Design Development Report (Small Projects)

The purpose of this form is to progressively document design inputs and details as they become available and are approved. The form is an attachment to the Business Case, Preliminary Design and Scheme Prototype at their current state of completion. Please select which stage of completion this form is at below.

This form is applicable to low risk or less complex projects.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Options Analysis | Business Case | Preliminary Design | Detailed Design | Scheme Prototype |
| (Please highlight one above) |
| Project nameRoad infrastructureThe Design Development Report is a companion form to the approval templates Options Analysis/Business Case, Preliminary Design and Scheme Prototype, as relevant. The form must be progressively completed for approval purposes at the appropriate project development stage. |
| **District / Region** |  | **Local government** |  |
| **Road name** |  |
| **Location** |  |
| **Project number** |  |
| **Project / DMS No** |  |
| **Program** |  |
| **Work description** |  |
| **Document control sheet – contact for enquiries and proposed changes**  |
| If you have any questions regarding this document or if you have a suggestion for improvements, please contact: |
| **Project Manager** |  |
| **Phone number** |  |

|  |
| --- |
| **Version history** |
| **Version no.** | **Date** | **Changed by** | **Nature of amendment** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Design Development Report**

**Establishing design input details**



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# Introduction

All sections are to be completed or noted not applicable (N/A). Any additional information is to be included as an attachment.

## Purpose

The purpose of this document is to progressively document design inputs and details as they become available and are approved. The form is an attachment to each of the phase stages, e.g. Options Analysis, Business Case, Preliminary Design and Detailed Design, including any design variations during the construction period. At the end of each phase stage the Design Development Report is to be electronically stored in the job folder, e.g. Design Development Report – Business Case. This records the status of the information at the time of completion of the phase stage concerned.

## References

This item lists reference documents including reports on previous investigations, studies, consultations and data gathering processes, e.g. brief, geotechnical, environmental, hydraulic, Native Title, property details, etc.

|  |
| --- |
| Insert references |

## Definitions

Define in the table below any term which the target audience may not understand, including specific terms, abbreviations and acronyms not covered in the standard Transport and Main Roads manuals, listed in section 1.2.

|  |  |
| --- | --- |
| Terms, abbreviations and acronyms | Meaning  |
| Constructability | Ensuring the infrastructure can be constructed using the available level of technology (knowledge, skills, materials and equipment) at the site concerned and within specified constraints, e.g. maintaining specified traffic requirements during the construction period. |
| Deliverable | A deliverable is the physical outcome of a task resulting from applying defined processes to a set of inputs. A deliverable is a measurable, tangible, verifiable item produced as part of a project. |
| Context Sensitive Design | Context Sensitive Design is described in the *Road Planning and Design Manual Volume 1 – Legislation and Design Philosophy* and the *Austroads Guide to Road Design – Part 2.* |
| Corporate objectives (strategic fit) | The corporate strategy adopted to maintain / upgrade the link concerned. |
| Notional pavement design | An initial pavement design based on appropriate investigations and testing of available materials for the purpose of developing a reliable pavement cost estimate for the concept estimate. |
| Project | A project is defined as "a temporary endeavour undertaken to create a unique product, service or result". |
| Project management | The planning, organising, monitoring and controlling of all aspects of a project in a continuous process to achieve its objectives, both internal and external. It is a discipline requiring the application of skills, tools and techniques and the balancing of competing demands of product or service specification, time and cost, within prescribed constraints. |
| Work activities | Work components of a project that are necessary to deliver a unique product, service or result. |
| Work management | The management of project deliverables in order to meet stakeholder needs and expectations from a project. |
| Work package | A clearly identifiable individual element of work identified in a project Work Breakdown Structure (WBS), e.g. geotechnical investigation. |
| Design review | An activity undertaken to ensure that each phase step of the design is aligned to the specified project outcomes so that overall fitness for purpose is achieved. The review should focus on those issues that are necessary to achieve project objectives, e.g.:* Corporate objectives (strategic)
* Required functionality (integration with other activities within and adjacent to the road reserve)
* Traffic operations (functionality and traffic operational efficiency)
* Technical standards (safety, economical solution, environmental sustainability)
 |

# Project requirements

The implementation of a project will deliver a range of outcomes varying from satisfying environmental considerations to operational performance of the completed infrastructure. It is very important that all required outcomes are achieved and in this respect this section describes and articulates these requirements to ensure the designer develops the 'right' solution.

## The need for the project

|  |
| --- |
| Describe the problem that this project is expected to fix. |

## The corporate objective (strategic fit)

|  |
| --- |
| Describe the corporate objective of the link this project needs to satisfy. |

## The required functional (operational) outcomes

|  |
| --- |
| The functional outcomes will normally be expressed in terms of capacity, delays, functionality of the network, safety, etc. For this project the required outcomes are: |
| Copy from project proposal and insert here. |

## Design intent (objectives)

|  |
| --- |
| The design intent for this project is to provide an economical solution that meets corporate objectives (strategic fit see clause 2.2), delivers the specified functional (operational) outcomes (see clause 2.3), and satisfies environmental requirements and community concerns. |
| Insert requirements not covered by sections 2.2 and 2.3. |

## Project description

|  |
| --- |
| Insert description of the project. |

# Existing conditions

## General details

|  |
| --- |
| Insert general details. |

## Traffic details

|  |  |
| --- | --- |
| AADT (current) | (Type current vpd) |
| Traffic type/mix (%) | Cars \_\_\_\_\_\_%Trucks-SU \_\_\_\_\_\_%Semi-trailers \_\_\_\_\_\_%B-Doubles \_\_\_\_\_\_%and others \_\_\_\_\_\_% |
| Growth (%) |  |
| Commercial vehicles (%) |  |

## Flooding details

|  |
| --- |
| Insert flooding details. |

## Accidents history

|  |
| --- |
| Insert accidents history details. |

## Road Safety Audit Report (existing road)

|  |
| --- |
| Insert road safety audit report details. |

# Developing scope and identifying design inputs

The identification of relevant project impact areas is required to help define specific work packages necessary to draw out issues that may impact on the scope of the project. In many cases preliminary studies are the forerunner of future detail studies that will be identified and commissioned in subsequent phases / phase stages.

Information gathering in many cases will require a two-stage approach to reduce unnecessary work and to minimise overall project cost.

Any additional information should be incorporated into the relevant section and where necessary reference to the source document or included as an attachment.

This list of proforma considerations can be used as a checklist to help in the identification of potential work packages required for planning the delivery and/or for input into this project.

|  |
| --- |
| Insert details. |

## Preliminary studies (work packages)

Preliminary studies will generally cover a broad area to provide sufficient information for all of the likely project solution options. Identification at the proposal stage is necessary in order to estimate the cost of the planning budget. Once the preferred option has been selected and approved additional and more intense information should be gathered over the preferred option footprint.

|  |
| --- |
| Insert details. |

## Preliminary studies (work packages)

Detail studies are generally built on earlier studies tailored to increasing the information relating to the adopted preferred option, (e.g. earlier environmental studies may have identified endangered species that require further investigations).

The issues identified by these additional studies that need to be considered / incorporated in the design development process must be included in the following sections, as relevant. Action requiring design solutions are to be included in the Design Requirements and Design Details Reference column with a cross reference to the relevant part of section 6, as appropriate. These design development considerations requirements must be included in the following table format example:

### Site familiarisation

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Project / design considerations | Design requirements | Details included in section 6.x |
| A |  |  |  |
| B |  |  |  |
| Comments |

### Additional survey information (over the footprint area of the preferred option)

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Project / design considerations | Design requirements | Details included in section 6.x |
| A |  |  |  |
| B |  |  |  |
| Comments |

### Geotechnical

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Project / design considerations | Design requirements | Details included in section 6.x |
| A |  |  |  |
| B |  |  |  |
| Comments |

### Community consultation

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Project / design considerations | Design requirements | Details included in section 6.x |
| A |  |  |  |
| B |  |  |  |
| Comments |

### Environmental

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Project / design considerations | Design requirements | Details included in section 6.x |
| A |  |  |  |
| B |  |  |  |
| Comments |

### Public utility plant

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Project / design considerations | Design requirements | Details included in section 6.x |
| A |  |  |  |
| B |  |  |  |
| Comments |

### Land acquisition (including native title suppression)

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Project / design considerations | Design requirements | Details included in section 6.x |
| A |  |  |  |
| B |  |  |  |
| Comments |

### Special requirements

Pedestrians, bicycles, special vehicles etc.

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Project / design considerations | Design requirements | Details included in section 6.x |
| A |  |  |  |
| B |  |  |  |
| Comments |

### Traffic management during construction

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Project / design considerations | Design requirements | Details included in section 6.x |
| A |  |  |  |
| B |  |  |  |
| Comments |

### Others

Sodic soils, acid sulphate soils/rock etc.

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Project / design considerations | Design requirements | Details included in section 6.x |
| A |  |  |  |
| B |  |  |  |
| Comments |

# Design parameters and issues

## Target design speed for link

|  |
| --- |
| The target design speed for link is: km/h |
| Reasons for sections with design speed less than target speed are: |
| Adopted target speed for design: km/h |

## Design approach

Please tick the design approach to be adopted.

|  |
| --- |
|  □ Extended Design Domain **OR** □ Normal Design Domain(design approach as detailed in the Transport and Main Roads’ standard documentation) |
| Comments |

## Any constraints to project/design constraints

Design constraints, e.g. land acquisition.
Restrictions that limit the way the objective is to be achieved (describe what might impact on successful development/implementation of the project e.g. environmental, geotechnical, property acquisitions, hydrology effects, community and stakeholder impacts, and the strategic fit). See Section 4 Developing scope and identifying design inputs. This may include restrictions on budget/funding, political issues, limited resources to work on the project, constraints to do with timing and implementation of project outcomes.

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Project / design considerations | Design requirements | Details included in section 6.x |
| A |  |  |  |
| B |  |  |  |
| Comments |

## Exclusions

What the project will not be doing.

|  |  |
| --- | --- |
| No. | Description of exclusions |
| A |  |
| B |  |
| Comments |

## Assumptions

Articulate the key assumptions adopted during the design process, e.g. design vehicles, traffic composition, bridge loadings, etc.

|  |  |
| --- | --- |
| No. | Description of assumptions |
| A |  |
| B |  |
| Comments |

## Connectivity to related projects

List related projects or proposals affecting the project (past, current or planned) and the relationship to the project. Such projects may pose significant risks to the overall project if not done at all by others or completed in time. This may create risks for the overall project that need to be recognised and managed.

|  |
| --- |
| *Insert related projects* |

## Potential impacts

This can be completed in narrative or table format. Apart from the above, identify other areas of potential impact, the nature of impact and who will be impacted (internal and external). Include impacts during the project's life (that is, costs, disruptions, temporary arrangements, etc.) and ongoing impacts resulting from the project's product/deliverables, e.g. an inadequate project budget may cause an increase in lifecycle costs by the reduction in pavement thickness.

|  |
| --- |
| *Insert potential impacts* |

## Risks

The department's risk management framework is aligned to the international risk management standard, AS/NZS ISO 31000:2009. If you are a applying for a tender and would like to know further information about the risk management requirements, please enquire through the specified tender process.

Within the department, risk management practice guides, tools and techniques are available through the *inside*TMR intranet in the ‘Policies and procedures’ section, under ‘Risk management’. For more information about risk management in TMR please email the Risk Advisory Team mailbox (Risk\_Advisory\_Team\_Mailbox@tmr.qld.gov.au).

|  |
| --- |
| *Insert risks* |

## Existing road alignment, restrictions

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Project / design considerations | Design requirements | Details included in section 6.x |
| A |  |  |  |
| B |  |  |  |
| Comments |

## Major controls on alignment, grade and layouts

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Project / design considerations | Design requirements | Details included in section 6.x |
| A |  |  |  |
| B |  |  |  |
| Comments |

## Road use permits and leases

Report on any other issues that affect right-of-way and proposed closure/acquisition requirements.

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Project / design considerations | Design requirements | Details included in section 6.x |
| A |  |  |  |
| B |  |  |  |
| Comments |

## Anything else that will put a boundary around the project

Detail anything else that will put a boundary around the project that may impact on the project team to achieve the project objective.

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Project / design considerations | Design requirements | Details included in section 6.x |
| A |  |  |  |
| B |  |  |  |
| Comments |

# Design details

## Type cross sections

|  |
| --- |
| *Insert type cross section details* |

## Earthworks

|  |
| --- |
| *Insert earthworks details* |

## Constructability

|  |
| --- |
| *Insert constructability details* |

## Intersection details

|  |
| --- |
| *Insert intersection details* |

## Drainage (existing and proposed)

|  |
| --- |
| *Insert drainage details* |

## Pavement details (existing and proposed)

|  |
| --- |
| *Insert pavement details* |

## Public utility plant (major relocation only)

|  |
| --- |
| *Insert public utility details* |

## Other features (e.g. cycles and pedestrian)

|  |
| --- |
| *Insert other feature details* |

## Other design features

Access/sight distance, pavement and shoulder widths flood immunity etc. and relationship to adjoining sections.

|  |
| --- |
| *Insert other design features* |

# Record of design issues arising from process activities

## Design verification

Describe the design verifications performed at the various stages of this project.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Design verification details | Verifier | Actions required | Actual actions taken (include requirements in section 6) |
| A |  |  |  |  |
| B |  |  |  |  |
| Comments |

## Project meeting minutes

Describe the design issues arising from project minutes.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Meeting details | Verifier | Actions required | Actual actions taken (include requirements in section 6) |
| A |  |  |  |  |
| B |  |  |  |  |
| Comments |

## Safety in design

Describe the major issues arising from the safety in design risk review. Alternatively, you may reference the location of the Safety in Design report.

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Risk description | Existing controls | Treatment required |
| A |  |  |  |
| B |  |  |  |
| Comments |

## Reviews conducted

A range of reviews may be required during the delivery process for a range of reasons. Reviews may be internally or externally generated. They will range from quality system requirements (e.g. design reviews) to corporate requirements (e.g. peer reviews).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No. | Review Type | By whom | Satisfactory? | Action required | Action by |
| Yes | No |
| A |  |  |  |  |  |
| B |  |  |  |  |  |
| Comments |

# Road safety audits

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Audit type | Auditor | Actions required | Actual actions taken (include requirements in section 6) |
| A |  |  |  |  |
| B |  |  |  |  |
| Comments |

# Actions

**Stages of approvals:**

|  |  |  |  |
| --- | --- | --- | --- |
| **OA =** Options Analysis | **BC =** Business Case | **PD =** Preliminary Design | **DD =** Detail Design |

## Design intent certification

|  |
| --- |
| * Satisfies the problem in accordance with the corporate objective for the link.
 |
| * Delivers required outcomes.
 |
| * Inputs are appropriate and addressed satisfactorily.
 |
| * Satisfies corporate design standards.
 |
| Stage | Signatory | Position | Date |
| *Stage* |  | *Insert position* | *Insert date* |
| Comments |

## Regional review and acceptance

Regional Office stage review and acceptance, as relevant.

|  |  |  |  |
| --- | --- | --- | --- |
| Stage | Signatory | Position | Date |
| *Stage* |  | *Insert position* | *Insert date* |
| Comments |

# Attachments