

MANAGING ENVIRONMENTAL RISK IN INFRASTRUCTURE DEVELOPMENT



More stringent global environmental regulations, coupled with heightened public awareness regarding protection of the environment and natural resources, has resulted in the need for comprehensive environmental risk management strategies, which not only ensure successful project delivery but also protect all stakeholders.

Environmental risks are evident in many types of projects and can exist in varying degrees throughout the project life cycle from pre-planning through construction closeout to the operational phase. It is important to understand the notable environmental risks associated with each phase of a project, as well as the types of infrastructure projects that are more likely to have environmental issues.

PRE-CONSTRUCTION

A significant element of risk identification occurs during this time. Due diligence is typically conducted in order to define environmental site conditions. Lenders or other project finance partners may become concerned about pre-existing conditions and their effect on successful project delivery. In addition, environmental or public interest groups may protest larger proposed projects where they identify a risk to human health and natural resources. Contractual due diligence and risk allocation metrics are assessed and confirmed.

CONSTRUCTION

Many of the most significant and tangible environmental risks are encountered once site activities commence. In a perfect world, site conditions have been fully characterized and any known contamination defined, as well as all underground structures such as storage tanks, vaults, and pipelines identified; however, this is not always the case. Even when exhaustive due diligence has been performed, the chance exists that pre-existing contamination may be encountered or exacerbated during a project.

POST-CONSTRUCTION

Environmental risks can arise from completed operations, construction defects, or installed products. In addition, new pollution conditions can be created as the result of operations and maintenance activities.

It is important to note that environmental risks are both sudden and gradual in nature. Those which begin and end within a prescribed time frame may be easier to manage than those which may take a longer amount of time to develop. In any event, the failure to manage either type of scenario properly during the life cycle of a project can result in significant delays, increased costs, and unforeseen liabilities.

At Marsh, we understand the challenges inherent in large infrastructure projects with multiple stakeholders. Our environmental professionals understand specific roles, the critical project issues, and work with you to effectively incorporate the appropriate risk management strategies within your project team and management protocols. We take a solutions-based approach that not only identifies the environmental implications of each project, but provides you with cost-effective and sensible resolutions, turning potential liabilities into profitable opportunities.

We can assist stakeholders by offering the following integrated environmental consulting and risk management services, including the assessment, quantification, mitigation, management, and transfer of key risks, which may negatively impact environmental performance.

ENVIRONMENTAL RISK MANAGEMENT PROCESS

STEP 1

ASSESSING ENVIRONMENTAL RISKS

Define and quantify potential environmental cost factors to be managed as an appropriate component of the project's financial risk management plan.

MARSH OFFERING

- Regulatory and compliance evaluation.
- Project environmental management system evaluation.
- Management or oversight of the due-diligence process.
- Risk quantification through risk mapping/modeling.
- Loss forecasting and risk-mitigation strategies.

STEP 2

RISK MANAGEMENT SUPPORT

Project insurability.

MARSH OFFERING

- Contractual risk allocation review.
- Exposure analysis and risk management review.
- Request for proposal review and support.

STEP 3

RISK-TRANSFER OPTIONS

Specialty environmental insurance coverages to address project liabilities associated with property acquisition, construction/development and operations, and maintenance.

MARSH OFFERING

- Project benchmarking.
- Cost-effective insurance programs with broad terms and conditions.
- Specialized environmental claims advocacy.

ABOUT MARSH'S ENVIRONMENTAL PRACTICE

Marsh's combination of strategic environmental consulting services, together with our risk and insurance advisory specialty, will guide you through the risks that can affect your project's performance.

WHAT YOU GET

- Access to more than 50 full-time environmental risk professionals worldwide – more dedicated environmental professionals in the world's major insurance markets than any other broker.
- Knowledgeable consultants and brokers who have experience with the following types of infrastructure projects:
 - Light rail.
 - Toll roads.
 - Bridges and tunnels.
 - Public works.
 - Energy distribution.
 - Ports and terminals.
 - Airports.
- Insight into comprehensive risk management programs and risk-transfer solutions focused on reducing your project's total cost of risk.
- Environmental consulting expertise that focuses on the identification, quantification, and mitigation of environmental risk.
- Dedicated environmental claims professionals who advocate your position and negotiate the most favorable outcome.
- For more than the past decade, Marsh has been one of the leading producers of environmental insurance in the marketplace. In the last five years, we have placed over US\$700 million in environmental premium.

ABOUT MARSH'S GLOBAL INFRASTRUCTURE PRACTICE

Marsh's Global Infrastructure Practice provides clients with access to the full range of risk-based, analytical, and transactional support services available from Marsh & McLennan Companies, including risk advisory and insurance transactional services; commercial/market, operations and capital planning organization; economics and regulation consulting; human capital and investment analysis.



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For further information, please contact your local Marsh office, or visit our website at uk.marsh.com

GEOFF CLARK
Global Infrastructure Practice
Marsh LLC
+1 213 346 5025
geoffrey.s.clark@mmc.com

ELIZABETH BANNISTER
Environmental Practice
Marsh LLC
+1 404 995 2732
elizabeth.c.bannister@marsh.com

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