



PROJECT RISK MANAGEMENT PLAN

Nalcor Doc. No. LCP-PT-MD-0000-RI-PL-0001-01

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Deputy General Project Manager		21-Oct-2014
	Jason Kean	

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1 PURPOSE

This *Project Risk Management Plan* is one of several key management plans under the umbrella of the Lower Churchill Project (LCP) [Project Execution Plan \(Scope and Approach\)](#), reference document No. [LCP-PT-MD-0000-PM-PL-0001-01](#) that details how the Lower Churchill Management Corporation (LCMC) – Lower Churchill Project (LCP) will be managed in order to achieve the goals and objectives stated in the Project Charter. This Management Plan provides:

- Overall risk approach / philosophy adopted by LCMC;
- Roles and responsibilities LCMC Project Delivery Team as it relates to risk management;
- Risk Management process to be used on the LCP – LCP Sub-Projects and
- Overview of the Risk Management tool.
- This plan also describes the methodology to be used for conducting risk management planning and implementation within the Lower Churchill Management Corporation (LCMC) to ensure that risk management is performed in a consistent manner throughout the Lower Churchill Project (LCP) and Sub-Projects.

2 SCOPE

This *Project Risk Management Plan* is a key component of the LCMC Risk Management Framework illustrated in Figure 1. Together these documents provide the core direction as to how risk management will be conducted within the Project.

This Management Plan is applicable during the planning and execution of Phase 1 of the LCP, including the following project elements:

- LCMC management activities including environmental assessment, aboriginal affairs, regulatory, financing, and labor relations
- Muskrat Falls Generation Sub-Project (MFG)
- HVdc Specialties Sub-Project (DCS)
- Overland Transmission Lines Sub-Project (OTL)
- Marine Crossing Team – SOBI Sub-Project (MCT)

This *Project Risk Management Plan* addresses all project risks, however does not specifically address the completion of specific health, safety and environmental risk assessments (e.g. hazard operability reviews “HAZOPs”, or process hazard analysis). While general project risks will be evaluated in accordance with these criteria, details of specific risks assessments related to these items are contained in the respective management plans.

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Figure 1: LCMC Risk Management Framework



3 DEFINITIONS

- Allowance** Costs added to the base estimate, based on experience, to cover foreseen but not fully defined elements.
- Action Plan** Action plan prepared to address Risks identified in the Sub-Project Risk Register.
- Base Estimate** Reflects most likely costs for known and defined scope associated with project’s specifications and execution plan.
- Decision Gates** A Decision Gate is a predefined moment in time where the Gatekeeper has to make appropriate decisions whether to move to the next stage, make a temporary hold or to terminate the project. The option to recycle to the current stage is considered an undesirable option unless caused by changes in business conditions.

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Escalation	Provision for changes in price levels driven by economic conditions. Includes inflation.
Estimate Contingency	Provision made for variations to the basis of an estimate of time or cost that are likely to occur, that cannot be specifically identified at the time the estimate is prepared but, experience shows, will likely occur. Contingency does not cover scope changes outside the Project's parameters, events such as strikes or natural disasters, escalation or foreign currency impact.
Key Risks	A risk selected to be overseen by the Risk Resolution Team or LCP Executive Committee due to the risk's complex nature and high profile.
Lower Churchill Management Corporation (LCMC)	Established in November 2013, Lower Churchill Management Corporation, which is 100% owned by Nalcor Energy, will carry out the project management functions, including planning, engineering and design management, construction management, risk management, cost control, finance and accounting, procurement and supply chain management for Phase 1 of the Lower Churchill Project, which comprises the power generation facility at Muskrat Falls, the Labrador-Island Link and the Labrador Transmission assets.
Management Reserve	<p>Approved capital budget held in reserve and controlled by Gatekeeper, which is used to provide a higher confidence cost level (i.e. comfort factor).</p> <p>It is often used by Gatekeeper as a mechanism to support scope additions in a project raised as part of the change management process which would not be covered by Estimate Contingency. The Management Reserve is also used to handle the impact of strategic risk.</p> <p>Unlike Estimate Contingency, Management Reserve is not expected to be spent unless the Gatekeeper so directs.</p>
Pareto's Principle	Also known as the 80-20 rule, states that, for many events, roughly 80% of the effects come from 20% of the causes. Application to risk management suggests that 80% of the risk exposure comes from 20% of the project's risk.
Project Change	A deviation which represents a change or departure from the Project baseline scope, estimate, schedule, intended plant quality, HSE targets, project policy, or execution plan that causes an addition or reduction to the Original Control Budget or baseline Project Control Schedule including correction for scope / estimate omissions, or change in execution approach.

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Project Change Notice (PCN)	A mechanism used to facilitate the processing of Project Changes.
Project Management Team (PMT)	The Project Management Team (PMT) is led by the Project Director and is made up of project leaders and key functional representatives. The PMT meets periodically, to identify issues that may affect cost and schedule and to determine how such issues should be resolved.
Project Scope	A concise and accurate description of the end products or deliverables to be expected from the project and that meet specified requirements as agreed between the Project stakeholders. It represents the combination of all project goals and tasks, and the resources and activities required to accomplish them.
Project Delivery Team (PDT)	Personnel assembled to develop and execute a project from planning through start-up. The Project Delivery Team (PDT) is dedicated to managing the overall project including significant focus on monitoring and controlling LCP consultant’s and contractor’s performance in execution of the work.
Risk	An uncertain event or condition that, if it occurs, has a positive (opportunity) or negative (threat) effect on a project’s objectives.
Risk Brokering	The process of allocating project risks to various providers (of technology, engineered equipment, engineering & construction services, insurance, and financing) such that each provider’s levels of cost and risk are optimized.
Risk Management	Risk Management is the act or practice of dealing with threats and opportunities. It includes creating an environment and a context for dealing pro-actively with them, identifying and analyzing potential threats and opportunities, prioritizing threats and opportunities (by comparing the probable consequence of different risks) so that the right resources can be applied in a timely manner, preparing and implementing mitigation plans, recording and communicating threats and opportunities, as well as the eventual close-out of specific risks and the Project itself.
Risk Owner	Responsible to define and implement mitigation and action plans to deal with identified risks for LCP Project and Sub-Projects. This role can be performed for any individual within the Project Delivery Team.
Risk Register	Document including LCP Project and Sub-Projects identified risks.
Risk Response Plan	Management strategy and action list prepared for Key Risks.

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Risk Resolution Team	Multi-functional group, acting as a resource to the Project Director, who select the highest priority risks (can include identification of that risk) for management based upon defined criteria and assist Risk Owners with the development of response plans.
Sub-Project	Sub-division of LCP Projects contained in the Work Breakdown into components to assist with the planning, executing and controlling of the work. Reference Project Controls Management Plan , reference document No. LCP-PT-MD-0000-PM-PL-0001-01 for details.
Strategic Risk	Identified background risks that are outside of the controllable scope of the project team, typically pertaining to external issues such as enterprise-level issues, governance, financial markets, stakeholders, hyperinflation, and regulatory approvals. Managing these risks requires significant effort and influence by the Gatekeeper with external stakeholders. Strategic risk is also referred to as the risk of failure of the general execution plan.
Strategic Risk Exposure	Probabilistic impact of Strategic Risks that is quantified. Covered by Management Reserve.
Tactical Risk	Identified background risks that are inside of the controllable scope of the project team. Basically it refers to risks associated with the base capital cost estimate as a result of uncertainties with the four components of the estimate: (1) project definition and scope omission, (2) construction methodology and schedule, (3) performance factors, and (4) price. It excludes price escalation.

4 ABBREVIATIONS AND ACRONYMS

DCS	HVdc Specialties Sub-Project
ERM	Enterprise Risk Management
FEL	Front End Loading
HAZID	Hazard Identification Review
HAZOP	Hazard Operability Review
HSE	Health, Safety and Environment
LACTI	Leads, <u>A</u> ccountable, <u>C</u> onsulted, <u>T</u> echnical and <u>I</u> nformed Chart
LCMC	Lower Churchill Management Corporation
LCP	Lower Churchill Project
MCT	Marine Crossing Team - SOBI
MFG	Muskrat Falls Generation Sub-Project
MoC	Management of Change
OTL	Overland Transmission Lines Sub-Project
PCN	Project Change Notice

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PMT	Project Management Team
PDT	Project Delivery Team
SOBI	Strait of Belle Isle Sub-Project
WBS	Work Breakdown Structure

5 RESPONSIBILITIES

Project Director: Responsible for:

- Chairing the Risk Resolution Team and accountable for implementation of this Risk Management Plan.
- Approving Risk Response Plans for Key Risks and subsequent updates, or seeks approval of Risk Response Plan (as required) from LCP Executive Committee.

LCP General Project Manager and Sub-Projects Project Managers: Responsible for:

- Implementing of this Risk Management Plan within their Sub-Project.
- Managing of risk within their Sub-Project or area of responsibility.

Risk Owner: Responsible for:

- Developing the Risk Response Plan for Key Risks or Risk Action Plan for other project risks.
- Spearheading the implementation of the Risk Response Plans.
- Advising the LCP Risk Coordinator and Project Manager of any implementation issues with Risk Response Plans.
- Taking action to adjust mitigation efforts as appropriate for Risk Response Plans.

Risk Resolution Team: Responsible for:

- Multi-functional group, acting as a resource to the Project Director, who select the highest priority risks (can include identification of that risk) for management based upon defined criteria and assists Risk Owners with the development of Risk Response Plans, including assistance with the assistance of optimal risk brokering.
- Monitoring the implementation status of Risk Response Plans.

LCP Executive Committee: Responsible for:

- Approving the selected list of highest priority risks made by the Risk Resolution Team.
- Approving selective Risk Response Plans (as required due to their delegation of authority or nature of the risk).
- Making decisions on risk mitigation trade-offs (corporate / project trade-offs).
- Removing roadblocks to enable Risk Response Plans to be implemented.

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LCP Risk Coordinator: Responsible for:

- Scheduling and facilitating risk assessments.
- Leading the population of the Sub-Project Risk Register.
- Facilitating discussions to identify the Risk Owners for each risk.
- Facilitating the identification of the Key Risks.
- Providing updated risk listing to procurement or package engineer for contracting strategy preparation and subsequent commercial negotiations.
- Ensuring Risk Response Plan is prepared for Key Risks in a consistent fashion.
- Ensuring Risk Action Plans are developed and implemented for all Project Risks.
- Monitoring the status of Risk Response Plan implementation (i.e. collecting updates).
- Producing Risk Response Plan status reports.
- Facilitating the Risk Resolution Team meetings.
- Developing, reviewing and evaluating risk questionnaires as part of the Request for Proposals (RFPs) packages.
- Reviewing Risk Response Plans as required for LCP Project Change Notices (PCNs).

Sub-Project Risk Coordinator: Responsible for:

- Organizing and consolidating the Sub-Project risk register by category.
- Leading the preliminary risk ranking on the Sub-Project risk register.
- Coordinating with Risk Owners to develop and implement Risk Action Plans.
- Informing LCP Risk Coordinator of overall risk status.

Risk Advisor (Westney): Responsible for:

- Providing process expertise and specialized tools for conducting risk assessments.
- Assisting with the assessment of financial exposure of Strategic Risks.
- Participating on Risk Resolution Team reoccurring meetings.
- Acting as independent risk broker.

Nalcor ERM Committee LCP Representative: Responsible for:

- Providing the linkage between the Project Risk Register and the Corporate Risk Register in terms of risk identification, risk rating and ongoing monitoring of mitigation strategies.
- Conveying details of best practices in project risk management as practiced by the LCMC to the benefit of the ERM Committee and Nalcor Energy generally.
- Ensuring that Nalcor Corporate Policy is being implemented by LCP Project.

Supply Chain: Responsible for:

- Responsible for development of contracting and procurement plans that consider risk inventory for the package.

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- Risk Brokering during the negotiation of the commercial terms of the package with the contractor or supplier.

6 REFERENCE DOCUMENTS AND/OR ASSOCIATED FORMS

LCP-PT-MD-0000-PM-PL-0001-01	Project Execution Plan
LCP-PT-MD-0000-PM-LS-0001-01	Project Dictionary
LCP-PT-MD-0000-PC-PI-0001-01	Project Controls Management Plan
LCP-PT-MD-0000-PR-PL-0001-01	Procurement Management Plan
LCP-PT-MD-0000-PC-PL-0001-01	Project Change Management Plan
LCP-PT-MD-0000-SC-PL-0001-01	Procurement Management Plan
LCP-PT-MD-0000-RI-RP-0001-01	Gate 2 Project Risk Analysis
LCP-PT-MD-0000-LE-PH-0001-01	Insurance Philosophy
LCP-PT-MD-0000-PM-PY-0001-01	Project Risk Management Policy
LCP-PT-MD-0000-PM-PR-0002-01	Project Execution Risk & Uncertainty Management Guidelines
LCP-PT-MD-0000-RI-PH-0001-01	Risk Management Philosophy

7 RISK MANAGEMENT PHILOSOPHY

LCMC’s [Project Risk Management Policy](#), reference document No. [LCP-PT-MD-0000-PM-PY-0001-01](#) for the Lower Churchill Project, as shown in Figure 2, makes a strong commitment towards identifying and management all project risks. With consideration of this Policy Statement, the Project’s risk management program described in this Management Plan is structured to encapsulate the following beliefs held by LCMC.

- Proactive risk awareness and management is a key enabler of “flawless execution.”
- Predictability of outcome will be vastly improved when achievable objectives are first established. A full understanding of project risks early in the project’s lifecycle will provide the greatest opportunity to complete the necessary work required to fully understand these risks (i.e. Risk-Driven Front End Loading) from which achievable objectives will be established.
- Quality decision making will be facilitated through a comprehensive understanding of project risks and how they can be managed with least impact on the Project. Such risk-informed decision making, illustrated in Figure 3, will be a standard for the Project.
- Consistent with Pareto’s Principle, we believe a few (15-20) select, complex risks will provide the greatest exposure for the Project. These Key Risks will be subject of heavy focus by LCMC Project Management Team and the Risk Resolution Team.
- Many risks are multi-dimensional and complex requiring creative solutions. Cost effectively managing risks will require risks to be allocated to various stakeholders who are best positioned to manage them through


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Risk Brokering. This process of risk allocating will be featured significantly through the procurement process for the project’s supply and construction contracts.

- Risk management is an on-going, continual looped process as the project progresses through the Gateway Phases (i.e. Plan-Do-Check-Act process).
- Consistent with practice up to Decision Gate 3, the Project will continue to use the Risk Resolution Team as illustrated in Figure 4, to support the development and validation of Risk Response Plans, however its membership will be adjusted as required to reflect the progression of the Project.

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Figure 2: Project Risk Management Policy Statement



Lower Churchill Project

Risk Management Policy

The Lower Churchill Project Management Team is committed to planning and executing the Lower Churchill Project in such a way as to minimize the potential negative effects of risks and to maximize opportunities. We will serve the needs of all our internal and external customers, stakeholders and our shareholder by tangibly demonstrating this commitment through compliance with our Risk Management System and by making continual improvement an integral part of our activities.

Our Philosophy

- Proactive risk management is fundamental to achieving the Lower Churchill Project's objectives.
- All participants in the Lower Churchill Project are responsible for identifying & mitigating risk and identifying & developing opportunities.
- Empowerment comes through strong leadership and involvement of all personnel.

Our Goals


- Create a culture that supports proactive project risk management that is viewed by all Team Members as an enabler to successfully achieve the Lower Churchill Project's objectives.
- Identify, assess, respond to and manage all key risks and uncertainties.
- Allocate project risk to the party who can most efficiently and effectively manage the risk.
- Improve decision-making by thoroughly understanding project risks and uncertainties.

Our Commitments

- We will ensure this Policy is known and clearly understood by all persons associated with the Lower Churchill Project.
- We will work to identify, assess, respond to and manage all key project risks and opportunities consistent with guidelines and tools advocated by this Policy.
- We are committed to managing project risks and opportunities from the following perspectives: occupational health and safety, environmental, technical, schedule, cost, operational reliability/quality, and reputation/image.

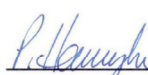
This Policy Statement supports and complements other policies within the Lower Churchill Project Integrated Management System. This Policy Statement is not intended to replace or duplicate Newfoundland and Labrador Hydro Corporate risk management policies with respect to market and financial loss risk mitigation activities.

Endorsed by:




 Vice-President
 Lower Churchill Project

20 Dec 07
 Date



 Project Manager
 Lower Churchill Project

18 Dec 07
 Date



 Strategic Planning Lead
 Lower Churchill Project

18 Dec 07
 Date

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Figure 3: Risk-informed Decision Making Approach

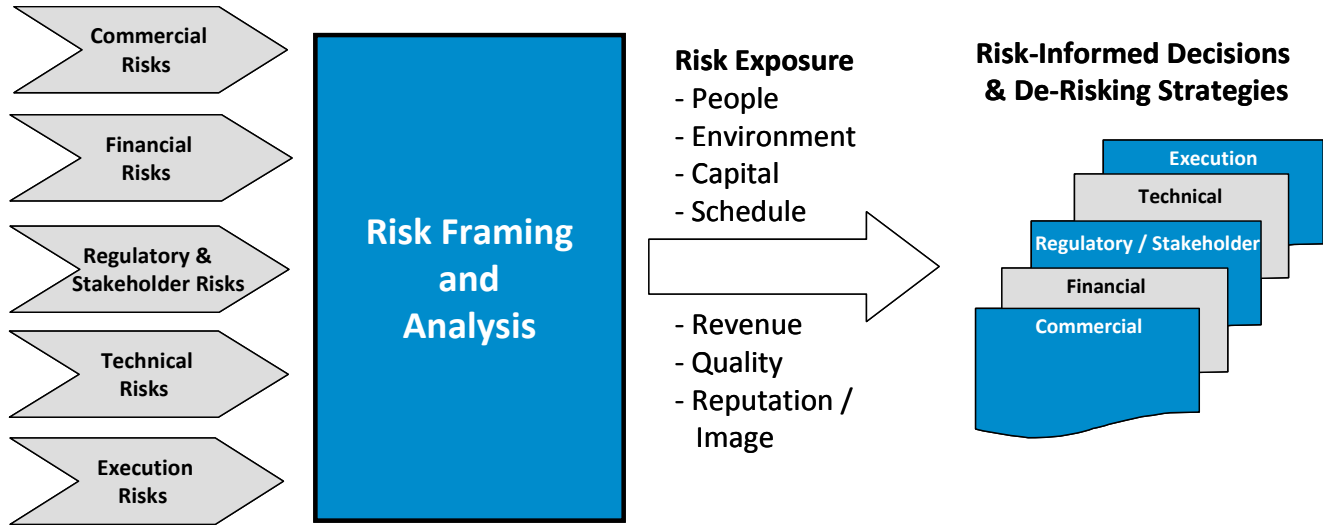
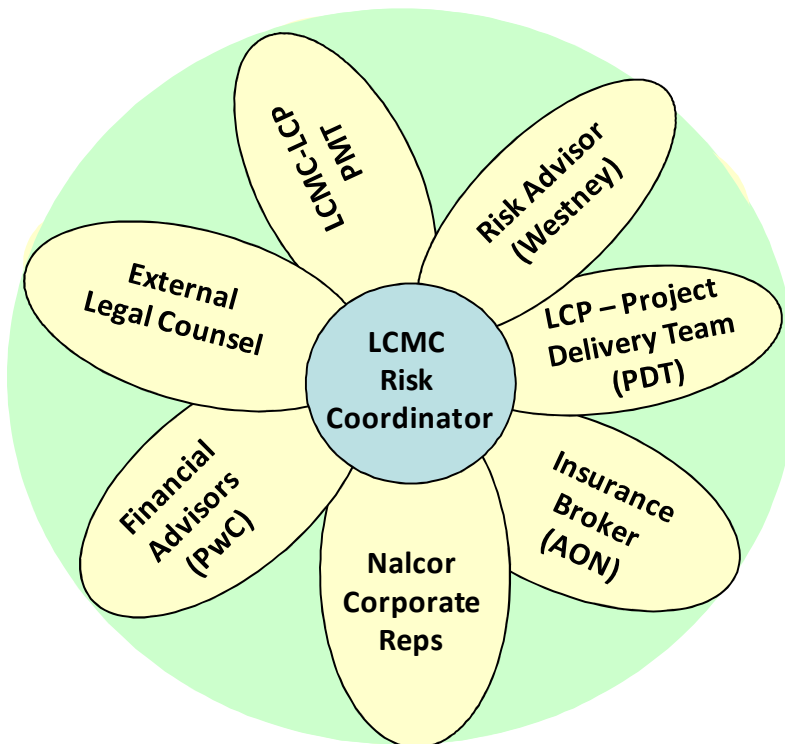


Figure 4: Risk Resolution Team Post Decision Gate 3



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7.1 Risk Management Synopsis

7.1.1 The Risk Management Environment

Project risk management addresses the uncertain events or conditions that, if they occur, it will have negative (threat) or positive (opportunity) effects in the LCP Project objectives: cost, schedule, quality, safety, environment and reputation.

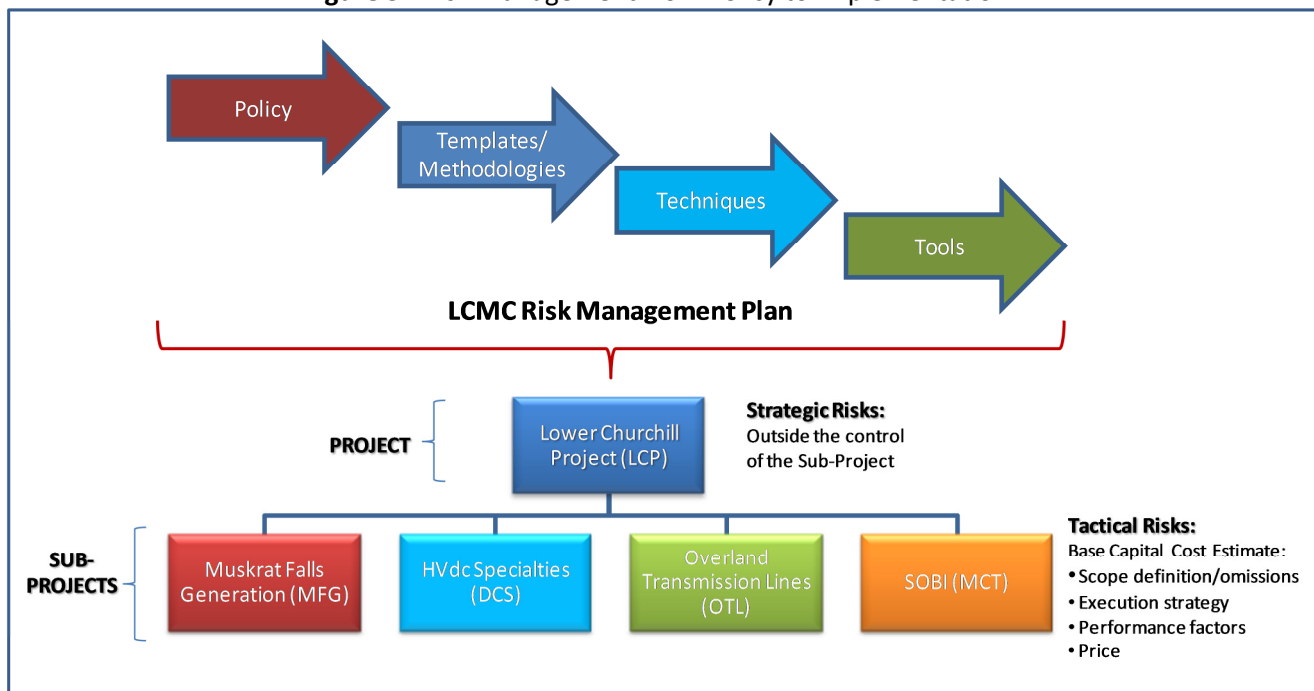
A risk event may have one or more causes and one or more effects. Primarily the effects would be on the LCP Project triple constraint: scope, cost and schedule. These effects also extend to cover all defined LCP Project’s objectives. Risk management seeks to protect the LCP Project in fulfilling its objectives by developing mitigation strategies and related actions plans.

For LCMC risk management is going to be pursued as an integral part of the LCP Project management process. Risks are going to be managed in a concerted effort by the LCP Project and Sub-Projects Management Team and identified members of LCP Project Delivery Team (PDT).

7.2 LCMC Risk Management Strategy

LCMC is committed to follow established risk management practices for LCP Project and Sub-Projects proactively investing in the deploy of the risk management methodology ensuring that LCP Project requirements and high expectations are going to be achieved.

Figure 5: Risk Management from Policy to Implementation



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7.2.1 Key Success Factors

LCCM recognizes that organizational culture is a key success factor for effective risk management within the LCP Project and Sub-Projects. The goal is to develop a culture that:

- Supports a honest, realistic and open recognition of LCP Project and Sub-Project risk even if they indicate problems with the project;
- Encourages talking about risk realistically, with no penalty for people who do so openly with the LCP risk management process;
- Promotes discussion in an atmosphere where there are no risks are out-of-bounds for discussion and no enforcement of bureaucratic hierarchy in meetings where risk identification and assessment is discussed and;
- Maintains commitment to collecting realistic and high-quality data about risk. Risk data are often based on the judgement and expertise of informed individual within the LCP Project Delivery Team (PDT).

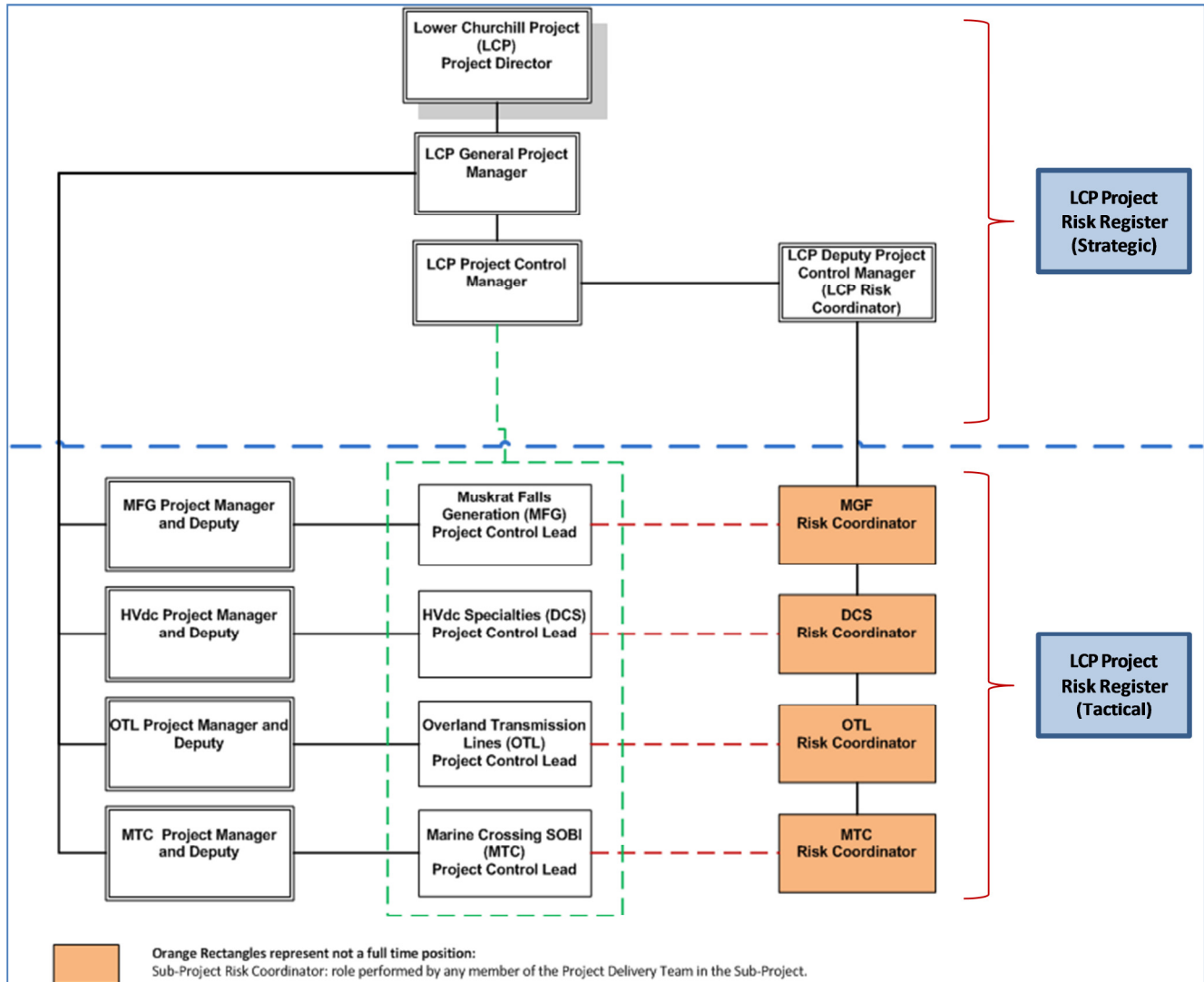
7.2.2 LCCM Organization for Risk Management

The organizational chart implemented to perform Risk Management process for LCP Project and Sub-Project is indicated in Figure 6.

The role of the LCP Risk Coordinator is performed by the LCP Deputy Project Control Manager. The roles of Sub-Project Risk Coordinator aren't full-time positions in the project; this role can be performed for any member of the Sub-Project delivery team who will coordinate with the LCP Risk Coordinator the methodology, process and tools for risk management.

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Figure 6: Organizational Chart for LCP Risk Management



7.2.3 Levels of Risk Management at LCMC

As indicated in Figure 5, two risk levels have been defined:

- **Strategic Risks:** applies to LCP Project and basically related to external issues like: (these risks are largely outside the control and management of the Sub-Project using their own resources)
 - Enterprise – corporation level issues
 - Governance
 - Financial markets
 - Stakeholders
 - Hyperinflation

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- Regulatory approvals

These risks are largely outside the control and management of the Sub-Project using their own resources

- **Tactical Risks:** applies to LCP Sub-Projects and basically related to internal issues; these risks are under the control and management of the Sub-Projects using their own resources. For LCP, tactical risks are associated with the Base Capital cost estimate and cover the uncertainty of the following four estimate's elements: (it doesn't include price escalation).
 - Sub-Project definition and scope omission
 - Construction Methodology and execution
 - Performance factors
 - Price

The LCP Risk Register and Sub-Project Risk registers will reflect this approach for all identified risks.

8 OVERVIEW OF RISK MANAGEMENT PROCESS

This section covers the Lower Churchill Project (LCP) and Sub-Projects risk management process from the identification of LCP risks (strategic) and Sub-Projects risk (tactical) to establishing the appropriate risk plans that address these risks and the subsequent monitoring and control.

The central focus of this section is the risk management process, which guides the members of the LCP Project Delivery Team (PDT) through the steps of:

1. Risk Identification and Organization;
2. Risk Assessment and Prioritization;
3. Risk Response;
4. Risk Monitoring and Control.

For LCP Project and Sub-Projects, the step of Risk Assessment and Prioritization is basically a qualitative analysis oriented to define the risk level and expected value as a basis to categorize the top ten risks.

8.1 Risk Management Process Cycle

The risk management process used to effectively manage risks during the planning and execution stages of the Lower Churchill Project (LCP) and Sub-Projects is depicted in Figure 7. This risk management process is comprised of four main steps which combine to form an ongoing cycle and it is a cyclical and iterative process performed throughout the project development cycle that for LCP refers to the gateway process as indicated in the [LCP Project Execution Plan](#), reference document No. [LCP-PT-MD-0000-PM-PL-0001-01](#).

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Figure 7: LCP Risk Management Process Cycle



Step 1 – Risk Identification and Organization

All risks are captured on Sub-Projects risk registers. The risks are then organized by major activity and type of risk; this organization facilitates both efficiency and effectiveness handling of the risks.

Step 2 – Risk Assessment and Prioritization

Each risk is given a “first-cut” priority ranking which is a function of the risk’s likelihood of occurrence and its potential consequence. From there, approximately 15-20 of the more complex and high impact- likelihood profile risks (Key Risks) are selected to be overseen by the Risk Resolution Team. Risk qualitative assessments are performed to evaluate both the individual and collective impacts of risks on the project, and to provide insight into the value of possible risk mitigations.

Step 3 – Risk Response

Each Key Risk is managed using a Response Plan which is recorded in the LCP risk management tool – Iris Intelligence. The Response Plan will detail the recommended strategy for managing the risk (i.e., avoidance, transfer, mitigation, or acceptance). The majority of risks are not elevated to Key Risk status and are managed using Action Plans within the LCP risk management tool which are reflected on the sub-project risk registers. Each risk’s Risk Owner is responsible for leading the development and implementation of that risk’s response or action plans.

Step 4 – Risk Monitoring and Control

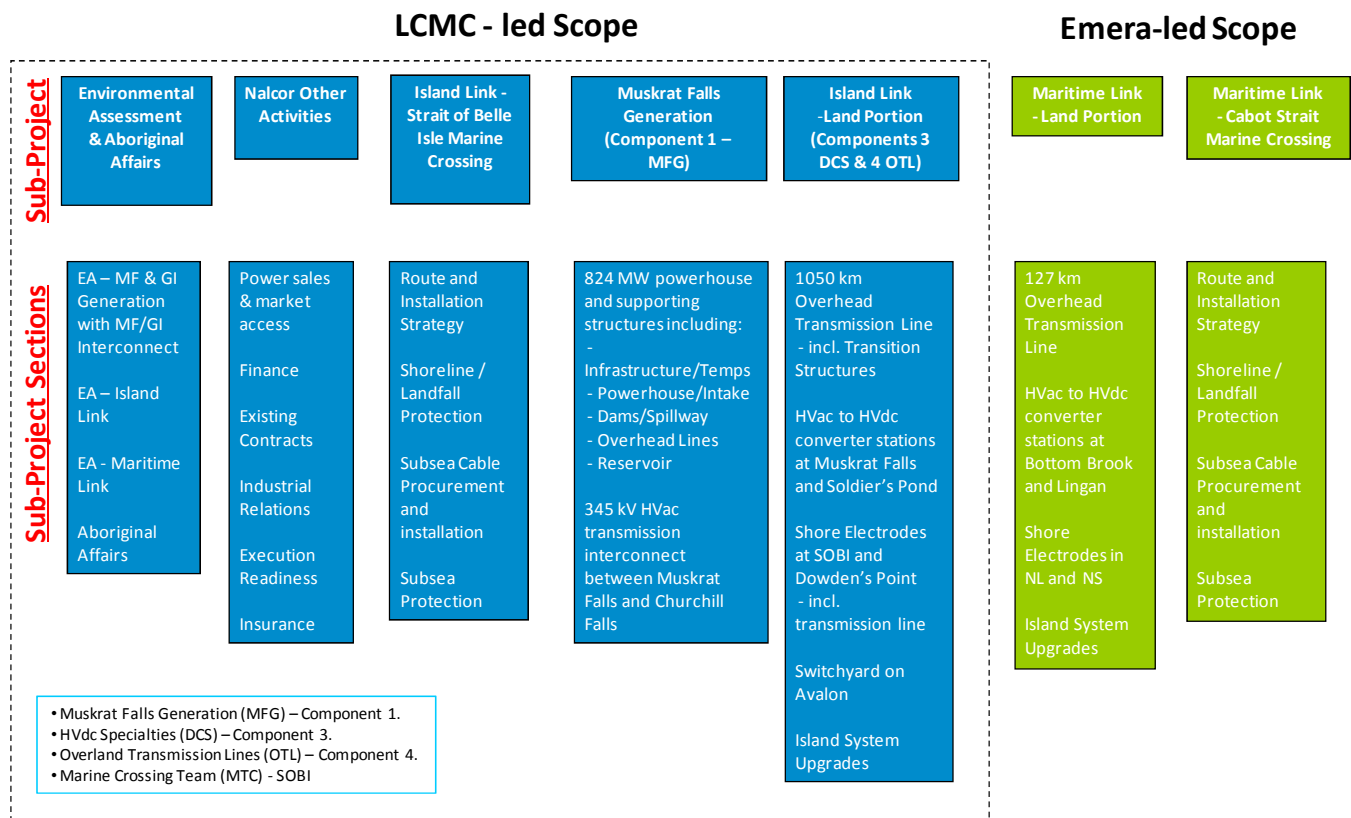
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The response and action plans are reviewed on a regular basis and are adjusted as conditions warrant promoting optimal outcomes. The frequency of reviews ranges from monthly to quarterly depending on the organizational entity involved in the review.

8.2 Scope of LCMC Responsibilities

Figure 8 shows the division of responsibilities between LCMC and interface with Emera for Phase I of the Lower Churchill Project (LCP). The overall Project is divided into Sub-Project areas; these Sub-Project areas are used as the basis for designating the Sub-Projects Risk Registers used in the Risk Management Process.

Figure 8: Depiction of Risk Register Responsibilities



LCMC will have the responsibility for overseeing: the Strait of Belle Isle (SOBI) Marine Crossing; and General Project Risks (including issues related to overall project execution, Environmental Assessment, Aboriginal Affairs, Financing, Regulatory and Labour Relations).

The LCMC through the Project Delivery Team (PDT) will oversee sub-project risk registers pertaining to: Muskrat Falls Generation - MFG (Component 1), HVdc Specialties - DCS (Component 3), Overland Transmission Lines - OTL (Component 4), and General Execution of Project Management within its area of responsibility.

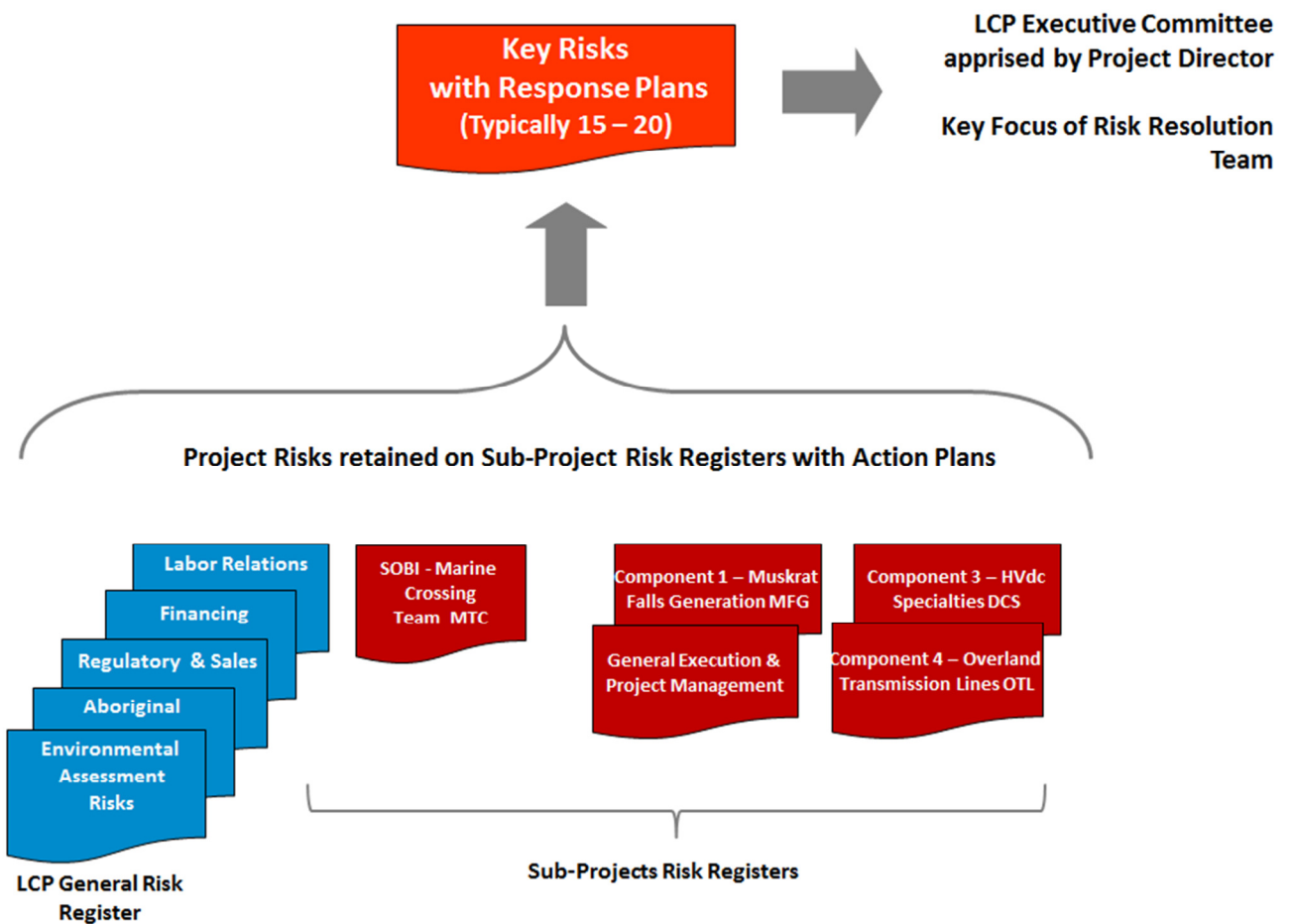
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At current it is envisioned that Emera, as lead for the Maritime Link, will be responsible for overseeing the risks associated with the Maritime Link.

8.3 Flow of Risks from Sub-Project Risk Registers to List of Key Risks

Figure 9 portrays the flow of project risks from the Sub-Projects Risk Registers to the List of Key Risks which are overseen by the Risk Resolution Team / LCP Executive Committee. Response Plans are used to manage the Key Risks while action plans are used to manage the risks that are retained on the Sub-Projects Risk Registers.

Figure 9: Flow of Project Risks from Sub-Project Risk Registers



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9 RISK IDENTIFICATION AND ORGANIZATION

This is the initial step for determining what, where, when, why and how something could happen. Each risk as it is identified will be recorded into the LCP Project or Sub-Project risk registers, these risk registers are structured in accordance with the LCP Risk Management tool following guidelines indicated in this document.

Risk items and issues may be identified through facilitated workshops including LCP Management Team for strategic risks and internal workshops/internal coordination meetings at the Sub-Project level for tactical risks during the life cycle of the LCP – Gateway Process.

Figure 10: Risk Identification and Organization



The process of identifying and organizing risk is continuous and can lead to new categories being added to the list of risk as indicated in Section 9.2.

During this step risks should be simply be listed and no judgement should be made regarding their validity. The risk should be stated clearly using explicit statements describing situations that can be negated or made conditional, it is recommend for LCP to use the following structure:

- IF
- Conditional statement (allowing probability to be addressed) - Cause.
- THEN
- Statement describing the consequences which can be assessed - Effect.

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Example:

IF a delay of one week in an LCP supplier delivery for free-issue materials occurs during construction, THEN the project delivery schedule of free-issue materials will be late by one week, exposing LCP to Contractor's claims.

9.1 Initial Risk Identification

All project risks associated with Phase 1 of the LCP Project and Sub-Projects will be placed on their respective Risk Registers using the LCP Risk Management tool. As described in Section 7.2.3 and Figure 11, the following risk register will be available:

- General LCP Risk Register (strategic)
- Sub-Projects Risk Registers (tactical)

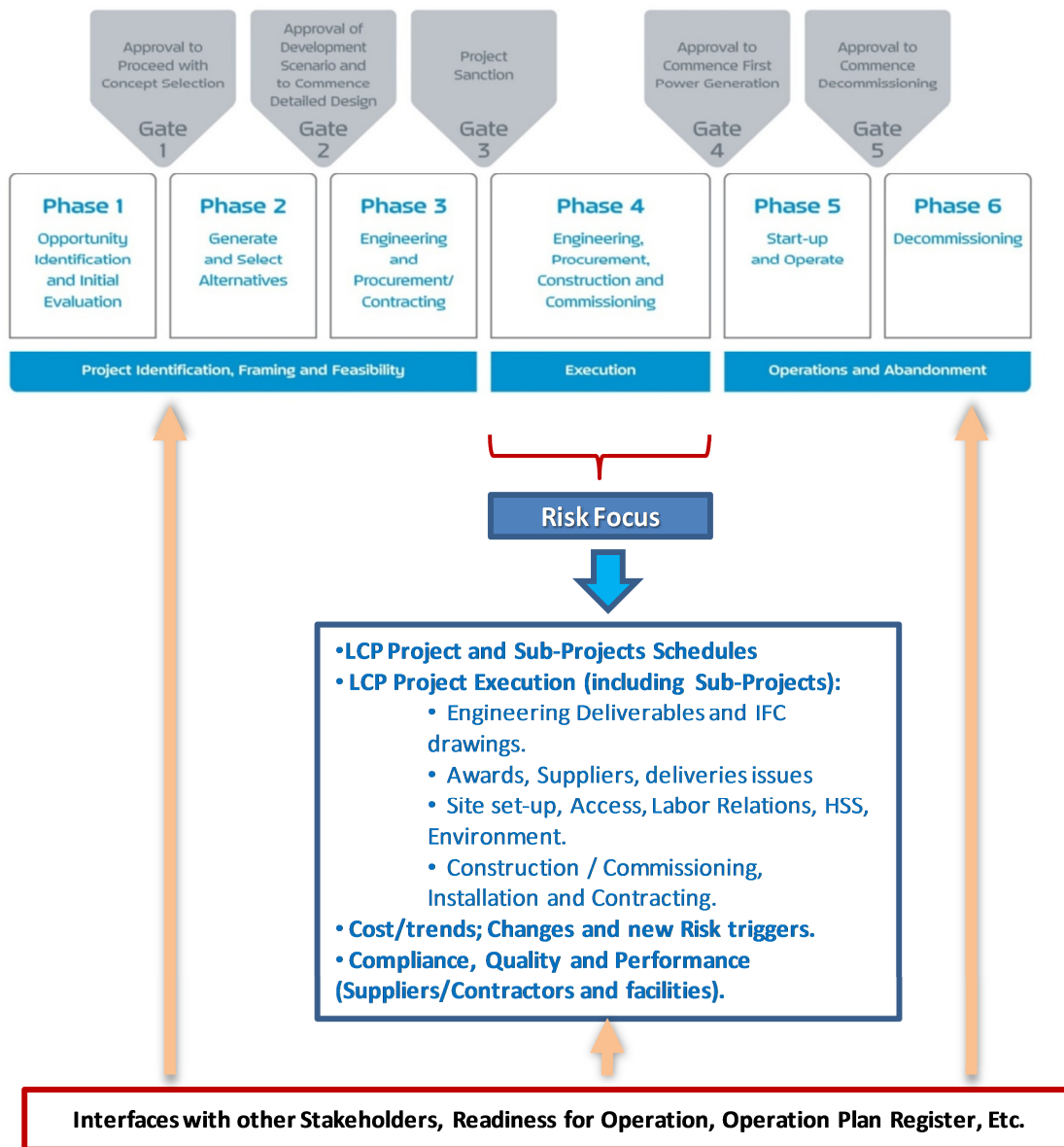
To assist with the initial population of a Sub-Project Risk Register, it is recommended that the Sub-Project Risk Register Coordinator create a preliminary list of the risks which pertain to that particular Sub-Project. A workshop can then be held, with broad participation from multiple disciplines, to further develop the list of risks for the risk register. This workshop will be facilitated by the LCP Project Risk Coordinator.

Core members of the LCP Project Delivery Team should be involved in this process so that they can develop and maintain a sense of ownership and responsibility for the risk and associated mitigations strategies and response actions.

Risk identification will be aligned with the current stage of LCP Project and Sub-Projects life cycle following the Gateway process (i.e. Post Gate 3 – Phase 4 Execution) as indicated in Figure 11.

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Figure 11: Risk identification – Gateway Process



9.1.1 Caution During Risk Identification

Before a potential LCP Project or Sub-Project risk item is added to the Risk Register, it must be scrutinized to ensure that it is a real Risk event as opposed to a normal day-to-day challenge.

A Risk event has a trigger which causes it, and the trigger needs to be realistic and credible, with a real possibility of occurrence. Challenges, on the other hand, are events faced in day-to-day Project execution and are sometimes more difficult than other normal events but still will happen, these challenges are known and are manageable, and therefore not a risk. It is expected that on many occasions, it will be difficult to draw the line

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between a risk and a challenge. However, consensus among the LCP Project Delivery Team participants of a risk identification workshop will help in clearing-up the difference and will steer the discussion into identifying a clear LCP risk event.

The important point to remember here is to ensure that only LCP potential risk events are addressed in the register and that other challenges are left to the Project, Sub-Projects and Functional Managers to manage these challenges as part of their day-to-day normal execution activities.

9.2 Organizing Risks by Category

Organizing the risks on the Sub-Project risk registers is critical to the risks being efficiently and effectively managed. The Sub-Project Risk Coordinator will have primary responsibility for organizing risks on the Sub-Project risk register using LCP Risk Management tool.

Initially, it may be helpful to group risks by major activity or physical component of the Work Breakdown Structure. Risks should be further organized by type of risk. In addition to the ten strategic risk categories defined for LCP as indicated below, Figure 12 indicates risk categories identified in order to have a differentiation of the risk level between the LCP Project (strategic) and Sub-Projects (tactical).

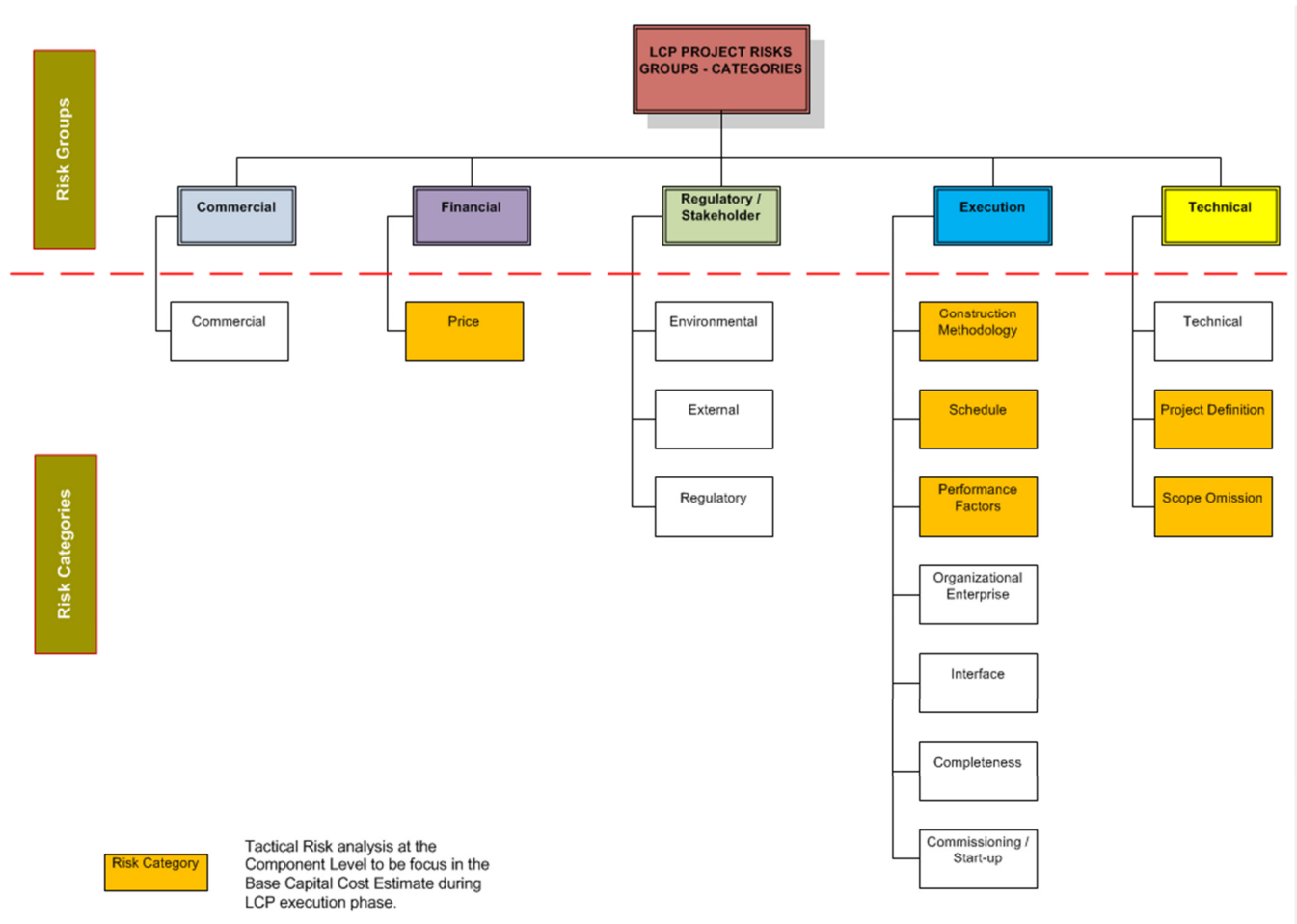
- 1) Commercial
- 2) Commissioning and Start-up
- 3) Completeness
- 4) Environmental
- 5) Construction
- 6) External
- 7) Interface
- 8) Organizational / Enterprise
- 9) Regulatory
- 10) Technical

After this level of organization has taken place, the list of risks should be reviewed to see what consolidation/elimination is appropriate.

Finally, to assist future risk assessments, a determination should be made for each risk as to whether it is a tactical risk or a strategic risk. In general, if the Sub-Project team has the authority to address a risk, it is a tactical risk; if a level of the organization above the Sub-Project team is required to address a risk, then it is a strategic risk.

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Figure 12: LCP Risk Categories



9.3 Identifying Risk Owners

The LCP Risk Coordinator and the Sub-Projects Risk Coordinators have primary responsibility for identifying the Risk Owners for each risk. This identification would typically be made during the workshop discussion at the time the risk is placed on the risk register. Afterwards, it is important that the Risk Coordinators confirm with the Risk Owner that he/she understands and accepts the responsibilities associated with being the Risk Owner.

9.4 Updating Risk Registers based upon Gathered Intelligence

The Sub-Project Risk Coordinators will work together to update or add risks to the Sub-Project risk registers based on discussions in management meetings, information gathered from Risk Assessments, or other new

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intelligence. The Sub-Project Risk Coordinators will also have primary responsibility for updating the status of each risk on the Sub-Project risk register as appropriate.

9.5 LACTI Chart for Risk Identification and Organization

Description of Activity	LCP Executive Committee	LCP Project Director	LCP Risk Resolution Team ¹	LCP Risk Coordinator	Sub-Project Risk Coordinators	Risk Owner	Risk Advisor (Westney)	Sub-Project Project Manager or Deputy	Nalcor ERM Committee LCP Rep.	LCP Change Management Lead
Initial Population of Sub-project Risk Register		A	I	L	C	C	T	I	I	
Organizes Risks by Category on Sub-project Risk Registers (incl. designating tactical/strategic & consolidating risks)		A	I	C	L	C	T	I		
Identify Risk Owner for each Risk		A	I	L	C	C	T	I		
Update Risk Registers based on Intelligence Gathered from LCP Executive Committee, Risk Resolution Team, Risk Workshops, Contractors, and General Surveillance	C	A	C	L	C	C	T	C		C

Legend:
L LEADS - Who leads the activity
A ACCOUNTABILITY - Who has accountability for the activity
C CONSULTED - Who needs to be consulted during the activity
T TECHNICAL - Who provides technical input on the activity
I INFORMED - Who should be informed, but is not actively participating in the activity

¹ Financial Advisor, Legal Advisor, and Insurance Advisor participate on Risk Resolution Team as appropriate.

10 RISK ASSESSMENT AND PRIORITIZATION

In the risk assessment and prioritization step, the LCP Project and Sub-Projects delivery teams evaluates the risks identified in the risk register to determine the probability of risk occurrence, the potential risk impact (consequences) to the project objectives within categories indicated in Section 10.1.

Using this information the LCP Project Delivery Team can subsequently develop risk mitigation strategies to address LCP prioritized threats and opportunities. One of the objectives of this step is to understand the

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magnitude of the impact (consequence) if a risk will be materialized in order to develop appropriate LCP strategies and tactics to mitigate the risk.

It is recommend as a good practice that at this stage the LCP Project delivery team should refrain from developing any action plan until the ranking of the risk has been performed, if however discussions are held, the conclusion should be noted and used during the risk response step.

Figure 13: Risk Assessment and Prioritization



10.1 Determining Preliminary Risk Rankings

The Sub-Project Risk Coordinator, with assistance from the LCP Risk Coordinator and other members of the Sub-Project delivery team as appropriate, will assess the likelihood of occurrence and the potential consequence(s) of each risk on the Sub-Project Risk Register. There are six categories used for potential consequences:

- Safety (Occupational Health and Safety).
- Environmental (Physical).
- Cost (LCP Capital Cost).
- Schedule (First Power Target Date).
- Quality (Availability, Reliability, and Performance).
- Reputation.

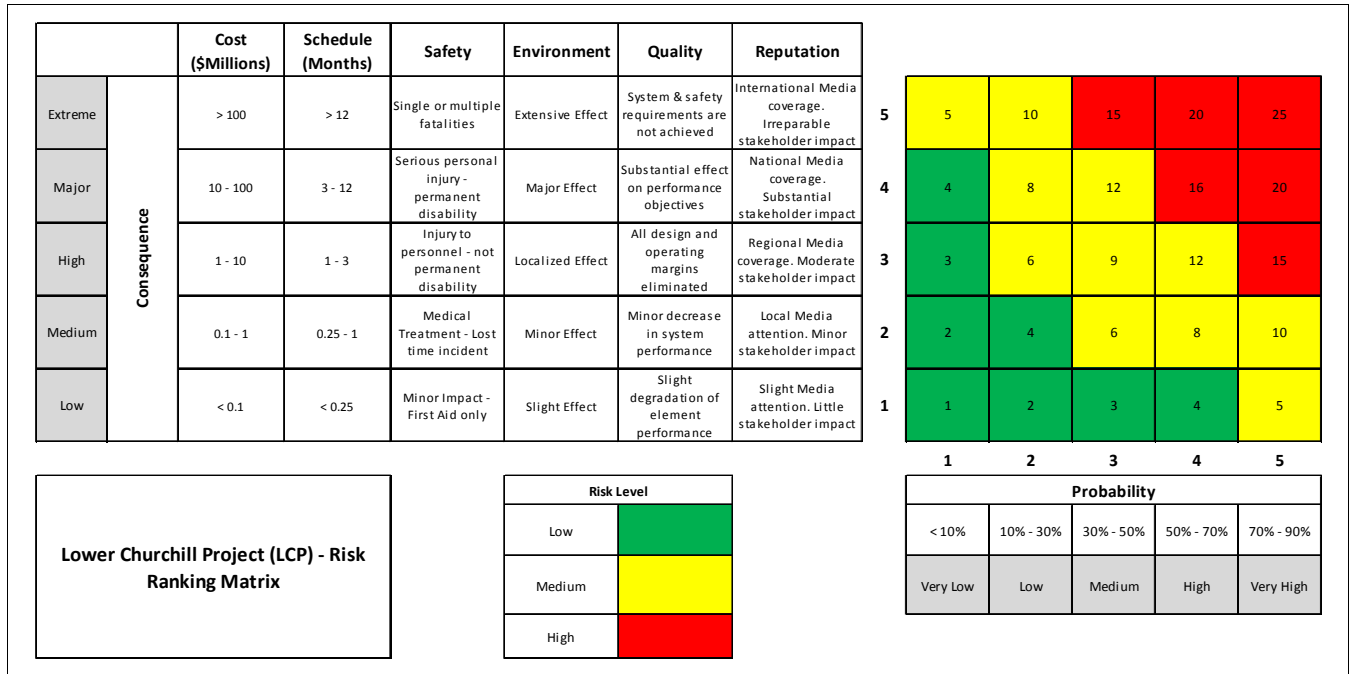
Each risk’s likelihood of occurrence combined with its potential consequence(s) produces a first-cut priority ranking for the risk (High – Medium – Low) following the LCP Risk Assessment Matrix as indicated in Figure 14.

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This process is performed in the LCP risk management tool that has been set-up with all parameters as indicated above.

LCP Project and Sub-Projects management team will validate all first-cut rankings for risks related to their areas of responsibility.

Figure 14: LCP Risk Assessment Matrix



10.2 Develop List of Key Risks to be Overseen by Risk Resolution Team / LCP Executive Committee

A critical aspect of LCMC Risk Management Philosophy, reference document No. LCP-PT-MD-0000RI-PH-0001-01, is the Risk Resolution Team (with involvement from the LCP Executive Committee as appropriate) managing a select number (approximately 15-20) of complex risks which provide the greatest exposure for the Project. The 15-20 Key Risks to be overseen by the Risk Resolution Team are selected from all of the risks on all sub-project risk registers as well as the risks on the Decision Gate 2 Strategic Risk Frames, reference document Gate 2 Project Risk Analysis LCP-PT-MD-0000-RI-RP-0001-01. The LCP Risk Coordinator has responsibility for facilitating the Key Risk selection process with the Risk Resolution Team.

10.3 Risk Assessments (Tactical-Risk, Strategic-Risk and Time-Risk Analyses)

The LCP Project Risk Coordinator has primary responsibility for developing a schedule for Risk Assessments (Tactical-Risk, Strategic-Risk, and Time-Risk analyses) to evaluate risks at the LCP Project and Sub-Projects.

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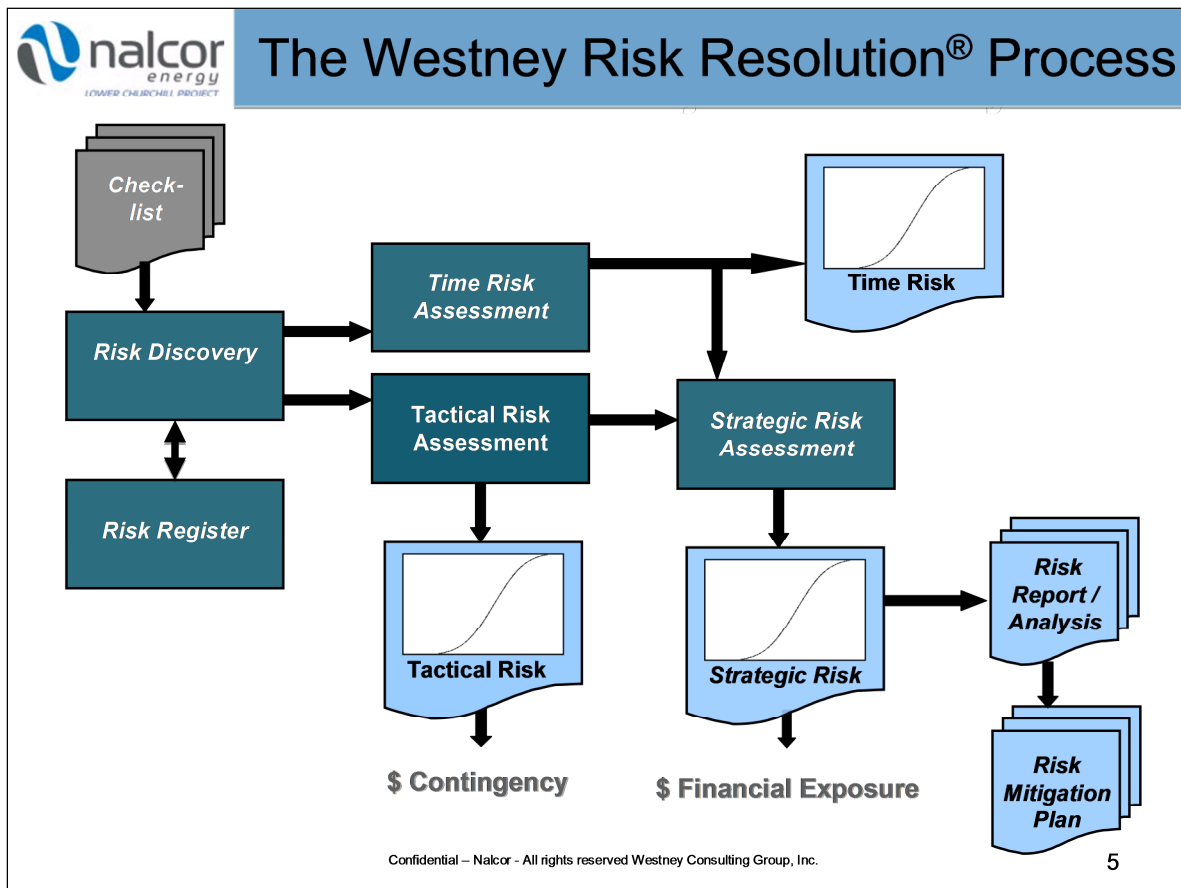
Where required, the LCP Risk Coordinator, working with the Risk Advisor (Westney Consulting Group), will facilitate the discovery (document review and interviews) and workshop discussions associated with the Risk Assessments. It is intended that a broad range of project knowledge holders participate in the discovery process and Risk Workshops. LCP Strategic Risk Frames will be used to describe the attributes of each Key Project Risk.

Prior to LCP Gate 3, the Risk Advisor (Westney) will be responsible for performing the analysis and creating reports to document findings. The analysis, including Monte Carlo-type simulation techniques, will be structured to gain insights on important issues identified by Nalcor; these issues may pertain to individual risks or groups of risks. Risk Assessments may consider both the impact of risks as well as the impact of potential mitigations. The Risk Assessment results are carefully considered in the determinations of both project contingency and management reserve levels (reference [Project Controls Management Plan](#), reference document No. LCP-PT-MD-0000-PC-PI-0001-01).

Post LCP Gate 3 - Project Execution, the Risk Advisor (Westney) will be engaged in an “as needed” basis.

The Risk Assessment process is illustrated in Figure 15 below.

Figure 15: Westney’s Risk Assessment Process



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10.4 Health, Safety and Environmental Risk Assessments

As noted in Section 2, the Project Risk Management Plan does not address the completion of specific health, safety and environmental risk assessments. Focused health, safety and environmental risk assessments (e.g. HAZIDs, HAZOPs, etc.) will be undertaken. Details on the process for undertaking these specific risk assessments can be found in [Health and Safety Management Plan](#), reference document No. [LCP-PT-MD-HS-PL-0001-01](#) and [Environmental Management Plan](#), reference document No. [LCP-PT-MD-EV-PL-0001-01](#).

Depending on the relevant risk ranking, a health & safety or environmental risk may become a Key Risk.

10.5 Confirm List of Key Risks based upon Gathered Intelligence

On a regular basis, the LCP Risk Coordinator will facilitate reviews with the Risk Resolution Team to confirm that the list of Key Risks is current based on discussions in management meetings, information gathered from Risk Assessments, or other new intelligence. The LCP Risk Coordinator will update the list of Key Risks as appropriate.

10.6 LACTI Chart for Risk Assessment and Prioritization

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Description of Activity	LCP Executive Committee	LCP Project Director	LCP Risk Resolution Team ¹	LCP Risk Coordinator	Sub-Project Risk Coordinators	Risk Owner	Risk Advisor (Westney)	Sub-Project Project Manager or Deputy	Nalcor ERM Committee LCP Rep.	LCP Change Management Lead
Conduct Preliminary Risk Rankings	I	A	I	C	L	C	T	I		
Develop List of Key Risks to be Overseen by Risk Resolution Team / LCP Executive Committee	C	A/C	C	L	C	C	T	C	I	
Determine Schedule for Risk Assessments (Tactical-, Strategic-, and Time-Risk Assessments)	I	A	C	L	C	C	T	C		
Conduct Risk Assessments (including discussion and evaluation of key individual risks)	C	A	C	L	C	C	T	C		
Update Lists of Key Risks based on Intelligence Gathered from LCP Executive Committee, Risk Resolution Team, Risk Workshops, Contractors, and General Surveillance	C	A	C	L	C	C	T	C	I	C

Legend:
L LEADS - Who leads the activity
A ACCOUNTABILITY - Who has accountability for the activity
C CONSULTED - Who needs to be consulted during the activity
T TECHNICAL - Who provides technical input on the activity
I INFORMED - Who should be informed, but is not actively participating in the activity

¹ Financial Advisor, Legal Advisor, and Insurance Advisor participate on Risk Resolution Team as appropriate.

11 RISK RESPONSE

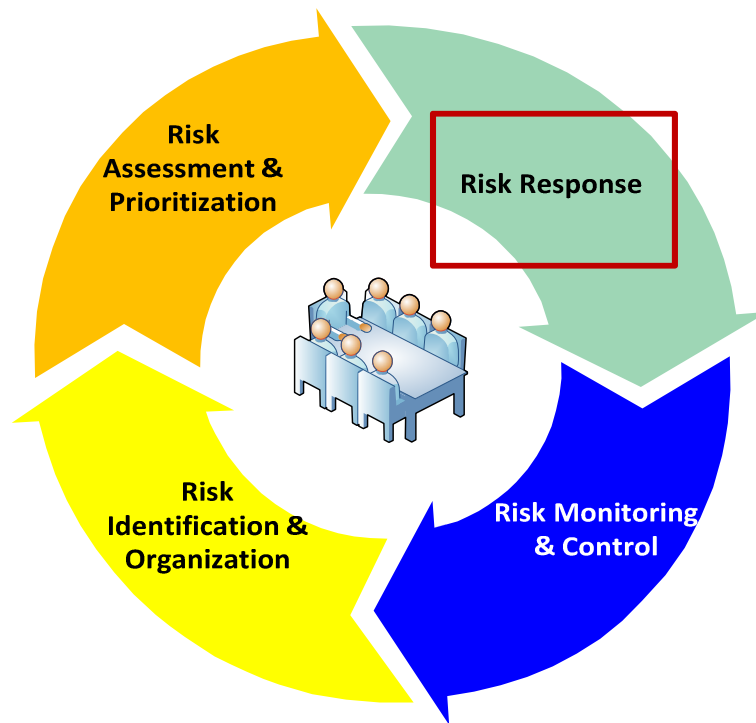
This step risk response is also referred as risk management strategies; it means the process of identifying various risk mitigation strategies and risk action plans for each LCP risk, evaluating the effectiveness of each option and selecting the best approach.

For the LCP Project and every Sub-Project risk several strategies or alternatives may apply. The LCP Project Management team and the Project Delivery Team (PDT) must identify these alternatives, evaluate their individual merits and select the one that offers the best solution – mitigation strategy for the LCP Project to:

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- Reduce the probability (likelihood) of the LCP risk;
- Reduce the consequence to the LCP objectives;
- Transfer in full or in part to those best qualified to manage the risk (e.g. contractors) and
- Avoid the risk.
- Accept the risk.

Figure 16: Risk Response



11.1 Developing and Implementing Response Plans to Address Key Risks Overseen by Risk Resolution Team

The Risk Owner for each Key Risk has the primary responsibility for developing the Response Plan for that risk. The Response Plan will detail the recommended strategy for managing the risk as:

- Threats: avoidance, mitigation, transfer or acceptance
- Opportunities: acceptance, exploit, share or enhance

The Risk Owner will consult with members of the Risk Resolution Team or the LCP Risk Coordinator as appropriate when developing the Response Plan. Findings from Risk Assessments should also be used to help shape the Response Plans. This process is performed using the LCP risk management tool.

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The LCP Project Director will approve each Response Plan or, when required, seek higher-level approval for the Response Plan. The Risk Owner for each Key Risk will be responsible for leading the implementation of the Response Plan.

11.1.1 Risk Response Planning for Threats

These four basic strategies for response to threats are: (as defined by the Project Management Institute (PMI) in the PMBOK – Project Management Body of Knowledge).

1. **Avoid:** risk avoidance involves changing the project management plan to eliminate the threat posed by and adverse risk to isolate the project objectives from the risk's impacts, or to relax the objective that is in jeopardy such as extending the schedule or reducing scope. Some risks that arise early in the project can be avoided by clarifying requirements, obtaining information, improving communication or acquiring expertise.
2. **Transfer:** risk transference requires shifting the negative impact of a threat along with ownership of the response to a third party. Transferring the risk simply gives another party responsibility for its management, it does not eliminate it. Transferring liability for risk is most effective in dealing with financial risk exposure; risk transference nearly always involves payment of a risk premium to the party taking the risk. Transference tools can be quite diverse and include, but are not limited to the use of insurance, performance bonds, warranties, guarantees, etc. Contracts may be used to transfer liability for specified risks to another party.
3. **Mitigate:** risk mitigation is a preventive action strategy and implies a reduction in the probability and/or impact of an adverse risk event to an acceptable threshold. Taking early action to reduce the probability and/or impact of a risk occurring in the project is often more effective than trying to repair the damage after the risk has occurred. Adopting less complex process, conducting more tests or choosing more stable supplier/contractor are examples of mitigation actions. Mitigation may require prototype development to reduce the risk of scaling up from a bench-scaled model of a process or product. Where it is not possible to reduce probability a mitigation response might address the risk impact by targeting linkages that determine the severity, for example designing redundancy into a subsystem may reduce the impact from a failure of the original component.
4. **Acceptance:** a strategy that is adopted because it is seldom possible to eliminate all risk from a project. This strategy indicates that the project management plan is not changed to deal with a risk or it isn't possible to identify any other suitable response strategy. It may be adopted for either threats or opportunities. This strategy can be either passive or active. Passive acceptance requires no action leaving the project team to deal with the threats or opportunities as they occur. The most common active acceptance strategy is to establish a contingency reserve including amounts of time, money, or resources to handle known or even sometimes potential unknown threats or opportunities.

11.1.2 Risk Response Planning for Opportunities

These four basic strategies for response to opportunities are: (as defined by the Project Management Institute (PMI) in the PMBOK – Project Management Body of Knowledge).

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1. **Acceptance:** as explained for threats in section 11.1.1.
2. **Exploit:** this strategy may be selected for risk with positive impacts where the project wishes to ensure that the opportunity is realized. This strategy seeks to eliminate the uncertainty associated with a particular upside risk by making the opportunity definitely happen. Directly exploiting responses include assigning more talented resources to the project to reduce the time to completion, or to provide better quality than originally planned.
3. **Share:** sharing a positive risk involves allocating ownership to a third party who is best able to capture the opportunity for the benefit of the project; examples of sharing actions include forming risk-sharing partnerships, teams, special-purpose companies, or joint ventures, which can be established with the express purpose of managing opportunities.
4. **Enhance:** this strategy modifies the size an opportunity by increasing probability and/or positive impact risks. Seeking to facilitate or strengthen the cause of the opportunity and proactively targeting and reinforcing its trigger conditions may increase probability. Impact drivers can also be targeted seeking to increase the project’s susceptibility to the opportunity.

11.2 Developing and Implementing Action Plans to Address Project Risks on Sub-Project Risk Registers

The vast majority of risks are not elevated to Key Risk status, and they continue to reside on the Sub-Project Risk Registers; Action Plans are used to manage these Project Risks. The Risk Owner for each Project Risk has the responsibility for developing that risk’s mitigation strategy and associated Action Plan using the LCP risk management tool. The Risk Owner will be responsible for consulting the Sub-Project Risk Coordinator and other resources as appropriate in developing the Action Plan.

The applicable LCP Sub-Project Manager (or delegate) will approve each Action Plan. The Risk Owner for each Sub-Project Risk will be responsible for leading the implementation of the Action Plan.

11.3 Risk Addressing through the Procurement Process

Another important aspect of the Project’s Risk Management Philosophy is effectively using the procurement process to address risks. Area Managers or Package Leads (or delegates) will work with the contracts coordinator/specialist and the Sub-Project Risk Register Coordinator to develop a risk inventory for each contract package.

The procurement strategy for each contract package will then consider the optimal Risk Brokering for the identified risk inventory. The LCP Risk Coordinator is responsible for working with the contracts coordinator/specialist to facilitate any required Risk Brokering reviews and approvals.

Five steps have been identified for the risk response through the procurement process:

1. Request for Inquiry (RFI) preparation;

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2. Request for Proposal (RFP) preparation;
3. Bidding / Negotiation / Risk brokering;
4. Contract preparations; and
5. Risk monitoring.

11.3.1 Package Risk Review – RFI preparation phase

LCP Package Lead, Engineer - Area Managers and LCP Risk Coordinator define the risk criticality of a LCP package and conclude on eligibility for package risk management.

For instance, small LCP packages related to supply of standard off-shelf products or standardized works not on project schedule's critical path usually have low criticality (non-critical) and do not require package risk management.

However, as a rule, all packages of value more than \$5M CAD should be considered critical and eligible for risk management. In addition, some LCP packages of value less than \$5M CAD will require package risk management if they satisfy to one or more of the following criteria:

In case of supply and service packages:

- Proximity to the project schedule critical path,
- A lack of maturity of technical or other requirements,
- Represents an unusually high degree of technical development,
- Concerns exist regarding the robustness of the supplier's/ provider's Quality Management System,
- Requires unusual design and/or manufacturing processes,
- A lack of LCP prior or positive experience with the Supplier/ provider,
- Concerns regarding any sub-vendors to the supplier/ provider,
- Criticality of the supplier/ provider to the overall success of the project,
- Any other relevant considerations;

In case of construction packages:

- The work is on or close to the critical path,
- The workforce will be a high percentage of the site workforce or will contain a large percentage of people new to the industry,
- The work will be undertaken in a heavily congested area,
- The work involves a high level of contractor design,
- The work involves new construction techniques and
- Any other relevant considerations.

If a LCP package is not considered risk critical and eligible for package risk management, corresponding decision is documented by the LCP Risk Coordinator. All possible project risks associated with the package are considered low and accepted.

11.3.2 Package Risk Review – RFP preparation phase

LCP Project Delivery Team representatives of Engineering, Safety, Environment, QA, Supply Chain, Permitting, etc. assigned as package risk owners, should develop detail response strategies (mitigation and actions) for each

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identified risk. Changes may be recommended to the package scopes or decisions may be made on risk response that should be negotiated and written into the package Contract's or purchase order's terms and conditions.

The information of the Package Risk Inventory along with the proposed response strategy should be collected in the Package Purchasing Plan and returned to the LCP Risk Coordinator to prepare a Package Risk Questionnaire. A Package Risk Questionnaire normally contains both standard risk questions and package specific ones depending on risks exposure.

Information about package risks (Package Risk Inventory) should be collected in the LCP risk management tool. This should include names of risk owners, assessment of risks before response, proposed response as well as assessment after response. All LCP package risks that are believed to have a high risk level ('red') and medium risk level ('yellow') after performing the risk response step should be reflected in the LCP Package Risk Questionnaire.

The criteria to evaluate the Risk Questionnaire during the bidding process is Pass/Fail, in order to achieve a status of Pass responses to the Risk Questionnaire must have a value over 60%.

11.3.3 Bidding, Negotiation and Risk Brokering

Selection of LCP Suppliers, Contractors or Service Providers will be made on a risk informed basis for all risk critical packages.

Upon receiving the RFP responses, the Package Risk Questionnaire responses along with package Risk Management Plans (including bidder's Risk Registers) become a basis for development of Bidder's Ranking Template to rank bidders and develop their short list.

In addition, during the bid clarification process LCP Supply Chain, Engineering and Risk personnel will collect risk information. The additionally collected risk information should be also used for evaluation of bidders. A risk review will be held to compare the risk exposure of awarding a particular package to each contender using the Ranking Template.

The next step of the process is most critical for the LCP package risk management. It is focused on negotiations with short listed bidders in order to allocate risks to the potential contractors where deemed best for the LCP Project (Risk Brokering). The LCP Risk Coordinator should work with the Contract Coordinator to facilitate any required risk brokering reviews and approvals.

As a result of this phase, the Contract award recommendation will be issued based on most optimal negotiated risk brokering approach for LCP project. Corresponding risk addressing obligations of the recommended bidder should be included to the package Contract. The General Package Risk Inventory should be updated to reflect corresponding residual medium and high risks as negotiated. If required, additional vendor specific medium and high risks should be identified and added to the Inventory.

11.3.4 Contract Preparation

The updated Package Risk Inventory should be reviewed with a selected LCP supplier, service provider or contractor. Addressing actions should be reviewed and included to the Contract. Similarly, the reporting

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requirement for a selected list of high and medium residual risks should become part of the Agreement (Contract). All these packages and supplier/ service provider/ contractor specific risks that are believed to have high or medium level after addressing should be added to the Sub-Project risk registers in the LCP risk management tool. Low level risk after addressing should stay in the LCP Package Risk Register.

11.3.5 Contractors and Suppliers Risk Management process and Risk Monitoring

To the maximum extent possible and as necessary, contractors and suppliers will be integrated into LCP project risk management activities. The degree of the involvement depends on a type of the package contract (fixed price, unit price, reimbursable) and phase of procurement process (package contract pre-award vs. post-award).

As during the pre-award phases the main goal of the package risk management is to collect risk information and evaluate bidders, there are following risk requirements for bidders pre-award:

- To answer all questions of the Package Risk Questionnaire;
- To provide a package Risk Management Plan (including Risk Register) according to item A04 of the LCP Supplier Document Requirement List (SDRL).

As the main goal of the package risk management post-award is risk addressing, monitoring and reporting a selected contractor/ supplier (the bid winner) should provide following documents post-award:

- Updated Risk Management Plan (agreed upon during Contract negotiation) according to item A04 of the LCP SDRL;
- Monthly Report (including recent package Risk Register) according to item A03 of SDRL.

[LCP Risk Management Requirements for Contractors and Suppliers](#), reference document No. [LCP-SN-CD-0000-RI-PR-0001-01](#) defines forward general instructions on structure of the Risk Management Plan, Risk Register and Monthly Risk Report. However, particular content of these documents should be negotiated and stipulated by the Contract in the Contract's Coordination Procedure that defines particular content of the Risk Management Plan and, hence,

- Requirement to implement a formal risk management process,
- List of risks that are subject to Monthly Reporting,
- Types and frequency of package risk reviews.

In case of reimbursable types of contracts, as a rule, a LCP supplier/ provider will be required to implement a formal risk management process based on agreed Risk Management Plan. Corresponding audit could be part of the requirement. Representatives of the LCP Project could attend the internal risk review meetings performed by Supplier/Contractor.

In case of fixed price or unit price types of contracts, as a rule, the full implementation of the risk management process is recommended. Usually, representatives of the LCP Project do not attend internal risk reviews, etc.

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11.4 Project Insurance Procurement

The Insurance Advisor (broker) will act as the technical advisor during the procurement of the Project’s insurance program, which entails a thorough understanding of the project and its associated risks discovered throughout the application of this Management Plan. Details on the strategy for placement of the Project’s insurance program are contained within [Insurance Philosophy](#), reference document No. [LCP-PT-MD-0000-LE-PH-0001-01](#).

11.5 LACTI Chart for Risk Response

Description of Activity	LCP Executive Committee	LCP Project Director	LCP Risk Resolution Team ¹	LCP Project Risk Coordinator	Sub-Project Risk Coordinators	Risk Owner	LCP Supply Chain Management	LCP Business Services Manager	Nalcor Insurance Advisor	Risk Advisor (Westney)	Sub-Project Project Manager or Deputy	Nalcor ERM Committee LCP Rep.	LCP Change Management Lead
Develop and Implement Response Plans to Address Key Risks Overseen by Risk Resolution Team / LCP Executive Committee ³	A/I	A/C	T/C	C	C	L				T	C	I	I
Develop and Implement Action Plans to Response Project Risks Retained on Sub-Project Risk Registers ³		A	I	C	C	L				T	I		I
Response Risks through the Procurement Process ⁴	I	A	C	C	C	C	L			T	C		I
Secure Construction All-Risk Policy	I	A	C	C	C	C		L	T	C	C	I	

Legend:
 L LEADS - Who leads the activity
 A ACCOUNTABILITY - Who has accountability for the activity
 C CONSULTED - Who needs to be consulted during the activity
 T TECHNICAL - Who provides technical input on the activity
 I INFORMED - Who should be informed, but is not actively participating in the activity

¹ Financial Advisor, Legal Advisor, and Insurance Advisor participate on Risk Resolution Team as appropriate.
² The results of Risk Assessments should be used to help shape Response Plans (and Action Plans as appropriate).
³ Supply Chain Management with the Scope or Area Manager will be responsible for developing of a contracting strategy which considers risk brokering.
⁴ Nalcor insurance group with AON as broker will technical support for the placement of the CAR policy.

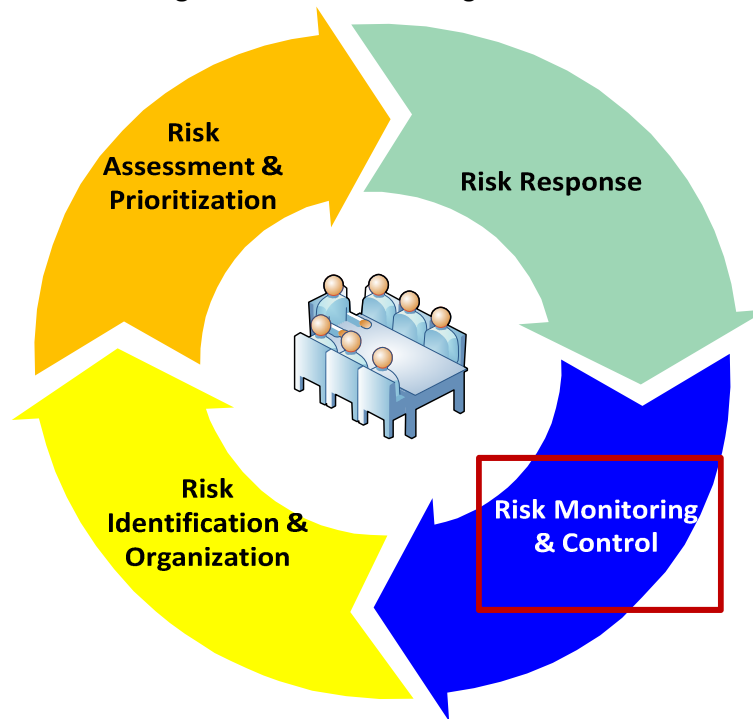
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12 RISK MONITORING AND CONTROL

This step of risk monitoring and control is the process of tracking identified risks, reassessing existing risk, monitoring trigger conditions for contingency plans, identifying, assessing and planning for new risks and reviewing the execution of risk responses while evaluating their effectiveness to the LCP Project.

Project assumptions are validated and/or modified. The risk monitoring and control process applies variance and trend analysis from performance data generated and collected during LCP Project and Sub-Projects execution. Risk monitoring and control is an ongoing process throughout the life of the project.

Figure 17: Risk Monitoring and Control



12.1 Monitoring and Adjusting Response Plans for Key Risks Overseen by Risk Resolution Team

The Risk Owner for each Key Risk will be responsible for providing a monthly update on the status of the Response Plan to the LCP Risk Coordinator. The LCP Risk Coordinator will issue a Response Plan Status Report from the LCP risk management tool, which will be reviewed with the LCP Management Team on a monthly basis and reviewed with the Risk Resolution Team on a quarterly basis. After each quarterly review with the Risk Resolution Team, the LCP Project Director will review highlights of the Response Plan Status Report with the LCP Executive Committee.

Response Plans may be adjusted based on feedback from the reviews. The LCP Project Director will approve any adjustments to a Response Plan or, when required, seeks higher-level approval for the adjustment.

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12.2 Monitoring and Adjusting Actions Plans for Project Risks on Sub-Project Risk Registers

The Risk Owner for each Project Risk will be responsible for providing a monthly update on the status of the Action Plan to the Sub-Project Risk Coordinator. All updates of Action Plans are captured in the Sub-Project Risk Registers using LCP risk management tool. Each Sub-Project Risk Coordinator will prepare an Action Plan Status Report which will be provided to Project Managers and Area Managers on a monthly basis.

Action Plans may be adjusted based on feedback. The applicable Sub-Project Manager (or delegate) will approve each Action Plan adjustment.

12.3 LACTI Chart for Risk Monitoring and Control

<u>Description of Activity</u>	LCP Executive Committee	LCP Project Director	LCP Risk Resolution Team ¹	LCP Project Risk Coordinator	Sub-Project Risk Coordinators	Risk Owner	Risk Advisor (Westney)	Sub-Project Project Manager or Deputy	Nalcor ERM Committee LCP Rep.	LCP Change Management Lead
Review (and adjust as appropriate) Response Plans to Address Key Risks Overseen by Risk Resolution Team / LCP Executive Committee	A/I	A/C	T	L	C	C	T	C	I	I
Review (and adjust as appropriate) Action Plans to Address Project Risks Retained on Sub-Project Risk Registers		A	I	C	L	C	T	I	I	I

Legend:
L LEADS - Who leads the activity
A ACCOUNTABILITY - Who has accountability for the activity
C CONSULTED - Who needs to be consulted during the activity
T TECHNICAL - Who provides technical input on the activity
I INFORMED - Who should be informed, but is not actively participating in the activity

¹ Financial Advisor, Legal Advisor, and Insurance Advisor participate on Risk Resolution Team as appropriate.

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13 RISK MANAGEMENT TOOL

For the LCP Project and Sub-Projects, the Risk Management tool is the software called Iris Risk Management Software - Iris Intelligence. The software is based on a relational database hosted in the cloud and has been customized and set-up to manage LCP requirements and methodology for risk management.

Figure 18: Software Overview and Benefits.

Software Overview

IRISIntelligence is a revolutionary software solution that empowers you to identify, manage and reduce the risk exposure of your organisation. The first software of its kind made exclusively by risk managers for risk managers, IRISIntelligence enables you to:

- Align project and programme activity with corporate goals and objectives
- Identify, evaluate and address risks before they arise
- Implement robust contingency plans to minimise the impact of risks should they crystallise
- Understand the total risk exposure of their company as a whole, individual departments or divisions or specific programmes and projects of work
- Make informed decisions on which areas of risk management should be prioritised and whether the costs of mitigating each risk outweigh the benefits of doing so

IRIS is consistently hailed by organisations and individuals alike as the most intuitive and user friendly risk management software package available.

Benefits of IRIS Intelligence

IRISIntelligence addresses all of the common problems of risk management faced by most organisations, including:

- The ability to roll out consistent, repeatable and effective processes across your organisation
- Calculation of your total risk exposure, by project, programme, business unit or for the organisation as a whole
- Illustrates how this risk exposure may be reduced in the most cost effective manner
- Demonstrates the Return on Investment delivered to your stakeholders
- Embeds a risk management culture in resources across the organisation
- Ensures risks are actively managed and data remains current
- Generates clear, consistent and effective reports to enable Senior Management to instantly identify the critical areas

The software is controlled and modified by the LCP Risk Coordinator coordinating with the provider of this tool as required and this tool is used by LCP Project and Sub-Projects. Two documents are provided with the tool that describes the features and functionality of the software and are embedded in the system main page, these document are:

- Iris Software User Exercise and
- Iris Software Administrator Exercise

MCT – SOBI are presently using a Ms Excel based software and will continue to do it for near term until risk information is uploaded in the LCP Risk Management Tool.

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Figure 19: Software User and Exercise Guides

IRIS Intelligence

Welcome to IRIS Intelligence

IRIS Intelligence is a software tool designed to help you manage risks within your organization. The system may be set up to cover risk management across the enterprise or it may be employed within a specific project, program, department, division or other organizational area.

REGISTERS

- Portfolio
 - Lower Churchill Project (LCP)
 - 01. LCP - General
 - 02. Component 1 - MFG
 - 03. Component 3 - DCS
 - 04. Component 4 - OTL
 - 05. SOBI - MCT

CUSTOM

- Data Fields

DATA VIS

- Data Vis

PERSONAL

- My Risks
- My Actions
- My Messages

SETTINGS

- My Settings
- Settings

Your Reminders

Due Date	Type	Name
No data available in table		

Showing 0 to 0 of 0 entries

Useful Info

- [IRIS Website](#)
- [ISO 31000:2009 - Risk management -- Principles and guidelines](#)
- [Project Management Institute Risk Handbook](#)
- [Management of Risk Official site](#)
- [IRIS Software User Exercises](#)
- [IRIS Software Administrator Exercises](#)

Quick Links

- My Risks
- My Actions
- Help
- Settings

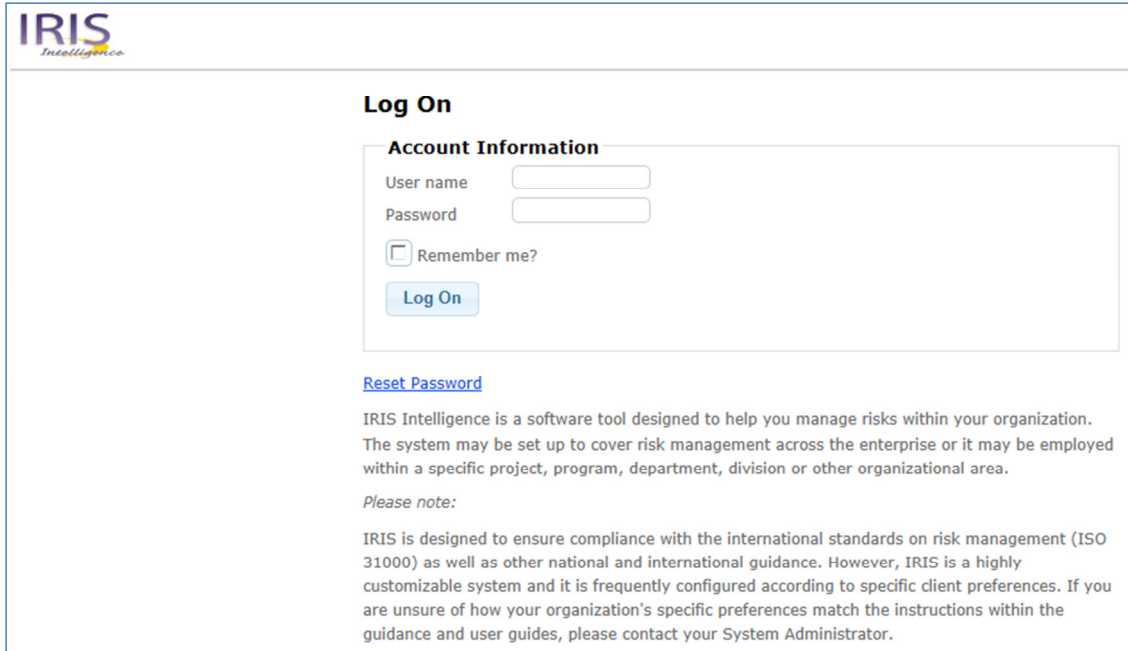
Version: 0

Risk Management workshops and risk update sessions for the LCP Project and Sub-Projects are all structured based on the software to conduct “live” hands-on risk management workshops.

The software restricts access to authorized users under the LCP Project and Sub-Projects. Two types of users are available in the tool: “administrator” and “user” with different administration rights (privileges) to manage the whole portfolio, program or specific project. Users’ accesses to the tool are managed by the LCP Risk Coordinator.

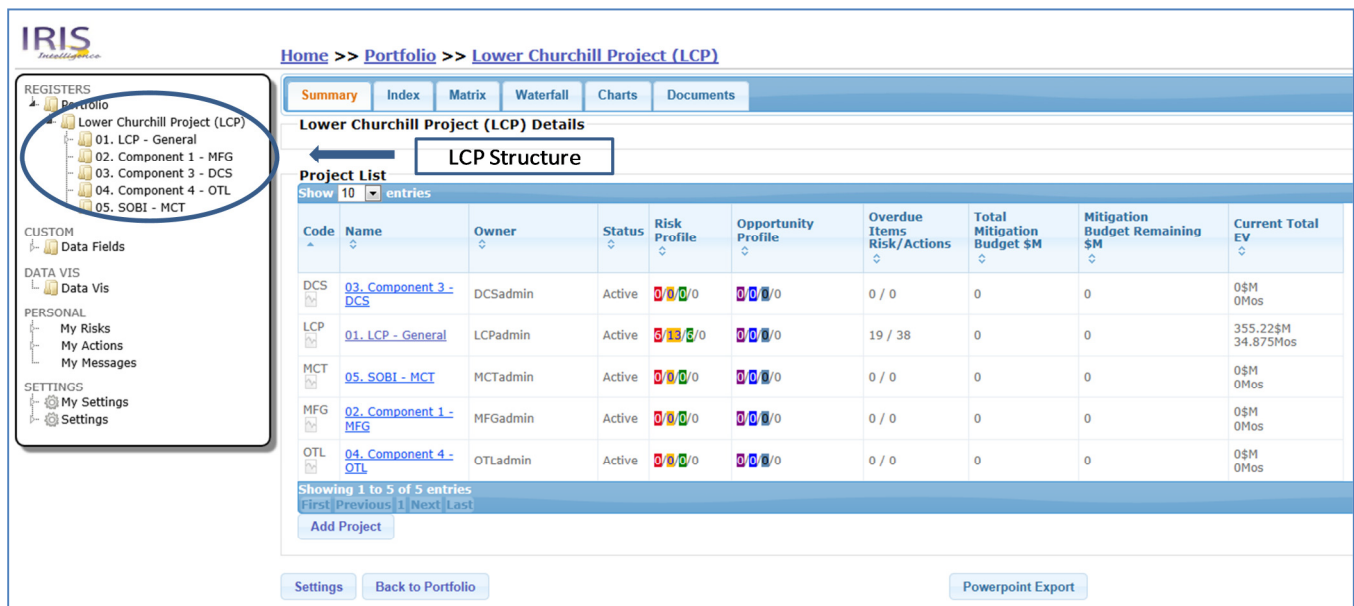
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Figure 20: Iris Risk Management Software Log-On



The software has been set-up to cover risk management requirements for LCP Project and Sub-Projects in order to reflect the approach of strategic (LCP Project) and tactical (Sub-Projects) risk management. Each Sub-Project Risk Coordinator will be responsible to keep risk information up to date in the tool.

Figure 21: LCP Structure – Iris Risk Management Tool



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The following information for LCP Project and Sub-Projects is gathered in the tool for each identified risk:

- Risk code – auto-generated by the tool;
- Risk title – “Name”;
- Brief description of the risk outlining causes (triggers), IF; and consequences (impact), THEN;
- Risk assessment data;
- Further information – comments.

Figure 22: Risk Information – Iris Risk Management Tool

The screenshot displays the Iris Risk Management Tool interface. The breadcrumb path is: Home >> Portfolio >> Lower Churchill Project (LCP) >> 01. LCP - General >> Final Project Integration. The interface includes a left-hand navigation menu with sections like REGISTERS, CUSTOM, DATA VIS, PERSONAL, and SETTINGS. The main content area is titled 'Risk' and contains the following sections:

- Risk Summary:** Name: Final Project Integration, Created On: 5/15/2014, Last Modified: 5/16/2014, Next Review: 6/25/2014.
- Code and Approach:** Code: LCPR003, Risk Code, Approach: Mitigate, Owner: admin, Category: Organization and Enterprise.
- Description (Cause):** IF due to complexity the overall integration of all Project Components and external elements (e.g. Island link) didn't happen prior to commissioning. **Risk Cause - Trigger**
- Impact Summary (Effect):** THEN it may represent a delay in the project commissioning process. **Risk Consequence - Impact**
- Risk Assessment Data:** A table with columns for Start, Current, and Target across categories: Probability, Cost (\$M), Schedule (Mos), Quality, Safety, Environment, and Reputation. All 'Start' and 'Current' values are set to 'High'. Target values are set to 'Choose...'. A 'Thresholds' table on the right shows values for Reputation (Nil, Very Low, Low, Medium, High, Very High) with Lower (\$M) and Upper (\$M) values.
- Further Information / Comments:** A text area for **Risk comments**.

Buttons at the bottom include 'Save and Exit', 'Save and Continue', 'Cancel', 'Make Available', 'Transfer', and 'Archive'.

13.1 Risk Registers

The following risk registers are managed with the tool for LCP Project and each Sub-Projects:

- **“Candidates” Risk Register:** refers to all risk identified in internal workshops and recorded in the tool waiting approval for incorporation in the live risk register.
- **“Live” Risk Register:** refers to all risk that have been identified with response and actions to deal with them – active risks.
- **“Archive” Risk Register:** refers to all risks that have been retired.
- **“Issues” Risk Register:** refers to all risks that have been accepted, no mitigation strategy and actions are implemented but those risk need to be followed-up by the team to deal with the issue once it is materialized.
- **“Opportunity” Risk Register:** refer to all opportunities identified as part of the risk management process.

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The structure of these risk registers indicated above is shown in the Attachment 15.1.

13.2 Risk Reports

The LCP Risk Management tool has the capability to produce automated report in MS PowerPoint following standard templates.

These reports are structured in three categories:

- Summary Reports
- Graphs
- Detailed Reports

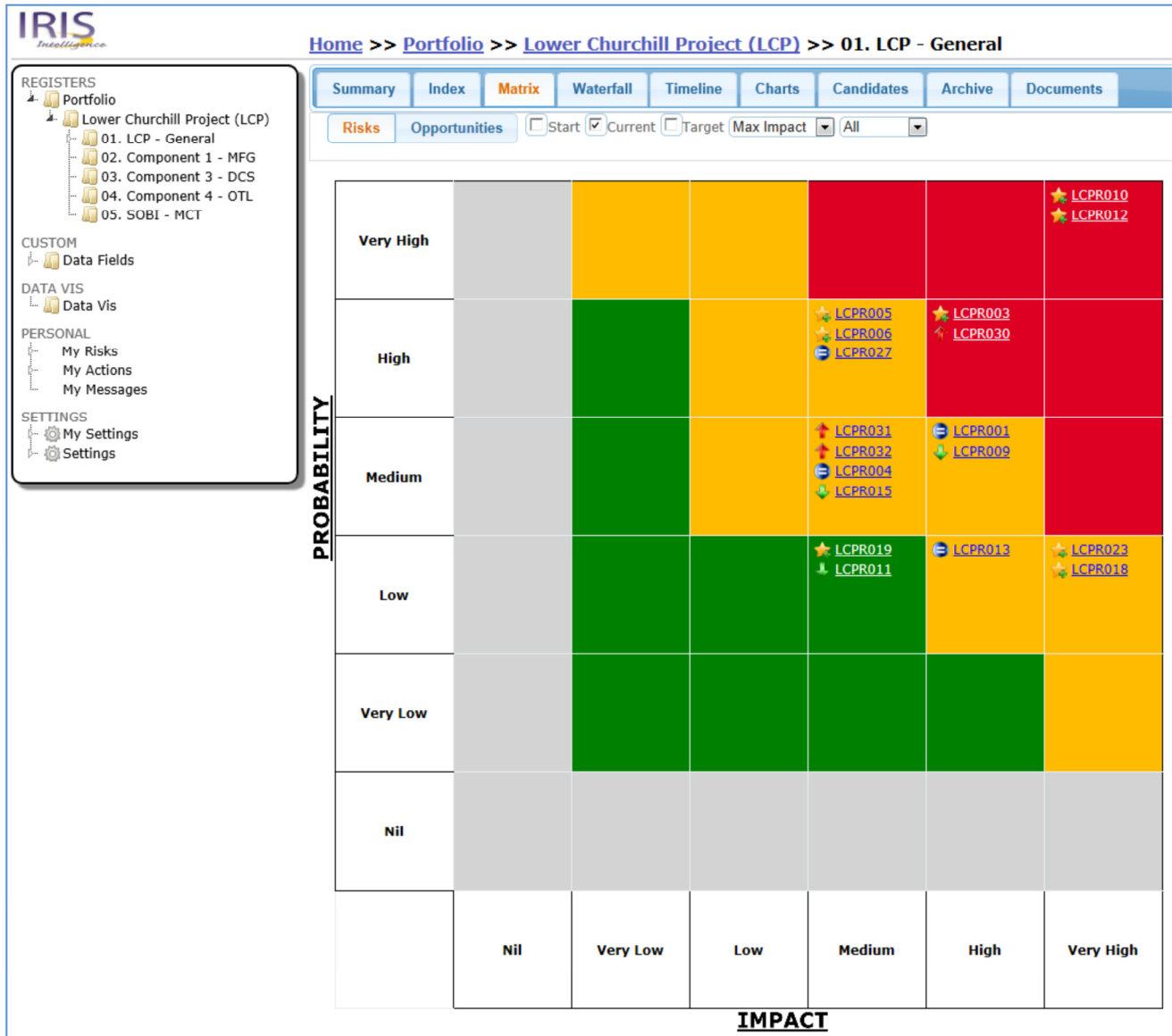
Figure 23: Risk Reports Structure - Iris Risk Management Tool

The screenshot shows the Iris Risk Management Tool interface. The top navigation bar includes tabs for Summary, Index, Matrix, Waterfall, Timeline, Charts, Candidates, Archive, and Documents. The main content area displays a table for '01. LCP - General in Lower Churchill Project (LCP)'. The table has columns for Code, Owner, Review, Status, Risk Profile, Opportunity Profile, Overdue Items Risk/Actions, Total Mitigation Budget \$M, Mitigation Budget Remaining \$M, and Current Total EV. Below the table, there is a 'Powerpoint Exports' window titled '01. LCP - General Export' with sections for 'Summary Reports', 'Detailed Reports', and 'Graphs'. The 'Summary Reports' section includes options for General Summary, Dashboard, Risks and Issues, and Live Risk Index. The 'Detailed Reports' section includes Summary, Quantitative Data, Waterfall, and Actions. The 'Graphs' section includes options for reports by Category, Cost (pie), Cost Impact (pie), Owner (bar), Owner (pie), and Probability (pie). A 'Risks' window is also visible, showing a list of risks with columns for Code and Name.

Code	Owner	Review	Status	Risk Profile	Opportunity Profile	Overdue Items Risk/Actions	Total Mitigation Budget \$M	Mitigation Budget Remaining \$M	Current Total EV
LCP	admin	14 days	Active	12/2/10	0/0/0	21 / 46	0.00	0.0000	450.0199 \$M 49.1Mos

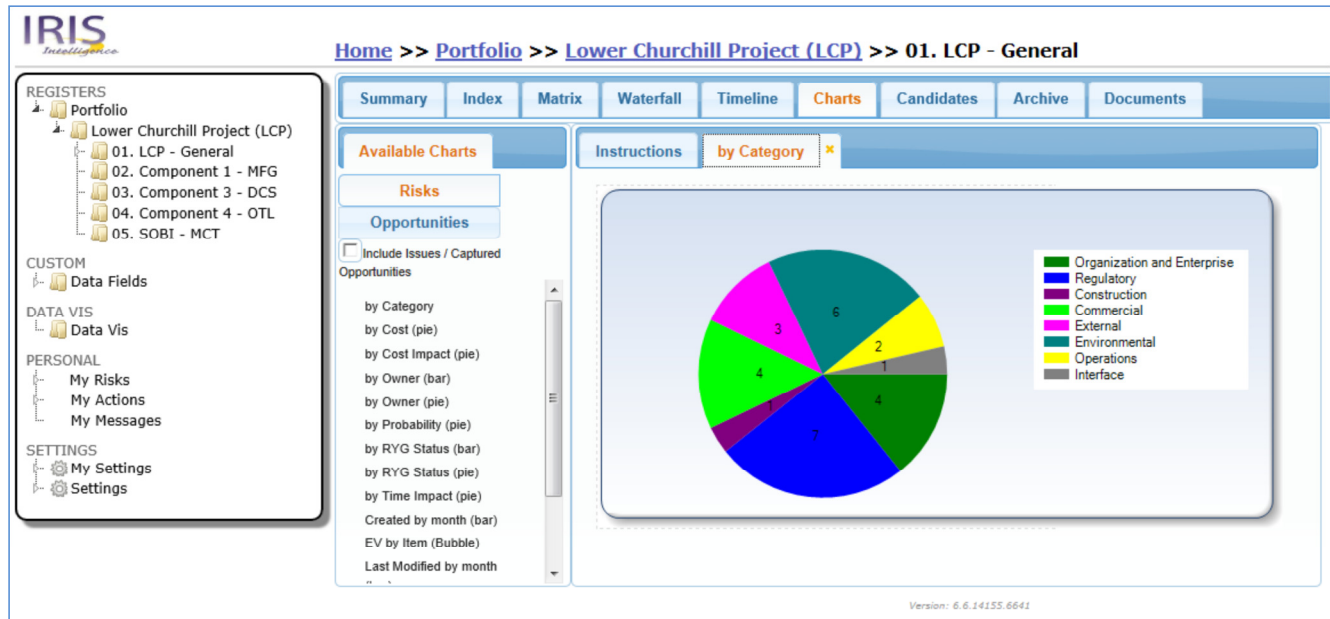
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Figure 24: Risk Heated Matrix – Iris Risk Management Tool



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Figure 25: Risk Graphs – Iris Risk Management tool



A sample of the risk reports available in the LCP Risk Management tool is provided in Attachment 15.2.

14 ADDITIONAL RISK MANAGEMENT TOPICS

14.1 Risk Updating

As indicated in Section 12, Risk Management is a dynamic process through the life cycle of LCP Project and Sub-Projects. The risk register needs to stay current and updated regularly; it keeps track of identified risk, residual risk and new risk monitoring the execution of planned mitigation strategies and actions on identified risk in order to evaluate their effectiveness for the project.

As the project moves throughout the Gateway process, the LCP Risk Coordinator will be engaged heavily in re-evaluating the major issues raised from the previous phase(s) and ensuring that proposed management strategies are validated, adopted and followed-up.

Risk Owners will report to the Sub-Project Risk Coordinator on a periodic basis (pre-set period) on the status of the mitigated risk items as well as of any events that have been raised during the period, this step is performed using the LCP Risk Management Tool.

14.1.1 Objectives of the Risk Updating Process

These objectives are:

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- Evaluating existing risk items already identified and registered during previous sessions including re-assessment of its probabilities and consequences to the LCP Project and/or Sub-Projects.
- Introducing new risk items by refreshing (updating) the risk register and introducing new risk issues raised during previous period including assessment, consequences and proposed mitigation strategies and actions.
- Informing the LCP Project Management Team and stakeholders on the status of the risk register through reporting updates including newly introduced risk as well as retired risks.
- Identifying new events from different sources and circumstances related to the LCP Project. It is responsibility of every manager on the LCP Project to bring risk issues and discuss them with the LCP Risk Coordinator for further follow-up.

14.1.2 Risk Updating Process

The risk updating process involves:

- Updating the status of existing risk items and progress;
- Following-up on the action log – reports related to the risk events;
- Choosing alternative response strategies;
- Implementing a contingency plan;
- Taking corrective actions;
- Re-planning the project as needed and
- Adding new risk items that have materialized during the last month (period) and identified during workshop sessions.

14.2 Conducting Risk Reviews and Workshops

General Checklist:

- Make sure that attendees know what to expect in advance of the workshop so that they can arrived prepared;
- Clarify objectives of the Risk Workshop with participants;
- Ensure agenda is in place with allocated time per subject;
- The meeting agenda should cover the Scope and Objectives of the Risk Review, defines the context for all participants and also facilitates proper workshop time management;
- The workshop shall systematically work through the defined scope areas to be handled during the session and record new risk events (candidates) in the risk register including probability and consequences using the LCP risk management tool.

It is suggested as a good practice that during the workshop the audience first identifies the major risk by title and description. In the interest of proper management of the workshop time only the most severe risk may be analyzed in greater detail during the session.

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The risk identification / assessment meeting should be structured as a “brainstorming session” where everybody will have the opportunity to participate. For risk ranked as medium or higher the participants should also propose high level mitigation strategies and any action to support them.

Clarity on the scope to be covered during the workshop:

The scope of each workshop – risk identification meeting should be clearly communicated to the participants. Some risk identification meetings may cover the complete scope and duration of the project while other may be more limited.

The scope of the meeting will be defined within the following boundaries:

- Phase of the project – activities;
- Exposure activities (engineering, procurement, construction, commissioning, etc);
- Physical location (specific location or locations) or package specific;
- Risk category (some or all categories);
- Risk level (greater than a certain level only).

Selecting Participants:

- For strategic risks at the LCP Project level it is recommended to include all LCP Project Management Team.
- For tactical risks at the LCP Sub-Project level it is recommended that the Project Manager include all Area Managers, Technical Team and Functional Managers as required.

Workshop Session Roles:

- Facilitator: for the LCP project workshops the facilitator will normally be the LCP Deputy Project Control Manager, his role is to ensure that the meeting runs smoothly and to ensure that all participants have the opportunity to propose and evaluate candidate risk. For the LCP Sub-Project the facilitator will be the Risk Coordinator and may have assistance of the LCP Deputy Project Control Manager.
- Recorder: a recorder will be assigned from the participants, his role is to correctly record entries in the risk register and capture significant discussion – comments related with project risk. For meetings to discuss a large scope it is recommend that the facilitator and recorder not be the same person.
- Key participants (audience).

14.3 Risk associated with LCP Supplier and Contractors

LCMC integrates LCP Suppliers and Contractors risks into the overall risk process with their respective scope of supply or work during the contracted period and during future or anticipated project phases following LCP Gateway process. Suppliers and Contractors risks can result from binding obligations with other parties, delays or deviations resulting from failure to meet quality standards, conformity to specifications requirements or workmanship that are likely to affect their performance (cost and schedule).

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For LCP procurement packages is recommend that Suppliers keep the risk identification process focused on quality and schedule.

For LCP construction packages is recommended that Contractors keep the risk identification process focused on safety, environment, quality and schedule. If a contract type of “cost –plus” or reimbursable is in place may be necessary for the Contractor to include risk related to cost, session can be organized with the participation of the LCP team following size, complexity and criticality of the package for the delivery of LCP Project.

There are two key deliverables to be produced by LCP Suppliers/Contractors in order to be aligned with the LCP risk management process, these are: the Supplier/Contractors Risk Management Plan and the Risk Register.

It is recommended to include in the Risk Register to be produced by Suppliers/Contractors the following information but not limited to as indicated in Figure 26 below.

Figure 26: Risk Register fields for Suppliers/Contractors

01	Risk ID
02	Exposure Activity
03	Exposure Status
04	Risk Title / Possible Outcome
05	Risk Description
06	Risk Type
07	Owner
08	Location
09	Risk Status
10	Risk Exposure Period (Start - end)
11	Probability
12	Consequence
13	Probable Consequence / Risk Level
14	Mitigation Strategy
15	Mitigation Description
16	Mitigation Status
17	Action
18	Action Status
19	Responsible
20	Original due date
21	Revised due date
22	Comments

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15 ATTACHMENTS

15.1 Risk Register – Iris Risk Management Tool

15.2 Risk Report – Iris Risk Management Tool

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15.1 Risk Register – Iris Risk Management Tool

Motion	Code	Name	Probability	Cost	Schedule	Quality	Safety	Environment	Reputation	Score	Approach	Owner	Next Review	Current EV	Future ROI	Category
	LCPR001	Contractor's availability and contracting strategy adjustments for unawarded packages	Medium	High	High	Very Low	Very Low	Very Low	Very Low	12	Mitigate	admin	6/4/2014	22 \$M 3 Mos	0 0	Commercial
	LCPR003	Final Project Integration	High	High	High	Nil	Nil	Nil	Nil	16	Mitigate	admin	5/30/2014	33 \$M 4.5 Mos	0 0	Organization and Enterprise
	LCPR004	Building Operations organization	Medium	Medium	Nil	Nil	Nil	Nil	Nil	9	Mitigate	admin	6/20/2014	2.2 \$M 0 Mos	0 0	Operations
	LCPR005	Innu involvement IBA	High	Medium	Medium	Nil	Nil	Nil	Medium	12	Mitigate	admin	5/30/2014	3.3 \$M 1.2 Mos	0 0	External
	LCPR006	Spare parts vs RAM	High	Medium	Medium	Medium	Nil	Nil	Nil	12	Mitigate	admin	5/30/2014	3.3 \$M 1.2 Mos	0 0	Operations
	LCPR009	Construction Labour Availability LCP	Medium	High	High	Medium	High	Nil	High	12	Mitigate	admin	6/4/2014	22 \$M 3 Mos	0 0	Commercial
	LCPR010	Construction Labour Productivity LCP	Very High	Very High	Very High	Medium	Nil	Nil	High	25	Mitigate	admin	5/30/2014	160 \$M 14.4 Mos	0 0	Commercial
	LCPR011	Sensitive Areas LCP	Low	Medium	Medium	Nil	Nil	Nil	Medium	6	Mitigate	admin	6/4/2014	1.1 \$M 0.4 Mos	0 0	Regulatory
	LCPR012	Interfaces LCP	Very High	Very High	Very High	High	Very High	Nil	High	25	Mitigate	admin	5/30/2014	160 \$M 14.4 Mos	0 0	Interface

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15.2 Risk Report – Iris Risk Management Tool

Lower Churchill Project (LCP)
01. LCP - General

Summary

Name	01. LCP - General			
Code	LCP			
Manager	admin			
Objective				

	1	2	3	Other	Overdue			
Risk Profile	4	12	2	10	Risks	21	Actions	46
Opportunity Profile	0	0	0	0	Opp.	0	Actions	0

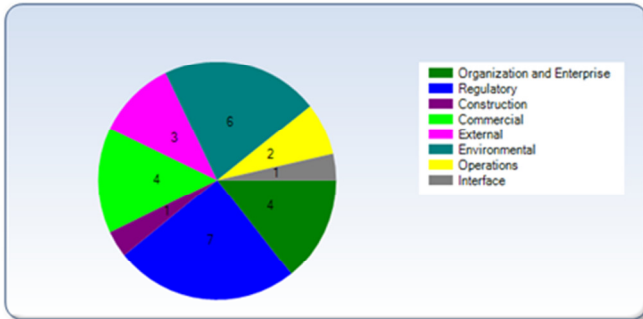
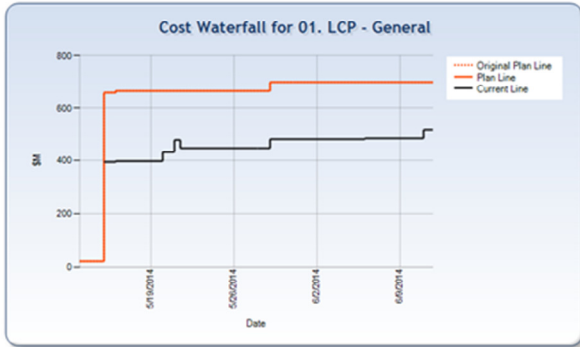
Quantitative Impact Limits:

	Cost \$M		Schedule Mos	
	Lower	Upper	Lower	Upper
Nil	0	0	0	0
Very Low	0	0.1	0	0.25
Low	0.1	1	0.25	1
Medium	1	10	1	3
High	10	100	3	12
Very High	100	300	12	24

Summary
6.1.14155.1439
6/11/2014
1

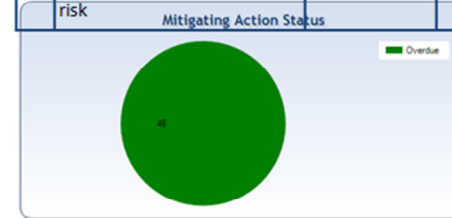
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01. LCP - General Dashboard



Top 10 By Expected Value

#	Name	Owner	EV \$M	Next Review
1	Construction Labour Productivity LCP	admin		5/30/2014
2	Interfaces LCP	admin		5/30/2014
3	Final Project Integration	admin		5/30/2014
4	Availability and retention of skilled construction labour	admin		6/12/2014
5	Contractor's availability and contracting strategy adjustments for unawarded packages	admin		6/4/2014
6	Construction Labour Availability LCP	admin		6/4/2014
7	Innu involvement IBA	admin		5/30/2014
8	Spare parts vs RAM	admin		5/30/2014
9	Terrestrial Habitat (Loss of Wetlands)	admin		6/20/2014
10	Foreign currency exchange risk	admin		6/12/2014



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Lower Churchill Project (LCP)
01. LCP - General

LCPR016
Water Contamination

Category	0	Owner	admin		
Score	0	Approach	Mitigate	Created	5/16/2014
Mitigation Budget	Total	Spent	Remaining	Amended	5/20/2014
	0.00	0.0000	0.0000	Next Review	6/3/2014

Description (Cause)

IF due to earth moving activities

Quantitative Impacts

	Cost \$M		Schedule(Days)	
	Lower	Upper	Lower	Upper
Nil	0	0	0	0
Very Low	0	0.1	0	0.25
Low	0.1	1	0.25	1
Medium	1	10	1	3
High	10	100	3	12
Very High	100	300	12	24



Impact Summary (Effect)

THEN a risk of impacting water quality at the North Spur, Dams, Dowden's Electrode, Anse au Diable locations, Converter station at MF

	Initial Probability	Cost	Schedule	Quality	Safety	Environment	Reputation
Start	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set
	0	0	0				
Current	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set
	0	0	0				
Target	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set	Not Set
	0	0	0				

Risk Summary
6.1.14155.1439
6/11/2014
1

Project Risk Management Plan		
Nalcor Doc. No.	Revision	Page
LCP-PT-MD-0000-RI-PL-0001-01	B2	57

Lower Churchill Project (LCP)		01. LCP - General
LCPR016	Water Contamination	 <small>LOWER CHURCHILL PROJECT</small>
Further Information / Comments		
<p>Action to be completed by D. Healey</p>		
	Risk Summary	6.1.14155.1439 6/11/2014

Project Risk Management Plan		
Nalcor Doc. No.	Revision	Page
LCP-PT-MD-0000-RI-PL-0001-01	B2	58

Lower Churchill Project (LCP)
01. LCP - General

LCPR016

Water Contamination

Owner	admin	Category	0	Amended	5/20/2014	Next Review	6/3/2014
Spend so far		0.0000		Remaining Budget		0.0000	
				Total Budget		0.00	

Cost	ROI Future	0	Expected Value	0	Target Expected Value	0
Time	ROI Future	0	Expected Value	0	Target Expected Value	0

Step No.	Name	Output	Owner	Status	Start Date	End Date	% Complete
	Site Water Control Plan				5/16/2014	5/16/2014	
1	Develop Site Water Control Plan		admin	Overdue	5/16/2014	5/16/2014	0.00%

Mitigation
6.1.14155.1439
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