

Roads Service Policy & Procedure Guide: RSPPG_E030

Title: Major Works Schemes: Inception to Construction

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Classification

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Level 2 : (Directorate): Strategic Programmes
Level 3 : (RSHQ or HoBU Managed Function): Strategic Road Improvements
Level 4 : (Work Areas) Forward Planning
Lands

Notes

Certification

This document complies with Roads Service Policy and is to be implemented with effect from the date of issue.

(Signed) Bob Cairns Director of Engineering

Certification Date: 13/08/09

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1 Introduction

1.1 Purpose

This Roads Service Policy & Procedure Guide (RSPPG):

- a) Is aimed at Roads Service Staff involved with developing major road improvement schemes¹ from inception to construction.
- b) Defines the procedures for major road improvement schemes to:
 - Enter the Forward Planning Schedule
 - Move from the Forward Planning Schedule to the Preparation Pool
 - Move from the Preparation Pool to the Construction Programme

1.2 Definitions

- 1.2.1 The DEM 29/01 “Value for Money Framework – Major Works” provides guidance on the procurement of major works including the definitions below.
- 1.2.2 Investment Decision Maker (IDM) is the Roads Service Board.
- 1.2.3 Project Owner² (PO) is the Divisional Roads Manager (DRM).
- 1.2.4 Project Sponsor (PS) will generally be a PPTO in the Strategic Road Improvement Team.
- 1.2.5 A Major Works Scheme is defined as a works scheme with a total value of over £1M, with the exception of Large Minor Schemes. In order to categorise, approve and designate appropriate funding for Large Minor Works written approval shall be sought from the Director of Network Services through Network Development Branch.

1.3 Background

The Regional Transportation Strategy (RTS) for Northern Ireland was published in July 2002, which identified Northern Ireland's strategic transport investment priorities for the next 10 years. Following on from the RTS the Department has published the Belfast Metropolitan Transport Plan (BMTP), the Regional Strategic Transport Network Transport Plan (RSTN TP) and the Sub-Regional Transport Plan (SRTP). These plans identify transport schemes and measures for the maintenance, management and development of the road and rail network. The Plans have been enhanced through the Investment Delivery Plan for Roads (IDP), published in April 2008, which sets out the Programme envisaged through the Investment Strategy for NI 2008-2018.

1.4 Costs and Benefits

As this RSPPG is the formalisation of existing practice, the costs and benefits are not relevant at this time.

¹ Refer to DEM 60/04 for financial limit of major & minor works.

² Also known as Senior Responsible Owner (SRO)

2.1 Inception to Construction

2.1.1 Investment Delivery Plan for Roads

The Investment Delivery Plan for Roads embraces those road schemes identified in the three Transport Plans and outlines the funding envisaged for capital roads projects over the period of the Investment Strategy. An enhanced Strategic Road Improvement Programme is set out in the document and the schemes are included in the Preparation Pool or the Ten Year Forward Planning Schedule. Divisions may however continue to identify other schemes which will be considered for inclusion in the Long Term Planning schedule (see below).

Appendix 1 provides an overview of how these schemes progress from the transport plans to completion. It highlights each of the various stages and identifies the points at which Gateway Approval is required. A checklist of the work activities required during each stage is shown in Appendix 2.

2.1.2 Long Term Planning Schedule

The Long Term Planning Schedule is a list of major road improvement schemes, which are not expected to be started within the next 10 years but will have a strategic benefit³. These schemes may be included in various Area Plans and / or have land protected to ensure they can be built in the future. Their development will be dependent on a review of the IDP under any future revision of the Investment strategy for Northern Ireland.

When appropriate the Divisional Roads Managers may seek permission to move a new scheme (or a scheme in the Long Term Planning Schedule) into the 10-Year Forward Planning Schedule by submitting a **Feasibility Options Report** to the Roads Service Board through the Director of Strategic Programmes who will consider the request in consultation with the Director of Network Services. This is a high level report and proportionate effort should be applied. The overall purpose of the report is to satisfy the Roads Service Board that the need for the proposed scheme is justified. It will highlight key areas such as its strategic context and the main issues that will impact on its development. Appendix 4 provides a list of possible topics that may be included in the report which should also take account of the Department for Transport "Transport Appraisal Guidance"⁴. Depending on the level of detail needed in this report, it may be deemed necessary to commission a Consultant. In this instance the Divisional Roads Manager will request that Headquarters Strategic Road Improvement (HQ SRI) Team seek this approval through the Consultancy Services Programme Board.

If the Feasibility Options Report is approved, the scheme will move to the 10 Year Forward Planning Schedule or at the discretion of the IDM it may move directly to the Preparation Pool. The latter does not negate the need for Gateway 0 approval with its associated requirements.

³ The Long Term Planning Schedule is to be developed

⁴ Refer to [Department of Transport - Transport Analysis Guidance - WebTAG](#)

2.1.3 **10 Year Forward Planning Schedule**

The 10-Year Forward Planning Schedule is a list of major road improvement schemes, which, together with those in the Preparation Pool, could be started within the next 10 years. The highest priority schemes will be considered for progression into the Preparation Pool.

When a scheme enters the 10 Year Forward Planning Schedule the Roads Service Board will become the Investment Decision Maker (IDM) and acting on their behalf the Director of Strategic Programmes will appoint the Divisional Roads Manager as the Project Owner, who will then appoint a Project Sponsor. At an appropriate time HQ SRI Team will request approval from the Consultancy Services Programme Board to appoint a Consultant to assist with the development of the scheme. The Project Sponsor will be responsible for defining the Scheme Requirements and preparing a brief for the consultant's commission. The Director of Strategic Programmes shall appoint a Consultant to the scheme subject to them preparing a Project Initiation Document (PID) to the satisfaction of the Project Owner. Upon approval of the PID by the Project Owner, the Director of Strategic Programmes will formally appoint the Consultant to the scheme.

The Project Owner will submit a **Preliminary Options Report** to the Roads Service Board, through the Director of Strategic Programmes, seeking permission to move the scheme into the Preparation Pool. This Preliminary Options Report (equivalent to DMRB Stage 1 assessment report) will identify the best performing options to be taken forward and may identify a preferred corridor. It should take account of the Department for Transport "Transport Appraisal Guidance"⁴. Refer to Appendix 4 for a list of possible topics to be included in this report⁵.

If approved (equivalent to Approval Gateway 0 in DEM 29/01) the scheme will move into the Preparation Pool.

An appropriate environmental assessment process, such as CEEQUAL, shall be carried out on projects with a construction capital value of greater than £5m, unless agreed otherwise by the Director of Strategic Programmes. Where CEEQUAL is used, new projects should achieve an "excellent" or "very good" rating, unless site constraints or project objectives mean that this requirement conflicts with the obligation to achieve value for money. On schemes, where the CEEQUAL process applies, the PS will appoint an in-house / consultant assessor prior to the commencement of the Preliminary Options Report. This will allow them to gather any relevant information arising from the preparation of the Scheme Assessment Reports.

⁵ Guidance notes on completion of the Scheme Assessment Reports are available at http://rdsclarweb1/rshq/Network_Development/Scheme_Assessment_Reporting.doc

2.1.4 **Preparation Pool**

The Preparation Pool is a list of high priority major road improvement schemes that should be started within the next five years. These schemes may be developed and taken through the statutory procedures, including land acquisition, in advance of funding being confirmed.

The Project Owner will undertake a scheme appraisal and submit a **Preferred Options Report** to the IDM through the Director of Strategic Programmes, seeking approval of the preferred option and permission to start the statutory procedures for this scheme. The Preferred Options Report (equivalent to DMRB Stage 2 assessment report) will identify the preferred route and should take account of the Department for Transport “Transport Appraisal Guidance”⁴. Refer to Appendix 5 for a list of possible topics to be included in this report⁵.

If approved (equivalent to Approval Gateway 1 in DEM 29/01) the Project Sponsor will complete a Stage 3 scheme assessment report and will progress the scheme through the statutory procedures. For schemes estimated to cost between £1m and £5m an **Economic Appraisal Report**⁶ should be completed, with proportionate effort, and forwarded to HQ SRI Team, who in conjunction with the DRD Economics Branch will decide on approval. For schemes in excess of £5m the Economic Appraisal Report must also be submitted to the Department of Finance & Personnel (DFP) (through HQ SRI Team). The Economic Appraisal Report should follow the guidance in Appendix 6 of this paper. Upon approval of the Economic Appraisal Report the scheme will be entered into the DAO (DFP) 06/05⁷ Departmental Delegations Database after which HQ Strategic Road Improvement Team will report to DRD Core Finance on a quarterly basis⁸.

Upon completion of the statutory procedures (and HQ/DFP approval of the Economic Appraisal Report) the Project Sponsor will submit a progress report to the IDM through the Director of Strategic Programmes, seeking permission to start the procurement process for this scheme. This report should identify any significant changes to the scheme since Approval Gateway 1. The Project Sponsor may have to submit a revised Economic Appraisal Report if for example the scheme estimate has changed by more than 10% or if the implementation has been delayed by more than 24 months, by comparison to the estimates given in the approved business case. Refer to the NI Practical Guide to the Green Book for Guidance⁹.

⁶ HQ Strategic Road Improvement Team and DRD Economics Branch should be contacted to provide assistance in completing Economic Appraisal Reports.

⁷ Refer to <http://www.aasbni.gov.uk/pubs/DAOs/dao0605v2.doc>

⁸ Refer to http://rdsclarweb1/rshq/Network_Development/DAO_Database.xls for the DAO spreadsheet

⁹ The NI Practical guide to the Green Book can be ordered or viewed via the web link

http://www.dfpni.gov.uk/economic_appraisal_guidance

If approved (equivalent to Approval Gateway 2 in DEM 29/01) the scheme should then progress to procurement. Subsequently, the Project Owner will (subject to finance being available) submit a request to the Director of Strategic Programmes, in accordance with RSPPG_P003, to procure and appoint a contractor for this scheme¹⁰. (Equivalent to Approval Gateways 3 and 4 in DEM 29/01.)

On schemes where the CEEQUAL process applies the PS shall appoint a CEEQUAL External Verifier before the final scheme design commences. (The in-house consultant assessor may recommend this appointment at an earlier stage). The External Verifier together with the in-house / consultant assessor shall agree the scoping-out of irrelevant CEEQUAL questions.

2.1.5 **Construction Programme**

The Construction Programme is a list of major road improvement schemes currently under construction. After the construction of the scheme is complete, Post Project Evaluations¹¹ are to be carried out. This is a two stage process with the first being the completion of the Post Management Evaluation form and the second being the completion of the Post Benefit Evaluation form.

The PS is to ensure that the CEEQUAL award process has been completed on the schemes that were selected for CEEQUAL Assessment.

Scheme Estimates

Project Sponsors are responsible for ensuring that the Director of Strategic Programmes is alerted to changes in scheme estimates as and when required. The scheme estimate proforma¹² must be submitted at each Gateway Stage, or when a change needs to be identified, and be approved by the relevant Project Owner. It is now Roads Service policy that any public facing estimates will be defined as a range and not as a single figure. HQ SRI Team will define the range which will decrease as cost certainty and scheme development progresses. Only the approved range should be quoted in public facing publications and websites.

¹⁰ Schemes that are part of DBFO package may use a different procurement procedure. Refer to RSHQ for advice on specific schemes.

¹¹ The Post Project Evaluation proformas and Guidance notes are available at <http://rdsclarweb1/rshq/sri/docs.htm>

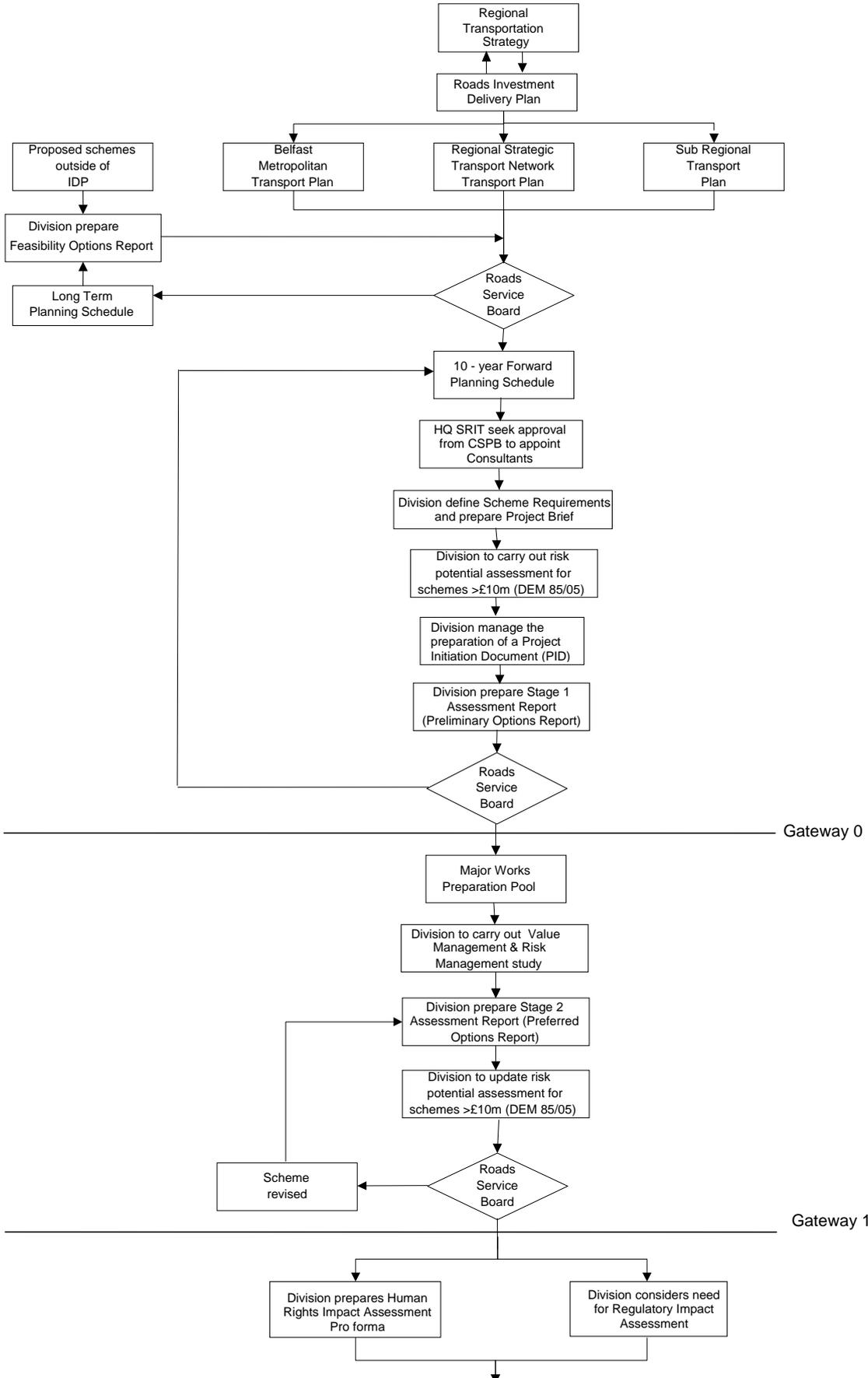
¹² The Scheme Estimate Proforma is available at http://rdsclarweb1/rshq/Network_Development/Scheme%20Estimate%20Proforma.xls

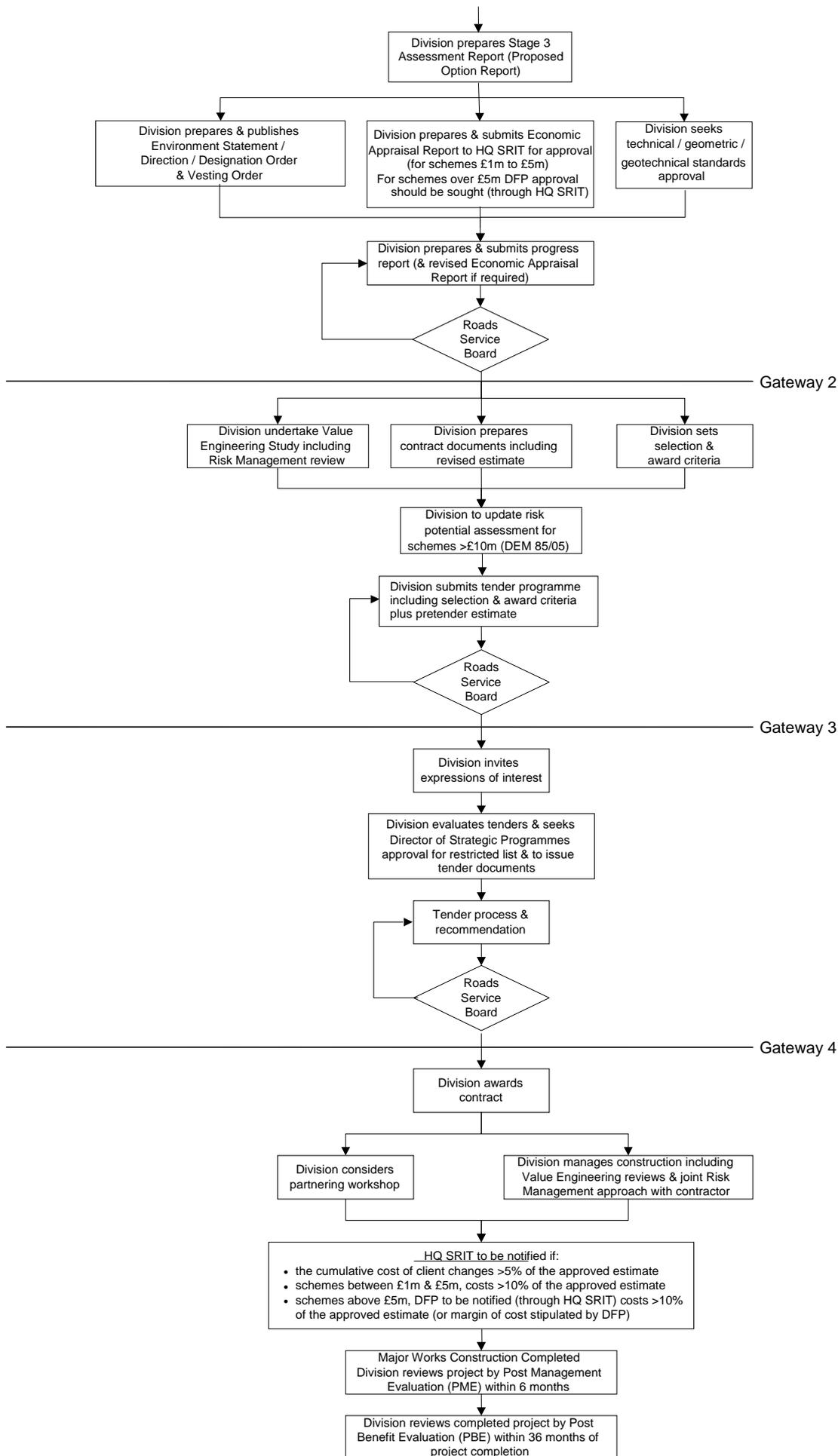
3	Equality Impact Assessment (EQIA)
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3.1 **Equality Impact Assessment Section 75 of the Northern Ireland Act 1998**

These amendments are being made to an existing internal document covering internal Roads Service procedures. As the amendments will not have any impact on any Section 75 group it is deemed that an EQIA Screening Analysis/ full EQIA is not necessary.

4.1 Appendix 1: Flowchart of the Progression of Major Works Schemes





4.2 **Appendix 2: Checklist for Major Works Schemes**

1. Scheme enters 10 Year Forward Planning Schedule.

2. HQ SRI Team seeks approval from Consultancy Services Programme Board for approval to appoint consultants.
3. The Director of Strategic Programmes acting on behalf of the IDM appoints Divisional Roads Manager as Project Owner (PO).
4. PO appoints PPTO generally from a Strategic Road Improvement Team as Project Sponsor (PS)
5. PS defines Scheme Requirements and prepares a brief for consultants.
6. PS manages preparation of a Project Initiation Document¹³ for approval by the PO (to be copied to HQ SRI Team).
7. PS prepares Risk Potential Assessment for schemes > £10m¹⁴.
8. PS appoints a CEEQUAL in-house / consultant assessor for schemes over £5M, unless agreed otherwise by the Director of Strategic Programmes.
9. PS manages the preparation of a **Preliminary Options Report** to include a cost estimate.
10. PO submits the Preliminary Options Report to the IDM and seeks approval to enter Preparation Pool.
- 11. Approval Gateway 0 – IDM approves entry into Preparation Pool**
12. PS organises a Value Management and Risk Management study¹⁵.
13. PS manages the preparation of a **Preferred Options Report**.
14. PS updates Risk Potential Assessment for schemes > £10m.
15. PO submits the Preferred Options Report & seeks IDM approval to start statutory procedures¹⁶.
- 16. Approval Gateway 1 – IDM approves the start of statutory procedures**
17. PS to complete:
 - Human Rights Impact assessment pro forma¹⁷ (Note - if the policy/proposal interferes with or limits one or more of the convention rights legal advice must be sought);

¹³ Refer to Appendix 3

¹⁴ Refer to DEM 85/05 Gateway Review Process.

¹⁵ Refer to <http://www.ogc.gov.uk/documents/CP0064AEGuide4.pdf>. A member of HQ SRI is to be invited to any Value Management or Risk Management study workshops.

¹⁶ Refer to "Statutory Procedure Workshop" – November 2002 under Internal Documents on Roads Service Manual for guidance on the progress of schemes through Statutory Procedures.

<http://rdsclarweb1/dmrb/RS%20Manual/Statutory%20procedures/Statutory%20procedures%20workshop.pdf>

- Regulatory Impact Assessment¹⁸ or identify how the policy/proposal justifies exclusion from this assessment.
18. PS manages the preparation of a **Stage 3 Scheme Assessment Report**.
19. PS to manage:
- The preparation of an Environmental Statement (Lands & Legislation Branch prepare and publish the Notice of Determination and Notice of Publication);
 - The preparation of background information in the form of a schedule for a draft Direction / Designation Order with associated documents and maps. (Lands & Legislation Branch prepare draft order and publish the Notice of Intention to make a Direction / Designation Order [NIMDO]);
 - The preparation of a map and Vesting Order Schedule with associated documents (Lands & Legislation Branch publishes the Notice of Intention to make a Vesting Order [NIMVO]).
- Note: Lands & Legislation Branch on receiving the PS's submission, requesting a statutory rule to be made, will first seek approval from the Minister and the Regional Development Committee on the policy/proposal that requires this statutory rule to be made.
20. PS to attempt to resolve any objections to each of the above Notices. If objections cannot be resolved it may be necessary to hold a Public Inquiry. Depending on the substance of the objections raised the PO may prepare a submission requesting that the Director of Corporate Services gives approval to proceed without recourse to a Public Inquiry. If a Public Inquiry is held, following receipt of the Inspectors Report, the PS will report and recommend to Lands & Legislation Branch the way forward in the form of a draft Departmental Statement. This is required to be submitted to the Minister for approval before publication.
21. Lands & Legislation branch will manage the publication of the Environmental Statement's Notice of Intention to Proceed and the making of the Direction / Designation Order and the Vesting Order. Prior to making the Vesting Order the PO must obtain an up to date estimate of land costs from Land & Property Services and seek confirmation from the Director of Strategic Programmes that funding is in place.
22. PS prepares and submits an **Economic Appraisal Report**:
- for schemes between £1m and £5m, to DRD Economics Branch for approval (through HQ SRI Team).
 - for schemes over £5m, to DFP for approval (through HQ SRI Team).
23. PS seeks technical / geometric / geotechnical standards approval¹⁹.
24. PO prepares and submits a progress report (and revised Economic Appraisal Report if necessary) and seeks IDM approval to commence contract preparation.

¹⁷ Refer to The Human Rights Impact assessment proforma

<http://www.ofmdfmi.gov.uk/humanrightsproforma.doc>

¹⁸ Refer to "Better Policy Making & Regulatory Impact Assessment: A Guide for Northern Ireland"

<http://www.detini.gov.uk/cgi-bin/downdoc?id=3117>

¹⁹ Refer to DEM 118/09 for approval of Design Speeds

25. Approval Gateway 2 – IDM approves the preparation of contract documents

26. PS appoints a CEEQUAL external verifier for schemes identified for CEEQUAL assessment. (The in-house consultant assessor may recommend this appointment at an earlier stage).
27. PO & PS undertake a Value Engineering Study including Risk Management review.
28. PS manages the preparation of contract documents including a revised estimate.
29. PS updates Risk Potential Assessment for schemes > £10m
30. PS manages the setting of the selection and award criteria.
31. PO submits tender programme including selection & award criteria as well as pre-tender estimate²⁰ and seeks IDM approval to start procurement.

32. Approval Gateway 3 – IDM approves the start of procurement

33. PS manages advertisement for a restricted list of contractors.
34. PO evaluates contractor's submissions & seeks Director of Strategic Programmes approval for restricted list & to issue tender documents.
35. PS issues tender documents.
36. PO evaluates tenders & seeks IDM approval to award contract.

37. Approval Gateway 4 – IDM approves the contract award

38. PO awards contract.
39. PS considers partnering workshop.
40. PS manages construction including Value Engineering reviews and joint Risk Management approach with contractor.
41. PO notifies HQ SRI Team if client requirements increase costs in excess of 5% above the approved estimate.
42. For schemes between £1m and £5m, PO seeks HQ SRI Team approval if costs increase by 10% over the approved estimate
43. For schemes greater than £5m, PO seeks DFP approval through HQ SRI team if costs increase by 10% over the approved estimate (or any other margin of cost stipulated by DFP).
44. PS to ensure that the CEEQUAL process has been completed on the relevant schemes
45. PO reviews completed project by carrying out Post Management Evaluation (PME)²¹ within 6 months of contract completion.
46. PO reviews completed project by carrying out Post Benefit Evaluation (PBE)²² within 36 months of contract completion.

²⁰ Refer to RSPPG_P003 for guidance on seeking RSHQ approval at the various stages of procurement.

²¹ The Post Project Evaluation proformas and Guidance notes are available at <http://rdsclarweb1/rshq/sri/docs.htm>

Major Works Database:

Throughout the life of a scheme POs and PSs should ensure that the information retained on the major works database (maintained by HQ SRI Team) is kept up to date. This database will evolve to hold all the relevant information relating to a scheme and will be used for monitoring, reporting and benchmarking purposes.

4.3 **Appendix 3: Project Initiation Document**

At the outset of a consultant's commission, the consultant shall produce a Project Initiation Document, for approval by the Project Sponsor, which defines all major aspects of the project and forms the basis for its management and the assessment of overall success. This document should include, but is not limited, to the following:

- Project Brief
- Project Background and Definition
- Project Scope and Deliverables/Outputs
- Project Aims and Objectives
- Project Organisational Structure with Names and Titles
- Roles and Responsibilities / Job Definitions / Management Plan
- Methodology/ Standards / Procedures
- Reporting and Control
- Communication Plan
- Inception Reports to be completed and agreed prior to each key stage
- Activity Schedules for each key task indicating the staff input (names, grades and hours) to establish a cost ceiling
- Project Quality Plan incorporating quality responsibilities; quality control and audit processes; tools to be utilised; acceptance criteria; and quality management system and standards.
- Project Plan in MS Project Gant Chart Format (updated monthly)
- Constraints and Assumptions
- Milestone/Delivery Summary (updated monthly)
- Project Cost Summary showing the total current estimate of the commission broken down into outturn and profiled expenditure (updated monthly)
- Change Control Register
- Risk and Opportunities Register
- Decision Register

The Project Initiation Document is not necessarily one document, but can be a set of documents. This should be a dynamic document(s) and will need to be up to date with additions/revisions being incorporated as the project progresses.

4.4 **Appendix 4: Feasibility / Preliminary Options Report**

This report should draw on WebTAG to include an Appraisal Summary Table for the various short listed options and may include, but is not limited to, the topics listed below.

1. Introduction
2. Existing Conditions
3. Description of Alternative Schemes
 - 3.1 Description
 - 3.2 Preliminary Cost Estimates
4. Engineering Assessment
 - 4.1 Condition of Existing Road, Pavements and Highway Structures
 - 4.2 Preliminary Consideration of:
 - Topography and Land Use
 - Geology and Geomorphology
 - Hydrology Drainage
 - Public Utilities
5. Environmental Assessment
 - 5.1 Baseline Condition
 - 5.2 Environmental Constraints
 - 5.3 Environmental Effects
 - 5.4 Mitigation
 - 5.5 Consultations
6. Traffic and Economic Assessment
 - 6.1 Existing Conditions
 - 6.2 Future Conditions
 - 6.3 Effect of Options
 - 6.4 Economics

4.5 **Appendix 5: Preferred Options Report**

This report should draw on WebTAG to include an Appraisal Summary Table for the various short listed options and may include, but is not limited to, the topics listed below.

1. Introduction
2. Existing Conditions
3. Description of Scheme Options
 - 3.1 Description of Options
 - 3.2 Cost Estimates
4. Engineering Assessment
 - 4.1 Engineering Description of Each Option in Relation to:
 - Engineering Standards
 - Climate, Topography and Land Use
 - Geology, Geomorphology and Ground Conditions
 - Hydrology, Hydrogeology and Drainage
 - Public Utilities
 - 4.2 Preliminary Consideration of:
 - Structure Required Engineering Standards
 - Assessment of any Anticipated Departure From Standard
5. Environmental Assessment
 - 5.1 Baseline Condition
 - 5.2 Environmental Effects
 - 5.3 Mitigation
 - 5.4 Consultations
6. Traffic and Economic Assessment
 - 6.1 Modelling
 - 6.2 Forecasting
 - 6.3 Effects of Scheme Options
 - 6.4 Economic Performance of Options

4.6 **Appendix 6: Economic Appraisal Report**

- An Appraisal Report is required for all major road improvement schemes estimated to cost over £1m.
- An Appraisal formalises the process of defining the problem and identifying the solution that offers the best value for money.
- This report should be completed in accordance with this appendix, which has taken account of Government Guidelines, known as the 'Green Book' and the NI Practical Guide to the Green Book²². For schemes over £5m the Economic Appraisal Report shall be submitted to DFP during the statutory procedures process.

The following guidance contains the categories to be covered in an appraisal and some brief explanatory notes although more comprehensive guidance notes and a pro forma which could be completed is available by following this link http://rdsclarweb1/rshq/Network_Development/Economic_Appraisal.doc

Consequently, for a relatively straightforward and /or low cost scheme (i.e. under £5m) all the steps in the report should be covered but the analysis may be brief. Headquarters Strategic Road Improvement Team and DRD Economics Branch are able to offer further advice on the completion of this report and on the principle of proportionate effort.

Note the following:

- (i) A scheme should not be sub-divided to remove the need for DFP Approval.**
- (ii) If approved scheme costs subsequently rise above £5m DFP approval must be sought retrospectively before further expenditure is incurred.**
- (iii) For schemes between £1m and £5m, HQ SRIT should be notified if costs increase by more than 10% of the approved estimate.**
- (iv) For schemes greater than £5m, DFP (through HQ SRIT) should be notified if costs increase by more than 10% of the approved estimate (or any other margin of cost stipulated by DFP).**
- (v) The same applies where project implementation is expected to be delayed by more than 24 months by comparison to the timescale indicated in the approved business case.**
- (vi) HQ SRIT should be notified if the cumulative cost of client changes exceeds 5% of the approved estimate.**

²² The NI Practical Guide can be ordered or viewed via the web link http://www.dfpni.gov.uk/economic_appraisal_guidance

4.6.1 Report Contents

1. Strategic Context

Describe the background to the project, including its strategic importance making reference to any relevant Strategies, NICS or Departmental Corporate and Business Plans, if relevant (for example, Regional Transportation Strategy and Regional Strategic Transport Network Transport Plan).

2. Assessment of Need

Describe the reason(s) for undertaking this project highlighting any deficiencies or problems with the existing road. Thus the road may be in a poor state of repair or there may be traffic congestion, high collision rates, high traffic volume, environmental concerns etc. If possible quantify these problems or needs (for example, increased traffic volumes over time, traffic collisions, some measure of higher congestion e.g. increasing travel times etc). A description of what is likely to happen in the absence of the proposed project is often a good indicator of need.

3. Objectives, Targets & Constraints

Based on the needs described, identify a range of objectives for this project, which should show the outcome that the project hopes to achieve. Alongside the objectives, set out any targets the project hopes to meet. These targets should be as SMART as possible (Specific, Measurable, Achievable, Realistic & Timely). Where possible targets should be quantified eg. reduce journey times from xx minutes to yy minutes or reduce the number of accidents from xx to yy.

Also, detail any Constraints on the project. These can be technical, legal, political or financial in nature. Issues such as timing or location can also act as constraints on a Roads Appraisal.

4. Identification of Options

Describe the range of options considered including the status quo or “do minimum” option. This option represents the genuine minimum input necessary to maintain the existing road network. It is recommended that at least two options as well as the Status Quo are carried forward for in depth appraisal.

The economic appraisal report is usually submitted during the statutory procedures process and at this stage the preferred option has already been picked. What is required in the option section is a description of all the alternative options that were considered for the scheme. In addition to the description of the options considered an explanation should be provided of the strengths of the preferred option against the other options and why it has become the preferred option.

The Appraisal Summary Tables (AST) for each of the options considered should be included in section seven.

5. Assessment

All relevant monetary costs and benefits should be identified for each short listed option and shown in real terms (i.e. ignoring inflation.) All land and buildings used in a project should be valued even if they are already owned by Roads Service. This reflects the fact that these assets have an alternative use. Where schemes attract Developer Contributions that contribution should be included as part of the cost. The stream of costs and benefits should cover the full project period, with any assumptions identified. These costs & benefits should be used in the COBA²³ (Cost Benefit Analysis) or TUBA computer program in order to establish the net present value of the new road scheme compared to the scenario without the road scheme.

The COBA analysis should.

- Include high and low growth traffic figures from local knowledge or NARTF²⁴.
- Include traffic collision rates.
- Present results as an average of the high & low traffic growth figures, and
- be discounted by a real discount rate as shown in Table 1 below.

Table 1: Discount Rate

Period of years	0 - 30	31 - 75	76 - 125	126-200	201-300	301+
Discount rate	3.5%	3.0%	2.5%	2.0%	1.5%	1.0%

6. Assess Risks and adjust for Optimism Bias

In appraisals there is always likely to be some difference between what is expected and what eventually happens. Several studies have indicated that scheme cost estimates tend to underestimate costs and delivery times and overstate benefits and revenue streams. As noted by HM Treasury (2003), this is usually due to biases unwittingly inherent in the appraisal, and the risks and uncertainties that materialise in the course of the project. As a result, it is important to identify and mitigate risks, and make allowances for “optimism bias”.

In the context of cost estimation, risk refers to identifiable future situations that could cause an over spend or under spend to occur. Optimism Bias is defined by the Green Book (2003 p.29) as “a demonstrated systematic, tendency for project appraisers to be overly optimistic”, and in effect, results in an underestimation of scheme costs. Identified scheme costs should be adjusted to account for risk and optimism bias in order to obtain more accurate cost estimates.

For projects with a capital value greater than £5m a Quantified Risk Assessment must be carried out. For projects with a value less than £5m risks should be identified along with any countermeasures that will be put in place to minimise their impact. Also indicate whether the level of risk is low, medium or high for each option.

²³ Refer to DMRB Volume 13 Economic Assessment of Road Schemes.

²⁴ National Average Road Traffic Forecasts in DMRB Volume 13 Economic Assessment of Road Schemes

Optimism Bias adjustments should be carried out using data from past projects or if this is not available then the figures produced by Mott Macdonald can be used. Further guidance on this is available in the Economic Appraisal Guidance notes.

7.NATA and Supporting Analysis

The New Approach To Appraisal (NATA) was introduced in the Governments white paper A New Deal for Transport. It was developed and designed for a number of purposes:

- Choosing between different options for solving the same problem;
- Prioritising between proposals; and
- Assessing value for money

Central to this approach is the production of Appraisal Summary Tables (AST) and the provision of what is referred to as Supporting Analysis. An AST displays the degree to which the five central government objectives for transport would be achieved. An AST should be provided for each of the short listed options. The five criteria are:

- Safety
- Environment
- Economy
- Accessibility
- Integration

More detailed guidance on this is contained within Webtag (<http://www.dft.gov.uk/webtag>)

8. Financing and Procurement

This section looks at the financial implications of the proposed project. If developers contributions form part of the overall scheme it is here that the effect of these contributions becomes apparent in the financing implications for Government.

The proposed method of procurement should also be explained. If a conventional procurement route is being followed there is no need for any extensive commentary but where an unconventional procurement route is being proposed there is a requirement to fully explain why this procurement route is being chosen and the benefits it will bring.

9. Conclusions & Recommendations

Summarise the options identifying the preferred option and the reasons why it was chosen.

10. Monitoring & Post Implementation Review

Describe the proposed arrangements for managing, monitoring and evaluating the project including when, how and by whom these tasks will be undertaken.

Title: Major Road Improvement Schemes: Inception to Construction

5.1 **Document History**

Version	Date	Author	Authorised by Document Control Panel Members	
			Name	Signature
First	20/07/04	P. Rice		
Second	12/10/05	J. Saulters		
Third	01/09/09	S. Wells	Philip Hamilton	

5.2 **Overall Reasons for This Version**

Version	Reasons
Second	Updated to reflect current requirements
Third	Updated to reflect current requirements

5.3 **Revision Details**

Version	Amendments