

Project Management LCLM5003_LON

A Project Portfolio

Part A (Poster)

Part B (Reflection on Feedback)

Part C (project management plan)

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[A] Poster

PROJECT MANAGEMENT [LCLM5003]

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Reconstruction of Local infrastructures that have been damage after the British Columbia Floods

introduction

In 2022, flooding in British Columbia damaged local infrastructures such as roads, small bridges, water pipes and public buildings. This affected daily life by reducing access to schools, healthcare and emergency services. This project aims to plan and manage the reconstruction of these infrastructures to improve safety and help communities return to normal.

The goal

of this project is to rebuild damaged local infrastructures to restore access to essential services, improve community safety and support daily mobility after the 2022 floods. This includes repairing small bridges, local roads, water systems and public buildings to help communities return to normal and become more resilient to future weather events.



Project Description

This project focuses on rebuilding local infrastructures damaged by the 2022 floods in British Columbia, including small bridges, local roads, water systems and public buildings. The aim is to restore safe access to essential services and improve community resilience. The work will be completed in phases, from assessment to construction and final safety checks.



RACI Matrix – Stakeholder Roles in the Reconstruction Project

Task	Provincial gov	Federal Gov	Residents	Contractors
Damage assessment	A	C	C	R
Infrastructure Repair	C	I	I	R
Utility Restoration	A	I	C	R
Community Communication	R	I	A	I

Phase Task Start End

Phase	Task	Start	End
Initiation	Project approval & funding	Week 1	2 weeks
	Stakeholder identification	Week 2	2 weeks
Planning	Damage assessment & surveys	Week 3	4 weeks
	Scope definition	Week 4	2 weeks
Execution	Scope stabilisation works	Week 7	10 week
	Drainage reconstruction	Week 12	9 weeks
Closure	Final inspection	Week 22	22 weeks
	Road reopening & handover	Week 24	1 week

Risk Register

ID	Cause	Effect	Type	#	Score	Owner	Response
R11	Limited contractor availability	Delays in rebuilding	Threat	4	3	PM	Partner with regional firms
R12	Insurance payouts	Faster recovery	Opportunity	3	4	Finance	Liaise with insurers early
R13	Community resistance to relocation	Project delays	Threat	2	5	Stakeholder Manager	Transparent communication compensation
R14	Use of modular construction	Faster deployment	Opportunity	4	4	Design Lead	Pilot modular units in schools first
R15	Inflation	Budget overruns	Threat	5	4	Finance	Include contingency buffer in budgets

Work Breakdown Structure

```
graph TD
    Initiation --> Planning
    Planning --> Closure
    Initiation --> ProjectApproval[Project approval & funding]
    Initiation --> StakeholderId[Stakeholder identification]
    Planning --> DamageAssess[Damage assessment & surveys]
    Planning --> ScopeDef[Scope definition]
    Planning --> ResourcePlan[Resource planning]
    Planning --> SafetyBarriers[Safety barriers & signage]
    Closure --> FinalInspect[Final inspection]
    Closure --> RoadReopen[Road reopening & handover]
```

Conclusion

The reconstruction of damaged infrastructure in British Columbia demonstrates the need for coordinated planning, clear communication, and resilient solutions. By working closely with stakeholders, essential services can be restored quickly while improving community safety and preparedness for future events.

Poster presentation [A]

QUAD CHART

Purpose: Restore essential local infrastructures[road,bridges,utilities] damaged by disasters

Customers/Stakeholders: Residents and communities
➢ Local Businesses And employers
➢ Healthcare and educational institutions

Desired End results/ Goals

- ☐ Fully functional transportation and utility networks.
- ☐ Secure access to water, electricity, healthcare, and education.
- ☐ Reduced downtime of essential services.

Measures of Success

- ☐ Time taken to restore critical services.
- ☐ Percentage of infrastructure rebuilt or upgraded.
- ☐ Reduction in service outages and maintenance costs.

Complete Project



Work Breakdown Structure

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Gibbs' Reflective

Project: Reconstruction of Local Infrastructures after the British Columbia Floods

1. Description

The poster on the reconstruction of local infrastructures after the British Columbia floods focused on how damage to everyday infrastructure affected communities at a very basic level. Roads, small bridges, water systems, and public buildings were damaged, limiting access to schools, healthcare, and emergency services. When preparing this poster, my aim was to show how project management can support communities in returning to normal life after a natural disaster. I structured the poster around the need to restore essential services and presented the project in a clear and accessible way.

2. Feelings

While working on this poster, I felt a stronger emotional connection to the project compared to others. The focus on local infrastructure made the situation feel more personal, as these are the services people rely on daily. I felt motivated to represent the impact of the floods respectfully and clearly. At the same time, I felt the responsibility of showing how planning and coordination can make a real difference to people's safety and wellbeing, not just to infrastructure systems.

3. Evaluation

One positive aspect of this work was my ability to communicate the human impact of infrastructure damage. I clearly explained why restoring local roads, bridges and utilities matters for communities trying to recover. The structure of the poster was logical and easy to follow, which helped convey the overall purpose of the project. However, I recognise that some sections focused more on describing outcomes rather than deeply analysing how each stage of the project would be managed in practice.

4. Analysis

Reflecting on this project helped me realise that local infrastructure recovery is not only a technical challenge but also a social one. When services such as water, electricity or access roads are disrupted, daily life becomes difficult and stressful for residents. This made me understand that project management decisions directly affect people's quality of life. Clear planning, communication with residents and coordination between authorities are essential to reduce disruption and rebuild trust within affected communities.

5. Conclusion

This reflection helped me see that effective project management goes beyond schedules and tasks. It requires understanding the needs of communities and prioritizing safety, access, and wellbeing during recovery. The project strengthened my awareness of the social responsibility involved in infrastructure planning.

6. Action Plan

In future projects, I will place greater emphasis on the human impact of project outcomes. I will aim to balance technical planning with community-focused thinking, ensuring that project decisions consider how people are affected at each stage. This approach will help me develop more meaningful and responsible project management plans.

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× 1. Introduction

Infrastructure recovery following natural disasters is a critical challenge for governments and communities. The 2022 floods in British Columbia caused significant damage to key transportation and local infrastructure, disrupting mobility, access to essential services and regional supply chains. Effective project management is essential to ensure that recovery efforts are structured, realistic and responsive to both technical and social needs.

This Project Management Plan focuses on the reconstruction of infrastructure affected by the 2022 floods, with particular attention to restoring safe access, improving resilience and reducing the risk of future disruption. The plan applies recognised project management tools and techniques to structure the project lifecycle, from initiation through to closure. Tools such as the Work Breakdown Structure, Gantt Chart, Quad Chart and Risk Analysis are used to support planning, coordination and decision-making.

The purpose of this plan is to demonstrate how project management principles can be applied to a real post-disaster infrastructure scenario. By integrating clear objectives, stakeholder involvement, resource allocation and risk management, the project aims to support efficient recovery while prioritising safety, sustainability and community needs.

× Project Description

The project focuses on the reconstruction of infrastructure damaged during the 2022 floods in British Columbia. Severe rainfall and flooding caused widespread disruption to transport routes, local roads and essential services, affecting the movement of people and goods and limiting access to healthcare, education and emergency response. The scale of the damage highlighted the need for a structured recovery project that could restore functionality while improving long-term resilience.

The primary aim of the project is to restore damaged infrastructure to a safe and operational condition, ensuring reliable connectivity between communities and supporting regional economic recovery. The project includes repairing and reinforcing roads and bridges, improving drainage systems, stabilising slopes and conducting safety inspections to reduce the likelihood of future failures. These activities are designed not only to address immediate damage but also to strengthen infrastructure against increasingly frequent extreme weather events.

The project is delivered through a phased approach, moving from initiation and planning into execution and closure. During the initiation phase, project objectives, scope and key stakeholders are defined. The planning phase focuses on risk identification, resource planning and scheduling. Execution involves the physical reconstruction and upgrading of infrastructure, while the closure phase ensures quality checks, final inspections and project evaluation.

This project involves multiple stakeholders, including provincial and federal government bodies, contractors, engineers and local communities. Coordinated collaboration between these groups is essential to minimise disruption during construction and ensure that recovery efforts align with community needs and regulatory requirements. Overall, the project represents a structured response to post-flood recovery, combining technical repair with careful planning and stakeholder engagement.

× Scope

The scope of this project defines the boundaries of the reconstruction work required following the 2022 floods in British Columbia. It focuses on restoring damaged infrastructure to a safe and functional condition while incorporating measures that improve long-term resilience and reduce future risk. Clearly defining the scope is essential to control time, cost and quality throughout the project lifecycle.

In-Scope

The project includes damage assessment, planning and reconstruction of flood-affected infrastructure. This covers the repair and reinforcement of roads and bridges, improvement of drainage systems, slope stabilisation works and safety upgrades to meet current standards. The scope also includes stakeholder coordination, environmental compliance, quality inspections and final project review. Project management activities such as scheduling, resource allocation and risk analysis are included to support effective delivery.

Out-of-Scope

The project does not include the development of new transport corridors or major infrastructure expansions beyond restoring and strengthening existing assets. Long-term urban development, private property repairs and unrelated utility upgrades are excluded. Ongoing maintenance after project completion also falls outside the project scope.

Constraints and Assumptions

Key constraints include budget limitations, environmental regulations, weather conditions and the availability of skilled labour and materials. The project assumes continued stakeholder cooperation, access to damaged sites and approval from relevant authorities. Managing these boundaries ensures the project remains focused, achievable and aligned with recovery objectives.

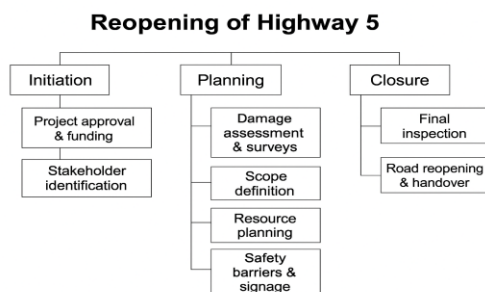
✖ Work Breakdown Structure (WBS)

The Work Breakdown Structure (WBS) breaks the project into clear and manageable phases to support effective planning and control. For the **reconstruction of local infrastructures**, the project is structured into three main phases: Initiation, Planning and Closure. Each phase represents a key stage in the project lifecycle and groups related activities required for post-flood recovery.

The **Initiation phase** focuses on defining the project scope, obtaining approvals, securing funding and identifying key stakeholders involved in the reconstruction process. This phase establishes priorities based on safety, accessibility and community needs.

The **Planning phase** includes technical and organisational activities such as damage assessments, site surveys, scope definition, resource planning and the implementation of temporary safety measures, including barriers and signage. These tasks ensure that reconstruction activities are well prepared and aligned with regulatory and environmental requirements.

The **Closure phase** covers final inspections, quality checks and the formal handover of reconstructed local infrastructures to the relevant authorities. This structure allows the project to progress logically from approval to completion, ensuring clarity, accountability and effective coordination throughout the reconstruction process.



× **Quad Chart**

<u>Purpose</u> To restore safe and reliable local infrastructure after the 2022 floods, ensuring continued access to essential services for communities while reducing the risk of future disruption.	<u>Customers / Stakeholders</u> Local communities, residents, emergency services, local authorities, construction contractors, utility providers, and provincial and federal government bodies
<u>Measures of Success</u> Completion of reconstruction works within the planned timeframe and budget, compliance with safety and environmental regulations, restored access to essential services, and improved infrastructure resilience against extreme weather events.	<u>Desired End Results / Goals</u> Reconstructed and operational local infrastructures, including roads, bridges and public facilities, that meet safety standards, improve accessibility, and support community recovery and resilience.

The Quad Chart provides a concise overview of the project by summarising its purpose, key stakeholders, expected outcomes and success measures in a single framework. It supports clear communication by aligning project objectives with stakeholder needs and performance indicators. This tool helps ensure that decision-making remains focused on delivering safe, efficient and resilient infrastructure recovery.

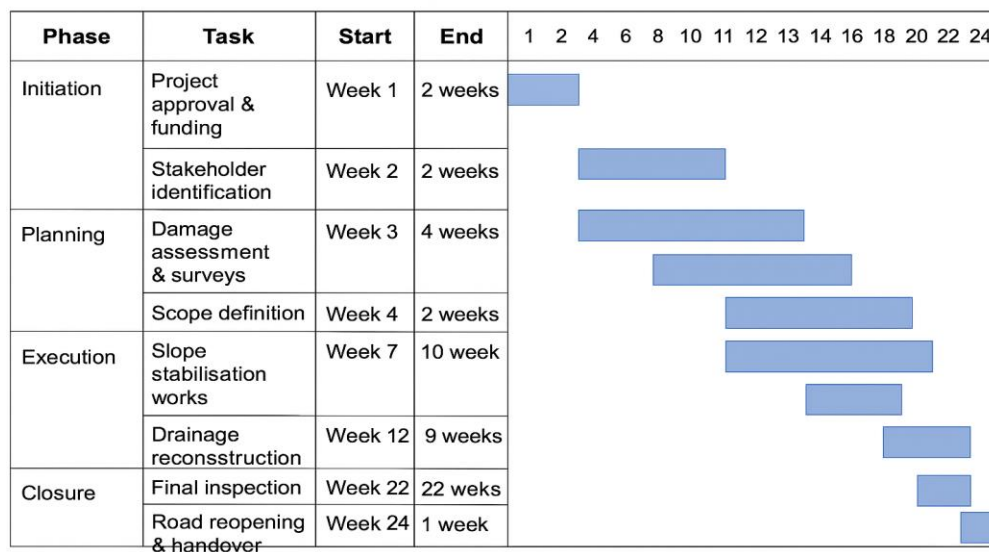
× Gantt Chart

The Gantt Chart illustrates the project schedule for the **reconstruction of local infrastructures** and shows how activities are distributed across the project lifecycle. The project is planned over a 24-week period and is divided into initiation, planning, execution and closure phases to ensure logical sequencing and effective control.

The **initiation phase** begins in week 1 and includes project approval, funding confirmation and stakeholder identification. The **planning phase** starts in week 3 and focuses on damage assessments, site surveys and scope definition, providing the technical foundation for reconstruction activities. The **execution phase** begins in week 7 and represents the longest stage of the project, reflecting the complexity of repairing and upgrading local roads, drainage systems and public facilities. Activities during this phase may overlap to improve efficiency while maintaining safety standards.

The **closure phase** takes place towards the end of the timeline and includes final inspections followed by the formal handover of reconstructed infrastructures to the relevant authorities. Overall, the Gantt Chart supports effective coordination by clarifying task durations, dependencies and key milestones throughout the project.

Reopening of Highway 5



✕ **Stakeholders' Involvement**

Stakeholder involvement is a critical component of the **reconstruction of local infrastructures**, as the project directly affects multiple groups with different interests and responsibilities. Effective engagement ensures that decisions are informed, risks are reduced and project outcomes align with community needs and regulatory expectations.

Key stakeholders include provincial and federal government authorities, who provide funding, approvals and regulatory oversight. Engineering teams and construction contractors are responsible for technical assessments, design and on-site reconstruction works. Their coordination is essential to ensure that activities are delivered safely on time and in compliance with relevant standards.

Local communities and residents are also important stakeholders, as the project impacts daily mobility, access to essential services and local economic activity. Clear communication with residents helps manage expectations, minimise disruption and build trust throughout the recovery process. Emergency services and local authorities are involved to ensure continued access during construction and to maintain public safety.

By clearly defining stakeholder roles and maintaining regular communication, the project supports collaboration, accountability and smoother delivery across all phases of the reconstruction process.

✖ ***Allocation of Resources***

Effective allocation of resources is essential to ensure the successful **reconstruction of local infrastructures** within the planned timeframe and budget. The project requires a combination of human, material and financial resources that must be coordinated carefully across all phases of delivery.

Human resources include project managers, civil engineers, geotechnical specialists, environmental officers and construction workers. These roles are allocated according to the project phase, with technical specialists primarily involved during the planning and execution stages. Construction contractors and site supervisors play a key role during execution to ensure that reconstruction activities are carried out safely and efficiently.

Material resources include construction materials such as aggregates, asphalt, drainage components, safety barriers and signage. Heavy machinery, including excavators, cranes and compactors, is required for repairing local roads, stabilising affected areas and restoring public facilities. Financial resources are allocated to cover labour costs, materials, equipment hire and contingency allowances for unforeseen conditions.

By aligning resource allocation with the project schedule, the project ensures efficient use of resources while maintaining safety, quality and regulatory compliance throughout the reconstruction process.

✖ Risk Analysis

Risk analysis is a key element in the reconstruction of local infrastructures affected by the 2022 floods in British Columbia. Post-disaster recovery projects involve high levels of uncertainty due to environmental conditions, damaged assets and coordination challenges across multiple locations. Identifying and managing risks early helps reduce disruption and ensures safer and more efficient recovery.

One significant risk is adverse weather, as continued rainfall or extreme conditions may delay reconstruction works or cause further damage to already weakened infrastructure. Environmental risks, such as soil erosion, flooding recurrence and contamination, also pose challenges, particularly when repairing local roads, drainage systems and public facilities. These risks are mitigated through site assessments, monitoring and compliance with environmental regulations.

Operational risks include shortages of materials, limited availability of skilled labour and delays in procurement. Health and safety risks are also critical, as reconstruction activities often take place in unstable or partially damaged environments. To manage these risks, the project applies clear safety procedures, flexible scheduling and contingency planning. Effective risk management supports safer working conditions and helps ensure the timely restoration of essential local services

x Conclusion

The reconstruction of local infrastructures following the 2022 floods in British Columbia represents a vital step in supporting community recovery and restoring access to essential services. This Project Management Plan has outlined a structured approach to managing post-disaster reconstruction through clear definition of scope, effective planning tools and coordinated stakeholder involvement.

By applying project management techniques such as the Work Breakdown Structure, Quad Chart and Gantt Chart, the project is organised into manageable phases that support control, accountability and efficient delivery. These tools help ensure that reconstruction activities are prioritised according to safety, accessibility and community needs, while maintaining compliance with regulatory and environmental standards.

Stakeholder involvement and resource allocation have been identified as key factors in achieving successful outcomes. Collaboration between government authorities, contractors, engineers and local communities supports informed decision-making and reduces disruption during recovery. In addition, proactive risk analysis enables the project to anticipate potential challenges related to weather, environmental conditions and operational constraints.

Overall, this plan demonstrates how structured project management can support effective and resilient reconstruction of local infrastructures. By focusing on both technical requirements and community impact, the project contributes to long-term recovery, improved resilience and the restoration of safe and reliable local services.

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