifecycle and have greater confidence in the proportion of expenditure spent on project development.

This will involve work investigating both our management information requirements and the project management tools necessary to both provide this information, as well as assist in the management of project expenditure. Following a gap analysis from our current position we can then specify the changes required and the timeframes and costs of making these changes.

From an initial scoping of this work we expect this to cost in the order of **£700k**. A more accurate figure for the IT part of the implementation will need to be determined during the first stage when the specification is produced.

6.2.2 Managing the implementation of Streamlining

We have assumed that the following roles are required to deliver the implementation plan:

- 1 x Project Sponsor: Receives updates from the Executive and may give occasional input.

- 1 x Streamlining Programme Executive: to chair the above Board and provide ad-hoc guidance to the Project Manager. It is estimated that this role would require approximately 0.5 days per week of input.

- 1 x Senior User: to represent the end-user of Streamlining as discussed above. It is estimated that this role would require approximately 1 day per month of input.

- 1 x Senior Supplier: to represent the supplier of implementation resource. This person would also support the Programme Manager in delivering the implementation. This role is likely to require 3-4 days per week of input.

The above three roles form the Streamlining Programme Board to guide the implementation and provide quality assurance to the sponsor

- 1 x Streamlining Programme Manager: to manage the day-to-day plans and activities required to implement the Streamlining model including managing the links between each workstream and any external workstream required to achieve the Streamlining objectives.

- 3 x Streamlining Workstream Leads: to manage individual packages of work in the programme. These roles are likely to be full-time, and may require more than one person at times Alongside each of the workstream leads is a group of key stakeholders who will provide input and support the delivery of the changes required. These stakeholder groups will vary in size (1 - 4 people) and are likely to need to provide at least 0.5 days per week.

  - *Process and products* – This workstream lead would take responsibility for designing and testing the new processes, developing the product specifications, developing guidance and reviewing the operation of the new processes and products.

    Process and products skills required are:

    - problem solving abilities;

    - strong analytical skills;

    - good project management skills;

    - significant experience of delivering process reengineering and efficiency;

    - experience of implementing in-line QA and data quality reviews/audits;

    - PRINCE 2 practitioner who understands the OGC gateway reviews

  - *Controls and tools* – This workstream lead would take responsibility for the developing the IT solution and implementing and reviewing the controls in the new system (e.g. product acceptance criteria, governance, approvals process, Gateways) and measuring the benefits.

    Controls and tools skills required are:

    - strong analytical skills;

    - in depth knowledge of Oracle and other relational database systems;

    - in depth knowledge of MS Access and Excel (especially the limitations);

    - GIS experience (MapInfo, ArcGIS) and linking these to relational databases;

    - IT specification experience (gap analysis, spec writing);

    - knowledge of best-practice data management;

    - knowledge of industry standard PPM tools; and

- extensive experience implementing IT projects with the above components

– *Roles and responsibilities* – This workstream lead would be responsible for the people related aspects of the implementation including communications, training and skills and capabilities assessment. Streamlining is a transformation programme which requires completely new behaviours in order to realise the efficiencies required. These behaviours need to be trained and embedded as a new way of thinking that would require extensive communication and learning of new skills and ways of working.

Roles and responsibilities skills required are:

- extensive experience in delivering cultural change projects;

- PRINCE2 practitioner;

- excellent persuasive and communication skills;

- conflict resolution and negotiation skills;

- some understanding of employment law; and

- experience of managing industrial relations and union consultation.

- 3 x workstream support for each of the workstream leads. It is estimated that the three workstream support roles would be on a full time basis and will need to complement the skills of each workstream lead.

In addition, the implementation programme would require support and inputs from various parts of the business where there are key dependencies that Streamlining relies on but for which it is not directly accountable for. The cost of this is not accounted for as it is assumed to be part of the existing job description.

In terms of managing the implementation of streamlining we are proposing a hybrid approach with resource and expertise provided in-house where possible and supplemented with the experience and expertise of implementing major change projects from external suppliers. The Environment Agency needs to decide whether it has sufficient in-house capabilities and availability to devote to implementation, and where it might require additional support. Both the speed of implementation and the approach taken will have a large bearing on the cost of managing the implementation.

We have developed indicative resource costs for the approach outlined above:

Managing the implementation	Estimated Cost £k
Environment Agency input (8 FTE's @ 35k each)	280
Estimated external support	380
Total	**660**

We have assumed that the Environment Agency would undertake most of the key roles set out above. To provide this resource internally we have estimated a cost of £35k per FTE for the 8 x FTE's required. We have allowed for some external support that is likely to be required for specific specialist input (such as Oracle specialists and process re-engineering expertise) equivalent to 1.5 x FTE over the first 18 months of implementation. In practice this is likely to relate to input from more than one individual. The estimate also includes an allowance for Partner / Director quality assurance and review time to oversee the consultant input.

6.2.3 Summary of Costs

IT – Improved programme and project management tools	£700k
Internal costs	£280k
External costs	£380k
Contingency	£450k
Total	**£1,810k**

Depending on the implementation approach, the total figure for implementing Streamlining over an 18 - 24 month timeframe is **£1.8m** based on the assumptions above. To reflect the relatively high risk in terms of implementation the estimate of costs includes a contingency of £450k. The figures presented do not include VAT.

It is anticipated that implementation would result in a 2.1% reduction in the cost of project development in the following financial year, with the full 4.1% realised in the second year after implementation. For a total FRM project expenditure of £200m this amounts to £4.1m in year 1 and £8.2m in year two. On this basis, the payback period is therefore less than 12 months after the start of implementation.

6.3 Measuring the benefits

The NAO, DEFRA and the EA itself require acceptance of a baseline in order to meaningfully assess performance in reducing the proportion of development expenditure. The baseline methodology outlined in Appendix 4 provides a repeatable means of measuring the annual proportion of development expenditure in the future. In addition, proposed improvements in the accuracy of management information will facilitate a greater understanding of the cost structure. The following metrics will provide a means for tracking performance, of which only the first metric is currently possible:

1) Project Development vs Project Delivery: Annual expenditure as a proportion of the total FRM project spend. The methodology in appendix 4 provides a means to determine this using existing data.

2) Project Development vs Project Delivery: By individual project location. This metric is not currently collected due to the lack of a unique identifier for each location. It is also difficult to attribute the cost of S/CFMP, Strategy Plans and pre-gateway 0 studies – but with a unique identifier based on location (e.g. shape-files) we can more effectively measure the cost of project development by location.

3) Project Development vs Project Delivery: By project type for projects for which the objective is to sustain the current SoS and change projects which require robust strategic impacts assessments. It may also be possibly to differentiate between tidal, fluvial and coastal projects, or even between asset types, walls, embankments, pumping stations etc.

4) Project Development vs Project Delivery: By programme, in order to take into account the long timeframes (3 - 5 years) over which a project is developed and delivered. This will require a mix of historic spend information and forward projections. A predominantly forward projection of the predicted programme may be required in order to account for a growing or shrinking total project spend, although this is likely to be indicative at best.

We have included a benefits realisation plan in Appendix 5. This sets out the benefits that the project aims to achieve, explains how they would be realised and assigns a target delivery date and stakeholder to take responsibility for delivering each benefit.

As described in the previous section, we have also identified those parts of the baseline where we expect to see the effects of streamlining as it is implemented and embedded. Appendix 4 gives details of the areas where savings would result.

6.4 Risk assessment

Whilst there are considerable uncertainties in terms of costs and significant risks that need to be managed during implementation, there are also considerable risks associated with the maintaining the

status quo. The risks identified with implementation are detailed below should be considered alongside the identified operating risks in section 5.8. Risks associated with the status quo have been detailed in section 4.2.1.

The lack of management information and visibility about expenditure, coupled with our fieldwork demonstrating a lack of consistency in the process projects follow, mean that there is a high amount of risk in the proposals identified:

- The current delivery/development expenditure breakdown is based upon estimates and assumptions (although similar proportions apply to the NEECA vs. NCF breakdown);

- The lack of information about the composition of the current programme – in terms of types of projects, the cost of appraisal and the number of projects taken forward at each stage – makes comparing the current with the new very difficult; and

- The incoming 'products' (CFMPs and AMPs) are not yet clearly defined and operational.

Whilst these risks are not insignificant, they are risks that are inherent to the status quo as much as in the Streamlined model. There are other risks of not addressing the lack of clarity or hierarchy of the incoming products beyond the proposed model. In this respect in order to make Streamlining work, we have had to improve other parts of the system that required fixing anyway. The clarity brought by having a clear sense of purpose and direction for each of the products in the system has benefits beyond the scope of Streamlining alone.

6.4.1 Risks associated with implementing the streamlined model

The table below sets out the key risks associated with implementing the preferred model and proposed mitigating actions to address the risks.

Ref.	Risk	Impact	Probability	Overall	Action	Mitigation
1	Unable to convince key stakeholders of reasons for change	High	Medium	HIGH	Treat	Implementation would require strong leadership and direction from senior management, as it may be challenging for those in some roles within the EA
2	Scope creep – project becomes too wide given scale of change required	Medium	Medium	MEDIUM	Treat	Project to run as a programme and clearly scope out each phase. Strong project management and exception reporting arrangements to be embedded.
3	Model has major flaws and would not work	High	Low	MEDIUM	Treat	The detail of the model has been worked up in depth however it would adapt through the implementation. The success factors are based on the principles rather than the mechanics.
4	Model is diluted too far to be successful	Medium	Medium	MEDIUM	Tolerate	Accept that some changes would happen in implementation for practical and pragmatic reasons, however the scope for change needs to be identified
5	Lack of in-house expertise to deliver	High	Medium	HIGH	Transfer	Identify resources required and engage external support as required. Clear accountabilities for delivery to be part of the programme management arrangements.
6	Incoming products do not conform to required specification	High	High	HIGH	Treat	Key requirement for the implementation is for the programme to be a stakeholder with sign off powers for the CFMP and AMP specification
7.	Project plan is unrealistic	Medium	Medium	MEDIUM	Treat	Project board to review each stage implementation plan. Exception reporting (as per PRINCE2 / OGC) to be operated.
8.	Implementation on back of IFRM means 'change fatigue' is encountered	Medium	Medium	MEDIUM	Tolerate	Although this is another change programme it would require less structural change and should be welcomed as providing a cohesion to the current messiness.

Appendix 1 – Glossary

We realise that the terminology we have used is not familiar to all Agency staff. The table below sets out some of these terms.

Standard of Service
A defined, objective measure for an asset – e.g. for a wall this would be the height in metres above ordinance datum (mAOD) and a minimum condition grade in line with the potential consequences of failure.

Standard of Protection
A subjective, changing measure of the level of risk mitigated by an asset – e.g. to afford protection from a theoretical 1/100 year event. Determining whether a specific water level is representative of a particular return period is dependent on a large number of variables such as hydrology and hydraulics and assumptions about the long-term effects of climate change, geomorphology and future effects of development as well as the ability to calibrate the models against real events.

Whole Life Cost
The sum of the cost of activities to maintain and replace an asset over its planned lifespan – the total cost of ownership

Asset Management Plans (AMPs)
A plan setting out, at the minimum, the planned actions to sustain an asset system to the agreed standard of service and the associated cost.

Walk away
A decision to cease maintenance and dispose of, or allow an asset to fail

Shape file
A collection of co-ordinate points that form a polygon – from which nationally held information related to that location can be generated.

Gateway 0 (GW0 or G0)
The point at which a candidate for a change project becomes a mandated project, with a unique identifier and the ability to incur project development expenditure. For replacement projects, this is the gateway that must be passed before it can avoid the full option appraisal.

Gateway 1 (GW1)
Technical approval of a preferred option – option choice. For change projects this is the result of a Strategic Investment Appraisal. For simplified replacement projects this is on the basis of the Asset Management Plan.

Gateway 3 (GW3)
Investment decision. The point after a project has been allocated for and has completed the necessary design, packaging and procurement. It is after gateway 3 that a supplier is appointed and construction begins.

Delivery
The construction or other implementation of the option designed by a project – post gateway 3.

NEAS
National Environmental Assessment Service

Appendix 2 – Steering Group and Stakeholder engagement

As discussed in setting out the approach taken to develop this Streamlining Business Case (section 2.3) we have met regularly with a core group of Directors and Senior Management at key stages:

- David King – Director of Water Management

- Paul Leinster – Director of Operations

- Nigel Reader – Director of Finance

- David Jordan – Deputy Director of Operations

- David Rooke – Head of Flood Risk Management

- John Parker – Head of (FRM) Investment & Funding

- Miles Jordan – Head of NCPMS

The key meetings with the steering group:

- March 2006: Acceptance of the diagnosis. After presenting a summary of the diagnosis work carried out the Directors asked the project team to develop an action plan to address the identified sources of waste, but also to consider more fundamental change to address the root causes, including alternative organisational designs for more efficient delivery of FRM.

- June 2006: Initial solution options. Directors were presented with nine individual actions to reduce the cost of project development, as well as three broad organisational design options. Directors accepted all nine actions but decided that the three structural models should not be pursued due to the recent IFRM changes. Instead, the Directors asked the team to develop the nine actions into a holistic solution that delivered the benefits of the hybrid model, but without involving major organisational change.

- November 2006: Initial reactions to holistic solution - Once sufficient detail of the holistic solution had been developed we took the solution to each of the Directors in November 2006 and explained key features taking feedback and incorporating this into the solution. A key aspect of the Streamlined model is the distinction between investment that *sustains* the agreed standard of service and investment that seeks to potentially *change* the standard of service.

- February 2007: Option choice – After incorporating feedback into the solution and developing this in greater detail the solution development phase was completed with a meeting to agree on the proposed solution. At this meeting Directors accepted the proposed product hierarchy, process and allocation method and requested more work be done on the roles and responsibilities alongside developing the business case.

- April 2007: Draft Business Case - we presented a draft business case to Directors. This raised a few

outstanding issues primarily relating to the role of Strategy Plans and the use of NaFRA in the proposed solution.

- May 2007: Amended Business Case - Directors were presented and agreed to a number of amendments to the Streamlining model, which have been incorporated into this business case.

In addition, we have had numerous interviews and workshops with key stakeholders including Area, Regional and NCPMS representatives and specific stakeholders on specialist subject areas. Key stakeholders that we have spoken to in developing the project to this stage included:

- Brian Francis – Client Manager, NCPMS

- Steve Williams – Appraisal Team Manager

- Tim Kersley – Head of Asset Management

- Phil Younge – Regional Strategy Unit Manager, North East Region

- Colin Candish – Regional Flood Risk Manager, Thames Region

- Ken Allison – Head of National Capital Programme Group

- Ian Tomes – Area Flood Risk Manager, Southeast Area, Thames Region

- Nathan Fahy – Programme Manager, FRM Southeast Area, Thames Region

We also met with specific stakeholders for particular subject areas:

- Governance and the role of RFDCs – Phil Winrow – Head of FRM Finance

- Asset Management Plans – Tim Kersley – AMP Process and Product owner

- CFMPs – Steve Williams and Brian Francis – CFMP Review

- Finance – Phil Winrow, Bob Taylor – FRM Finance

- Management information systems – David Denness, Bob Taylor

- Investment Appraisal – David Cotterell – Technical Manager Appraisal and Approval

- FRM Policy and Process – David Murphy, Rachel Hill, Mervyn Pettifor, Sue Reed.

Appendix 3 – Summary of current approach

In order to identify the key factors driving the high proportion of expenditure on project development, it is essential to first understand how the existing FRM capital programme functions. It is important to note that the diagnosis stage of this project identified significant confusion and differences of opinion in relation to defining the existing system for developing and delivering FRM capital projects. Examples of this include:

- A lack of clarity around roles and responsibilities;

- Widespread variability in the process for initiating, managing and delivering FRM projects; and

- Contradicting opinions about the correct scope, function and hierarchy of investment decision products.

With this in mind, we have attempted to set out below an illustrative process map that aims to capture the current process that FRM capital projects follow, but recognise that this may not represent a consensus view.

The diagram and text below provides a high level summary of the key stages involved in the current system for developing and delivering FRM capital projects operates.
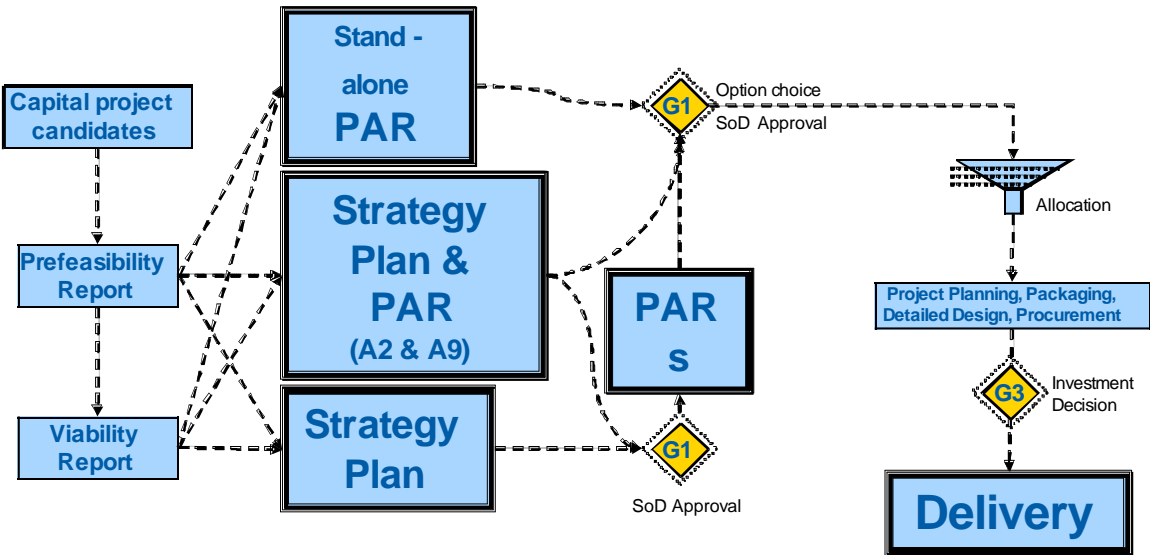
- **Identification of need** - Areas identify a need for a project based on a number of different triggers including flooding events, deterioration of an existing assets, requests from Regional Flood Defence Committees (RFDC) or recommendations from previous studies or strategies. Which route to take in justifying capital expenditure depends on the nature of the problem.

- **Prefeasibility and other Inception reports** – A prefeasibility is the first evaluation of the flood risk problem along with potential solutions. The pre-feasibility report includes details of potential options and the estimated costs and benefits of the options to generate an indicative priority score. Once prefeasibility is complete a handover meeting occurs with NCPMS, who are usually engaged by the area client to take the project forward to feasibility. These reports are typically produced by NEECA consultants and managed by the Area.

- **Viability reports** – In some instances, when NCPMS receive a project they undertake a viability report in order to confirm the viability of the project and its priority score before proceeding to feasibility. These reports are typically produced by NEECA consultants and are managed by NCPMS.

- **Project Appraisal Reports** – In some locations, the next stage involves NCPMS carrying out a full appraisal on the project to consider the potential options. The appraisal looks in detail at the different options and must at least consider a 'do nothing' and 'do minimum' option. The appraisal results in a preferred option with a corresponding priority score. NEECA consultants (managed by NCPMS) typically produce Project Appraisal Reports

- **Strategy Plans** – In most locations a strategy will be required, due wider issues that need to be taken account of. There is a flowchart in PAG 3 which helps to determine when a Strategy Plan is necessary. A Strategy Plan may in some cases be the starting point in the process to justification of capital expenditure. Strategies are effectively appraisals based on an entire inter-connected system and are highly variable in geographical scope. Strategy Plans can also be multi-layered, especially on the coast or in Estuaries. In some cases Strategy Plans are developed in sufficient detail to gain both A9 and A2 SoD approval for the preferred option choice although this had led to confusion about the role of Strategy plans. In other cases a Strategy Plan will only confirm the overall approach for a wider area, with a Project Appraisal Report required for individual parts of the approved strategy. NEECA consultants (managed by NCPMS) typically produce strategy Plans.

- **Review and approval** - When the PAR or Strategy has identified a preferred option, a review board considers the technical detail before it is recommended for approval. Projects over £2m capital investment require technical approval from the National Review Group (NRG) and projects under £2m capital investment require approval from the Project Appraisal Board (PAB).

- **Allocation** - Once projects have received Scheme of Delegation approval, they must then obtain funding approval in competition with other funding needs. In previous years DEFRA have set a priority score threshold above which a project would receive funding, but since FDGIA has been introduced the Environment Agency has had much greater flexibility in decisions about which projects to fund although Priority Score continues to be the primary prioritisation tool.

- **Project Planning** – Once funding has been approved NCPMS can package projects together to maximise procurement efficiency before engaging consultants to do the detail design and programming options are considered to maximise procurement efficiency.

- **Project Delivery** – Finally, having made the investment decision NCPMS engage a supplier or contractor and award the contract and manage its delivery.

Appendix 4 – Baseline Methodology

The objective of Streamlining is to reduce the proportion of expenditure on Flood Risk Management projects that we are spending on Project Development. Project Development has been defined as all work up to the point of investment decision, where we enter into a contract to deliver a Flood Risk Management benefit. The Office of Government Commerce refers to this decision point as "Gateway Three". Beyond gateway three we are making a discernable change to flood-risk, usually by making some sort of intervention (e.g. constructing a wall or embankment) in order to reduce the probability of an event having negative impacts.

Project Development therefore includes all of the following:

- The initial identification of need;

- Prefeasibility study and report (where required);

- Viability study and report (where required);

- Strategy Study, and report (where required);

- Project Appraisal Report;

- Project planning and packaging; and

- Detailed design and procurement.

Engineering consultants carry out the majority of the above activities. In addition, project development often involves some or all of the following before awarding a contract for delivery:

- Topological, hydro-geological and archaeological surveys and other intrusive site investigations;

- Environmental surveys and impact assessments; and

- Cost consultants.

NCPMS and/or Regional/Area staff manage the above project development work supplied by external partners and some assessment of this internal cost needs to be included. There is a significant amount of expenditure on Project Development that is funded from revenue budgets and as a result does not feature on the "capital programme".

Project Delivery covers the cost of the contractor as well as a number of overhead costs, such as project supervision, cost consultants and the management of the Delivery phase post gateway 3.

Data source and baseline methodology

The Environment Agency's finance and project management systems are not configured in such a way to enable us to easily calculate the proportion of development expenditure. In addition:

- We have not been able to separate expenditure for each part of the process;

- There is no mechanism for reconciling the regional budgets and actual expenditure on individual projects at the programme level;

- The total expenditure developing FRM projects is unknown, especially locally incurred expenditure.

In order to establish a baseline we have used the actual expenditure on third parties combined with an estimate of internal staff costs. Oracle provides the raw data for external spend, in the form of actual expenditure against category codes. The data for salary costs comes from the budget allocation for Area FRM and from NCPMS records.

External Spend

When an order is raised within 1B1S it is given a "Category Code" for the type of expenditure. We have identified 12 Categories that account for the majority of external expenditure relating to FRM projects. Unfortunately, whilst we have very good data concerning who was paid and how much, we do not have a robust mechanism for determining what they did or for which specific project. As a result we initially made some assumptions about the proportion of each code was spent on development or delivery. More recently, Procurement has provided detail that has enabled us to attribute expenditure according to who raised the order.

Expenditure with external suppliers is recorded against over 300 category codes, 12 of which we are most relevant to FRM project development and delivery. The following table shows the total spend against these categories since April 2005 (this includes non-FRM and non-Project expenditure).

Code	Category	2005/06 Total Spend	2006/07 Total Spend
0703	Contractor Payments	40,141,101	46,135,079
0705	Cost Consultants	3,831,504	3,734,321
0708	Engineering Services Consultants	9,548,283	7,747,576
0709	Environmental Consultants	17,485,498	11,771,821
0714	Flood Management Consultants	17,019,971	17,866,109
0715	Hydro-geological Services	3,584,975	3,584,557
0728	NEECA (NCPMS)	28,605,374	28,394,951
0729	NEECA (Non NCPMS)	15,842,807	19,618,233
0730	National Cost Consultants	589,751	792,235
0731	National Site Investigation Framework	3,064,121	2,405,414
1003	Civil Engineering	8,492,385	6,571,576
1014	National Contractors Framework	114,716,098	96,210,065
	SUB TOTAL	**262,921,866**	**244,831,937**

Included in the above figures is more than £45m of expenditure on non-FRM projects. We can remove this by only including expenditure raised by NCPMS, Asset System Management or Operations Delivery.

The following table gives the external expenditure on FRM projects under the category codes we have analysed:

Code	Category	2005/06 FRM Project Spend	2006/07 FRM Project Spend
0703	Contractor Payments	31,602,196	35,041,152
0705	Cost Consultants	2,317,227	1,932,500
0708	Engineering Services Consultants	7,920,571	5,899,479
0709	Environmental Consultants	7,616,683	1,338,546
0714	Flood Management Consultants	2,203,290	1,795,196
0715	Hydro-geological Services	2,949,802	2,857,153
0728	NEECA (NCPMS)	25,730,343	28,380,237
0729	NEECA (Non NCPMS)	13,100,967	18,692,986
0730	National Cost Consultants	580,934	640,836
0731	National Site Investigation Framework	2,992,635	2,389,387
1003	Civil Engineering	5,394,774	4,108,944
1014	National Contractors Framework	114,716,098	96,205,890
	SUB TOTAL	**217,125,518**	**199,282,305**

Each of the Categories can then apportioned to either project development or project delivery on the basis of our understanding of the proportions of each:

Code	Category	Project Development	Project Delivery
0703	Contractor Payments	0%	100%
0705	Cost Consultants	40%	60%
0708	Engineering Services Consultants	100%	0%
0709	Environmental Consultants	100%	0%
0714	Flood Management Consultants	100%	0%
0715	Hydro-geological Services	100%	0%
0728	NEECA (NCPMS)	86%	14%
0729	NEECA (Non NCPMS)	94%	6%
0730	National Cost Consultants	40%	60%
0731	National Site Investigation Framework	100%	0%
1003	Civil Engineering	0%	100%
1014	National Contractors Framework	0%	100%

- (0728) NEECA (NCPMS): We have made an assumption that 14% of FRM Project Spend on this category is incurred post-gateway three, as an overhead of managing project delivery.

- (0729) NEECA (Non-NCPMS): We have made an assumption that 6% of FRM Project Spend on this category is incurred post-gateway three, as an overhead of managing project delivery.

- (705, 730) Cost Consultants, National Cost Consultants Framework: We have made an assumption that 60% of FRM Project Spend on this category is incurred post-gateway three as an overhead of managing project delivery.

In addition, some projects we know can be fully attributed to either project development or project delivery, and for which we need to "override" the apportionment above. Specifically:

- Broadlands expenditure - to Project Delivery
- TE2100 Strategy expenditure - to Project Development

- National Contractors Framework input pre-gateway three – to Project Development

The result of the apportionment and the "overrides" above result in the following totals for Project Development in the 2005/6 and 2006/7 financial years:

Code	Category	2005/06 FRM Project Development	2006/07 FRM Project Development
0703	Contractor Payments	32,581	23,947
0705	Cost Consultants	926,891	773,000
0708	Engineering Services Consultants	7,880,168	5,859,479
0709	Environmental Consultants	735,157	1,338,546
0714	Flood Management Consultants	2,203,290	1,795,196
0715	Hydro-geological Services	2,949,802	2,857,153
0728	NEECA (NCPMS)	22,128,095	24,407,004
0729	NEECA (Non NCPMS)	12,314,909	17,571,406
0730	National Cost Consultants	232,373	256,334
0731	National Site Investigation Framework	2,992,635	2,389,387
1003	Civil Engineering	0	0
1014	National Contractors Framework	3,433,884	4,271,848
	Subtotal External Costs	**55,829,784**	**61,543,300**

Internal Spend

The above covers the *external* expenditure on project development under these the 12 category codes. We need to add to this the *internal* cost of Environment Agency staff to manage the programme. There are a number of teams both at head office and regional/area level who are involved in managing project development work. Unfortunately, Activity Based Costing is not mature enough to determine an accurate figure for the time or cost incurred internally developing FRM projects. The two main groups who are involved in developing projects are NCPMS who manage the contracts with external suppliers, and the Area FRM teams, who identify the need, manage the initial investigation and provide ongoing input as the "client" as the project is developed.

We have estimated that at least two-thirds of NCPMS resource is involved in work developing projects up to the contract award stage, and based on an annual cost of £9.412m (2005/06 final outcome) have attributed 67% of this to Project Development.

For Regional/Area FRM we know from the 2003/04 business plans that there were 40 FTE's working to "Develop Strategic Plans", at a cost of 1.4m, 64 FTE's working to "Identify need/Prefeasibility", at a cost of 2.2m, and 62 FTE's engaged in "project management of Non-NCPMS projects", at a cost of 2.1m. This gives a total of £5.767m of which 67% has been attributed to Project Development, in line with NCPMS.

% Development	Salary Costs	2005/06 FRM Project Development	2006/07 FRM Project Development
67%	NCPMS	6,306,040	6,306,040
67%	Regional and Area FRM	3,863,890	3,863,890
	Subtotal Internal Costs	**10,169,930**	**10,169,930**

Adding the external costs to the internal costs and comparing with the total project spend results in a baseline of:

	2005/06	**2006/07**
Total FRM Project Development	65,999,714	70,732,840
Total FRM Project Spend	232,304,518	214,461,305
% Project Development	**28%**	**33%**

It is important to recognise that the 2005/06 financial year represented a peak in the delivery of FRM projects developed in previous years. In addition, the 2006/07 year was affected by in-year budget cuts that affected all of the DEFRA family.

Moreover, FRM projects currently take many years to develop to gateway three, and delivery may be spread out over a number of years. As such, it would be ideal to analyse expenditure on project development over a period of three or four years in order to gain a better understanding of the relative costs. Without more than two years of reliable data to examine the above analysis demonstrates that the current approach is not as efficient as it could be, and there are significant opportunities to make improvements.

Potential errors:

- We have not included external expenditure against category codes other than the 12 listed above

- We have not included external expenditure paid for via charge cards

- Potential for errors in assigning expenditure to the wrong category code;

- Potential that some of the expenditure raised by either NCPMS, Asset System Management or Operations Delivery is for non-FRM spend. Where this is known we have recategoried;

- We have not included the cost of either head office teams (NEAS, NCPG, NRG, I&F) or regional teams;

- Lack of robust activity based costing has resulted in Salary costs being based on budget allocation for Area Staff costs;

Appendix 5 – Savings estimates and measurement

The following is a discussion and breakdown of the assumptions in the savings, and where in the baseline we would expect to see the effects of streamlining manifest. All of the savings identified are achieved by reducing the expenditure with external suppliers. Although Streamlining will make some internal resources available, we envisage most of this being redeployed on other FRM activities, specifically AMPs and managing the agreed standard of service.

The following is the external expenditure on each of the category codes:

Code	Category	2005/06 FRM Project Development	2006/07 FRM Project Development
0703	Contractor Payments	32,581	23,947
0705	Cost Consultants	926,891	773,000
0708	Engineering Services Consultants	7,880,168	5,859,479
0709	Environmental Consultants	735,157	1,338,546
0714	Flood Management Consultants	2,203,290	1,795,196
0715	Hydro-geological Services	2,949,802	2,857,153
0728	NEECA (NCPMS)	22,128,095	24,407,004
0729	NEECA (Non NCPMS)	12,314,909	17,571,406
0730	National Cost Consultants	232,373	256,334
0731	National Site Investigation Framework	2,992,635	2,389,387
1003	Civil Engineering	0	0
1014	National Contractors Framework	3,433,884	4,271,848
	Subtotal External Costs	**55,829,784**	**61,543,300**

The two category codes relating to the NEECA framework are where we expect the greatest savings to be realised, due the following key streamlining actions:

Reduced expenditure through no longer conducting pre-gateway 0 studies

The saving estimates assume that the implementation of Option 3, would remove the requirement for Areas to undertake most of the work involved in pre G0 studies such as inception reports and pre-feasibility studies. In the new model, replacement projects would be initiated through AMPs and change projects would be initiated at a programme level using data held nationally. Therefore, fewer projects would be initiated and, for those initiated, less work would be required at the pre G0 stage. It is recognised, however, that some of the work currently undertaken during the prefeasibility stage would still need to be undertaken in the new model. Although in the new model this work would be undertaken as part of either a Strategy Plan or PAR. Examples of prefeasibility work that would still need to be undertaken in the new model are:

- Scoping the study;

- Carrying out document review of historic information;

- Identifying the site;

- Initiating the project; and

- Carrying out some modelling work which does not need to replicated or re-worked.

The table below sets out the assumptions behind the £3.5m per annum estimated savings arising from removing pre Gateway 0 studies. The 'best estimate' is based on the assumptions that:

- Each of the 26 area offices initiate and complete four pre-gateway 0 studies per year; 100 in total.

- The studies cost between £30k and £50k each;

- Under the new system approximately 75% of these would no longer be initiated. This is due to better management of the initiation of projects. All of the prefeasibility costs relating to these projects are saved; and

- We have assumed that of the remaining 25 projects initiated, approximately half of the costs would have to be incurred anyway within either the Strategy Plan or PAR process.

The high and low estimates are based on changing these variables.

	Low Estimate	Best Estimate	High Estimate
Estimated average cost of a pre gateway 0 studies	£35k	£40k	£45k
Estimated no. pre-gateway 0 studies currently conducted annually	80	100	120
Estimated % attrition in the new model	75%	75%	75%
Estimated number of pre G0 studies no longer required	60	75	90
Estimated savings from initiating fewer projects	£2.1m	**£3.0m**	£4.05m
Estimated number of projects initiated annually in the new model	20	25	30
For projects still initiated, estimate % of prefeasibility costs still applicable	50%	50%	50%
Estimated saving	£0.35m	**£0.5m**	£0.68m
Total savings from halting pre-feasibility	£2.45m	**£3.5m**	£4.73m

We expect this saving to manifest itself as a reduction in the baseline £17m spend on 0729 NEECA (Non-NCPMS). We might also see a reduction in spend on 0708 Engineering Services Consultants.

This estimate is based on assumptions regarding the number of project initiated and as there is much less scope for regions and areas to engage consultants without a clear mandate to do so, a more significant reduction in non-NCPMS spend on NEECA may be possible.

In terms of staff costs, we have assumed there are no associated savings, based on the fact that the additional requirements for asset management plans and the increased focus on managing the existing asset portfolio would, in the short term, occupy the time of Area staff in place of managing consultants delivering pre-feasibility studies.

Reduced expenditure through no longer conducting viability reports

The saving estimates assume that the implementation of Option 3, would remove the requirement to undertake much of the work currently undertaken in a viability report. It is recognised, however, that some

of the work currently undertaken during the viability stage would still need to be undertaken in the new model. In the new model this work would be undertaken as part of the Strategy Plan or PAR stage. Examples of viability work that will still need to be undertaken in the new model are:

- Engaging consultants;

- Carrying out document review of historic information;

- Initiating the project; and

- Carrying out some modelling work which does not need to replicated or re-worked.

The table below sets out the assumptions behind the £0.75m per annum estimated savings from removing viability reports. The 'best estimate' is based on discussions with NCPMS staff and our fieldwork.

The 'best estimate' assumptions are based on the assumptions that:

- Each of the 26 area offices initiate and complete around one viability project per year; 30 in total.

- The viability studies cost between £35k and £60k each;

- Under the new system 20% (6 projects) of these projects would no longer be initiated. This is based on a higher level of attrition in the new model.

- Of the remaining 24 projects initiated, approximately half of the costs would have to be incurred anyway within the Strategy Plan or PAR process.

The high and low estimates are based on changing these variables.

	Low Estimate	Best Estimate	High Estimate
Estimated average cost of a viability report	£40k	£50k	£55k
Estimated number of viability reports currently conducted annually	20	30	35
Estimated % attrition in the new model	20%	20%	30%
Estimated number of viability reports no longer required	4	6	10.50
Estimated savings from initiating fewer projects	£160k	**£300k**	£577.5k
Estimated number of projects still live annually in the new model	16	24	24.50
For projects still live, est. % of viability costs still applicable	50%	50%	50%
Estimated saving	£0.32m	**£0.6m**	£0.67m
Total savings from halting pre-feasibility	£0.48m	**£0.9m**	£1.25m

We expect this saving to be largely realised in a reduction in 0728 NEECA (NCPMS) spend from the current £24m of expenditure. We might also find a reduction in spend on 0708 Engineering Services Consultants.

Reduced expenditure on appraising replacement projects

Currently a full option appraisal is carried out for all proposed capital expenditure. Because of the need to consider multiple options, examining the effects and consulting on the possibilities, this is a very expensive process. The Priority Scoring system and houses target also implicitly encourages the full investigation of potential improvements to the current standard of service alongside the simple replacement option.

The Streamlined model takes a different approach for investment decisions where the main driver for investment is to replace an asset that has reached the end of it useful life. Where there is no stakeholder demand for an improvement to the current standard and where the Asset Management Plan demonstrates a robust economic case for the existing standard of service, that replacement projects would not require option appraisal. The unknown at this stage is how many projects might be eligible to take this route.

The use of CFMP and AMP products, together with other potential central controls, allows comfort that those projects meeting the criteria to avoid option appraisal do not present undue risk of making poor investment decisions. Projects where there is policy intent to change the current standard of service, community demand for a change, increased risk or low cost-benefit would not meet this criteria.

The scale of costs saved is an unknown, as the current system:

- Does not distinguish between different types of capital replacement activity; and

- Distorts demand for improvements, through using one process to assess both types of project – i.e. as full appraisals are required, teams would carry out the investigative work to review options.

We have estimated that between 5 – 15% of a £200m asset investment programme might be eligible for a simplified replacement route. The reduction in cost of justification due to avoiding full option appraisal to reach gateway 1 we have estimated at 13%. This is based on the cost of project development via Strategy Plan and PAR (which require the full option appraisal) to be in the order of 23% (after implementing streamlining). With a simplified route we expect this could be as low as 10%.

	Low Estimate	Best Estimate	High Estimate
Proportion of total project expenditure eligible for a simplified route	4%	5%	6%
Value of a £200m programme spent on replacement projects	£1.6m	£20m	£24m
% saving by taking the simplified route	13%	13%	13%
Total potential savings	£1.04m	**£1.3m**	£1.56m

We would expect this saving to manifest in the reduction in 0728 NEECA (NCPMS) spend from the current £24m. We might also expect a reduction in spend on 0708 Engineering Services Consultants.

Fewer change projects started

Much like the above benefit, the potential savings associated with this are largely dependent on how the system is managed. In any one year we could "pull forward" as many or as few change projects as we wished.

The saving here would be the avoidance of the expenditure which would ordinarily be incurred in developing a potential change candidate. Once more, the Environment Agency does not have information about the types of project (improvement or replacement) nor the costs of appraisals and strategies, either for these types of project or more generally. Equally there is poor visibility about the number of projects which are started but do not progress.

The assumptions are therefore:

- The expenditure on identification of need and getting to gateway 0 would be reduced due to a simplified method for submission and analysis of potential change projects using shape-files; and

- We would more effectively restrict the number of candidates at gateway 0 through objective, centrally managed attrition. This would result in fewer projects starting that are not priorities given the current funding levels.

In essence, the savings delivered by better matching of investment appraisal to the available funding is entirely dependent on what proportion of the total FRM asset investment programme we wish to spend on

investment appraisal. By setting the budget first, and then determining how many investment appraisals we can deliver for that amount we would be able to more effectively control the total project development spend.

	Low Estimate	Best Estimate	High Estimate
Average cost of GW0 – GW1	£300k	£500k	£600k
No. change projects curtailed at G0	4	5	6
Total potential savings	£1.2m	**£2.5m**	£3.6m

We expect this saving to manifest in the baseline by a reduction in 0728 NEECA (NCPMS) spend from the current £24m by about £2.5m.

We feel this estimate is very conservative and would hope to see a much more drastic reduction in spend on NEECA as we shift to a system with much better control on the initiation of change projects and more focus on delivering projects. At any rate, the spend we do incur on NEECA in the future would be much more effective in that projects that have been shortlisted at gateway 0 based on urgency and contribution to outcome measures would have better continuity and certainty associated with them.

Savings Summary

As discussed above, significant annual savings have been identified based on a £200m programme, predominantly from reduced expenditure on engineering consultants:

Key Streamlining Activity	Estimated Savings
Remove pre-gateway 0 studies (prefeasibility, inception reports etc)	1.75% (£3.5m)
Remove viability product (some work still carried out within Strategy or PAR)	0.45% (£0.9m)
Simplified replacement route (reduced option appraisal)	0.65% (£1.3m)
Fewer change projects started (attrition at gateway 0)	1.25% (£2.5m)
Total savings (per annum)	**4.10% (£8.2m)**

Based on the above estimates, if we use a baseline of the last two financial years As such, I'd prefer to state the target as "reducing the proportion of total FRM project spend incurred pre-Gateway 3": we are expecting a saving of 4.1%, from the average over the last two years of 30%. Thus, the target is to reduce this to ~26% by 2009/10.

Future Potential Savings

The above estimates do not fully achieve the objective of reducing the cost of project development to 20% of total FRM project spend. Using the tools and information provided by implementing Streamlining, it is envisaged that further savings can be made beyond the 26% target by 2009/10, at a rate of 2% each year, reaching the 20% target by 2012/13. For different FRM project programme sizes, these would be the projected targets and annual savings subsequently realised:

Financial Year	% Spend on Development	£200m total FRM Project Spend	£250m Total	£300m Total	£350m Total	£400m Total
2007/08	30%	£60m	£75m	£90m	£105m	£120m
2008/09	28%	£56m	£70m	£84m	£98m	£112m
2009/10	26%	£52m	£65m	£78m	£91m	£104m
2010/11	24%	£48m	£60m	£72m	£84m	£96m
2011/12	22%	£44m	£55m	£66m	£77m	£88m
2012/13	20%	£40m	£50m	£60m	£70m	£80m
Total	**(10%)**	**(£20m)**	**(£25m)**	**(£30m)**	**(£35m)**	**(£40m)**

Appendix 6 – Benefits realisation plan

Benefits Realisation Plan

Project: Reducing the cost of project development (Streamlining)			Project Sponsor: David King		
Project Objective	**Project Outcome**	**Benefit to be achieved**	**Estimated Benefits**	**Outcome achieved by**	**Status**
Remove Viability	Viability process and product no longer followed or produced	Reduction in spend on this part of the process	£0.9m	December 2007	Pending approval
Remove Pre-feasibility	Prefeasibility process and product no longer followed or produced	Reduction in spend on this part of the process	£3.5m	December 2007	Pending approval
Simplified replacement route (for low-risk projects)	Projects for which AMP provide justification followed by a cost-effective appraisal to deliver the same SoS (no optioneering)	Reduced spend on appraisal for those projects that are selected and agreed to be appropriately low-risk decisions	£1.3m	March 2008	Pending approval
Fewer projects started	The number of change candidate projects selected is proportionate to funding	Earlier attrition of projects with less information resulting in lower development spend	£2.5m	March 2008	Pending approval
Improve management information	Projects, the Programme and all Asset Management Expenditure is visible	Ability to better manage the pipeline of projects with detailed programme expenditure information	-	December 2008	Pending approval
Project expenditure visibility	Two parts: AMP give forward visibility of replacement; shape-files give early visibility of change projects	Earlier attrition of projects with less information resulting in lower development spend	-	December 2008	Pending approval
Total			£8.2m		

The timing of when the benefits of Streamlining will be realised are dependent to two key things:

1) the Implementation - We have estimated an implementation timeframe of 12-18 months, from the date that an implementation team is mobilised.

2) The annual allocation process, which is effectively completed in December for the following financial year starting in March. Once a budget allocation is made, there is a much-reduced ability to affect change in the way the budgets are spent.

The following diagram illustrates the overlap of these two dependencies:

The figures below are the savings that result from implementing streamlining against a baseline in 2006/07 assuming a flat funding profile.

Project Objective	Estimated Benefits	Outcome achieved by	2008/09 Savings	2009/10 Savings	2010/11 Savings
Remove Viability	£0.9m	December 2007	£0.5m	£0.9m	£0.9m
Remove Pre-feasibility	£3.5m	December 2007	£2.0m	£3.5m	£3.5m
Simplified replacement route	£1.3m	March 2008	£0.0m	£0.7m	£1.3m
Fewer projects started	£2.5m	March 2008	£2.5m	£2.5m	£2.5m
Improve management information	-	December 2008	-	-	-
Project expenditure visibility	-	December 2008	-	-	-
Total	£8.2m		£5.0m	£7.6m	£8.2m
External Development Costs		(£42m in 06/07)	£37.0m	£34.4m	£33.8m

Appendix 7 – Links to other initiatives

There are a number of other recent Agency initiatives and projects which are closely linked with the FRM capital programme. In this section, we have included an outline description of these key initiatives, in order to understand the context in which we are designing a new system for developing and delivering capital projects.

Asset management plans (AMPs)

The Environment Agency has a target to produce AMPs for all asset systems by 2007-08. The total number of asset systems recorded is 3,300. Although this is likely to be an overestimate, it will still be a significant challenge to achieve the target.

The AMP specification is currently in the process of being developed and it is not yet clear how AMPs will fit with existing FRM structures and systems. For example, whether they will be used in place of business plans for funding and if yes, what information they will require.

The Streamlining team believe that AMPs have an important role to play in improving the current FRM capital programme and have met regularly with the Process team responsible for the roll-out of AMPs to discuss the potential requirements of a streamlined approach to capital development. We believe that it will be possible to develop a specification which will be simple enough to achieve the AMP target whilst also fulfilling the needs of the streamlining model.

Further detail around the proposed functionality and content of the AMPs is contained in section 5 of this report.

Shoreline/Catchment Flood Management Plans (S/CFMPs)

The core objective of a CFMP is to develop complementary, sustainable policies for flood risk management within a catchment over the long term. The key outputs from a CFMP are a broad understanding of the size, nature and distribution of current flood risk and scenarios for future flood risk in a catchment combined with a complementary set of justifiable, long-term flood risk management policies that satisfy the catchment objectives. The development of a prioritised set of actions for the catchment is a further key product.

A CFMP is a new, complex and innovative product. It is about taking a strategic view of the catchment, thinking about how it works, how it should work and establishing the most sustainable approach to managing flood risks over the long-term. The development of the CFMP programme has required the development of innovative processes and approaches.

Work on CFMP pilot programme commenced in 2001 and ringfenced funding is provided by DEFRA. In England the main programme of work commenced in 2004 and in Wales the main programme of work commenced in 2006. Currently there are 71 CFMPs under development:

- 43 are programmed to complete by December 07;
- 18 are programmed to complete by December 08; and
- 9 in Wales are programmed to complete by April 09.

CFMPs will also need to play an important role in any new approach to FRM capital project development. Further detail about the role CFMPs will play in the preferred solution is included in Section 5.

Appendix 8 – Impact of the 2007 summer floods

In June and July of 2007, England and Wales experienced two separate extreme rainfall events that overwhelmed urban drainage systems and overtopped many defences, resulting in significant flood damage. This has resulted in a potential change in our understanding of flood risk as well as a significant change in our funding forecast, each of which may have an effect on the Streamlining proposal.

Potential changes in our understanding of flood risk

- Increases the shift away from a traditional Flood Defence approach by demonstrating that absolute protection from flooding is neither technically feasible nor economically or environmentally viable. The events demonstrate that thinking in terms of setting a design standard is both a trap and a delusion: such standards conflict with the principle of managing all floods and not just some. It is also a delusion because estimates of the magnitude of extreme floods are very inaccurate and, due to climate change, likely to get modified over time.
- Reinforces the government strategy "Making space for water", looking for ways to live with and adapt to flood risk and using natural processes to reduce the impact as well as the probability of flooding.
- The flood events further emphasis the importance of surface water runoff and urban drainage as a source of flooding – which may result in a widening of the Environment Agency's remit.
- Potentially more focus on integrated urban drainage and storage to attenuate peak flows, as opposed to more traditional defences, which typically shift the problem to other areas.
- Critical infrastructure such as power supply and water supply may require a higher Standard of Protection, as well as increased focus on more vulnerable groups within communities.
- Flooding in locations where we have defences resulted from overtopping rather than asset failure. Water levels were so high that overtopping of defences was unsurprising - it is unlikely that we would have provided defences to prevent the flooding that resulted.
- Whilst there were few if any reports of flooding as a result of asset failure, the focus on asset condition at the Public Accounts Committee hearing suggests that the condition of the existing portfolio will remain a relatively high priority.
- Increased focus on wider strategic planning and Integrated Flood Management. As this will require considering more strategic consideration of the potential sources and impacts of any proposed changes this may put pressure on the unit cost of producing CFMPs and Strategy Plans.
- The potential that extreme rainfall events of this type may be more frequent in the future. This may change the calculation of benefits of since an event that we previously considered to have a 1% probability of being exceeded in any one year (1 in 100) may now have a 1.33% probability of being exceeded (1 in 75), and so the Average Annual Damages associated with an event will be higher.

The investment product hierarchy proposed within Streamlining provides clarity of function of the strategic input from CFMPs and Strategy Plans as well as the tactical input from AMPs, and a better understanding of the long-term costs of the current FRM asset portfolio.
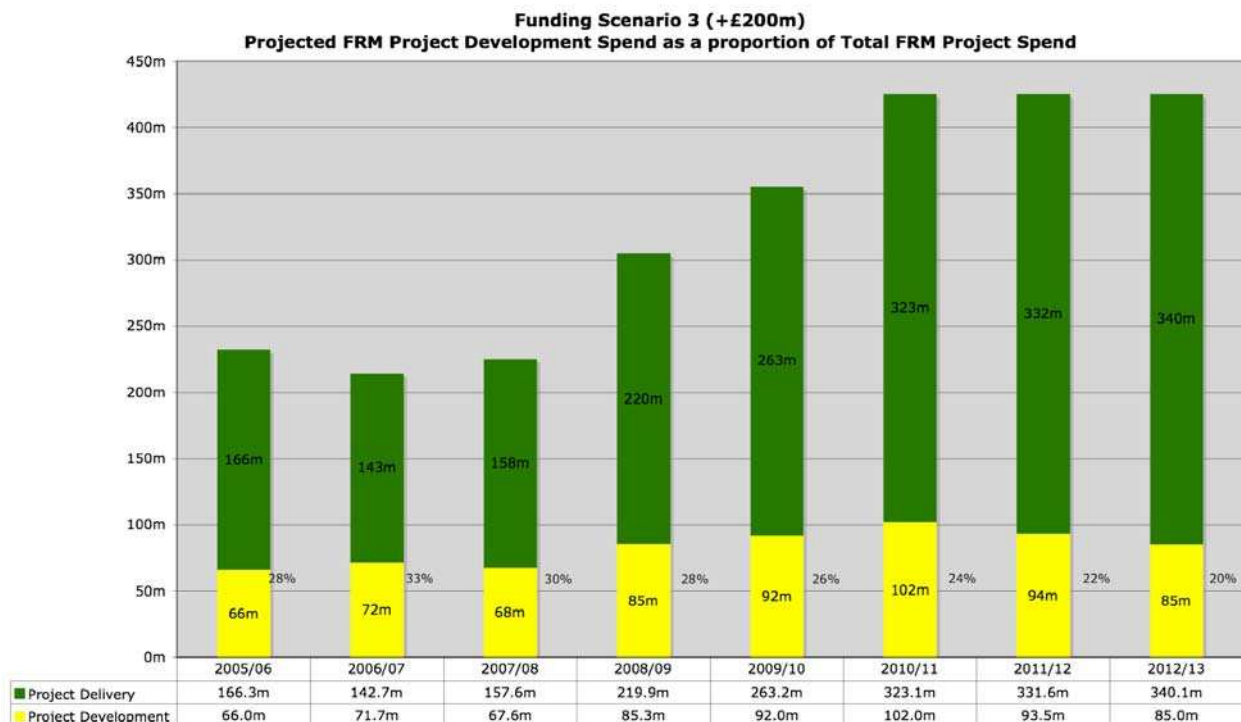
Streamlining will promote new process and product guidance, clarity of roles and responsibilities and more effective and efficient controls and tools to enable the Environment Agency to respond more quickly and for less initial cost, delivering more in terms of real reduction in flood risk.

Changes in the funding forecast

- The announced £200m additional funding for FRM, if spent entirely on the FRM projects programme would represent a doubling of the programme from £225m in 2006/07 to £425m by 2010/11.
- In the short-term this will reduce the current funding constraints on the programme and significantly reduce a backlog of projects that currently do not have a high enough priority score (indicative priority score will reduce to 16 for mid-forecast programme growth and could reduce much further).
- There will be a need to develop enough projects over the next 2-3 years to maintain the increased programme. The current lead time for projects is much longer and without Streamlining the process we would struggle to populate enough projects with gateway 3 approval to deliver.
- Annual expenditure on project development (at 20% of the total FRM project spend) would need to rise from the current £71m to £85m.
- Annual expenditure on project delivery (at 80% of the total FRM project spend) would need to rise from the current £143m to £340m.
- In the short-term there will be an increase in total expenditure on project development, but a measured overall increase in the total proportion spent on project delivery.
- There will need to be a significant increase in internal resource efficiency across the business in order to deliver the increase, e.g. each NCPMS project manager will need to manage a greater number of projects.
- There will be a need to effectively control the competition from regions to start projects so that the supply of proposals is in line with the available funding.

> **By changing from a "push" system to a "pull" system, Streamlining will prevent under or over-programming of the initial project development stages, ensuring we pull forward as many potential projects as is necessary to drive the programme and achieve the targets. As a result the controls proposed within Streamlining ensure that we start the right projects and that once they are started, they have a much quicker and clearer path to delivery.**
>
> **Increased clarity around project roles and responsibilities will also enable nugatory work to be identified and curtailed earlier, shifting resource quickly to other potential projects and in doing so enable delivery of more projects.**

Funding Scenario 3 (+£200m)
Projected FRM Project Development Spend as a proportion of Total FRM Project Spend

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Project Delivery	166.3m	142.7m	157.6m	219.9m	263.2m	323.1m	331.6m	340.1m
Project Development	66.0m	71.7m	67.6m	85.3m	92.0m	102.0m	93.5m	85.0m

Impacts on the Streamlining strategic case

Whilst the funding forecast has changed, the diagnosis in section 3 of the business case is fundamentally the same – the sources and root causes are effectively no different whether the total FRM project expenditure is £225m or £425m. An increase in funding will not in itself improve efficiency and there is a real risk that an even greater proportion of the available funding is directed toward excessive project development. For a project to progress beyond gateway three it has already been the subject of a number of reviews and procurement controls - many more than for projects in the initial stages of development.

A short-term or piece-meal approach to Streamlining may appear attractive but is unlikely to deliver sustainable improvements and would retain underlying inefficiency and their root causes. Streamlining has been conceived and developed as a complete package of changes that are mutually dependent and rely on each other to achieve the required result.

The increase in funding, if managed well, does provide an opportunity to ease the pain of improving efficiency. Successful implementation of the Streamlining proposal will ensure effective and efficient delivery of the FRM projects programme whether funding levels increase, decline or stay the same.

The recent flooding, and public expectation on the wise use of the increased funds have heightened the need to significantly improve the efficiency of the FRM projects programme. As a result, the urgency and importance of the swift implementation of Streamlining has, if anything, increased as a result of the recent flooding.

Impact on Streamlining benefits

The benefits of streamlining have been measured as a percentage reduction in the proportion of the total FRM project expenditure spent on developing projects to gateway 3. We have estimated that by implementing Streamlining we can reduce the proportion from the current 30% by 4.1%. For a £200m programme this represents a total of £8.2m.

If the programme increased by £80m to £305m in 2008/09 the 2.1% reduction in that year would represent a saving of £6.3m. If the programme increased by another £50m to £355m in 2009/10, the 2% reduction in that year (total of 4.1%) would represent an additional saving of £8.3m (total of £14.6m).

In addition to the annual baseline shift, the measurement of savings will need to reflect the longer-term reduction in costs by taking account of the contribution of development costs to estimated delivery in future years. Investment in planning in the early years could otherwise skew the result.

Impact on Streamlining implementation risks

To properly gear our future programme and respond to political pressure more studies are likely to start. Because of the need to drive a larger programme there is an increased risk that some projects that turn out to be marginal will be developed in great detail when they should have been curtailed earlier. We need to ensure these are curtailed early in their life when sufficient evidence is captured to confirm any outcome would be low priority – so we do not spend years and hundreds of thousands proving that a hard engineered solution is not economically, environmentally or socially viable.

The internal resources required to implement Streamlining are unlikely to impede the development or delivery of projects, since many of the changes are to policy and process, controls and tools - with a manageable shift in roles and responsibilities at the local level.

The transitional risks of making the Streamlined system operational are minimal and will be supported by guidance and training that would replace the current guidance and training. It may take some time for the new systems to embed, but the changes are complementary to the need to deliver more, better, faster and for less.

Impact on Streamlining implementation timeframes

Section 6.1 of the business case details the key deliverables and a proposed timeframe. There is some scope for bringing forward some aspects of Streamlining (such as the removal of Prefeasibility and Viability Report products) but in order to roll out the new process and products there is a need to prototype and design some key aspects of the proposed system. The sooner an implementation plan is agreed and a suitable project governance and external support is in place the sooner we can start to realise efficiencies.