JABATAN KERJA RAYA
MALAYSIA

RISK MANAGEMENT MANUAL

Ibu Pejabat Jabatan Kerja Raya Malaysia,
Kuala Lumpur

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1.0	03 April 2008	Yaakob AL	First Edition	
2.0	12 Oct 2010	Yaakob AL	Review and update template in accordance to current practices. • Include new section – Planning for Risk Management in Projects. • Include revised templates	• Section 1 • All sections

FOREWORD

Risk Management has been recognised by Jabatan Kerja Raya as an area in project management which contributes to improvement in project delivery. The department has made it known that Risk Management be widely used particularly in high impact projects. Before implementing risk management in projects, the project manager is encouraged to plan for its execution, particularly for the risk management workshops and beyond. To conduct the workshop, every project manager or risk manager shall be required to acquire the knowledge and methodology of organising and facilitating the risk workshop.

This Risk Management Manual is developed to provide step-by-step instructions to the project manager and risk manager on what to do when organising a risk workshop. The manual also provides orderly instructions to risk workshop facilitators on how to facilitate a RM workshop successfully. The project or risk manager would also find this manual useful as it contains instructions to pre and post-workshop activities which include monitoring and reporting. The RM Manual is a supplementary document to the Risk Management Facilitation Guidelines. The processes described in the Guidelines provide the basis for the development of this manual.

It is a hoped that project managers and risk managers will find this manual helpful in implementing risk management successfully in their projects.

Risk Management Unit

JKR PROKOM
October 2010

LIST OF ABBREVIATIONS

RM	-	Risk Management
RMgr	-	Risk Manager
PM	-	Project Manager
HOPT	-	Head of Project Team
HODT	-	Head of Design Team
RMFG	-	Risk Management Facilitation Guideline
RR	-	Risk Register
RAT	-	Risk Analysis Template
RMP	-	Risk Management Plan
RSR	-	Risk Status Report
RFR	-	Risk Final Report
RRM	-	Risk Review Meeting
PROKOM	-	Cawangan Pengurusan Projek Kompleks

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APPENDICES

1 PLANNING FOR RISK MANAGEMENT IN PROJECTS

1.1 Decision to Implement

When the project manager decides to implement risk management on his/her project, proper planning of the implementation has to be carried out. The project manager has to consider the activities and resources required in implementing the risk management processes.

*1.2 Planning For Risk Manage**me**nt*

When planning for the project's risk management, the project manager will have to decide the following:

1. Whether a risk manager is to be appointed?
2. Who are the stakeholders in risk management?
3. Whether a risk management workshop is required?
4. What to prepare for the risk management workshop, if required?
5. How monitoring should be done and by whom?
6. How reporting should be done and how often?
7. Who endorses the risk documents and reports?

The initial risk management planning template can be used to assist the project manager in planning for implementation of risk management for his/her project.(**Appendix A-1**).

The project manager shall identify and maintain a contact list (**Appendix A-2**) of all risk management stakeholders for the purpose of communication.

2 PREPARING FOR RISK MANAGEMENT WORKSHOP

Prior to conducting any risk workshop, the organiser must always have these questions in mind:

- Who are the participants?
- Who are the facilitators?
- When and where is the workshop?
- What is the workshop itinerary?
- What are the workshop requirements?
- What is the budget?
- What the facilitator needs to prepare?

2.1 Workshop participants

Participants shall comprise of the following:

- JKR project team – HOPT, HODT, site supervision team, etc
- JKR Specialist
- Client – ministry & department
- Contractor
- Consultant
- Central agencies

2.2 Workshop facilitators

Facilitators can be appointed from:

- PROKOM
- JKR Risk Management Officers
- Past participants of risk management workshop
- External resource – must be familiarised with JKR Risk Management process and procedures

2.3 Workshop duration and venue

- The proposed duration for the workshop is about 1 – 3 days (depending on the size and complexity of projects)
- Dates agreeable to all with ample time for preparing of workshop, booking place for workshop and sending out letters of invitation to participants / facilitators. (Normal period is about 3 to 4 weeks before workshop)
- Location preferably away from office, if budget permits
- Large hall or meeting room for workshop arrangement (as shown in **Appendix B1**)

2.4 Workshop itinerary

Generally, the itinerary for the workshop as depicted below.

- Registration
- Opening
- Introduction of participants, facilitators
- Presentation on Risk Management (if some participants has no prior knowledge on RM and its processes)
- Project briefing and current status
- Risk identification

- Group presentation (1)
- Consolidation of risks
- Risk analysis and treatment
- Group presentation (2)
- Summary
- Closing

The above is produced as a guideline only. The contents may be adjusted to suit individual workshop requirement. An example of the workshop's itinerary is as per **Appendix D**.

2.5 Workshop requirements

- Large hall (approx. 12m x 18.5m)
- Public announcement (PA) system with wireless tie clip microphone
- Laptop, LCD projector and screen for presentation
- Rounds tables, chairs – maximum 8 persons per table
- Flipchart and/or whiteboard with marker pens (black, blue & red), cleaners per group table
- Laptop, LCD projector and screen per group table
- Tables, chairs for facilitators and presenter
- Rostrum and sofa for VIPs (opening only), if any
- Registration table

A typical floor arrangement layout for the workshop is attached as **Appendix B1**. The organiser can also use **Appendix B2** as a checklist for workshop requirements.

2.6 Workshop budget

It is essential that the budget for the workshop be estimated and to agree as to who shall bear the cost. The budget shall include:

- Hotel lodging for participants, facilitators and VIPS, if required
- Food & beverage for all
- Rental of hall and necessary equipment
- Travelling allowances
- Allowances for facilitators

A useful template for budget estimation is shown in **Appendix C.**

2.7 Preparations by the lead facilitator

To ensure the workshop can be conducted smoothly, the lead facilitator should:

- Obtain basic information on the project
- Identify names of participants & from which organisation
- Organise participants in working groups
- Assign project phase/phases to each group to work on
- Assign facilitators to each group
- Brief facilitators on their tasks
- Prepare presentation materials
- Prepare handouts for participants e.g. presentation notes, project information, risk templates, etc.

3 FACILITATING THE RM WORKSHOP

3.1 Risk Management Facilitation Guidelines

Facilitation of the risk workshop is based on procedures developed in Risk Management Facilitation Guideline (RMFG). Items to be referred are:

- Workshop procedures in RMFG
- Work instructions
- Objective and outcomes
- Requirements
- Steps

3.2 Workshop objective

The objective of workshop is to develop a risk management plan towards completing the project by managing project risks. This will be achieved by:

- Identifying all potential project risks
- Evaluating the likelihood and impact
- Prioritising major risks (i.e. high and extreme risks)
- Analysing its causing factors, possible effects, existing treatments
- Proposing new risk treatments
- Developing risk management plan

3.3 Workshop outcomes

The results of the workshop comprise of 3 documents, namely:

3.3.1 Risk Register

- Reference no. (Risk no. / WBS no.)
- Risk Name / Title
- Category of Risk
- Likelihood, Impact and Risk Rating
- Treatment Measures
- Responsible Party
- Deadline

3.3.2 Risk Analysis

- Risk Description
- Risk Factors
- Possible Effects
- Existing Risk Treatments, Responsible Party, Deadline
- New Risk Treatments
- Inherent, Assessed, Target Risk Ratings

3.3.3 Risk Management Plan

- Summary
- Project Information
- Risk Process
- Risk Register
- Risk Analysis Templates

3.4 Tools & Techniques

Tools and techniques that can be utilised during the workshop are:

- Generic Risk List
- Brainstorming
- Mind Mapping
- Cause & Effect Diagram (Ishikawa)
- Decision Tree Analysis
- SWOT Analysis

3.5 Steps involved during the workshop

3.5.1 Step 1: Project Briefing

Before starting the identification process, invite the Project Manager to give a briefing on project. The purpose is to:

- Present key and current project information
- Identify stakeholders
- Report current status and progress
- Highlight current issues
- Share common knowledge

Note: Allow about 15 – 20 mins. for presentation

HINT : Do not spend too much time presenting the architectural aspects or finished outlook of the project.

3.5.2 Step 2: Risk Identification

In the identification process, the Risk Register template is used (**Appendix E**).

1. First suggest the group to appoint a scriber and a presenter

HINT : The scriber is tasked to register immediately all data on the risk templates preloaded in the laptop computer.

2. Start by writing **project objective** and scope at the top of the flip chart
3. Then draw 5 columns as shown below:-

No. & Identified Risk	Category of Risk	Likelihood rating	Impact rating	Risk Rating

4. Encourage group members to identify all possible risks within the assigned project phase.
5. Number and list the risks as and when they are identified in 1st column

   Note: limit duration for identifying risks (say, 40-60 minutes)

HINT : Devise a numbering scheme for the risks, eg 1.X for planning risks, 2.X for the design risks, 3.X for procurement risks, 4.X for construction risks and 5.X for handover risks.

6. Next, categorise each risk in 2nd column (refer to category table)
7. Then take each risk and let the group quantify the likelihood and impact – write in 3rd and 4th column

8. Proceed to evaluate the risk rating (refer to risk matrix table) and write in 5th column
9. Summarise the risk list by counting the number of extreme, high, medium and low risks

   Note: limit duration for prioritising risks (say, 20 minutes)
10. Group presenter to prepare for presentation

    Note: Present summary of risk list and highlight only major risks to be analysed (limit 10 minutes for each group)

3.5.3 Step 3: Risk Consolidation

Risk consolidation is done immediately after the identification process. The purpose is to select risks that are commonly identified by two or more groups. The lead facilitator shall eliminate similar risks to avoid duplication. Consolidation also allows the facilitator to distribute risks to be analysed fairly evenly to all groups.

1. Invite presenter from each group to present and share their risk list with other participants
2. Lead facilitator to select common or similar risks by comparing risk registers from the groups (with the assistance of the other participants)
3. Eliminate similar risks in view of allocating almost equal number of risks to all groups
4. Verify the number of risks to be analysed by each group after consolidation

At the end of this procedure, the total number of major risks are quite evenly distributed between the working groups.

3.5.4 Step 4: Risk Analysis

To analyse risks, the risk analysis template is used (**Appendix F**)

1. Start by reaching a common understanding of the risk from group members
2. Assist to develop the risk description – identify the source, event and impact
3. Facilitate the group to identify risk factors i.e. what contributes to risk eventuating
4. List the possible effects from the risk factors
5. Ask the group if there is currently any existing risk treatments / mitigating measures and list down their effectiveness

6. Facilitate members to formulate new risk treatments
7. For each treatment, agree to allocate person(s) responsible and deadline for action
8. Evaluate the inherent, assessed and target risk rating

Note:

Inherent Risk	-	Risk rating during initial identification
Assessed Risk	-	Risk rating after implementation of existing risk treatments
Target Risk	-	Risk rating after complete implementation of new risk treatments

3.5.5 Step 5: Risk Register Update

All risks analysed completely will have new risk treatments propose with actions assigned to a responsible party with an agreed deadline.

1. Transfer these data (New Risk Treatment, Responsible Party, Deadline) into Risk Register
2. Also replace the risk events in the Risk Register with the complete risk statements from the Risk Analysis Templates.
3. Invite presenter from each group to present and share their risk analysis and proposed treatment actions with other participants

   Note: Present risk description and proposed risk treatment actions highlighting, responsible party and deadline for each risk analysed (Limit 15 minutes for each group)

3.5.6 Step 6: Summary of workshop

After the group presentation the lead facilitator shall:

1. Gather and announce the total number of risks identified and analysed to all participants
2. Explain briefly the next steps need to be carried out by the Project Manager which include:
   i. Develop the Risk Management Plan (RMP)
   ii. Monitor and Review the RMP
   iii. Organise Risk Review meetings and further workshops, if necessary
3. Close workshop (if no other person is doing the closing of the workshop)

   Note: Ensure all group templates (risk registers and risk analysis templates) are copied into thumb-drives at the end

of workshop which later shall be combined to form the master copy. Copies of group risk registers can be printed and circulated to group members.

4 ACTIONS AFTER THE WORKSHOP

4.1 Immediately after workshop

1. Gather all risk templates to consolidate into mastercopy;
2. Ensure Project Manager holds Initial Risk Review Meeting(s) to review / refine risk register Hold Initial Risk Review Meeting(s) with Project Manager (PM) to review / refine risk register;
3. Develop Risk Managemen Plan using RMP template (**Appendix G**);
4. Get approval of the RMP from the Program Manager;
5. Send copy of approved RMP to PROKOM (for purposes).

4.2 Monitoring and Review

1. PM to send copies of the Risk Register to the assigned risk owners and request mitigation action/s to be taken accordingly and timely;
2. PM / Risk Manager (RMgr) to hold follow up Risk Review Meetings (RRM) regularly to monitor planned actions with deadline allocated;
3. Alternatively PM can integrate RRM as part of agenda in site meeting;
4. PM to receive report from relevant parties and review treatment actions if required.

4.3 Reporting

4.3.1 Risk Status Report

1. Use standard Risk Status Report (RSR) template (**Appendix H**) to report on RM status to PM / Program Manager;
2. Determine frequency of reporting e.g. monthly / bimonthly;
3. Send copy to PROKOM (for record purposes);

4.3.2 Risk Management Final Report

1. Do final review and assessment of RMP;
2. Use standard RM Final Report template (**Appendix I**) to prepare final report upon project handover;
3. Submit final report attaching final RMP to Program Manager;
4. Send endorsed copy to PROKOM (for record purposes).

4.4 Additional Workshop

If there is a need, the project manager/risk manager can organise additional risk workshops, usually :

1. after appointment of contractor (in case where the initial risk workshop was conducted in the absence of contractors/ consultants)
2. if there are major changes in project e.g. scope, policies, cost, time, etc.

The purpose of organising the additional risk workshop is to:

a. Revisit the risk register based on new information (identify new risks based on current input)
b. Review risk rating based on current changes
c. Revise the RMP

4.5 Closing

Once the final report has been prepared and endorsed by the program manager, the risk management for the project comes to an end. The project manager finalises the RMP and extracts lessons learnt to be posted in the department's knowledge database.

APPENDIX A-1

RISK MANAGEMENT PLANNING TEMPLATE

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RISK MANAGEMENT PLANNING

1.0 PROJECT INFORMATION

PROJECT TITLE :	
PROJECT REF. NO. :	
SKALA REF. NO. :	
CLIENT MINISTRY :	
END USER :	
FUNDING :	FEDERAL / STATE / PFI / OTHERS
PROGRAM MANAGER :	
PROJECT MANAGER :	
SITE SUPERVISION OFFICE :	
RISK MANAGER :	
PROJECT ENTRY DATE:	
PROJECT COMPLETION DATE :	
CONTRACT START DATE:	
CONTRACT END DATE:	
PROJECT CEILING COST:	
CONTRACT COST:	
TYPE OF CONTRACT:	CONVENTIONAL-JKR / CONVENTIONAL-CONSULTANT / DESIGN & BUILD / OPEN TENDER / RESTRICTED TENDER / DIRECT NEGOTIATION
CONTRACTOR'S NAME:	
ADDRESS:	
CONSULTANT'S NAME	
ADDRESS :	
Need for Workshop?	Yes / No

2.0 RISK MANAGEMENT WORKSHOP

DATE OF WORKSHOP:	
LOCATION :	
PARTICIPATING ORGANISATIONS :	1.
	2.
	3.
	4.
	5.
	6.
	7.
	8.
	9.
	10.
NO. OF PARTICIPANTS :	
NO. OF PRESENTER/FACILITATORS :	Presenter: Facilitator :
ESTIMATED COST :	RM
Go To Budget Template	
SOURCE OF FINANCING :	
ITINERARY TYPE :	A / B / Other
PROJECT PHASES :	INITIATION / PLANNING / DESIGN / PROCUREMENT / CONSTRUCTION / HANDOVER
CURRENT PROJECT ISSUES :	1.
	2.
	3.
	4.
	5.
	6.
	7.
	8.
WORK PLAN :	Q PLAN / WORK SCHEDULE / .....

LIST OF APPARATUS & EQUIPMENT AND NOS REQUIRED :				
	1. LAPTOP COMPUTER	nos.	6. WIRELESS MIC	nos.
	2. LCD PROJECTOR	nos.	7. LASER POINTER	nos.
	3. PROJECTOR SCREEN	nos.	8.	nos.
	4. FLIPCHART	nos.	9.	nos.
Go To Workshop Checklist	5. PA SYSTEM	nos.	10	nos.

3.0 MONITORING & CONTROL

3.1 RISK MANAGEMENT PLAN

DATE OF INITIAL RISK REVIEW MEETING:	
DATE TO APPROVE RMP :	
DATE TO DISTRIBUTE RISK REGISTER :	

3.2 MONITORING & FEEDBACK

1. PROJECT SITE MEETINGS	
2. FOLLOW UP RISK REVIEW MEETINGS	
3. TECHNICAL MEETINGS	
4. E-MAIL	
5. OTHERS ……	

Mark √ on the appropriate methods to be used

3.3 REPORTING

FREQUENCY OF STATUS REPORT :	MONTHLY / BI MONTLY / QUARTERLY
DATE TO COMPLETE FINAL REPORT :	
REPORTING OFFICER :	
VERIFYING OFFICER :	

4.0 SIGN OFF

Prepared by Project Manager :	
Approved by Program Manager / Director :	
Date :	

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APPENDIX A-2

CONTACT LIST

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CONTACT LIST

PROJECT:	**PREPARED BY:**
	REVIEWED:
PROJECT MANAGER :	**DATE OF PREPARATION:**

Organisation	Name	Position	Address	Office Phone	Mobile	Fax	E-Mail

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APPENDIX B-1

WORKSHOP FLOOR ARRANGEMENT PLAN

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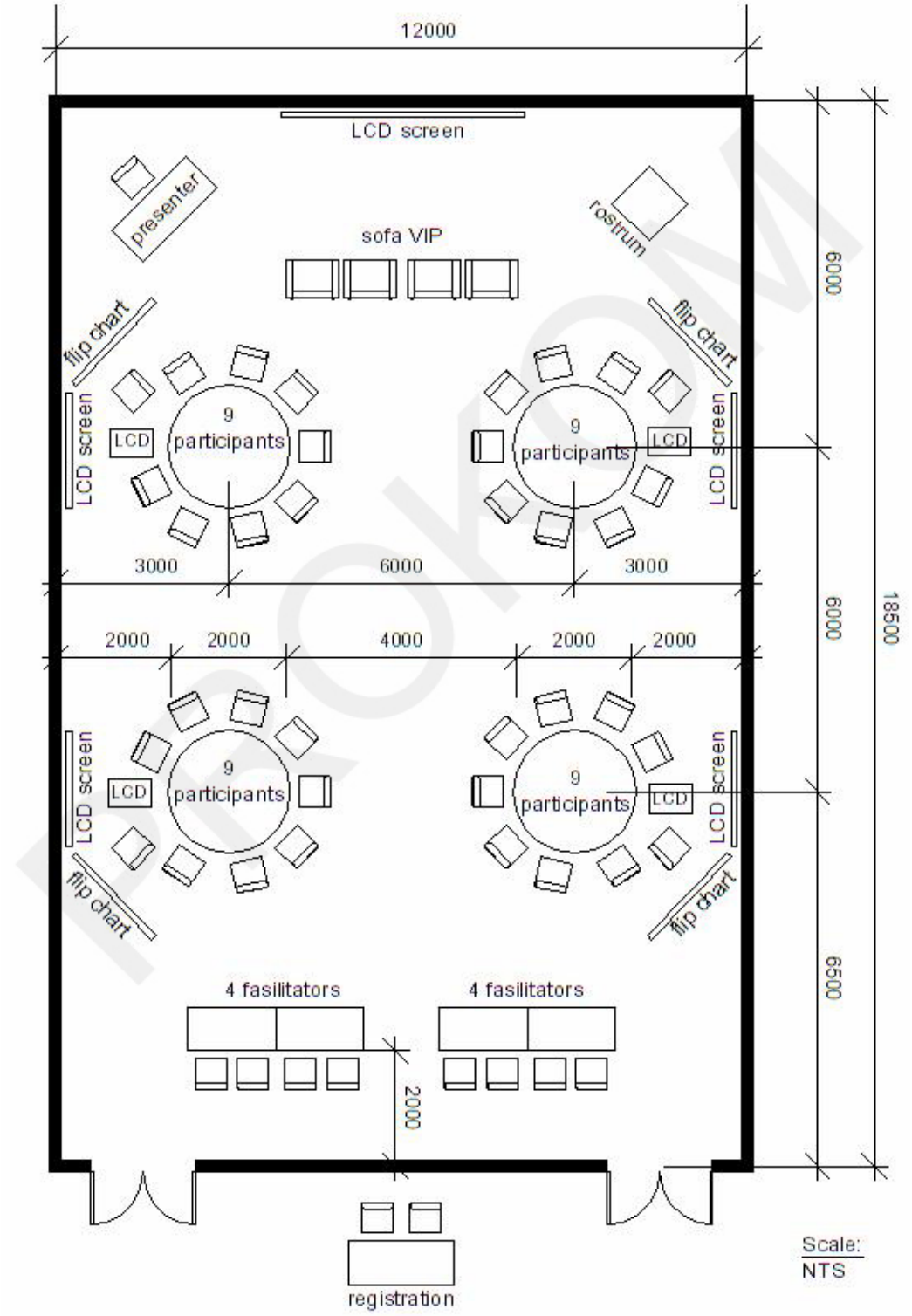
ROOM LAYOUT
FOR RISK MANAGEMENT WORKSHOP



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APPENDIX B-2

RISK MANAGEMENT WORKSHOP CHECKLIST

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RISK MANAGEMENT WORKSHOP CHECKLIST

Branch			
Workshop Name			
Confirm Date	*Not Yet* ☐	*Yes* ☐	*If yes, please state* ……..
Confirm Location	*Not Yet* ☐	*Yes* ☐	*If yes, please state* ……..
Confirm No of Participants	*Not Yet* ☐	*Yes* ☐	*If yes, please state* ……..
Confirm Presenter/Facilitator	*Not Yet* ☐	*Yes* ☐	*If yes, please state* *Presenter ……..* Facilitator ……. …….. ……..
Confirm Budget	*Not Yet* ☐	*Yes* ☐	*If yes, please state* ……..

Venue Supply

Printer	Nos Reqd. ☐	Nos Avail. ☐	Note ……..
Flip Charts/Whiteboard (1 Set per Group)	Nos Reqd. ☐	Nos Avail. ☐	Note ……..
Whiteboard Marker pens (3 colours, 1 set per group)	Nos Reqd. ☐	Nos Avail. ☐	Note ……..
Effective whiteboard cleaners and fluid (1 Set per Group)	Nos Reqd. ☐	Nos Avail. ☐	Note ……..
Large Round Table with 8 to 9 chairs per table (1 Set per Group)	Nos Reqd. ☐	Nos Avail. ☐	Note ……..
Break-out space	Adequate ☐	Not Adequate ☐	Note ……..
Sound system with a. Wireless microphone b. Dynamic microphone	Nos Reqd. ☐ Nos Reqd. ☐	Nos Avail. ☐ Nos Avail. ☐	Note ……..

LCD projector (1 set per group + 1 set for presenter)	Nos Reqd. ☐		Nos Avail. ☐	Note ……..
Laptop (1 set per group + 1 set for presenter)	Nos Reqd. ☐		Nos Avail. ☐	Note ……..
Projector screen (1 set per group + 1 set for presenter)	Nos Reqd. ☐		Nos Avail. ☐	Note ……..
Projector table (1 set per group + 1 set for presenter)	Nos Reqd. ☐		Nos Avail. ☐	Note ……..
Table for registration plus 2 chairs	Set Reqd. ☐		Set Avail. ☐	Note ……..
Rostrum for opening	Nos Reqd. ☐		Nos Avail. ☐	Note ……..
Table for facilitators including 3 chairs (1 set per 3 facilitators)	Set Reqd. ☐		Set Avail. ☐	Note ……..
Table for presenter/VIP including 2 chairs (1 set per 2 persons)	Set Reqd. ☐		Set Avail. ☐	Note ……..
Sofa for VIP (for opening)	Nos Reqd. ☐		Nos Avail. ☐	Note ……..
Pencils and A4 paper (1 set per participant)	Set Reqd. ☐		Set Avail. ☐	Note ……..
All electrical leads are to be taped in place to prevent tripping/electrocution (Workplace safety)	Not Yet Done ☐		Done ☐	Note ……..
Lunch per client specification	Not Yet Determined ☐		Determined ☐	Note ……..
Break refreshments	Not Yet Determined ☐		Determined ☐	Note ……..
Light refreshment during registration	Not Yet Determined ☐		Determined ☐	Note ……..

Specific Equipment and Responsibility Assignment

Item	Responsible person
LCD projector	
Presentation Laptop	
Group Laptop	
Whiteboard/Flip Chart	
Wireless/Dynamic Microphone	
Projector Screen	
Thumbdrive	
Laser pointer	
Printer	

Secretariat

Notify Project Manager to provide project briefing	Done ☐	Not Done ☐	Note ……...
Prepare document to be circulated (RMFG, Template, Workshop note)	Done ☐	Not Done ☐	Note ……...
File all material documents	Done ☐	Not Done ☐	Note ……...
Copy software for course into thumbdrive	Done ☐	Not Done ☐	Note ……...
Group Name Cards to be placed on the table each group in hard paper	Done ☐	Not Done ☐	Note ……...
Confirm Presenter availability	Done ☐	Not Done ☐	Note ……...
Sent appointment letter to Presenter and Facilitator	Done ☐	Not Done ☐	Note ……...
Sent invitation letter to participants	Done ☐	Not Done ☐	Note ……...
Confirm Presenter and Facilitator fees	Done ☐	Not Done ☐	Note ……...

Presenter Checklist:

Confirm workshop presentation scope	Done ☐	Not Done ☐	Note ……...
Client point of contact	Done ☐	Not Done ☐	Note ……...
Confirm workshop date	Done ☐	Not Done ☐	Note ……...
Confirm location and address	Done ☐	Not Done ☐	Note ……...
Confirm Number of participants and list	Done ☐	Not Done ☐	Note ……...
Determine member of a group and assignment every group	Done ☐	Not Done ☐	Note ……...
Determine amount of note	Done ☐	Not Done ☐	Note ……...
Complete presentation notes	Done ☐	Not Done ☐	Note ……...
Sent presentation notes to Secretariat	Done ☐	Not Done ☐	Note ……...
Confirm training support materials available	Done ☐	Not Done ☐	Note ……...

Confirm training equipments available	Done ☐	Not Done ☐	Note ……..
Travel requirements organised	Done ☐	Not Done ☐	Note ……..
Confirm venue	Done ☐	Not Done ☐	Note ……..
Venue point of contact	Done ☐	Not Done ☐	Note ……..
Confirm workshop venue prepared to layout plan	Done ☐	Not Done ☐	Note ……..
Briefing to facilitators	Done ☐	Not Done ☐	Note ……..

APPENDIX C

BUDGET TEMPLATE FOR RISK MANAGEMENT WORKSHOP

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BUDGET TEMPLATE

A. ACCOMODATION

a. Location:

b. Duration:

c. Participants & Secretariat: Nos

Grade/Designation	Rate/room (RM)	Nos of room	Nos of days	Total
Jusa C				
J54	300			
J52	180			
J48	180			
J44	160			
J41	160			
Other Grade				
Other Grade				
			Total A (RM)	

B. FOOD

		Serving (nos)
a. Welcome coffee	YES/NO	
b. Morning Tea	YES/NO	
c. Lunch	YES/NO	
d. Evening Tea	YES/NO	
e. Dinner	YES/NO	
f. Supper	YES/NO	

Rate/day =

Total day =

Total B (RM)

C. VENUE

Facilities	Rate/unit (RM)	Unit	Nos of days	Total
Hall				
PA System				
Wireless Microphone				
LCD projector				
Projector Screen				
Flipchart				
Whiteboard				
Laser Pointer				
Laptop				
Others				
			Total C (RM)	

D. PRINTING MATERIALS

Type Jenis	Rate/unit (RM)	Unit	Total
RMFG			
Handouts			
RM Manual			
RM Template			
Others			
		Total D (RM)	

E. FACILITATOR'S ALLOWANCES

Grade	Rate/hour (RM)	Nos of person	Hour consume	Total
54	100			
52	90			
48	90			
44	80			
41	80			
			Total E (RM)	

F. LECTURER'S ALLOWANCES

Grade	Rate/hour (RM)	Nos of person	Hour consume	Total
54	200			
52	150			
48	150			
44	120			
41	120			
			Total F (RM)	

G. TRAVELLING ALLOWANCES

Type	Rate (RM)	Expected km	Nos of unit/person	Total
Car				
a. Class A	0.7			
b. Class B	0.6			
c. Toll		N/A		
Flight				
a. Business Class		N/A		
b. Economy Class		N/A		
c. Taxi to & from aiport		N/A		
Other Transportation				
a. Bus		N/A		
b. Taxi		N/A		
c. Train		N/A		
d. Ferry		N/A		
			Total G (RM)	

GRAND TOTAL (RM)

Note: = to be filled N/A = Not Applicable

APPENDIX D

ITINERARY FOR RM WORKSHOP

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RISK MANAGEMENT WORKSHOP ITINERARY TYPE A

PROJECT :

…….

DATE :

VENUE :

ITINERARY

Day 1:

8.00 a.m. - 8.30 a.m.	Registration of participants (*Light refreshments to be served*)
8.30 a.m. – 8.45 a.m.	Official Opening by …….
8.45 a.m. – 9.30 a.m.	Presentation on "Overview of Risk Management"
9.30 a.m. – 10.15 a.m.	Presentation on "JKR Project Risk Management"
10.15 a.m. – 10.40 a.m.	Presentation by Project Manager – Project Brief & Current Status
10.40 a.m. – 11.00 a.m.	Morning Tea break
11.00 a.m. – 12.15 a.m.	Session 1 – Risk Identification
12.15 p.m. – 1.00 p.m.	Session 2– Group Presentation 1(10 mins each) & Consolidation
1.00 p.m. – 2.15 p.m.	Lunch break
2.15 p.m. – 3.45 p.m.	Session 3 – Risk Analysis & Treatment Part 1
3.45p.m. – 4.00 p.m.	Evening Tea Break
4.00 p.m. – 5.00 p.m	Session 4 – Risk Analysis & Treatment Part II
5.00 p.m.	End of Day 1

Day 2

8.00 a.m. - 8.30 a.m.	Registration of participants (*Light refreshments to be served*)
8.30 a.m. – 10.30 a.m.	Session 5 – Risk Analysis & Treatment Part III
10.30 a.m. – 10.50 a.m.	Morning Tea break
10.50 a.m. – 12.50 p.m.	Session 6 – Risk Analysis & Treatment Part IV
12.50 p.m. – 2.15 p.m.	Lunch break
2.15 p.m. – 3.30 p.m.	Session 7 – Risk Analysis & Treatment Part V & Risk Register Update
3.30 p.m. – 4.30 p.m.	Session 8 – Group Presentation 2 (10 mins each group)
4.30 p.m. – 5.00 p.m.	Summary Closing Remarks
5.00 p.m.	Evening Tea End of Workshop

DISTRIBUTION : –

a) from Organiser:
Presentation Notes, Risk Register and Risk Analysis Template;

b) from Project Manager :
Project Brief & Current Status, Project Schedule/Q-Plan

RISK MANAGEMENT WORKSHOP ITINERARY TYPE B

PROJECT: ……

DATE :

VENUE :

ITINERARY:

Day 1

2.00 p.m. – 6.00 p.m.	Registration of participants at Hotel
7.00 p.m. – 8.00 p.m.	Dinner
8.30 p.m. – 8.45 p.m.	Opening Remarks by ……..
8.45 p.m. – 9.30 p.m.	Presentation on "Overview of Risk Management"
9.30 p.m. – 10.30 p.m.	Presentation on "JKR Project Risk Management"
10.30 p.m.	End of day 1 Supper

Day 2

8.15 a.m. – 8.40 a.m	Presentation by Project Manager – Project Brief & Current Status
8.40 a.m. – 10.00 a.m	Session 1 – Risk Identification
10.00 a.m. – 10.40 a.m.	Session 2 – Group Presentation 1 (10 mins each) & Consolidation
10.40 a.m. – 11.10 a.m.	Morning Tea Break *(Group Photograph Session – Optional)*
11.10 a.m. – 1.00 p.m.	Session 3 – Risk Analysis & Treatment Part 1
1.00 p.m. – 2.15 p.m.	Lunch break
2.15 p.m. – 4.30 p.m.	Session 4 – Risk Analysis & Treatment Part II

4.30 p.m.	Evening Tea Break End of Day 2

Day 3

8.30 a.m. – 10.30 a.m.	Session 5 – Risk Analysis & Treatment Part III
10.30 a.m. – 10.50 a.m.	Morning Tea break
10.50 a.m. – 11.10 a.m.	Session 6 – Risk Register Update
11.10 a.m. – 12.00 p.m.	Session 7 – Group Presentation 2 (10 mins each group)
12.00 p.m. – 12.30 p.m.	Summary Closing Remarks
12.30 p.m.	Lunch End of Workshop

DISTRIBUTION : –

a) from Organiser:
Presentation Notes, Risk Register and Risk Analysis Template;

b) from Project Manager :
Project Brief & Current Status, Project Schedule/Q-Plan

APPENDIX E

RISK REGISTER TEMPLATE

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RISK REGISTER

Project Title :	Date :
Project Ref. No. :	Compiled by :
Project Manager :	Reviewed by :

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. Occ. Health & Safety
8. Other resources	16. Cultural & Social

Likelihood Rating	Impact Rating	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 MATRIX

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					

Ref No. (WBS)	Risk Event There is a risk that …….	Category of Risk	Likelihood Rating	Impact Rating	Risk Rating	Treatment Measures	Responsible Party	Target Deadline
1.0	PLANNING RISK							
1.1								
1.2								
2.0	DESIGN RISK							
2.1								
2.2								
2.3								
2.4								

Ref No. (WBS)	Risk Event There is a risk that …….	Category of Risk	Likelihood Rating	Impact Rating	Risk Rating	Treatment Measures	Responsible Party	Target Deadline
3.0	PROCUREMENT RISK							
3.1								
3.2								
3.3								
4.0	CONSTRUCTION RISK							
4.1								
4.2								
4.3								
5.0	HAND OVER RISK							
5.1								
5.2								
5.3								

APPENDIX F

RISK ANALYSIS TEMPLATE

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Risk Analysis Template Sheet No. :

Ref No (WBS):	Risk Title:		
Risk Description:			
Risk Nature: Strategic/Operational	Risk Category:	Risk Manager:	Business Unit:

Risk Factors:	Possible Effects:
○ ..	○ ..
○ ..	○ ..
○ ..	○ ..

Existing Risk Treatments:	Effectiveness: (High/Medium/Low)
○ ..	○ ..
○ ..	○ ..
○ ..	○ ..

New Risk Treatments :	Responsible Party:	Target Deadline:
○ ..	○ ..	○ ..
○ ..	○ ..	○ ..
○ ..	○ ..	○ ..

Risk Assessment Date	Inherent Risk			Assessed Risk			Target Risk		
	Likelihood	Impact	Risk Rating	Likelihood	Impact	Risk Rating	Likelihood	Impact	Risk Rating

Risk Analysis Template Instructions:

1.	**Ref. No (WBS):**	Sequential numbering of each risk identified.
2.	**Risk Title:**	Give the risk a title.
3.	**Risk Description:**	Provide a brief description of the risk (risk statement)
4.	**Risk nature:**	Select one of the following – Strategic or Operational.
5.	**Risk Category:**	Select the appropriate category to classify the risk (ie based on the source of the risk)
6.	**Risk Manager:**	Person responsible for managing the risk.
7.	**Business Unit:**	Provide name of Business Unit or similar
8.	**Risk factors:**	Describe the causes of the risk.
9.	**Possible Effects:**	Describe the impacts of the risk arising.
10.	**Existing Risk Treatments:**	Identify all existing risk treatments and controls that are in place and any mitigating factors.
11.	**Effectiveness (H,M,L):**	Rate the effectiveness of the existing risk treatments as either High (H), Medium (M) or Low (L).
12.	**New-Risk Treatments:**	Identify a new range of options or strategies for treating risks.
13.	**Responsible Party:**	Specify person who is responsible for the implementation of each new/proposed risk treatments.
14.	**Deadline:**	Specify a final date when the implementation of the strategy will be completed.
15.	**Risk Assessment Date**	Specify date of risk being assessed.
16.	**Inherent Risk:**	Determine the risk level by applying the risk matrix assuming no Existing Risk Treatments.
17.	**Assessed Risk:**	Determine the risk level by applying the risk matrix after forming a judgment on the effectiveness of Existing Risk Treatments.
18.	**Target Risk:**	Advise the target level that will be achieved after implementation of the new/proposed risk treatments. The target risk is the desired risk level after implementation of new/proposed risk treatments. There may be instances where the target risk remains high due to the nature of the activity undertaken. In this case new/proposed risk treatments should be closely monitored and reported.

APPENDIX G

RISK MANAGEMENT PLAN TEMPLATE

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JABATAN KERJA RAYA
MALAYSIA

RISK MANAGEMENT PLAN

(Project Name)

Cawangan .....
Ibu Pejabat JKR Malaysia
Kuala Lumpur

Version 2.0
12 October 2010

Build Status

Version	Date	Author	Reason	Sections
1.2	12 Nov 2010	Yaakob AL	Review and update templates to include Endorsement page	Last page
2.0	12 Oct 2010	Yaakob AL	Review and update templates in accordance to current practices. • Attachment A – new risk management planning template. Other Attachments renumbered. • Clauses amended to include client participation • Tools & Techniques amended to include check box.	• ATTACHMENTS • Para 1.4, 2.2 • Para 2.2.1

Summary of (Project Name) Risk Profile

Provide a brief summary and overview of the risk profile of the project at the time of preparing the document.

Include a table listing all extreme (red) and high (amber) risks from risk register based on risk categories. eg

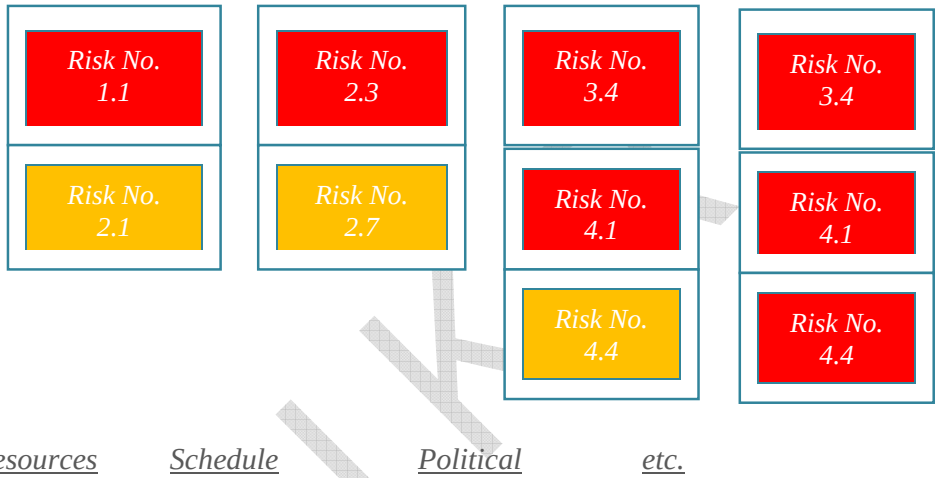

TABLE SUMMARY OF RISK PROFILE

TABLE OF CONTENTS

ATTACHMENTS

LIST OF FIGURES

1. Introduction

1.1 Background

Some words on the background to risk management for the project i.e……..

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 stakeholders 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.

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 project team for *(Project Name)* will perform the job of managing risks for the project. It defines roles and responsibilities for stakeholders in the risk processes, the risk management activities that will be carried out, the schedule and subsequent budget for risk management activities and subsequently the 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 *(Project Name)* 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, analyzing, 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

Describe the Project (or where it fits in the program if part of a program) that the risk management plan applies to.

1.3.1 Project Governance

Include the governance structure of the project here …….

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 Manager and his team, client 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 **Error! Reference source not found.** 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 Manager, team, client and 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 Project Manager. In such cases, available applicable team members will make the decision.

1.5 Definitions, Acronyms and Abbreviations

Update Attachment D with any project specific definitions. Include in this section project specific acronyms or abbreviations that are used.

PM	Project Manager
RMgr	Risk Manager
RMP	Risk Management Plan
CCC	Certificate of Completion and Compliance
CF	Certificate of Fitness
CPM	Critical Path Method
EPU	Economic Planning Unit
PM	Project Manager
SOA	Schedule of Accommodation
VO	Variation Order

Specific risks definitions are shown at Attachment D.

2. Risk Management Process

This section describes the JKR project risk management process and provides an overview of the *(Project Name)* 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. **Error! Reference source not found.** shows, in general terms, the overall risk management process that has been followed in the *(Project Name)*. Each of the risk management functions shown in the figure is discussed in the following paragraphs, along with specific procedures for executing them.

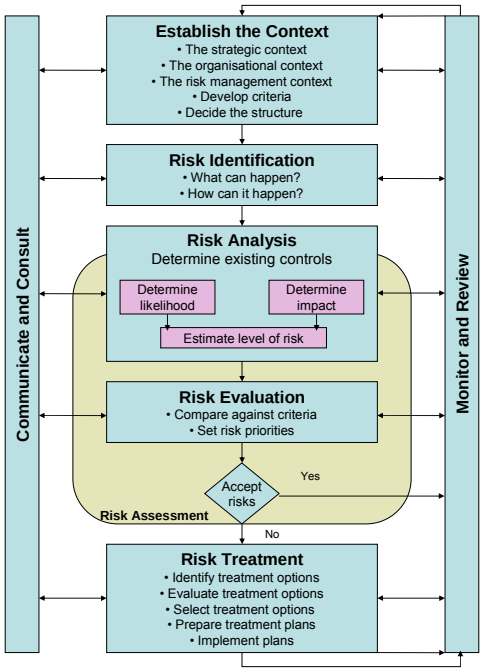

Figure 1: JKR Project Risk Management Process

2.1 Establish the Context

Establishing the context for the *(project name)* 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 organized and thorough approach to assess, handle, and monitor risks. It also assigns responsibilities for specific risk management actions and establishes risk reporting and documentation requirements. This RMP serves as the basis for all detailed risk planning, which must be continuous. The risk planning is detailed out in the Risk Planning Template (see Attachment A).

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 *(project name)* to determine those critical events that would prevent the project from achieving its objectives. All identified risks were documented in the Risk Register (see Attachment B).
Risks were identified by the team, including the client and 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.
For the purpose of this assessment, risks were identified in the Post Award stage of the project implementation.

2.2.1 Tools and Techniques

Tools and techniques used in the risk identification and mitigation strategies for this project were as follows:

- ☐ 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 norms
- ☐ Reviewing project information, including plans, analysis and designs.
- ☐ Checklists.
- ☐ Others : ……

Note : Check [√] in appropriate boxes

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 B.
Note: At this stage just a list of identified risks would appear in the risk register. The risk register Attachment B 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 B.

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.

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 Analysis Templates

The output of the identification and assessment of the high priority risks is shown at Attachment C. At this stage some implementation measures have been identified (New Risk Treatments) 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 at the weekly project status meetings, with a full risk review conducted on a monthly basis.

3.0 Risk Management Organisation

The risk organisation for the *(project name)* 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 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 program manager endorses the risk management plan and receives update reports on the status of project risks from the Project Manager or Risk Manager.
The project team is responsible for implementing risk management tasks as 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 Analysis Templates
- 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).

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ATTACHMENT A

RISK PLANNING TEMPLATE

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RISK MANAGEMENT PLANNING

1.0 PROJECT INFORMATION

PROJECT TITLE :	
PROJECT REF. NO. :	
SKALA REF. NO. :	
CLIENT MINISTRY :	
END USER :	
FUNDING :	FEDERAL / STATE / PFI / OTHERS
PROGRAM MANAGER :	
PROJECT MANAGER :	
SITE SUPERVISION OFFICE :	
RISK MANAGER :	
PROJECT ENTRY DATE:	
PROJECT COMPLETION DATE :	
CONTRACT START DATE:	
CONTRACT END DATE:	
PROJECT CEILING COST:	
CONTRACT COST:	
TYPE OF CONTRACT:	CONVENTIONAL-JKR / CONVENTIONAL-CONSULTANT / DESIGN & BUILD / OPEN TENDER / RESTRICTED TENDER / DIRECT NEGOTIATION
CONTRACTOR'S NAME:	
ADDRESS:	
CONSULTANT'S NAME	
ADDRESS :	
Need for Workshop?	Yes / No

2.0 RISK MANAGEMENT WORKSHOP

DATE OF WORKSHOP:		
LOCATION :		
PARTICIPATING ORGANISATIONS :	1.	
	2.	
	3.	
	4.	
	5.	
	6.	
	7.	
	8.	
	9.	
	10.	
NO. OF PARTICIPANTS :		
NO. OF PRESENTER/FACILITATORS :		Presenter: Facilitator :
ESTIMATED COST :		RM
Go To Budget Template		
SOURCE OF FINANCING :		
ITINERARY TYPE :		A / B / Other
PROJECT PHASES :		INITIATION / PLANNING / DESIGN / PROCUREMENT / CONSTRUCTION / HANDOVER
CURRENT PROJECT ISSUES :	1.	
	2.	
	3.	
	4.	
	5.	
	6.	
	7.	
	8.	
WORK PLAN :		Q PLAN / WORK SCHEDULE / .....

LIST OF APPARATUS & EQUIPMENT AND NOS REQUIRED :					
	1. LAP. COMPUTER	nos.	6. W/LESS MIC		nos.
	2. LCD PROJECTOR	nos.	7. LASER PTR		nos.
	3. PROJ. SCREEN	nos.	8.		nos.
	4. FLIPCHART	nos.	9.		nos.
Go To Workshop Checklist	5. PA SYSTEM	nos.	10		nos.

3.0 MONITORING & CONTROL

3.1 RISK MANAGEMENT PLAN

DATE OF INITIAL RISK REVIEW MEETING:	
DATE TO APPROVE RMP :	
DATE TO DISTRIBUTE RISK REGISTER :	

3.2 MONITORING & FEEDBACK

1. PROJECT SITE MEETINGS	
2. FOLLOW UP RISK REVIEW MEETINGS	
3. TECHNICAL MEETINGS	
4. E-MAIL	
5. OTHERS ……	

Mark √ on the appropriate methods to be used

3.3 REPORTING

FREQUENCY OF STATUS REPORT :	MONTHLY / BI MONTLY / QUARTERLY
DATE TO COMPLETE FINAL REPORT :	
REPORTING OFFICER :	
VERIFYING OFFICER :	

4.0 SIGN OFF

Prepared by Project Manager :	
Approved by Program Manager / Director :	
Date :	

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ATTACHMENT B

RISK REGISTER

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RISK REGISTER

Project Title :	Date :
Project Ref. No. :	Compiled by :
Project Manager :	Reviewed by :

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. Occ. Health & Safety
8. Other resources	16. Cultural & Social

Likelihood Rating	Impact Rating	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 MATRIX

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					

Ref No. (WBS)	Risk Event There is a risk that …….	Category of Risk	Likelihood Rating	Impact Rating	Risk Rating	Treatment Measures	Responsible Party	Target Deadline
1.0	PLANNING RISK							
1.1								
1.2								
1.3								
2.0	DESIGN RISK							
2.1								
2.2								
2.3								

Ref No. (WBS)	Risk Event There is a risk that …….	Category of Risk	Likelihood Rating	Impact Rating	Risk Rating	Treatment Measures	Responsible Party	Target Deadline
2.4								
3.0	PROCUREMENT RISK							
3.1								
3.2								
3.3								
4.0	CONSTRUCTION RISK							
4.1								
4.2								
4.3								
5.0	HAND OVER RISK							
5.1								
5.2								
5.3								

ATTACHMENT C

RISK ANALYSIS TEMPLATE

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Risk Analysis Template Sheet No. :

Ref No (WBS):	Risk Title:		
Risk Description:			
Risk Nature: Strategic/Operational	Risk Category:	Risk Manager:	Business Unit:

Risk Factors:	Possible Effects:
○ ..	○ ..
○ ..	○ ..
○ ..	○ ..

Existing Risk Treatments:	Effectiveness: (High/Medium/Low)
○ ..	○ ..
○ ..	○ ..
○ ..	○ ..

New Risk Treatments :	Responsible Party:	Target Deadline:
○ ..	○ ..	○ ..
○ ..	○ ..	○ ..
○ ..	○ ..	○ ..

Risk Assessment Date	Inherent Risk			Assessed Risk			Target Risk		
	Likelihood	Impact	Risk Rating	Likelihood	Impact	Risk Rating	Likelihood	Impact	Risk Rating

Risk Analysis Template Instructions:

1.	**Ref. No (WBS):**	Sequential numbering of each risk identified.
2.	**Risk Title:**	Give the risk a title.
3.	**Risk Description:**	Provide a brief description of the risk (risk statement)
4.	**Risk nature:**	Select one of the following – Strategic or Operational.
5.	**Risk Category:**	Select the appropriate category to classify the risk (ie based on the source of the risk)
6.	**Risk Manager:**	Person responsible for managing the risk.
7.	**Business Unit:**	Provide name of Business Unit or similar
8.	**Risk factors:**	Describe the causes of the risk.
9.	**Possible Effects:**	Describe the impacts of the risk arising.
10.	**Existing Risk Treatments:**	Identify all existing risk treatments and controls that are in place and any mitigating factors.
11.	**Effectiveness (H,M,L):**	Rate the effectiveness of the existing risk treatments as either High (H), Medium (M) or Low (L).
12.	**New-Risk Treatments:**	Identify a new range of options or strategies for treating risks.
13.	**Responsible Party:**	Specify person who is responsible for the implementation of each new/proposed risk treatments.
14.	**Deadline:**	Specify a final date when the implementation of the strategy will be completed.
15.	**Risk Assessment Date**	Specify date of risk being assessed.
16.	**Inherent Risk:**	Determine the risk level by applying the risk matrix assuming no Existing Risk Treatments.
17.	**Assessed Risk:**	Determine the risk level by applying the risk matrix after forming a judgment on the effectiveness of Existing Risk Treatments.
18.	**Target Risk:**	Advise the target level that will be achieved after implementation of the new/proposed risk treatments. The target risk is the desired risk level after implementation of new/proposed risk treatments. There may be instances where the target risk remains high due to the nature of the activity undertaken. In this case new/proposed risk treatments should be closely monitored and reported.

ATTACHMENT D

DEFINITIONS

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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 favourable 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	Any risk event which has serious or catastrophic consequence even though the likelihood of occurrence may be quite low
Uncertainty	The gap between the information required to estimate an outcome and the information already possessed by the decision maker

ENDORSEMENTS

Project Manager / Risk Manager

Name	Signature	Date

Program Manager

Name	Signature	Date

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APPENDIX H

RISK MANAGEMENT
STATUS REPORT TEMPLATE

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RISK STATUS REPORT

Project Title :	Report No. :
Project No. :	Date of Report :
Project Mgr :	Prepared by :

Action Status : C – Completed; O – On Going; NS – Not Started

Ref No. (WBS)	Risk Event	Risk Category	Inherent Rating	Treatment Measures	Resp.Party	Target Deadline	#Action Status C/O/NS	Current Risk Rating	Remarks (Action Review/Others)
A	**CURRENT RISKS**								
B	**EMERGING RISKS**								

Immediate Outstanding Issues

Project Implications

Achievements

Lessons Learned

Reported by

Project Manager/Risk Manager	Signature	Date

Sign Off

Program Manager/Director	Signature	Date

APPENDIX I

RISK MANAGEMENT
FINAL REPORT TEMPLATE

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FINAL RISK MANAGEMENT REPORT

1.0 Project Information	
a) Project Name	
b) Project Reference No.	
c) Client	
d) Project Manager	
e) Risk Manager *(if any)*	
f) Branch / Unit	
g) Project Start Date	
h) Project End Date	
i) Project Initial Cost (RM):	
j) Project Final Cost (RM):	
k) Contractor's Name & Address	

2.0 Project Risk Information	
a) No. of Risks Identified Initially *(from 1st Risk Register)*	Low ☐ Medium ☐ High ☐ Extreme ☐
b) No. of Initial Risks Managed *(High + Extreme Risks)*	
c) No. of Emerging Risks Managed *(New Risks)*	
d) No. of Risks Successfully Mitigated *(Refer Section 3)*	
e) No. of Risks Not Successfully Mitigated (*Refer Section 4)*	
f) Initial Risk Review Meeting	Date 1: Date 2:
g) Follow-up Risk Review Meeting	Date 1: Date 2:
h) Additional Risk Workshop *(if any)*	Date :

3.0 Risk Events Successfully Mitigated						
Risk Ref.	Risk Title	Inherent Rating	Final Rating	Action Taken	Reason For Success	Lessons Learned

4.0 Risks Events Not Successfully Mitigated						
Risk Ref.	Risk Title	Inherent Rating	Final Rating	Proposed Treatment Measures	Reason For Failure	Lessons Learned

5.0 Risk Statistics				
5.1	**Percentage of Success of Risks Managed**	$\frac{2(d)}{[2(b)+2(c)]}$ %	$\frac{\square}{\square + \square}$ %	%
5.2	**Percentage of Failure of Risks Managed**	$\frac{2(e)}{[2(b)+2(c)]}$ %	$\frac{\square}{\square + \square}$ %	%

6.0 Project Benefits

7.0 Project Achievements

8.0 Sign Off		
Project Manager/Risk Manager	Signature	Date

Program Manager	Signature	Date

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APPENDIX J

EXAMPLES OF RISK EVENTS

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EXAMPLES OF RISK EVENTS

NO.	CLASSIFICATION	RISK EVENTS
1.	**PHYSICAL RISK**	
		Earthquake
		Landslide and subsidence
		Fire
		Lightning
		Heavy rain
		Flood
		Extraordinary wind (typhoon, hurricane, etc)
		Pestilence
2.	**PERSONAL RISK**	
2.1	Technician and Labour	Frequent job change by skilled labour
		Lack of skilled labour
		Lack of labour
		Strikes and labour disciplines
		Low productivity
		Poor workmanship
		Brawls and fighting
		Use of illegal foreign labour
		Gambling on site
		Absenteeism
		Unable to understand drawings
		Communication problems
2.2	Subcontractor	Lack of funds to proceed with work (insolvency)
		Lack of required technical skill
		Unable to finish work on time
		Low productivity
		Problems in coordination
		Subcontractor unable to afford adequate labour
		Subcontractor takes jobs in several projects
		Subcontractor abandons projects
2.3	Staff, foreman	Incompetence and lack of responsibility
		Absenteeism
		Brawls
		Lack of experienced staff and foremen
2.4	Engineer	Incompetence and lack of responsibility
		Absenteeism
		Brawls

NO.	CLASSIFICATION	RISK EVENTS
		Lack of experienced engineers
2.5	Consultant	Does not understand his role/duty
		Poor construction method
		Delays in materials and shop drawings approval
		Communication and coordination problems
		Dishonesty
		Unaccountability of work
2.6	Client	Interference
		Change orders
		Client lacks managerial capability
		Quality expected beyond standard and specs
3.	**TECHNICAL RISK**	
3.1	Material	Affordable material is more expensive than presented in bills of quantities (BoQ)
		Proposed materials are not approved
		Material shortage
		Late in material delivery
		Quality of material below standard
		Material damage during storage
		Material damage during transportation
3.2	Equipment	Low productivity and efficiency
		Frequently out of order or damaged
		Inappropiate equipment causes problems
		Unavailability of spare parts or cost is high
		No reserve equipment
		Need to import from other countries
		High maintenance cost
3.3	Technique	New technique is required
		Quality criteria are difficult to achieve
3.4	Construction process	Failure to construct as planned
		Coordination problems
		Delay in possession of site
		Communication problems
		Red tape in liason with public service consumes too much time
		Irregularity of work load

NO.	CLASSIFICATION	RISK EVENTS
		Severe climate causes low productivity
		Errors or omissions in Bills of Quantities
		Insufficient time to prepare bids
		Delay of information from designers
3.5	Construction site	Access problems
		Construction site is adjacent
		Work hours are limited
		Traffic congestion
		Local regulations
		Theft
		Project is threatened by hooligans
3.6	Ground condition	No site investigation or boring log
		Inadequate site investigation
		Errors in information of site investigation
		Unforeseen problems
4.	**SAFETY-ACCIDENT RISK**	
		Severe accidents occur
		Inappropriate machine induces accident
		Machine is not checked before operating
		There is no fence or protection net
		There is no fire protection system on site
5.	**CONSTRUCTION DESIGN CAUSES RISK**	
		Inadequate or ambiguous specifications
		Errors in drawings
		Incomplete design scope
		Need innovative construction method
		Need new materials and equipment
		Non-standard details of drawing induces low quality of work and error in estimate
		Likelihood of change
		Incompatibility between drawing and method
6.	**POLITICAL AND REGULATION RISK**	
		Frequent changes in law
		War, revolution and civil disorder
		Requirement to use local labour
		Customs and import restrictions
		Unstable politics
		Embargo
		Long procedure for approval and permits
		Cost for corrupt government officials

NO.	CLASSIFICATION	RISK EVENTS
7.	**FINANCIAL RISK**	
		Payment risk of completed work
		Slow payment by clients due to dispute
		Retention is not returned
		Liquidated damage for delay
		Adequate payment for variations
		Financial problems due to errors in estimating
		Loss due to default of contractor, subcontractor, supplier or client
		Inflation
		Exchange rate fluctuation
		Local and national taxes are high
		Bid and construction bond are unfairly called
		Insufficient insurance
		Labour cost is higher than predicted
		Material cost is higher than predicted
8.	**CONTRACTUAL RISK**	
		Unfair or unreasonable stipulation
		Ambiguous clauses that have several meanings
		Work conditions differ from contract
		Misinterpretation
		Extent of work differs from contract
		Red tape in litigation
9.	**ENVIRONMENTAL REGULATIONS CAUSE RISK**	
		Construction process causes pollution
		Waste treatment required by law
		Preserving historical finds
		Local environment regulations obstruct construction process

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