

# CONSULTANT SERVICES MANAGEMENT PLAN

(MINIMUM REQUIREMENTS)

## Revision List

Rev	Prepared by	Date	Reviewed by	Date	Approved by	Date	Agreed by	Date
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## **1. INTRODUCTION**

### **1.1. Application and Purpose**

Upon assignment award the Consultant shall prepare a comprehensive Consultant Services Management Plan (CSMP) detailing the processes that will be applied during the provision of the assigned Services.

The initial Consultant Services Management Plan shall be supplied for approval within one (1) month of assignment award.

As refined planning for some Services may require preceding Services to be underway or completed, a phased submission for those plan components may be acceptable, however, the initial Consultant Services Management Plan submission is expected to cover the Project Definition, preliminary design and detailed design phases in detail and provide initial planning for the remaining Services.

The Consultant shall update the CSMP to further levels of detail at the end of each of the Project phases, including the Definition, Preliminary Design and Detailed Design phases, to reflect their most current planning for the upcoming phases.

During proposal stage, the Consultant shall have provided a comprehensive overview of their proposed Consultant Services Management Plan and provided a schedule detailing the proposed submittal timeframe for any applicable phased submission.

### **1.2. Objectives**

The Consultant Services Management Plan objective is to provide a detailed plan to identify and track the processes used by the Consultant during the provision of the assigned Services in order to ensure the delivery of Consultant Services as per City requirements. It will be used by the Consultant and the City as a management and control tool.

The following requirements are not intended to review exhaustively and chronologically all project management technics and aspects but rather, they focus on the methodology for addressing the successive issues of the Plans and on specifics of the Project, and shall be followed as a minimum requirement for the preparation of the comprehensive CSMP and of each of its subcomponents.

### **1.3. Consultant Services Management Plan (CSMP) Scope**

The Consultant Services Management Plan shall encompass the assignment scope of work as detailed in the RFP Bid Opportunity, including, as applicable;

- Advisory Services
- Project Definition Design phase
- Preliminary Design phase
- Detailed Design phase
- Contract Administration Services (required and optional)

- Commissioning Services
- Additional Services

As stated above, The Consultant shall prepare a comprehensive Management Plan for its overall Services (CSMP), and, under the scope of this plan, the Consultant shall prepare a management plan for each of the above assignments to be submitted to the City for approval.

The Plan updates with detailed assignment plans shall be delivered to the City at least 2 weeks prior to the expected starting date of each assignment.

## **2. PROCESSES MANAGEMENT**

### **2.1.Processes**

The Consultant Services Management Plan (and its components) shall identify and detail the following processes:

- Initiating Processes
- Planning Processes
- Executing Processes
- Controlling and Monitoring Processes
- Closing Processes

Note:

- the initiation phase of the Project and of the different assigned Services are not described here, as for most of the assignments, initiation is already assumed in the preceding one, however, the Consultant shall develop this process when applicable.
- For sake of clarity, examples may be given only for a particular assignment, and are to be understood and transposed for other types of assignments.

### **2.2.Planning Processes**

During the development of the planning processes, the Consultant should take into consideration the specifics of the Project and the controls that the City intends to exercise on the Project including Consultant Services during the exclusion of the assignment.

#### **2.2.1. Work Breakdown Structure (WBS)**

The WBS is a deliverable oriented grouping of elements that defines the total scope of the assignment. The WBS will develop and confirm a common understanding of the assignment scope. The WBS will subdivide the assignment deliverables into smaller more manageable components known as design work packages. Decomposition of the assignment involves the following major steps:

- Identify major elements relative to how the assignment will be managed

- Quantify person responsible, duration, resources, effort, cost and any associated disbursements for each element
- Identify elements in terms of tangible and verifiable results to facilitate performance measurement

## **2.2.2. Assignment Planning**

Assignment Planning forms the basis for the Consultants development of an Assignment Plan. The Assignment Plan will identify the WBS of the assignment deliverables and will detail, manpower requirements, manpower costs and provide the critical path schedule for the development and issuance of the deliverables.

The Assignment plan shall, as a minimum, identify the following:

- All deliverables further broken down into design/assignment work packages
- The number of the design work packages required and description of each;
- List of Drawings planned for each discipline and design work package
- Resource requirements, effort and duration by design work package;
- All information required to support the scope of work for each design work package
- The design elements for each area correlating the timing of design outputs to the design schedule;
- Design Schedule requirements for design phases relative to each design work package;
- Design and Progress meetings
- Presentation/review meeting/ workshops, identifying anticipated City personnel and/or resources required
- Required information inputs, third party inputs
- Reviewers/Verifiers; including constructability aspects
- Reviews and approval
- the format of documentation for each design work package;
- the timing and sequence in which procurement documentation is to be produced;
- Quality Management elements

## **2.2.3. Assignment Schedule**

The Consultant shall prepare a critical path schedule reflecting the assignment plan WBS using CPM and utilizing MS Project 2003 or later version, as the presentation tool. Once approved by the Project Manager the schedule shall be frozen as a baseline for the assignment. The schedule shall be updated weekly and submitted to the Project Manager monthly in MS Project native format. Review of the Assignment schedule with the Consultant will occur during the designated Consultant Services monthly status review meetings. Should slippage to the baseline occur, the Consultant shall provide the Project Manager with a mitigation strategy to bring the schedule back to baseline.

## **2.3.Executing Processes**

The Consultant shall have detailed in planning stage how each of the executing processes will be undertaken in respect of the following City requirements.

The City is developing an Integrated Management System (IMS) with procedures that are to be followed during the execution of all assignments as applicable.

### **2.3.1. Risk Management**

The approach to Risk Management adopted for the Winnipeg Sewage Treatment Program is consistent with the Risk Management Process identified by ISO 31000. It includes distinct activities for Risk Identification and Analysis, Evaluation, Response Planning, Risk Planning Implementation and control through Monitoring and Review processes using the Risk Register (initial issue is given for reference in Appendix A-2) as a key management tool. Criteria for using the risk register are delineated in Use of the Project Risk Register. The Consultant shall submit a Risk Management Plan incorporating this Risk Management context

Risk Identification- The Project scale justifies the use of multiple teams with each assigned one or more categories of risk by type (regulatory, competitive, technological, etc.) or the risks associated with a specific deliverable (facility construction, systems development, etc.).

Risk Analysis- Qualitative analysis is used as a screening tool to identify risks with large expected value and to justify more expensive quantitative analysis. Quantitative Risk Analysis is used to justify risk responses that cost a great deal of money or time.

Risk Evaluation-The result of the risk analysis can be used to rate the significance of each risk and for prioritizing risk treatment efforts. This ranks the relative importance of each identified risk. The criteria for evaluation include the magnitude of the risk, and the likelihood of it occurring. The Consultant shall utilize the Programs Evaluation Matrix for rating the risks.

Risk Response -More detailed set of risk responses using one or more of the following strategies: avoidance, mitigation, deflection or acceptance with a contingency plan. Larger Projects may combine all four of these risk reduction strategies in sophisticated responses with careful monitoring of the Project using risk triggers for early warning.

### **2.3.2. Quality Management**

The Winnipeg Sewage Treatment Program will implement a quality management approach based on the standards of the ISO 9004 model. The formats and templates will be transmitted to the Consultant in due course. Quality Management includes the processes required to ensure that the assignment will satisfy the needs for which it is undertaken. It includes all activities that determine the quality policy, objectives and responsibilities. The Consultant shall submit a plan detailing how the following quality components will be achieved.

- Quality Planning
- Quality Assurance
- Quality Control

### **2.3.3. Cost Management**

Cost Management includes the processes required to ensure the assignment is completed within the approved budget:

- Resource Planning
- Resource Costing
- Cost Monitoring

The Plan shall detail how to achieve the objective and propose methodology in regard to procurement delivery strategy. Costs will be closely monitored and controlled by the City.

### **2.3.4. Records Management**

The purpose of this section is to support creation and management of authentic, reliable and useable records, capable of supporting the business functions and activities of the Winnipeg Sewage Treatment Program for as long as they are required. It describes the approach for the systematic control of the creation, organization, maintenance, storage, movement, retrieval, and disposal of records of the Winnipeg Sewage Treatment Program. To assist in facilitating Records Management the City will/has established a Document Management System (DMS) utilizing the performance capabilities of Share Point in a Microsoft 365 environment. The Consultant shall utilize the DMS for Document Management including but not necessarily limited to;

- Issue of draft documents for review;
- Reports, TM's and other like submissions
- Receipt of Reviewer's comments;
- Issue of "Bid Opportunity" documents;
- Issue of Contract Administration documentation;
- Transmittal of documents to third parties,
- Transmittal of letters and memos;
- Change Management documents, and tracking of their status/history;
- Contractor Submittals for review and response
- design review and approval process
- release of documents for use process
- Meeting Minutes
- Inspection and QC records
- Verifications and Certifications
- Issuance of Project Turnover Records

The use of the DMS is to be considered in developing the Plan and its detailed document management processes. In particular, for contractors and suppliers' documentation, submittals such as Shop Drawings, Temporary Works drawings, Manufacturers Data sheets, Material test reports, Factory Inspection Tests shall be submitted via DMS c/w a copy of the transmittal sent to the Administrator of the specific Contract. The Consultant shall review for acceptability and conformance to all applicable design documents and respond at Contract Administrator level within defined time frames of 10 days unless otherwise specified.

All submittals shall be accompanied by a transmittal identifying the sender, recipient, date of transmission, expected date of return as well as the content description.

The Consultant shall use and comply with the City Documentation Management System, including Documents codification, Drawings numbering and metadata utilization, and administration rules.

As the usage of the City DMS is an integral part of the Consultant Services, the City will provide a training manual and information as required to selected individuals of the Consultant for proper performance of document control in the City DMS system.

## **2.4. Controlling and Monitoring Process**

Processes must be measured regularly to identify variances from plan. The CSMP shall include as a minimum high level details of the following processes:

- Scope Change Management
- Design Review and Approval
- Release of Documents for Use
- Process Design Control
- Performance Reporting
- Cost Control
- Consultant Invoicing.

In addition to the prescribed revision of the plan, updates are to be provided as required to capture changing conditions as the Project evolves.

### **2.4.1. Scope Change Management**

A Change Control System defines the procedures by which the assignment s' scope may be changed, if necessary. It includes the documents, tracking system and approval processes necessary to authorize change to the assignment.

The City intends to keep closely track of the changes and will require the use of different standardized forms including Design Services Change Request (DSCR), Request for Information (RFI), Technical Deviation Notice (TDN), Non Conformance Report (NCR), Daily Inspection Reports...Minimum requirements for the templates will be transmitted to the Consultant in due time.

### **2.4.2. Design Review and Approval**

All design deliverable documents require review and approval. The Design Review and Approval Process shall be defined in the Consultant's quality management plan and shall address the following:

- Engineering Practice Reviews
- Inter-discipline coordination (IDC)
- Design Verification / Peer review
- Operability and Maintainability review
- Constructability and cost reviews



- Design Certification
- City of Winnipeg reviews

Prior to issuance of documents for City review and approval they must undergo the Consultant's planned internal review processes.

The Consultant's Assignment Plan WBS shall detail the applicable review and approval elements. Unless noted otherwise Design submissions shall be made to the Project Manager at 30% design completion (Preliminary Design), 60% design completion and 95% design completion. Documents that are to be presented or reviewed in a meeting or workshop shall be issued a minimum of ten working days prior to the presentation. Comments and/or conclusions reached and recorded at the applicable meeting shall be incorporated into the documents. Ten working days response time may be required for other documents issued for City review or approval.

### **2.4.3. Release of Documents for Use**

There are a number of milestone stages where the Consultant's documents are required to be released for use. As documents move through the creation, checking, review, comment, verification, certification and approval processes for each stage, the Consultant shall provide for tracking and monitoring the document movement through these processes. These processes shall be defined in the Consultant's quality management plan and shall support DMS (Microsoft 365/Share point) utilization procedures. The process of releasing documents for use shall be managed through the DMS. City approval is required prior to releasing any documents for use. Typical usage would be:

- Target Cost Development
- Bid Opportunity purposes;
- Design Changes
- for City or City operational use
- for record purposes

### **2.4.4. Process Design Documentation Control**

The Consultant is requested to use the PID(s) as the primary and sole interface document(s) to generate and automatically update the lists of equipment/instruments and the piping lines.

The Consultant must also provide a strategy and the tools for the control of the documentation for process and electrical equipment during their complete life cycle, from the design phase to end of operation and maintenance, including the change management control requirements.

### **2.4.5. Performance Reporting**

Performance Reporting involves collecting and disseminating performance information in order to provide stakeholders with information about how the resources are being used to achieve assignment objectives. This process includes Status reporting which identifies where the assignment is at, Progress reporting which describes what has been accomplished and Forecast reporting which predicts where the assignment is expected to complete. Work progress and costs have to be measured in parallel.

The Consultant shall provide monthly Performance reports to the Project Manager. Review of the Performance reports with the Consultant will occur during the designated Consultant Services monthly

status review meetings. Should deviation to the baseline occur the Consultant shall provide the Project Manager with a mitigation strategy to bring the performance in line with baseline plan.

#### **2.4.6. Cost Control**

Cost control concerns influencing the factors which create change to the cost baseline and managing the actual changes as they occur. Cost control includes monitoring cost performance to detect variances from plan, ensuring changes are recorded accurately.

Cost control is part of the measurement of the performance for each Project activity, including Consultant Services.

The Consultant shall continually control cost and shall use Earned Value Analysis (EVA) reporting and Estimate at Completion (EAC) forecasting measured against baseline cost. Regarding Consultant Services, details are given in the following section.

#### **2.4.7. Consultant Services Invoicing**

Consultant Services monthly progress estimates shall be presented in order to allow close control of the actual work done and forecast.

The minimum information to be presented on the monthly summary of fees is based on the structure of Form B: Fees with horizontal indication of assignments referred to as phases and their respective sub assignments, and with vertical information related to Previous values at month N-1, current values achieved during the month N, Total value at the end of month N, base line value and percentage of Total value over baseline.

For the purpose of control and validation of work done, the Consultant shall develop a further level of details with indication of the components of work within each sub assignment as identified in WBS. A matrix format with indication of personnel, discipline, rates and time assigned and provision for time spent up to and within the current month and forecast total time and costs for each work component will be developed by the Consultant. This development is to be submitted to the City Project Manager for approval with the issue of the CSMP.

Once all monthly detailed sheets are approved by the City Project Manager, the monthly summary of fees will be validated and will support the invoices to be issued by the Consultant in accordance with the Project Template that the City will transmit at award.

In order to reduce the provision of time for review, the documents shall be prepared and submitted in both paper and electronic versions.

Invoicing for Services which exceed individual Form B:Fee -Total Fee amounts will not be approved or payable without the prior written approval of the Project Manager.

### **2.5. Assignments Closeout and Turnover Packages**

Assignment turn over processes, consist of verifying and documenting assignment results to formalize acceptance of the assignment. They include collection of Project records generated as assignment deliverables.

Note: In regard to the Project closeout, Turnover documentation shall include as a minimum the following :

- As-built Drawings
- O&M manuals c/w associated warranty documentation
- Area Manuals
- Standard Operating Procedures
- Operational Data including Asset Data schedules (Active and Decommissioned)
- Commissioning turn over documentation including Training Documentation and Records (Refer to Consultant Services Project Commissioning Requirements for extent of Commissioning turn over documentation).

### **3. OTHER SPECIFIC REQUIREMENTS**

The following other specific requirements shall apply to the Services and be incorporated into the CSMP.

#### **3.1. Communication Management**

Communications Management includes the processes required to ensure timely and appropriate generation, collection, dissemination, storage and archiving of Project information. Communication management provides the critical links among people, ideas and information that are necessary for success.

The Consultant will include a communication plan, as part of the CSMP.

The plan shall address organizational interfaces, technical interfaces and interpersonal interfaces, the roles and responsibilities of the various stakeholders integrated within the Projects' organizational structure. It will identify the delegation of authority and delineates, who needs what information, when it will be needed and how it will be given....

The Plan shall consider the use of forms and templates developed by the City of Winnipeg for facilitating communication during the Project different phases and types of Services. It shall integrate the use of the City DMS as a communication tool. Documentation generated must be captured in the DMS and may as required form part of the Project Record Turnover documents.

Details regarding meetings and workshops are given here after.

##### **3.1.1. Consultant Services Monthly Status Review Meetings -**

The Consultant shall conduct a monthly status review meetings; to present the monthly status report. The meeting will include key management personnel from both the Consultant and City of Winnipeg. The Consultant shall record minutes and upload to DMS the monthly status report shall contain:

- Assignment Status
- Cost performance
- Schedule performance
- Quality performance
- Risk Item review

### **3.1.2. Weekly Meetings**

The Consultant shall conduct weekly design team meetings and record minutes and upload to DMS. The weekly meetings will be attended by a representative of the City of Winnipeg. The weekly meetings as a minimum will review the following:

- Recap of past week progress
- Two week look ahead of planned activities
- Review of outstanding issues
- Man-hours and Cost for previous week
- Man-hours and forecast for two week look ahead

During construction and commissioning phases similar types of meetings shall be conducted.

### **3.1.3. Workshops**

The Consultant shall provide outlines and methods including participants and projected costs for conducting each planned workshop. The outline, methods and costs of the planned workshop shall be reviewed by the Project Manager prior to undertaking arrangement of the workshops.

The Consultant shall obtain approval from the City of Winnipeg prior to conducting any unplanned workshops for the Project. The Consultant shall identify the expected output, workshop participants, estimate the cost of the workshop including venue, travel, accommodation, confection and total man-hours and include same with the request for approval.

When applicable, based on the assignment scope of work, the following workshops or combination thereof, shall be included:

- HAZOP
- CHAIR (Construction Hazard Assessment Implication Review)
- Value Engineering

## **3.2. Documentation Submission Requirements**

Further to section 2.3.4 above, the Consultant's pre IFT/IFC design drawing review submissions to the City shall consist of 10 hard copy sets of 600mm x 900mm drawings as well as uploading of searchable ".pdf" electronic versions to the DMS. Drawing submission status codes shall be as defined in the DMS. The hard copy sets shall be delivered to the City Project Manager for internal review and comment. Official submission control will be on electronic upload only. Hard copy submissions without a corresponding electronic DMS submission will not be recognized as an official submission.

Technical Memorandums, design notes, reports, specifications and other like documents shall be Cerlox bound or equivalent and 10 copies of each submitted to the City Project Manager as well as a searchable ".pdf" upload to the DMS.

The Consultant shall provide the Project Manager with 10 sets of hard copy IFT/IFC packages including drawings and specifications.

Further to section 2.4 above, the Project turnover documents shall be submitted to the City Project Manager as follows:

O&M manuals shall be bound in 3 ring binders. Electronic copies shall be uploaded to DMS in searchable pdf format.

As-Built drawings

The Consultant shall forward the following to the City for review:

- (a) six (6) sets of 11" x 17" size paper as-built drawings; and
- (b) electronic copies of the drawings in both AutoCAD and PDF

Upon approval, the Consultant shall forward the following final sets of drawings to the City

- (a) a set of full size mylar drawings;
- (b) six (6) sets of 11" x 17" paper copies; and
- (c) electronic copies of the drawings in both AutoCAD and PDF.

Area Manuals, SOP's, Training records, Commissioning Reports, Asset schedules shall be provided in the native file formats in addition to ".pdf" and ".xls" as applicable, as well as bound hard copy submissions, quantity (6).

## **4. APPENDICES**

The versions of the documents listed in the appendices are representative of the type of documentation to be used for the Project. They allow the Consultant to assess with sufficient accuracy the principles and the magnitude of any work associated with their use for the purpose of quotation.

Applicable revisions of the documents will be transmitted to the Consultant for use at award stage.

### **4.1. Appendix A: Relevant Document Management and Integrated Management Systems Procedures**

-Appendix A:1 Procedure PG-RC-PC-05 DMS File Structure

-Appendix A-2 Procedure PG-RM-PC-01 Risk Register documents part 1 to 4

# WSTP Document Management System File Structure

What:	Procedure describing where to store and locate files in the WSTP Document Management System	<b>Resources Required:</b> •
When:	Ongoing during contract period	
Who:	All personnel	

## 1.0 Overview

The following procedure outlines where to store/file official project correspondence/documents related to Capital Projects within the WSTP. There are many documents generated throughout the course of a project, each document type is unique and may occur only once whereas some document types will be created numerous times. Some documents will be support/background documents for other project documents and will be linked accordingly. The file system will be controlled through the use of Metadata tags (see [Procedure 1B-14-Metadata for WSTP Records \(In development\)](#)). The DMS file Structure will reside within SharePoint, in various sites configured by WWD IT resources. A Vendor site shall be established containing the following libraries. Access to the libraries will be secure and controlled by the DMS Administrator via user name and password control, access permissions will be determined by the Project Manager or his/her delegate.

## 2.0 SharePoint

The following libraries will be established within the SharePoint site for each of the planned capital projects. Metadata will be attached to each document by Project Document Control.

- Project Development and Management
- Project Financials
- Project Technical Development
- Procurement
- Contract Administration
- Contract Closeout
- Public Information
- Safety Management

### 2.1 Project Development and Management

This library will include records and documents created during the initial stages of the project and include items such as Business Case, Project Plan, Project Schedule, Background Information, Regulatory information, Advisory Committee and Risk Management.

### 2.2 Project Financials

Capital Budget Estimates, Operating Budget Estimates, Project cost Reports, Payment Transactions, Over Expenditure Reports will be filed within this library.

### 2.3 Project Technical Development

This library will contain project technical documents such as studies and Assessments, Advisory Services, Technical Memorandums, Conceptual/Preliminary/Detailed Design documents, Value Engineering and Specialty Consultant Services.

### 2.4 Procurement

Bid Opportunity Documents, Addenda, Bid Evaluation and Bid Award Recommendations will be contained within this library.

References:	
Keywords:	
Last Updated:	March 28 2012
Author:	B. Willemsen

# WSTP Document Management System File Structure

What:	Procedure describing where to store and locate files in the WSTP Document Management System	<b>Resources Required:</b> •
When:	Ongoing during contract period	
Who:	All personnel	

## 2.5 Contract Administration

This library will be configured to store information by Bid Opportunity. Within each Bid Opportunity the same set of documents will be stored, this includes, insurance and bonds, shop drawings, contract work schedules, progress billings, Change Record, RFI's, Contemplated Change Notices, Authorized Contract Changes, Field Work Authorizations, Claims, Over Expenditure Report Analysis, Contractor Progress Meeting Minutes, Field Instructions, Daily Construction Reports, Daily Inspection Reports, Nonconformance Reports, Material testing reports, Factory Acceptance Tests, Third Party Test Reports, Progress Photos, Contractor Safety Records (Near Miss, Incident, Infraction, CS/HW/CL Permits, JHA's, PSI's) and contract legal.

## 2.6 Contract Closeout

As with Contract Administration in 2.5 above, contract closeout will follow the same parameters such that all close out documents must be tagged to the bid opportunity number. Contract Close out documents will include certificates of Substantial Completion, Total Performance, Final Acceptance, Deficiency lists, Performance Verification Tests, Operation and Maintenance Manuals, Warranties, Training Materials, As-built Records and Commissioning documents.

## 2.7 Public Information

In this library documents such as Public Communications, Press Releases, Public Consultations and Briefing notes will be contained.

## 2.8 Project Safety and Security

Safety Management Plan, Daily Safety reports, site orientations, worker registry, Safety Statistics, Site safety procedures, access control, emergency response plan, training and other safety or security related documents will be contained within this library.

References:		
Keywords:		
Last Updated:	March 28 2012	Page 2
Author:	B. Willemsen	



# Use of the Project Risk Register

What:	How to use the Risk Register	<b>Resources Required:</b> • R&O Register
When:	Each time you identify a risk	
Who:	All program staff	

## Project Risk Register

Each project will have its own Risk Register. Each Risk on the Risk Register is assigned a sequential Risk ID number. The combination of the project reference and Risk ID identifies the individual risk. Risk IDs once assigned will not be re-used.

The mandatory fields for completion in the Risk Register are as follows:

<b>Risk Register Field</b>	
<b>Risk ID; Sequential ID</b>	<b>Mandatory</b>
<b>Last Reviewed Date</b>	<b>Mandatory</b>
<b>Status Change Date</b>	<b>Mandatory</b>
<b>Identification Date</b>	<b>Mandatory</b>
<b>Project</b>	<b>Mandatory</b>
<b>Phase</b>	<b>Mandatory</b>
<b>Task Group</b>	<b>Mandatory</b>
<b>Contract (Bid Op)</b>	
<b>Operational or Capital</b>	<b>Mandatory</b>
<b>Facility</b>	
<b>Process Area</b>	
<b>Discipline</b>	
<b>Risk Type; Program or Project Level Risk</b>	<b>Mandatory</b>
<b>Category of Risk; Design, Construction, HR, Procurement etc</b>	<b>Mandatory</b>
<b>Threat or Opportunity (T / O)</b>	<b>Mandatory</b>
<b>Due to (Cause Event)</b>	<b>Mandatory</b>
<b>this could occur (Result Event )</b>	<b>Mandatory</b>
<b>Resulting in (this Effect)</b>	<b>Mandatory</b>
<b>Risk / Opp Owner (per Agreement); CofW or Shared</b>	<b>Mandatory</b>
<b>Risk / Opp owner (Individual responsible)</b>	<b>Mandatory</b>
<b>Status (Identified / In Development / Defined / Closed)</b>	<b>Mandatory</b>
<b>Magnitude of Risk Event(1-5)</b>	<b>Mandatory</b>
<b>Likelihood (1-5)</b>	<b>Mandatory</b>
<b>Assessed Score C X L</b>	<b>Calculated</b>
<b>Estimated Impact (\$,000) what is cost if risk occurred)</b>	<b>Mandatory</b>
<b>Financial Impact (% Target Cost)</b>	<b>Calculated</b>

References:			
Keywords:	risk register, project		
Last Updated:	20 Dec 2011	Version:	v1.0
Author:	B.Minaker (MNP)	Status:	DRAFT

# Use of the Project Risk Register

What:	How to use the Risk Register	Resources Required: • R&O Register
When:	Each time you identify a risk	
Who:	All program staff	

Contingency (Est. Impact X likelihood)	Calculated
Risk Response Type (Avoidance, Transference, Mitigation, Acceptance)	Mandatory
Risk Response Plan - Actions	
Residual Magnitude occur (1-5)	Mandatory
Residual Likelihood (1-5)	Mandatory
Assessed Residual Score	Calculated
Cost of Mitigation (\$,000)	
Adopted	
Contingency (cost after action)	
Trigger date (mandatory review date)	
Date for each action	
Mitigation Evaluation	
Action Log Reference	
Comments	

## Risk Identification

The purpose of this stage of the process is to produce a common understanding of threats and opportunities facing the Project.

### Identifying risks and responses involves two specific tasks:

1. Search for sources of risk and responses
2. Classify to provide a suitable structure for defining the risks and responses aggregating / disaggregating as appropriate

The tools of identification include the collective experience of past events, foresight of possible project outcomes and a step-by-step analysis of the project activities being reviewed. The simplest way to begin identification of risks when faced with a blank sheet of paper is to start with considering uncertainties associated with the project key criterion these are often known as level one or primary risks. Following on from these, the next step would be to consider associated uncertainties. Multi-disciplined teams are most effective at searching for risks and responses which can be achieved through formal and informal processes for risk identification, including:

- Formal risk workshops;
- Engineering and value management reviews; and
- Identification by project team members at any stage.

References:			
Keywords:	risk register, project		
Last Updated:	20 Dec 2011	Version:	v1.0
Author:	B.Minaker (MNP)	Status:	DRAFT

# Use of the Project Risk Register

What:	How to use the Risk Register	Resources Required: • R&O Register
When:	Each time you identify a risk	
Who:	All program staff	

**The following questions need to be considered when searching for risks:**

- What can happen;
- How and why it can happen; and
- Where it can happen?

Where an identified risk is managed by an existing process, then that risk does not need to be entered into the Risk Register unless it is for the purpose of contingency calculation or management.

Inputs into the Risk Identification will be: design, project schedule, contractors or consultants program, procurement strategy, Site information and environmental studies. This is not a comprehensive list and any and all pertinent information should be presented to aid risk identification.

**Risk Meta Language**

To aid in the identification of true risks rather than a list of statements or confused risk causes and separate effects which have no bearing to the project, a structured approach to risk and risk descriptions will be used in the Program. Sometimes called risk metalanguage, it provides a 3 part statement which separates the risks statements into component causes and effects, as follows:

“As a result of < definite CAUSE> , < uncertain EVENT> may occur, which would lead to < EFFECT on objective(s)> ”.

E.g. As a result of outsourcing production (cause), we may be able to learn new practices from our selected partner (opportunity), leading to increased productivity and profitability (effect).

These statements are captured in the appropriate column in the Risk Register. Only enter risks on the register that could have an impact on the projects objectives.

**Causes**

Definite events or sets of circumstances which exist in the project or environment which give rise to uncertainty (Facts), for example:

- Requirement to implement a new process
- The need to use unproven technology
- A lack of staff with a necessary experience
- The fact that the organization has never done a particular operation before

References:			
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# Use of the Project Risk Register

What:	How to use the Risk Register	Resources Required: • R&O Register
When:	Each time you identify a risk	
Who:	All program staff	

## Risks

**Uncertainty that Matters (impacts objectives), for example:**

- Possibility that planned milestone dates will not be met
- Possibility that planned production rates will not be met
- Interest or inflation rates might fluctuate
- Cost of materials might fluctuate beyond general inflation
- Chance that customer expectations may be misunderstood
- Chance that a contractor might deliver earlier than planned
- Possibility of colder / wetter / drier / hotter weather

## Effects

**Unplanned variations from objectives (+ / -), arising from risk occurring, for example:**

- Being early for a milestone
- Exceeding the authorized budget
- Failing to meet agreed performance levels

In order that risks are managed throughout the project life cycle, the risk register should be reviewed at regular intervals between each workshop, reviews of the project risks should not be restricted to defined stages in the project and the Project Manager should encourage open debate of risk by including this on every meeting agenda alongside risk.

The Risk Management Process is about insight, understanding and asking the right questions. If we identify the right questions and understand what they mean, getting the right answers is relatively straightforward.

## Risk Analysis

The purpose of this stage of the process is to assess the potential impacts of the identified risks and the likelihood of those impacts occurring. It establishes the exposure of the Project, or Program component, to an individual risk and uncertainty

Each risk is evaluated in terms of the likelihood that the risk will occur and consideration of the subsequent consequences of the risk event using the Likelihood Scoring table and the Magnitude Scoring table in the Risk Register template. Quantitative tools can be important in risk assessment however, experience and intuition of the Program Team will be the most appropriate starting point when assessing likelihood and impact and in many cases will be the only tools required. If necessary quantitative Risk Analysis maybe conducted to better understand the cost and or time exposure of risk on the project.

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# Use of the Project Risk Register

What:	How to use the Risk Register	<b>Resources Required:</b> • R&O Register
When:	Each time you identify a risk	
Who:	All program staff	

**The most accurate available sources of information should be used when analyzing risks to eliminate subjective biases, including:**

- Past records and experience in similar conditions;
- Industry best practice;
- Relevant published literature;
- Prototype performance;
- Engineering models; and
- Specialist and expert judgments.

**The magnitude of the risk must also be assessed in terms of its financial impact (in \$ terms) and included in the Risk Register.**

**The risk score is calculated by multiplying the magnitude and likelihood scores. A contingency value is calculated by multiplying the financial impact of the Risk against it's likelihood score. For the purposes of this calculation the mid point of the likelihood score range is used, this can be changed if the Risk Analyst has better information.**

**Risk analysis is an iterative process in which the identified risks may be revised, combined, separated or removed as the risk becomes clearer, this is a normal part of the process.**

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# Use of the Project Risk Register

What:	How to use the Risk Register	Resources Required: • R&O Register
When:	Each time you identify a risk	
Who:	All program staff	

## Risk Mitigation Planning

### Ownership

As risk management requires action on the part of the members of the Project Team, the first part in managing the risk is to determine who owns the risk. Risk Owners have responsibility for managing the risks which have the potential to impact on the objectives of the job by developing and implementing responses that will deliver the opportunity or deal with threats.

The Risk Owners need not be responsible for the day to day implementation of the actions in the mitigation strategy, however they should be in a position where they have the authority and expertise to devise an appropriate risk response strategy. It is vitally important that opportunities are allocated to those who have the authority and competence to develop the necessary responses.

Every risk should have an owner. The starting point is whether the risks are owned by the City, the Program or a Contractor / Consultant. Program risks should be allocated to a role and preferably a named individual. It is important for the Project Manager to ensure ownership of the risk has been acknowledged.

### Risk Mitigations

The risk and its associated Risk Ranking are reviewed at the end of the risk evaluation process to assess if the risk and its consequences may be accepted without treatment.

If the Risk Ranking of a risk can't be accepted without treatment, then a risk management action to mitigate either the likelihood or consequence of the risk event is required to reduce the subsequent Risk Ranking. Risk mitigation strategies may include some or a combination of the following:

- Risk Avoidance – avoid the activity;
- Risk Control – reduce the likelihood or consequence to an acceptable level;
- Risk Transfer to another party; and
- Risk Retention – accept the risk and carry on.

If the Risk Ranking of a residual risk is not reduced to an acceptable level after a risk management action has been applied, then further risk management action is required to reduce the Risk Ranking of the residual risk to an acceptable level. In these situations it may be necessary to loop back to carryout risk identification, analysis and evaluation to understand the risk further

Having chosen separate response strategies for each individual risk, the Risk Owner should then develop specific actions to put these strategies into practice, each with an agreed Action Owner. The selected response strategy and associated actions are recorded in the Risk Register.

The Risk Owner retains responsibility for each identified risk until the risk treatment for that particular threat and/or opportunity is completed and the risk closed out.

### Risk Transfer

Certain risks may be better managed by specialist subcontractors. In such instances, the risk responses will be included in the Procurement Program. Risks can also be transferred through insurance.

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# Use of the Project Risk Register

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## Risk Retention

Any residual risk that has not been controlled in the design process or transferred in some way is therefore retained by the Program for management in design, construction and possibly for eventual transfer into Operations.

The risks which are to be eventually transferred into Operation are to be agreed with the Operations Manager and an operational risk management processes will be completed at commissioning Completion.

For residual threats where proactive action is either not possible or not cost effective, an acceptance is the last resort, taking risk without special action.

## Risk Action Plans

The purpose of an action plan is to document how the chosen risk treatment option will be implemented. The action plan includes:

- Proposed action;
- Resources required;
- Responsibility;
- Timing;
- Triggers; and
- Reporting and monitoring.

A 'Risk Action Plan will be developed for each open item identified in the 'Risk Register' categorized as Extreme, High or Medium.

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## Assessing Likelihood/probability of Risk Occurrence

Descriptor	Rating	Frequency	Probability
Almost certain	5	Is expected to occur during projects of this type	> 95%
Likely	4	More likely as not, regularly occurs during projects of this type	$60\% < x < 95\%$
Moderate	3	As likely as not, might occur at some time during a project of this type	$30\% < x < 60\%$
Unlikely	2	Could occur at some time during the project, rarely occurs on projects of this type	$5\% < x < 30\%$
Rare	1	Only occur in exceptional circumstances on projects of this type	< 5%

### Note on the use of Specific Probability Data and Distributions:

The first step in assessing the likelihood / probability of a risk should always be to apply the project teams engineering judgement and experience, in most cases this approach is all that is required. Specific probability data is available from a variety of sources, however unless the assumptions underpinning such distributions and data hold, the results can be misleading and introduce greater risk. Such data should be checked carefully before it is used.

## PG-RM-TO-01 Risk Register Part 3/4 (Draft )

### RISK ASSESSMENT OF MAGNITUDE

#### Assessment of the Magnitude of Opportunity

	Insignificant Savings 1	Minor Savings 2	Moderate Savings 3	Major Savings 4	Significant Savings 5
Cost					
Time	Time savings <½ day	Time savings ½ – 1 day	Time savings >1 day, < 1 week	Time savings >1 week, < 1 month	Time savings >1 month
Other??					

#### Assessment of the Magnitude of Risk

Descriptor	Negligible	Moderate	Substantial	Severe	Disastrous
	Small effect on costs	Moderately effects costs	Considerably affects cost	Serious threat to the organization, public etc.	The impact is totally unacceptable to the organization
	1	2	3	4	5
Safety *	Negligible – No injury, near miss	Minor – minor cuts, bruises, muscle strain	Serious – broken bones, muscle and ligament injuries	Serious / permanent injury / illness	Catastrophic – Single or Multiple fatalities
Financial Impact upto a maximum value (re-work / loss etc..)					
Financial Impact % of Target Cost	Do not use at the moment				
Schedule, impact on critical path*	Not likely to impact dates	Likely to absorb float between planned dates and target dates	≤ 1 month	≤ 2 month	> 2 month
Environment *	Negligible Environmental effect	Nuisance / minor but reversible Environmental harm	Moderate but short term Environmental harm	Localised, long term Environmental harm	Extensive long term Environmental harm
Regulatory *	negligible, near miss	report required to regulatory body	Inspection by Manitoba Env safety officer etc..	CEC review	Clean Environment Commission (CEC) Hearing
Image / Reputation *	Single Public Enquiry	Multiple Public Enquiries and / or informal Councillor and / or MP Request	Moderate Media Political – Formal Council and / or MP Request / Moderate Public Impact	Provincial Government, Major Political & Media Scrutiny / Major Public Impact	Federal Investigation
Moral	No Impact	Grumbings at wter cooler	Moderate / Increasing Absenteeism	Major Negative / Loss of Staff / “Go Slow”	Catastrophic Negative / walk out
Legal	No Liability	Written Claim Damages < \$	Damages > \$ < \$	Damages > \$ < \$	Damages > \$
Other *					

## PG-RM-TO-01 Risk Register Part 4/4 (Draft)

### SEVERITY RESPONSE (Draft)

<b><i>Total Severity</i></b>	<b><i>Category</i></b>	<b><i>Response</i></b>
20-25	Critical	Expected cost to the project is unacceptably high. This risk must be eliminated or transferred before proceeding with the project. Attempt to avoid or transfer risk
10-20	Serious	Expected cost is high compared to total project cost. It probably is cost effective to eliminate or transfer this risk.
5-10	Important	Consider eliminating or transferring. If accept then manage proactively.
0-5	Acceptable	Accept and manage