EAST COAST EXPRESSWAY PHASE 2
FROM KUANTAN TO KUALA TERENGGANU

RISK MANAGEMENT PLAN: PACKAGE 4

Version 0.1 **01 APRIL 2008**

Summary of ECE Phase 2 Risk Profile – Package 4

The initial risk process for the East Coast Expressway Phase 2 project was conducted through a risk workshop session and discussions facilitated by Ir. Yaakub Abdul Latif from PROKOM and attended by HOPT, LLM, Consultant and Contractor for the project.

Through the process 21 risks were identified. Review of these risk and removal of duplicates resulted in 9 risks to be evaluated. The information provided has allowed an initial assessment of the project's risk profile to be conducted and mitigation/treatment measures were identified to reduce the likelihood or impact of the risk. A preliminary analysis of the risks identified will be undertaken progressively.

The overall risk profile of the project as it stands would be considered MEDIUM. This is not unusual at this stage of the project. A significant risk mitigation strategy currently in place for the project is the adoption and implementation of the Partnering mode, as many of the identified risks will be resolved by good communications and discussions to develop a common understanding of the requirements required to deliver the successful outcomes of the project.

Initial assessment was conducted against the risks identified as either Pre Letter of Award or Post Letter of Award and sorted into Extreme (0,3), High (0,6), or Medium (0,12). The Extreme and High risks for pre and post award are shown in Figure 1 and some initial strategies were identified during the workshop to reduce the likelihood or impact of the risk.

Description of all risks identified are shown in the Risk Register, Appendix A and the initial assessment sheets completed for the Extreme and High risks in Appendix B.

Post Award

OH & S	Human Resources	Financial	Organizational	Contractual
Lack of safety awareness	Important person transferred	Price escalation	Low contractor's performance	Incomplete documentation
	Turn over skill worker		Supervision team performance	Delay in making good defect

Technical
Delay in testing & commissioning

Legend : EXTREME HIGH

Build Status

Version	Date	Author	Reason	Sections
0.1	01Apr08	En. Zainal En. Aswarudin	Initial Draft	

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1. INTRODUCTION

The proposed Lebuhraya Pantai Timur Fasa 2 (LPT2) in Terengganu is a continuation of the recently completed Lebuhraya Pantai Timur Fasa 1 (LPT1) from Karak to Kuantan and together with KL – Karak Highway will form an expressway linking Kuala Terengganu and Kuala Lumpur.It tranverses from Ladang Jabor in the south to Gemuruh Interchange in the north for a total distance of 190 km of which 127 km will be designed and implemented by JKR and the remainder by Lembaga Lebuhraya Malaysia (LLM).The location plan for the proposed alignment is as per below.The expressway shall be a high quality (2) lane dual carriageway and furnished with a full range of facilities to benefit the traveling public and with an emphasis on road safety and economical and ease of maintenance.The facilities provided include rest and service areas and provision of regional offices.It is envisage that the Expressway will spur the much anticipated development along its corridor in line with Government's Vision 2020 policy.

1.1. Background

There are always risks associated with a project. The purpose of risk management is to ensure levels of risk and uncertainty are effectively managed, so that the project is completed successfully on time and within budget. The risk management process enables participants involved in a project to identify possible risks and the manner in which these risks can be contained and the likely cost of mitigation strategies.

Proper risk management allows the project to prosper through taking and avoiding risks. Good risk management will greatly improve the transparency of how the project operates, providing a roadmap to achieve strategic goals and objectives and reassurance over the management of risks. It is vital to the well being of the project, that the project manager takes risk management seriously.

Successful management of the Project requires informed, proactive, and timely management of risks. The specific objectives of this risk management plan and approach are:

- Ensure critical risks impacting scope, schedule, budget, business performance, and/or change management are proactively identified, communicated, mitigated, and escalated in a timely manner.
- Facilitate attention to key risks impacting the project and individual teams.
- Produce meaningful information that allows project management to focus efforts on the "right" (e.g., high likelihood and high impact) risks with an effective coordination of effort.
- Ensure appropriate stakeholders are informed and, if applicable, participate in the mitigation.
- Record an audit trail of discussions and mitigation of project risks.

The goal of this Risk Management Plan (RMP) is to proactively identify and address risks early in the project and throughout its lifecycle in order to avoid surprises.

1.2. Purpose

This document describes how the East Coast Expressway Phase 2 project will perform the job of managing risks for the project. It defines roles and responsibilities for participants in the risk processes, the risk management activities that will be carried out, the schedule and budget for risk management activities and tools and techniques that will be used.

This RMP presents the process for implementing proactive risk management as part of the overall management of the CPMD project. Risk management is a program management tool to assess and mitigate events that might adversely impact the project. Therefore, risk management increases the probability/likelihood of project success.

This RMP will:

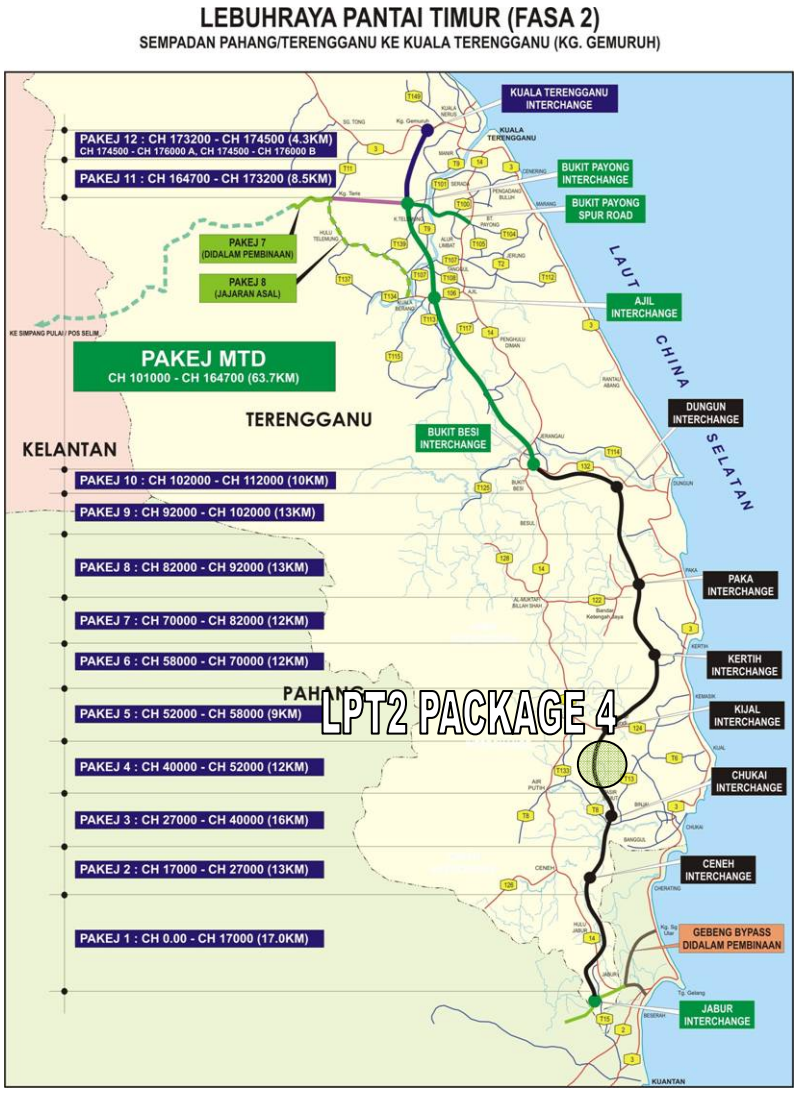
- Serve as a basis for identifying alternatives to achieve cost, schedule, and performance goals
- Assist in making decisions on budget and funding priorities
- Provide risk information for milestone decisions
- Allow monitoring the health of the project as it proceeds.

The RMP describes methods for identifying, analysing, prioritizing, and tracking risk drivers; developing risk-handling plans; and planning for adequate resources to handle risk.

It assigns specific responsibilities for the management of risk and prescribes the documenting, monitoring, and reporting processes to be followed.

1.3. Project Summary

The Project is devided into several packages and Package 4 is a continuation from Package 3.It starts at CH.40+000 at Stesen Penyelidikan Mardi to CH.47+300 at Ladang Cherul,District of Kemaman,Terengganu Darul Iman.Refer to the following map.



The starting chainage is located approximately 20 km away from Bandar Chukai,Kemaman.The site is accessible via Jalan Mardi either from Jalan Jerangau Jabor (FR14) – Jalan Air Puteh (T8) or Bandar Chukai – Jalan Air Puteh (T8) – Jalan Ibok (T13).Whilst the ending chainage can be reached either through Jalan Jerangau Jabor (FR14) – Jalan Sri Bandi (FR124) – Ladang Cherul access road or Jalan Ibuk (T13) – Jalan Sri Bandi (FR14) – Ladang Cherul access road.The distance of the access road to the ending chainage is approximately 7 km.

SCOPE OF WORK

The contract value of Package 4 is RM 64,200,000.00 and the contract period is 24 months starting from January 1,2008 to December 28,2009.The scope of work includes :

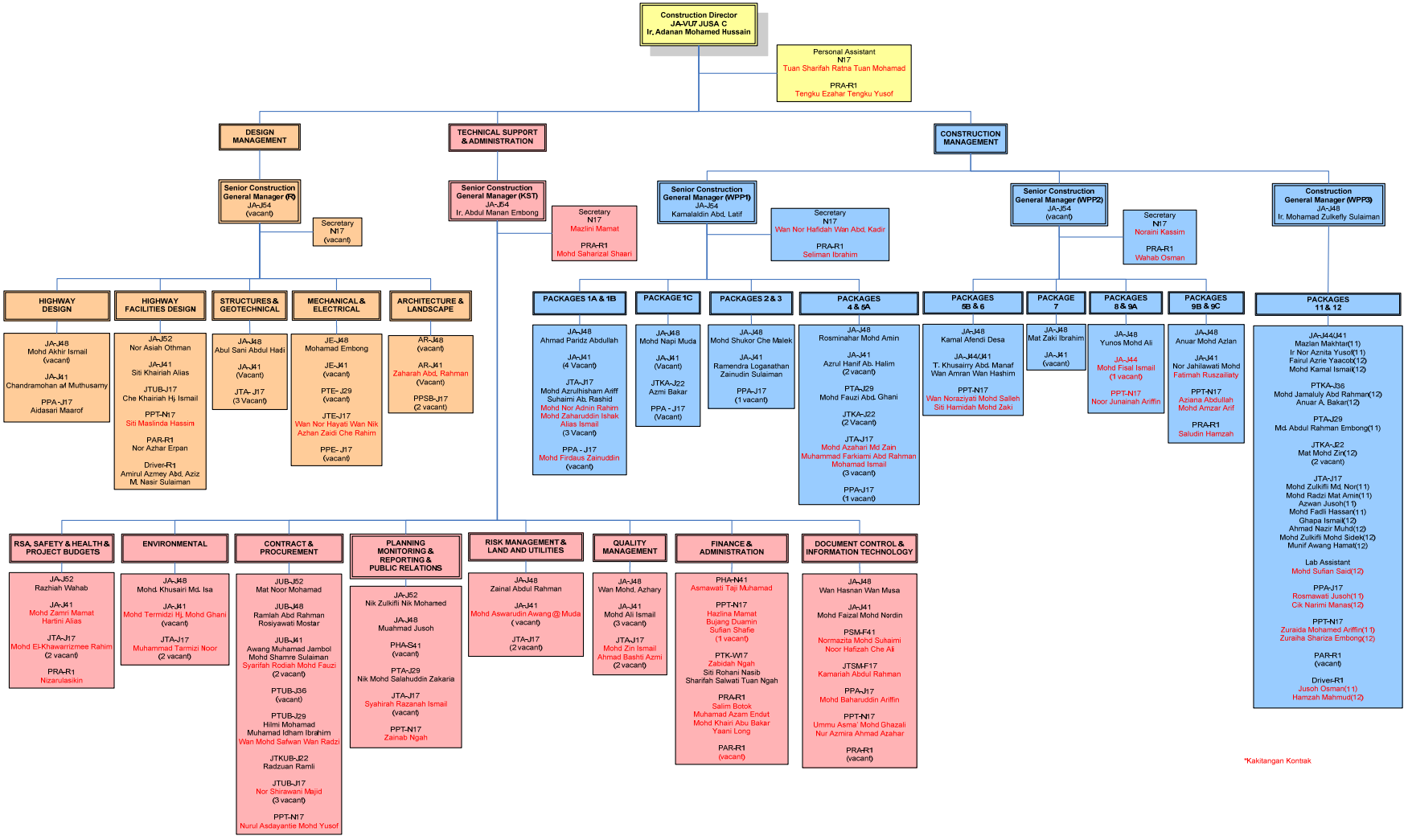
- Site Clearing and Demolition work.
- Earthwork
- Drainage Work
- Pavement Work
- Road Furniture
- Geotechnical work
- Bridge No.1 – Jalan Mardi
- Bridge No.2 – Anak Sungai Pinang
- Bridge No.3 – Over Stream
- Box Culvert 3 M and Above and Vehicular Box Culvert
- Traffic Management and control
- Environmental and Protection Works
- Routine Maintenance
- Provisional Items

1.3.1. Project Governance

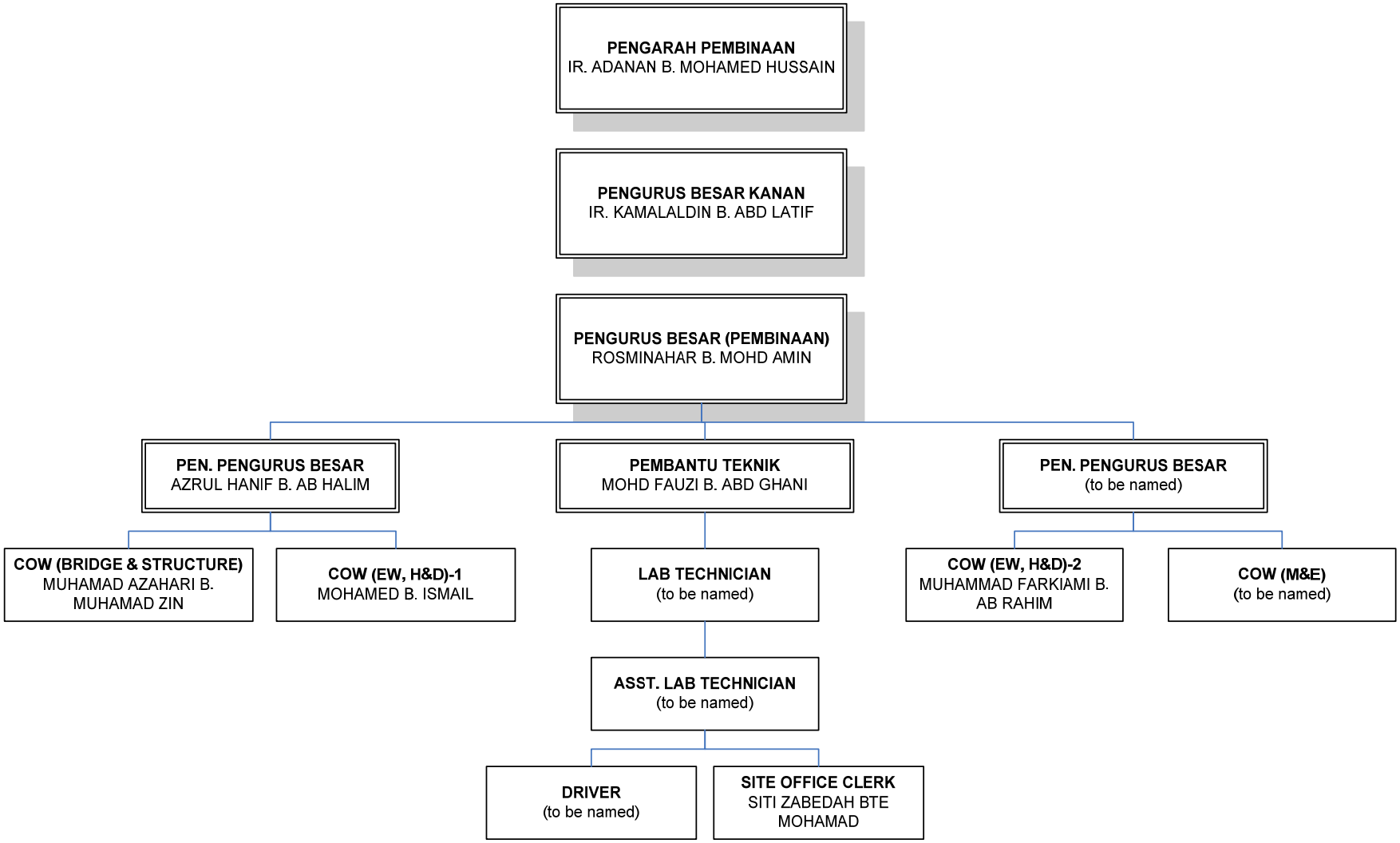
KEMENTERIAN KERJA RAYA MALAYSIA

ORGANIZATION CHART
ECE PHASE 2 PROJECT TEAM

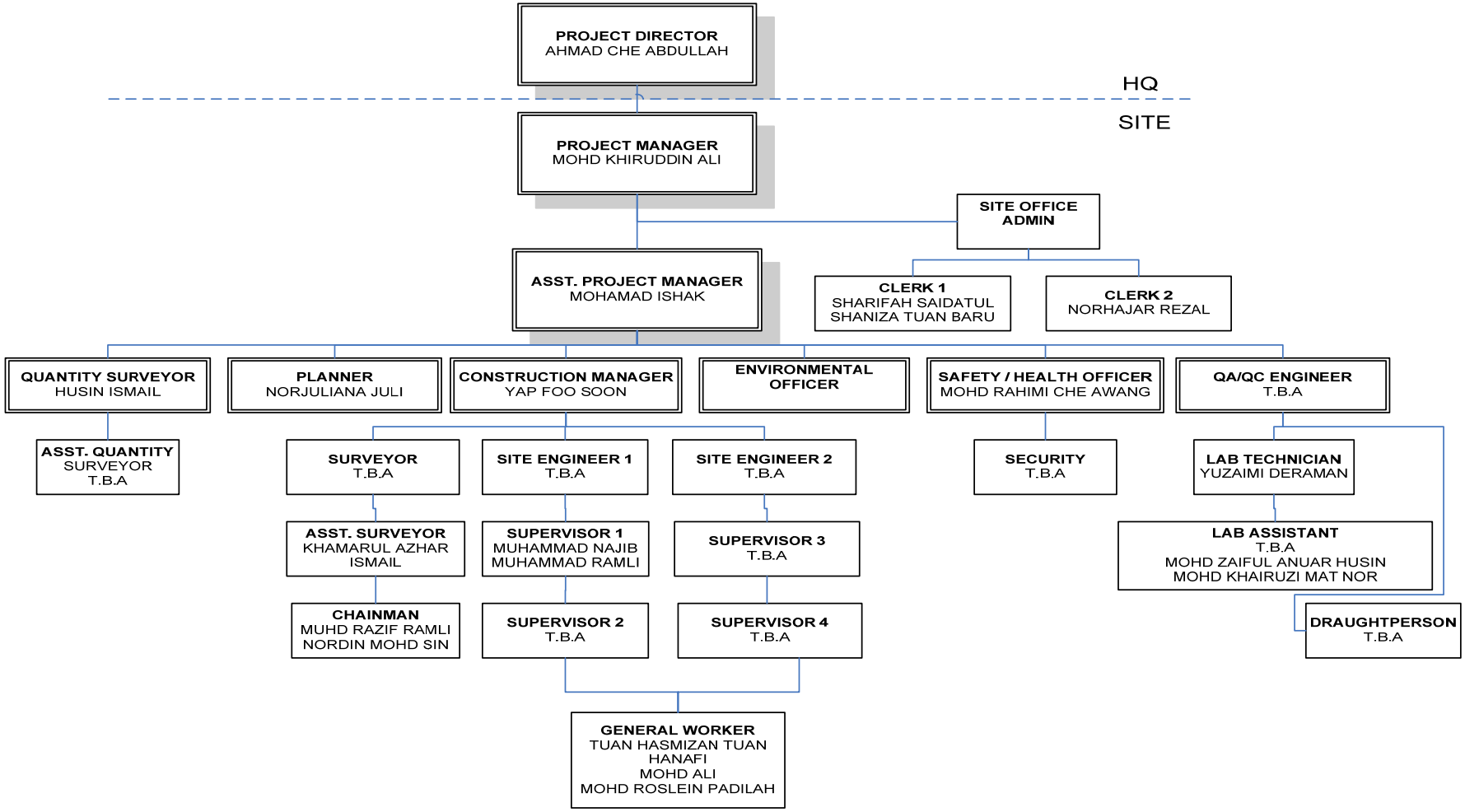
JABATAN KERJA RAYA MALAYSIA



CARTA ORGANISASI PASUKAN PENGAWAS PAKEJ 4



CARTA ORGANISASI KONTRAKTOR PAKEJ 4



1.4. Scope and Context

This RMP identifies the procedures used to manage risk throughout the project. In addition to documenting the approach to risk identification and analysis, the plan covers who is responsible for managing risks, how risks will be tracked throughout the project lifecycle, and how mitigation and contingency plans are developed and implemented.

Risk management starts at the beginning of the project (Initiation Phase) with initial planning and assessing and is carried out at all levels within the project: project, team, and contractor. The risk management process ensures that risks are mitigated at the appropriate level and communicated as appropriate. While this plan provides guidance on managing all levels of risks, the primary focus is on risks at the project level; assuming that similar processes are in effect within the individual teams and contractors that comprise the project.

Risk management is an integral part of overall project planning and management and effective project planning and management requires effective identification and assessment of risks and determining what mitigating actions are required. Managing the effective completion of mitigation actions should be integrated with overall project tasks and assignments.

Risk management also works in concert with issue management. The key difference between issue management and risk management is the element of uncertainty inherent in risks. Uncertain events that could impact the project should be identified and managed through this RMP. Note that risks could lead to identification of issues and issues could drive identification or resolution of risks.

In order to be successful, the principles listed below guide the use and implementation of the overall Risk Management Process that is described in detail in Section 2 of this document.

- Decisions will not be revisited once made (unless substantively new facts become available).
- A single owner is assigned responsibility for a risk even if several people work to mitigate it.
- Work and communicate progress on most severe risks first.
- Set realistic due dates and then work to meet the dates.
- Mitigate risks at the appropriate level (i.e., project, team, contractor).
- Responsible team leads determine and agree on the risk severity level.
- Document the planned risk mitigation history and actual mitigation of a risk. This documentation serves as a key input to root cause analysis, key learning, metrics, and risk analysis.
- For high impact, unanticipated risks, a 24-hour decision turnaround may be required or as determined by the PM. In such cases, available applicable team members will make the decision.

1.5. Definitions, Acronyms and Abbreviations

CF	Certificate of Fitness
CPM	Critical Path Method
EPU	Economic Planning Unit
EO	Enviromental Officer
HRD	Human Resources Department
HODT	Head of Design Team
PM	Project Manager
PP	Pegawai Penguasa (Pengarah Pembinaan)
SO	Safety Officer
SOA	Schedule of Accomodation
VO	Variation Order
WPP	Wakil Pegawai Penguasa

Specific risks definition are shown at Appendix C.

2. RISK MANAGEMENT PROCESS

This section describes the JKR project risk management process and provides an overview of the risk management approach. Risk management is defined as the act or practice of controlling risk and includes risk planning, assessing risk areas, developing risk-handling options, monitoring risks to determine how risks have changed, and documenting the overall risk management program. Figure 1 shows, in general terms, the overall risk management process that has been followed in the ECE Phase 2 project. Each of the risk management functions shown in the figure are discussed in the following paragraphs, along with specific procedures for executing them.

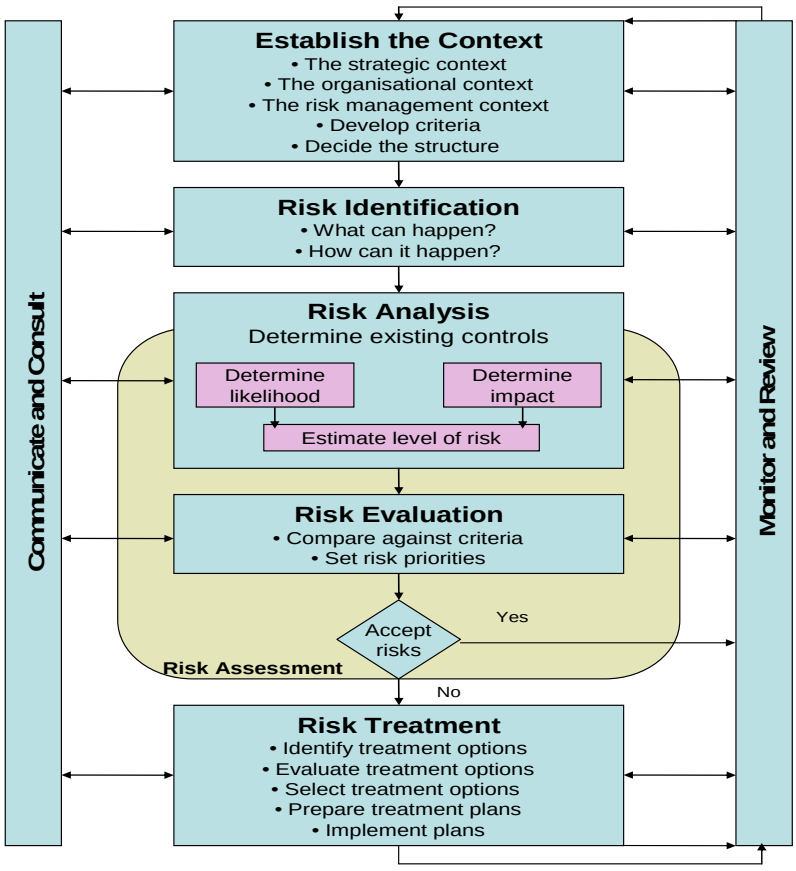


Figure 1: JKR Project Risk Management Process

2.1. Establish the Context

Establishing the context for the ECE Phase 2 project consists of the up-front activities necessary to execute a successful risk management program. It is an integral part of normal project planning and management. The planning addresses each of the other risk management functions, resulting in an organised and thorough approach to assess, handle, and monitor risks. It also assigns responsibilities for specific risk management actions and establish risk reporting and documentation requirements. This RMP serves as the basis for all detailed risk planning, which must be continuous.

2.1.1. Responsibilities

The project manager (or delegate or risk manager if appropriate) is responsible for conducting risk planning, using this RMP as the basis. Planning covers all aspects of risk management to including assessment, handling options, and monitoring of risk mitigation activities. The project management monitors the planning activities of the team to ensure that they are consistent with this RMP and that appropriate revisions to this plan are made when required to reflect significant changes resulting from the team planning efforts.

Each person involved in the design, production, operation, and support of the project is a part of the risk management process. This involvement is continuous and should be considered a part of the normal management process.

2.1.2. Documentation

This RMP establishes the basic documentation and reporting requirements for the project. Team members should identify any additional requirements that might be needed to effectively manage risk at their level. Any such additional requirements must not conflict with the basic requirements in this RMP.

2.2. Risk Identification

Risk identification is the first step in the assessment process. The basic process involves reviewing the entire ECE Phase 2 project to determine those critical events that would prevent the project from achieving its objectives. All identified risks were documented in the Risk Register (see Appendix A).

Risks were identified by the team, including the contractors which allowed the identification of significant concerns earlier than otherwise might be the case and the identification of those events in critical areas that need to be dealt with to avoid adverse consequences/impacts. Likewise, individuals involved in the detailed and day-to-day technical, cost, and scheduling aspects of the project are most aware of the potential problems (risks) that need to be managed.

2.2.1. Tools and Techniques

- Brainstorming, with a facilitator and range of stakeholders
- Interviews with stakeholders.
- Scenario, business analysis and event tree modelling.
- Dependency modelling.
- Experience from other projects, metrics and published data for norms.
- Reviewing project information, including plans, analysis and designs.
- Checklists.

2.2.2. Risk Register

The key output of the risk identification phase is the risk register. The risk register for the project is shown at Attachment A.

Note: At this stage just a list of identified risks would appear in the risk register. The risk register Attachment A has had further analysis applied to the risks.

2.3. Risk Analysis

Risk analysis can be undertaken using similar methods as used for risk identification and is also a continuous process in the same way that risk identification is and the two may often be combined, in a structured way, into one activity.

Project or program risks are analysed to identify the:

- Estimated likelihood that the risk will occur (preferably probability using quantitative methods);
- Estimated impacts of the risk occurring in terms of its cost, schedule, 'quality' and other impacts on the project objectives including its products;
- The most appropriate risk owner; and
- Potential impact of the risk on third parties such as other projects and organisations.

It can also be useful at this stage of the analysis to conduct an initial high level assessment of whether the risk should be managed. There are three cases where a risk may not need managing by a project:

- The likelihood of it happening is extremely small.
- The impacts are insignificant and require no treatment
- The risk belongs outside the project; in this case the outside owners must formally take responsibility for it.

2.3.1. Updated Risk Register

The risk register is updated with the Likelihood and impact Information and the consequent risk rating as per Attachment A.

2.4. Risk Evaluation

Typically an analysis or review of the risks associated with a project is made and a decision formed on what risks need treatment and what are their associated priorities. The first action is to sort the analysed risks by classifying them as one of:

- Accepted Risks, risks that are currently acceptable and do not require treatment, but will be kept under review.
- Rejected Risks, risks that are considered non-existent after analysis or of no significance.
- Significant Risks to be treated, these may need prioritisation.

Classification and prioritisation will be against risk criteria in the light of contexts and policies established in the Risk Management Plan.

Note: At this point in time, overall JKR policies for risk management have not been developed and a review of the risks was undertaken only at the project level and in the first instance the risks were accepted and treatment measures will be undertaken.

2.5. Risk Treatments

An initial identification and assessment of measures to modify the identified risks was performed and the preparation of treatments for the risks identified. Risk Owners should also be assigned and may be members of the project team, business or other managers elsewhere in JKR, participating agencies or other stakeholder bodies. They will require an appropriate allocation of resources for their task(s), which may require negotiation by the Sponsor depending on their relationship to the project.

Treatments are aimed to either reduce the risk's likelihood or impacts or both. Preparation of treatments requires inputs from stakeholders and coordination with the Project Manager. Normally if there is an unacceptable risk of a treatment failing (or not being found) or when a risk may reach an unacceptable level then a contingency plan must be developed.

2.5.1. Risk Assessment Worksheets

The output of the identification and assessment of the high priority risks is shown at Attachment B. At this stage some implementation measures have been identified (Future Strategies) but actions arising from these strategies, should, where possible, be included as activities in the project management plan.

2.6. Risk Monitoring and Reporting

The project manager as overall responsibility for monitoring and managing all aspects of the risk management process, unless the risk management activities have been assigned to a separate risk manager.

To ensure that significant risks are effectively monitored, risk-handling actions should be reflected in integrated project planning and scheduling. Identifying these risk handling actions and events in the context of Work Breakdown Structure (WBS) elements establishes a linkage between them and specific work packages, making it easier to determine the impact of actions on cost, schedule, and performance.

Risk status should be reported on an exception basis with a full risk review conducted on a monthly basis.

3. RISK MANAGEMENT ORGANISATION

The risk organisation for the ECE Phase 2 project is not a separate organisation, but rather risk is integrated into the project's existing structure. A role is typically assigned to a Risk Manager who in turn is the overall coordinator of the project's Risk Management Program.

Note: This role in most projects will be performed by the project manager, but depending on the size of the project this role may be performed by a dedicated person.

The Risk Manager is responsible for:

- Maintaining this RMP
- Briefing the PM on the status of CPMD project risk
- Tracking efforts to reduce moderate and high risk to acceptable levels
- Providing risk management training
- Facilitating risk assessments
- Preparing risk briefings, reports, and documents required for project reviews and the acquisition milestone decision processes.

The project team is responsible for implementing risk management tasks per this Plan. This includes the following responsibilities:

- Review and recommend to the Risk Manager changes on the overall risk management approach based on lessons learned

- As directed, update the project risk assessments made during the applicable project phase
- Review and be prepared to justify the risk assessments made and the risk mitigation plans proposed
- Report risk to the PM, with information to the Risk Manager via the Risk Register or Risk Assessment Forms
- Ensure that risk is a consideration at each project review.

It is also important that the user/owner organisation remains fully involved in the risk management process, and identifies risks associated with future operation of the project deliverable(s).

APPENDIX A

RISK REGISTER

PACKAGE 4

RISK REGISTER

Project Title : **Projek Lebuhraya Pantai Timur Fasa 2**	Date : **01 April 2008**
Project No. : **Pakej 4**	Compiled by : **Zainal Bin Abdul Rahman**
Project Mgr : **Khiruddin Bin Ali**	Reviewed by : **Ir. Yaakob Bin Abdul Latif**

CATEGORY OF PROJECT RISK	
1. Political	9. Contractual
2. Scope	10. Technical
3. Schedule	11. Environmental
4. Financial	12. Suppliers
5. Human Resources	13. Industrial relations
6. Quality	14. Organisational
7. Communications	15. OH & S
8. Other resources	16. Cultural

Likelihood	Impact	Risk Rating
5. Almost certain	V. Severe	E– Extreme risk, immediate action required
4. Likely	IV. Major	H – High risk, will jeopardize project if not managed
3. Possible	III. Moderate	M – Medium risk, will impact time, cost or quality if not managed
2. Unlikely	II. Minor	L – Low risk, acceptable project management risk, monitor only
1. Rare	I. Insignificant	

Risk Rating						
LIKELIHOOD	**5**	H	H	H	E	E
	4	M	M	H	E	E
	3	L	M	M	H	E
	2	L	L	M	H	H
	1	L	L	M	M	H
		I	**II**	**III**	**IV**	**V**
		IMPACT				

CONSTRUCTION PHASE

Ref No. (WBS)	Ref No. (WBS)	Risk Event There is a risk that …….	Category of Risk	Likelihood Rating	Impact Rating	Risk Rating	Treatment Measures	Responsible Party	Action Date
1	1	Price escalation on construction material due to high demand will cause cost overrun and leading to project delay	4	4	IV	**E**	o Review design - Pavement - Bridge - Road Furniture	PM (Contractor)	3 months before activity start (Based on CPM)

Ref No. (WBS)	Ref No. (WBS)	Risk Event There is a risk that …….	Category of Risk	Likelihood Rating	Impact Rating	Risk Rating	Treatment Measures	Responsible Party	Action Date
							o Price review with government's approval	PP	Upon submission by contractor
2	2	Contractors' performance will affect project deliverable due to poor project management	14	4	IV	**E**	o Exposure to project requirement eg spec, condition of contract, ect o Close monitoring of contractor's works	PP PP	Monthly Weekly
3	3	Supervision team performance at site will constitute to wrong judgement and slow in decision making.	14	3	IV	**H**	o Sent for training / courses related to project management o To assign senior competent officer as mentor at site	PP PP	As and when required ASAP
4	4	Turn over of local workers will affect the work program resulting in delaying completion of project.	5	4	III	**H**	o Engaged foreign workers	PM (Contractor)	As and when required

Ref No. (WBS)	Ref No. (WBS)	Risk Event There is a risk that …….	Category of Risk	Likelihood Rating	Impact Rating	Risk Rating	Treatment Measures	Responsible Party	Action Date
5	5	Safety negligence due to lack of safety awareness and incompetence personnel will lead to accident, fatality and stop work order.	15	2	IV	**H**	o Mandatory visits by DOSH o Advance / refresher courses for safety officer periodically o Toolbox meeting / briefing	SO (Contractor) PM (Contractor) SO (Contractor)	Quarter yearly If necessary Weekly
6	6	Labour shortage	5	3	III	M			
7	7	Machinery shortage / break down	8	3	III	M			
8	8	Unpredictable weather	3	3	III	M			
9	9	Site access	7	3	II	M			
10	11	Unexpected flooding (delay to schedule)	11	3	II	M			
11	11	Design changes *(alternative)*	10	3	II	M			
12	12	Relocation of facilities	7	3	III	M			
13	13	Co-ordination between packages	7	3	II	M			

Ref No. (WBS)	Ref No. (WBS)	Risk Event There is a risk that …….	Category of Risk	Likelihood Rating	Impact Rating	Risk Rating	Treatment Measures	Responsible Party	Action Date
14	14	Local authority requirements	13	3	II	M			
15	15	Theft	15	3	II	M			

HANDING OVER PHASE

Ref No. (WBS)	Ref No. (WBS)	Risk Event There is a risk that …….	Category of Risk	Likelihood Rating	Impact Rating	Risk Rating	Treatment Measures	Responsible Party	Action Date
1	16	Personnel involved in the project been transferred out of the project then it will make the project difficult in closing its final account	5	4	IV	**E**	o To emphasise a dedicated project team o To have complete and proper documentation handed over to successor	PP / HRD PP	As project activate till completion of the project Before transfer date of officer
2	17	Incomplete documentation which will cause difficulty in finalising the contract leading to delay in closing its final	9	3	IV	**H**	o Electronic Document Management System	PP	Immediate

Ref No. (WBS)	Ref No. (WBS)	Risk Event There is a risk that …….....	Category of Risk	Likelihood Rating	Impact Rating	Risk Rating	Treatment Measures	Responsible Party	Action Date
		account.					(EDMS) o Enforce standardise filing and document handling procedure	PP / PM (contractor)	Reviewed by Pegawai Tadbir
3	18	Delay in testing & commissioning street lighting then it will lead to delay in handing over of the overall project	10	2	IV	H	o Calling of tender for electrical works early o More frequent coordination meetings	PP PP	6 months before activity start During site meeting
4	19	Contractor delays in making good defects then the handing over of project will be delayed	9	4	III	H	o Retain some money for making good defect in addition to performance bond o Issue NCR immediately when defect is identified o Issue warning letter if contractor fails to comply within stipulated time o	PP PP / PM (Contractor) PP	3 months before CPC When defect identified When defect identified

Ref No. (WBS)	Ref No. (WBS)	Risk Event There is a risk that ……..	Category of Risk	Likelihood Rating	Impact Rating	Risk Rating	Treatment Measures	Responsible Party	Action Date
5	20	NCR not closed	9	3	II	M			
6	21	Final account not closed	9	3	II	M			

SUMMARY:

RISK RATING	PLANNING, PROCUREMENT, DESIGN	CONSTRUCTION	HANDING OVER	TOTAL
EXTREME	0	2	1	**3**
HIGH	0	3	3	**6**
MEDIUM	0	10	2	**12**
LOW	0	0	0	**0**
UNCATEGORISED	0	0	0	**0**
TOTAL	**0**	**15**	**6**	**21**

APPENDIX B

RISK ASSESSMENT WORKSHEETS

PACKAGE 4

CONSTRUCTION PHASE - Risk Analysis 1

Risk No: 1	**Risk Title: Price escalation**		
Risk Description: There is a risk that price escalation on construction material due to high demand will cause cost overrun and leading to project delay			
Risk Nature: **Strategic**	**Risk Category: Financial (4)**	**Risk Owner: PM (Contractor)**	**Business Unit: LPT2 JKR**
Risk Factors:		**Possible Effects:**	
o High demand of material o Insufficient quantity o Increase in fuel price o Control by Cartel		o Increase in material cost o Problem in materials supply o Financial burden o No bargaining power o Project delay	

Existing Risk Treatments:	**Effectiveness: (H, M, L)**
o Stockpile available materials	H
o Review sources of supply	M
o Procurement planning	M

New Risk Treatments :	**Responsibility:**	**Deadline:**
o Review design	PM (Contractor)	3 months before activity start
o Price review with government's approval	PP	Upon submission by contractor

Assessed Risk Date Last Review	**Inherent Risk (E)**		**Assessed Risk (E)**		**Target Risk (M)**	
	4	IV	4	IV	3	III

Risk Analysis 2

Risk No: 02	**Risk Title:** Contractor performance		
Risk Description: There is a risk that contractor's performance will affect project deliverable due to poor project management			
Risk Nature: **Operational**	**Risk Category: Organizational (14)**	**Risk Owner: SO**	**Business Unit: LPT2 JKR**

Risk Factors:	**Possible Effects:**
o Lack of competent site staffs o Lack of headquarters support o Lack of empowerment o Poor leadership o Poor project management	o Unorganized site work o Monthly projection not achieved target o Slow in decision making o

Existing Risk Treatments:	**Effectiveness: (H, M, L)**
o Induction program on SPK o Roles and responsibility awareness	H M

New Risk Treatments :	**Responsibility:**	**Deadline:**
o Exposure to project requirement eg. Spec., condition of contract, etc o Close monitoring of contractor's works	PP PP	Monthly Weekly

Assessed Risk Date Last Review	**Inherent Risk (Extreme)**		**Assessed Risk (Medium)**		**Target Risk (Low)**	
	4	IV	3	III	2	II

Risk Analysis 3

Risk No: 03	**Risk Title: Supervision team performance**		
Risk Description: There is a risk that the incompetent existing supervision team at site will constitute to wrong judgement and slow in decision making.			
Risk Nature: **Operational**	**Risk Category: Organisational (14)**	**Risk Owner: SO**	**Business Unit: LPT2 JKR**

Risk Factors:	**Possible Effects:**
o Incompetent in respective skill o Lack of experience o Lack of cooperation o Under staff	o Wrong judgement o Slow in decision making o Kerja-kerja terbantut o Multi tasking in duty performing o Work long hour – fatigue

Existing Risk Treatments:	**Effectiveness: (H, M, L)**
o Training and awareness program	M
o Request for additional staff from management	M

New Risk Treatments :	**Responsibility:**	**Deadline:**
o Sent for training / courses related to project management	PP	As and when required
o To assign senior competent officer as mentor on site	PP	ASAP

Assessed Risk Date Last Review	**Inherent Risk (High)**		**Assessed Risk (Medium)**		**Target Risk (Low)**	
	3	IV	2	III	2	II

Risk Analysis 4

Risk No: 04	**Risk Title: Turn over of local workers**		
Risk Description: There is a risk that turn over of skilled workers will affect the work program			
Risk Nature: Operational	**Risk Category: Human Resources (5)**	**Risk Owner: PM (Contractor)**	**Business Unit: LPT2 JKR**

Risk Factors:	**Possible Effects:**
o Regulatory – labour law requirement (NIOSH, DOSH, CIDB, etc) o Better offer elsewhere o Shortage of Manpower	o Poor quality of work o Need new recruitment all the time o Work program affected

Existing Risk Treatments:	**Effectiveness: (H, M, L)**
o Employ new skill workers o Utilise alternative method – use of machinery to replace manpower o Review salary scheme	M H M

New Risk Treatments :	**Responsibility:**	**Deadline:**
o Engaged foreign workers	PM (Contractor)	As and when required

Assessed Risk Date Last Review	**Inherent Risk (High)**		**Assessed Risk (Medium)**		**Target Risk (Medium)**	
	4	III	3	III	3	II

Risk Analysis 5

Risk No: 05	**Risk Title: Safety negligence**		
Risk Description: There is a risk that safety negligence due to lack of safety awareness and incompetence personnel will lead to accident, fatality and stop work order.			
Risk Nature: Operational	**Risk Category: 15**	**Risk Owner: PM (Contractor)**	**Business Unit: LPT2 JKR**
Risk Factors:		**Possible Effects:**	
o Lack of safety awareness o Incompetent personnel o		o Accident o Fatality o Stop work order	
Existing Risk Treatments:			**Effectiveness: (H, M, L)**
o Safety induction o Tool box o Safety meetings o Safety audit o Have safety officer at site			M M H H H

New Risk Treatments :	**Responsibility:**	**Deadline:**
o Mandatory visits by DOSH	SO (Contractor)	Quarter yearly
o Advance / refresher courses for safety officer periodically	PM (Contractor)	If necessary
o Toolbox meeting / briefing	SO (Contractor)	Weekly

Assessed Risk Date Last Review	**Inherent Risk (High)**		**Assessed Risk (Medium)**		**Target Risk (Low)**	
	2	IV	2	III	1	II

HANDING OVER - Risk Analysis 1

Risk No: 16	**Risk Title:** Personnel project transfer out (QS, RE, SO)		
Risk Description: If personnel involved in the project been transferred out of the project then it will make the project difficult in closing its final account			
Risk Nature: **Operational**	**Risk Category: Human Resources (5)**	**Risk Owner: SO**	**Business Unit: LPT2 JKR**

Risk Factors:	**Possible Effects:**
o Management requirement o Organisation restructure o Resign for better opportunity	o Difficulty in updating latest data o Lack of traceability o New recruitment takes more time to understand the project situation

Existing Risk Treatments:	**Effectiveness: (H, M, L)**
o .. o ..	

New Risk Treatments :	**Responsibility:**	**Deadline:**
o To emphasise a dedicated project team	PP / HRD	As project activate till completion of the project
o To have complete and proper documentation handed over to successor	PP	Before transfer date of officer

Assessed Risk Date Last Review	**Inherent Risk (Extreme)**		**Assessed Risk (…..)**		**Target Risk (Low)**	
	4	IV			1	I

Risk Analysis 2

Risk No: 17	**Risk Title: Incomplete document**		
Risk Description: There is a risk that incomplete documentation which will cause difficulty in finalising the contract leading to delay in project handing over.			
Risk Nature: Operational	**Risk Category: 9**	**Risk Owner: PP & PM**	**Business Unit: LPT2 JKR**
Risk Factors:		**Possible Effects:**	
o Resource turn over o Poor filing system o Document mishandling o Staff Competency		o Difficult to finalise contract o Difficult to trace document o Ditto o Ditto	

Existing Risk Treatments:	**Effectiveness: (H, M, L)**
o Awareness and compliance to SPK requirement	M
o Quality audit by Unit Naziran JKR	M
o Proper filing and document control	H

New Risk Treatments :	**Responsibility:**	**Deadline:**
o Electronic Document Management System (EDMS)	PP	Immediate
o Enforce standardise filing and document handling procedure	PP / PM (contractor)	Reviewed by Pegawai Tadbir

Assessed Risk Date Last Review	**Inherent Risk (High)**		**Assessed Risk (High)**		**Target Risk (Low)**	
	3	IV	2	IV	1	II

Risk Analysis 3

Risk No: 18	**Risk Title: Testing & Commissioning**		
Risk Description: If delay in testing & commissioning then it will lead to delay in handing over of the overall project			
Risk Nature: Operational	**Risk Category: 10**	**Risk Owner: PM (Contractor)**	**Business Unit: LPT2 JKR**

Risk Factors:	**Possible Effects:**
o Poor workmanship	o Too many reworks
o Work not completed according to schedule	o Delay in T&C
o Competent personnel not available	o

Existing Risk Treatments:	**Effectiveness: (H, M, L)**
o Monitoring by main contractor	M
o Appoint coordinator	H
o	

New Risk Treatments :	**Responsibility:**	**Deadline:**
o Calling of tender for electrical works early	PP	6 months before activity start
o More frequent coordination meetings	PP	During site meeting

Assessed Risk Date Last Review	**Inherent Risk (High)**		**Assessed Risk (Medium)**		**Target Risk (Low)**	
	2	IV	2	III	2	II

Risk Analysis 4

Risk No: 19	**Risk Title: Delay in making good defects**		
Risk Description: If contractor delays in making good defects then the handing over of project will be delayed			
Risk Nature: Operational	**Risk Category: 9**	**Risk Owner: PM (Contractor)**	**Business Unit: LPT2 JKR**
Risk Factors:		**Possible Effects:**	
o Early demobilisation o Lack of resources o Poor workmanship o No allocation to repair defects		o No resources to do repair work o Delay in handing over o Inconvenience to public o	

Existing Risk Treatments:	**Effectiveness: (H, M, L)**
o Threaten to revoke performance bond to do the repair works	H
o Improve workmanship to reduce needs for repair works	M
o Surcharge over repair works done by third party	H

New Risk Treatments :	**Responsibility:**	**Deadline:**
o Retain some money for making good defect in addition to performance bond	PP	3 months before CPC
o Issue NCR immediately when defect is identified	PP / PM (Contractor)	When defect identified
o Issue warning letter if contractor fails to comply within stipulated time	PP	When defect identified

Assessed Risk Date Last Review	**Inherent Risk (High)**		**Assessed Risk (Medium)**		**Target Risk (Low)**	
	4	III	3	III	3	II

NOTE :

The project risks will be reviewing in the Risk Review Meeting No. 1 on 30th June 2008.

ATTACHMENT C

DEFINITIONS

DEFINITIONS

Assumptions List	A record of the assumptions embedded in the project plan. Assumptions that are not validated are potential risks.
Business Case	The document that justifies the need for the system to be delivered by a project, what the business changes will be and the resources required to deliver, operate and dispose of the system. It provides the basis for project funding and may undergo approved revisions during the project
Impact	The outcome of an event expressed in qualitative or quantitative terms (for example, financial or reputational) being a loss, injury, disadvantage or gain
Inherent Risk	A raw risk that is a risk that has no mitigation factors or treatments applied to it.
Monitoring and Accountability	The processes used to manage the Enterprise Risk Management Framework on an on-going basis to reduce risk and take advantage of risk as an opportunity.
Opportunity	The possibility of realizing a favorable outcome and the impact this outcome has on the involved party. Opportunity is positive risk and can be identified and managed in a similar way.
Probability	a qualitative description of the likelihood and/or frequency of a risk occurring.
Residual risk	the degree of risk left after mitigation factors have been identified.
Risk	Risk is anything that may happen that impacts the achievement of an organization's objectives. Risk encompasses the following three dimensions: • **Hazard -** preventing an exposure from turning into a loss • **Uncertainty -** coping with volatility and change; and • **Opportunity -** harnessing opportunities to one's advantage. Risk is an event having a cause and a impact that could be either positive or negative.
Risk Acceptance	the informed decision to accept the impact and the likelihood of a particular risk.
Risk Analysis	A systematic use of available information to determine how often specified evens may occur and the magnitude of their impacts.

Risk Appetite	Risk appetite is the amount of risk, on a broad level, an entity of willing to accept in pursuit of objectives. It reflects that organization's risk management philosophy and, in turn, influences the organization's culture and operating style.
Risk Avoidance	An informed decision not to become involved in a risk situation.
Risk Event	The occurrence of an event which has the potential to affect the viability of a project.
Risk Management Framework	A formalized process for managing risk on an explicit basis. The framework consists of a risk assessment, response and accountability for the risk and mitigation activities around it.
Risk Manager	The role responsible for operating the project's risk management process and the custodian of the Risk Management Plan and Risk Register
Risk Mitigation	The processes built into the controls environment, such as policies, frameworks, accountabilities etc to lower the residual risk.
Risk Owner	A designated position in an organisation assigned the responsibility for managing a specific risk
Risk Reduction	A selective application of appropriate techniques and management principles to reduce either the likelihood of an occurrence or its impacts, or both.
Risk Register	A record, under formal change control, of all identified risks, their assessment, treatments and outcomes
Risk Retention	Intentionally or unintentionally retaining the responsibility for loss or financial burden or loss within the organization.
Risk Response	The decision to accept, decline, treat or mitigate a risk or share a risk with another party.
Risk Sharing	Sharing the responsibility for the impact of a risk with another party such as through an outsourcing contract or insurance policy.
Strategic Risk	

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