

WBS 8.5

Group Kitchen Remodel Risk Management Plan

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Assessing and Managing Project Risk

PMGT 613

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# **KITCHEN RENOVATION PROJECT PLAN**

Embry Riddle Aeronautical University – PMGT 501

TEAM 3

Final Submission

by

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## Table of Contents

1	Risk Management Plan .....	5
1.1	Methodology .....	5
1.2	Roles and Responsibilities .....	5
1.3	Risk Categories .....	5
1.4	Program and Evaluation Review Technique (PERT) .....	7

## LIST OF TABLES

Table 5: Kitchen Reno PERT .....	7
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# **1 Risk Management Plan**

## **1.1 Methodology**

The project office and each member of team will partake as the risk management group, and will contribute to the risk matrix for any ongoing risk. The risk management group will come to a decision on who is the risk manager depending on schedule of the participants. If for some unforeseen reason a risk manager cannot be decided, then a selected member of the project office will be chosen. Once the project is executed, the risk manager will hold meetings twice a week since there is such a short timeframe on the kitchen renovation project.

## **1.2 Roles and Responsibilities**

Risk Manager: The risk manager will be responsible to manage and control risks, and can delegate, if needed, to the rest of the project team.

- Project Office: Responsible for controlling risks which are assigned.
- General Contractor: Responsible for controlling risks which are assigned.
- Credit Union/Loan Officer: Responsible for controlling risks which are assigned.
- Subcontractors: Responsible for controlling risks which are assigned.
- Homeowners: Responsible for controlling risks which are assigned.
- Designer: Responsible for controlling risks which are assigned.
- City Inspector: Responsible for controlling risks which are assigned.

## **1.3 Risk Categories**

Project risks are separated into four different sections: technical, external, organizational, and project management. The risk categories are defined below each section.

### **1. Kitchen Renovation Project**

## 1.1. Technical

1.1.1. Design

1.1.2. Quality

## 1.2. External

1.2.1. Subcontractors

1.2.2. Homeowners

1.2.3. City Inspection/Permits

## 1.3. Organizational

1.3.1. Budget

1.3.2. Scope

1.3.3. Time

1.3.4. Resources

## 1.4. Project Management

1.4.1. Estimating

1.4.2. Planning

1.4.3. Communication

1.4.4. Sign offs

1.4 Program and Evaluation Review Technique (PERT)

Equation 1 was used to find the weighted average activity time. Equation 2 uses the weighted average activity time in the critical path to find the Z value, which allows us to calculate the probability of completing the project by a specified date. The expected project duration is 28.5 days as seen from the critical path identified in Table 5 below. The probability for completing this project in the required 45 days can be found by using Equation 2.

Equation 1:  $t_e = \frac{a+4m+b}{6}$  where,

$t_s$  = weighted average activity time

a = optimistic activity time

b = pessimistic activity time

m = most likely activity time

Equation 2:  $Z = \frac{T_S - T_E}{\sqrt{\sum \sigma_{t_e}^2}}$  where,

Z = probability of meeting scheduled duration

$T_E$  = critical path

$T_S$  = scheduled project duration

$\sigma_{t_e}^2$  = variability in the activity time estimates

Upon entering in  $T_S$  as 45 days and  $T_E$  as the calculated 28.5 days into Equation 2, Z equals 2.56. By referencing the Z values and probabilities table in Gary & Larson (2014), one can observe that there is a 99.4 percent chance of completing the project.

Table 1: Kitchen Reno PERT

Act ID	Description	Predecessor	a	m	b	Act Time ( $t_e$ )	Var $[(b-a)/6]^2$	Critical
A	Plan & Design	None	1.5	2	2.5	2.00	0.03	YES
B	Acquire Subcontractor	A	.75	1	1.5	1.04	0.02	
C	Design Package	A	1.5	2	4	2.25	0.17	YES
D	City Permit/Inspection	A,B,C	1.5	2	3	2.08	0.06	
E	Demolition	C	1.75	2	4	2.29	0.14	YES
F	Demolition Cleanup	E	.5	1	1.5	1.00	0.03	YES
G	Prep for Construction	E,F	5	7	8.5	6.92	0.34	YES
H	Procurement of materials	G	2	3	5	3.17	0.25	YES
I	Mechanical	D,H	2	3	4	3.00	0.11	
J	Electrical	D,H	4	6	7	5.83	0.25	YES
K	Plumbing	D,H	5	8	10	7.83	0.69	

L	Paint	D,H	1	1.5	2	1.50	0.03	
M	Cabinet/Countertops	D,H	2.5	3	4	3.08	0.06	
N	Flooring	D,H	1	2	2.5	1.92	0.06	
O	Installation of Appliances	D,H	1	3.5	4	3.17	0.25	
P	Test and Commission	I, J,K,L,M,N,O	1	3.25	4	3.00	0.25	YES
Q	Cleanup	P	.75	1	3	1.29	0.14	YES
R	Turnover	Q	1	1.25	2	1.33	0.03	YES