

Project Portfolio

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Module: Project Management: LCLM5003

Part A (Poster):

Part B (Reflection on Feedback):

Part C (project management plan)

Part [A]

REOPENING OF HIGHWAY 5 – POST-FLOOD INFRASTRUCTURE RECOVERY

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Assesment 1[Poster]

INTRODUCTION

Flooding in 2022 severely damaged Highway 5, disrupting regional transportation and supply chains. This project aims to reopen the highway safely and efficiently through structural repairs, improved drainage, and slope reinforcement. Reopening Highway 5 is critical for economic recovery, emergency access, and community mobility.

PROJECT DESCRIPTION

This project aims to repair and reopen Highway 5 after severe flood damage, restoring safe transport, reconnecting communities, and preventing future disruption.



GOAL

- Reopen Highway 5 safely
- Restore transport access
- Reduce economic disruption
- Improve future resilience

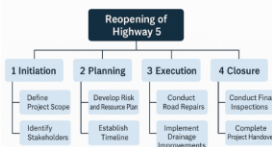
COMPLETE PROJECT



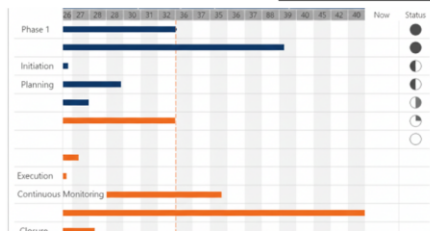
QUAD CHART

Purpose	Desired End Results / Goals
Restore safe transport access after flood damage. Reconnect communities and supply chains.	Fully functional highway with improved drainage and stability. Reduced travel delays and economic disruption.
Customers / Stakeholders	Measures of Success
Local residents, emergency services, transport companies. Provincial and federal government agencies.	• Highway reopened within planned schedule and budget. • Compliance with safety standards and reduced future closures.

WORK BREAKDOWN STRUCTURE



Gantt Chart



Conclusion

Reopening Highway 5 restores safe mobility after the 2022 flooding. It improves access for communities, emergency services, and supply chains. Infrastructure repairs and drainage upgrades reduce future disruption. Overall, the project strengthens long-term regional resilience.

Risk Register

ID	Issue	Impact	Type	#	I	S	Owner	Response
R1	Unstable soil during foundation	Delays in roadwork	Threat	4	5	20	Geotechnical Engineer	Conduct soil stabilization before pouring
R2	Availability of skilled labor	Project completion	Opportunity	3	4	10	HR Manager	Recruit locally and offer incentives
R3	Weather disruptions	Site accessibility	Threat	5	4	20	Site Manager	Reschedule work during dry periods
R4	Use of expensive materials	Longer budget	Opportunity	2	5	10	Procurement	Plan for alternative materials
R5	Regulatory delays	Project hold-up	Threat	3	4	10	Legal Advisor	Early engagement with authorities

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Part [B] (Reflection on Feedback)

1. Description

Preparing my poster for the project *Reopening of Highway 5 After the 2022 Floods* was an important learning experience. In the first version of the poster, I felt confident about most of the written sections. I developed the introduction, project description, quad chart, goals and conclusion myself, and I believed they clearly reflected my understanding of the flood impacts and the importance of restoring Highway 5. I also focused on organising the information clearly and creating a visually structured poster. However, during the feedback session, my lecturer identified three sections that required significant improvement: the Work Breakdown Structure (WBS), the Gantt Chart and the Risk Register.

2. Feelings

Initially, I felt satisfied with my work because the poster looked professional and well organised. I believed that presenting the information clearly was the main objective. However, when I received feedback, I felt disappointed and slightly concerned, particularly when it was pointed out that the technical tools did not meet the required standard. At the same time, I recognised that the feedback was constructive and aimed at helping me improve my understanding of project management rather than criticising my overall effort.

3. Evaluation

One positive aspect of my work was that the written sections were clear, relevant and directly linked to the context of Highway 5 after the floods. I demonstrated a good understanding of the project background and its importance for transport, emergency access and economic recovery. However, a major weakness was the Risk Register, which I copied directly from the lecturer's example. Although I initially believed this would be acceptable, it meant I did not demonstrate my own judgement or ability to identify project-specific risks. Additionally, while I created the WBS and Gantt Chart myself, they were not structured correctly or realistically.

4. Analysis

Reflecting on the feedback helped me understand that project management tools must do more than look correct visually. The WBS lacked a clear hierarchy and did not break the project down logically from deliverables to tasks. Similarly, the Gantt Chart did not

reflect realistic durations or a coherent sequence for an infrastructure recovery project. This showed me that technical accuracy and realism are essential in project planning, especially for complex projects such as post-flood highway reconstruction.

5. Conclusion

From this experience, I learned that originality, structure and realism are essential when applying project management tools. Visual presentation alone is not sufficient if the tools do not accurately represent the project scenario. The feedback helped me understand the importance of applying theoretical knowledge correctly and adapting it to real-world situations.

6. Action Plan

In future project work, I will ensure that all project management tools are fully original and tailored to the specific scenario. I will spend more time checking structure, sequencing and realism, particularly for tools such as WBS, Gantt Charts and risk analysis. For the final Project Management Plan, I will apply these lessons to produce structured, realistic and accurate tools that clearly demonstrate my understanding of project management practice.

Part[C] (project management plan)

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Introduction

The reopening of Highway 5 is a major post-disaster infrastructure initiative developed in response to the severe flooding and landslides that affected British Columbia in late 2022. As one of the province's primary transportation corridors, Highway 5 plays a crucial role in supporting regional mobility, economic activity, and the movement of essential goods. The damage caused by the floods disrupted access for residents, emergency services, commercial vehicles and supply chains, highlighting the importance of restoring the highway quickly but also safely and sustainably. Because of the complexity and scale of the reconstruction, a structured project management approach is essential.

This Project Management Plan presents the strategic and operational framework required to guide the reopening process. It outlines the project's objectives, scope, key deliverables, activity breakdown, timelines, stakeholder responsibilities, resource allocation, and risk mitigation measures. Using recognized project management methodologies ensures that decisions are transparent, tasks are coordinated efficiently, and all phases of the reconstruction are aligned with safety, environmental, and quality standards. The plan also emphasizes the need for clear communication among government agencies, contractors, local communities, and transport users throughout the project.

By integrating tools such as the Work Breakdown Structure, Quad Chart, Gantt Chart, stakeholder mapping, and a detailed risk analysis, this plan aims to support the successful and timely reopening of Highway 5. Ultimately, the goal is not only to restore the highway to its previous operational capacity, but to rebuild it in a way that improves resilience, reduces future disruption, and strengthens the region's ability to respond to extreme weather events.

Project Description

The project focuses on the reopening of Highway 5, a major transportation route that was severely damaged during the British Columbia floods of 2022. These floods caused multiple washouts, slope failures and structural damage across long sections of the highway, cutting off communities and limiting access for emergency services and commercial transport. For many residents and businesses, Highway 5 is not just a road but a lifeline that supports daily mobility, access to essential goods and broader economic stability. Because of this, rebuilding the highway is not simply about repairing physical infrastructure; it is also about restoring confidence, safety and normality to the region.

The project involves several key components, starting with assessing structural damage and determining which parts of the corridor require full reconstruction versus partial repair. Engineering teams must stabilise slopes, replace damaged bridges, rebuild road surfaces and upgrade drainage systems to ensure long-term resilience. The work also requires constant coordination between provincial authorities, contractors, environmental specialists and local communities, as the repairs must meet safety standards while minimising disruption.

Beyond the technical elements, the project also carries a social and economic dimension. Restoring Highway 5 will reconnect people with work, healthcare and family networks, and it will allow businesses to resume the movement of goods that were interrupted by the disaster. The project therefore balances urgency with responsibility, aiming to deliver repairs quickly but without compromising on quality or safety. In this plan, each task and decision is approached with the understanding that the reopening of Highway 5 represents an essential step toward recovery for the entire region.

Scope

The scope of this project defines exactly what is included in the reopening of Highway 5 and what sits outside its boundaries. Setting a clear scope is essential because the work involves many teams, technical disciplines and safety requirements, and the affected area stretches across several kilometres of damaged highway. A well-defined scope helps everyone involved understand what needs to be delivered, what the priorities are, and how success will be measured.

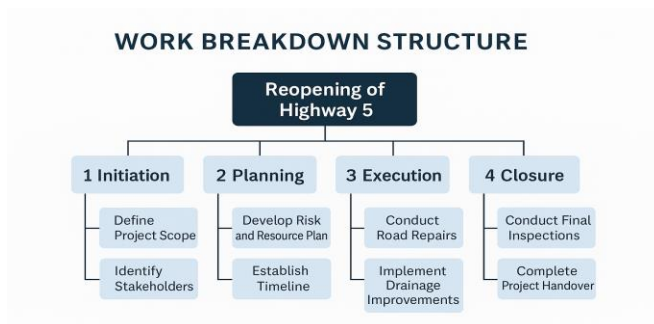
At its core, the project includes the **assessment, repair and reconstruction** of all highway sections that were impacted by the 2022 floods. This involves restoring washed-out lanes, rebuilding collapsed bridges, stabilising weakened slopes, replacing damaged drainage systems and ensuring that all repaired areas meet provincial safety standards. The scope also includes temporary traffic management, environmental protection measures and coordination with local communities affected by construction activities.

Another key element of the scope is the **improvement of long-term resilience**. The project does not aim to simply return Highway 5 to its pre-flood condition; it also involves targeted upgrades to make the corridor more resistant to future extreme weather events. This includes enhanced drainage, stronger structural materials and improved slope reinforcement. These resilience components are considered essential to avoid repeated disruption in the future.

However, the scope does **not** include unrelated infrastructure projects, new lanes or expansions beyond what is necessary for recovery. Routine maintenance unrelated to the flood damage also falls outside the project boundaries.

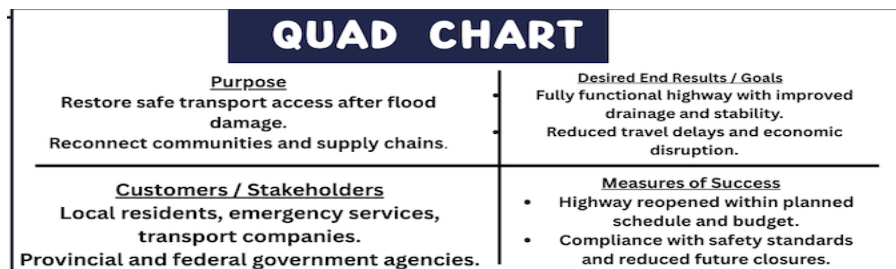
Overall, the scope provides a realistic and achievable framework that guides planning, resource allocation and decision-making, ensuring that the highway can be reopened safely, efficiently and with long-term reliability in mind.

Work Breakdown Structure



The Work Breakdown Structure (WBS) is a hierarchical decomposition of the project into manageable sections. It breaks the overall goal reopening Highway 5 into phases, deliverables and specific tasks. This structure clarifies what needs to be completed, helps assign responsibilities and supports accurate scheduling and resource planning.

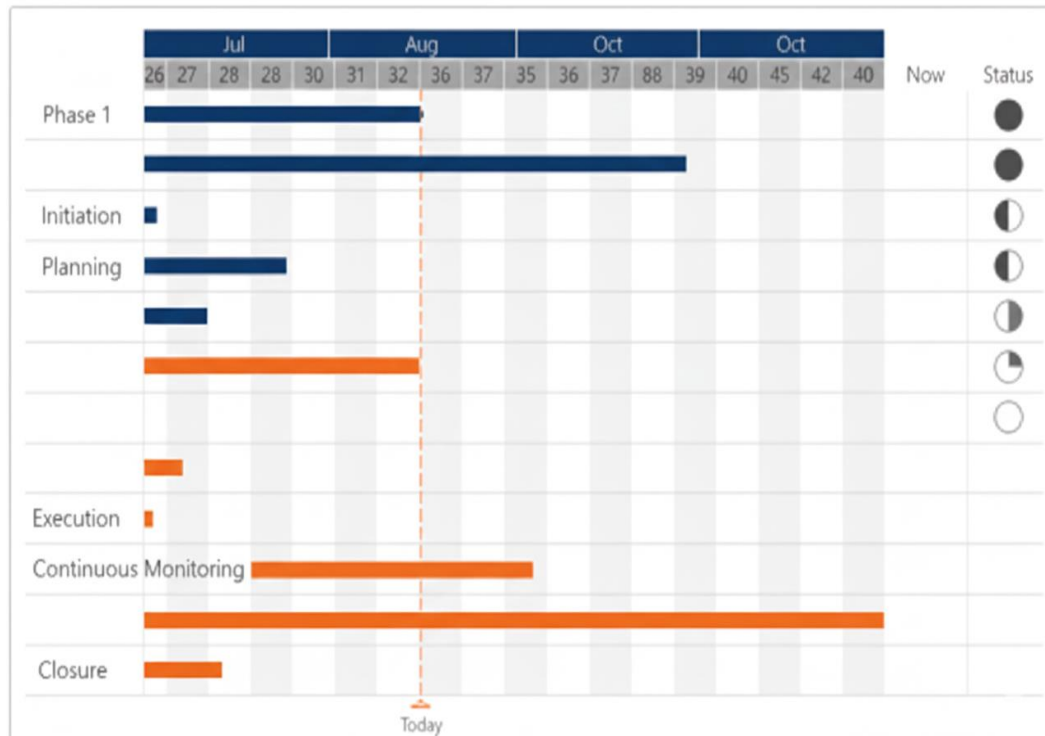
Quad Chart



The Quad Chart

summarises the key elements of the project in four sections: purpose, stakeholders/customers, desired outcomes and measures of success. It provides a clear visual overview that supports rapid understanding of the project's objectives and strategic direction.

Gantt Chart



The Gantt

Chart presents the project timeline, showing when each task or phase begins and ends. It illustrates the sequence of activities, their durations and any overlaps. This helps monitor progress, manage dependencies and ensure that reconstruction work on Highway 5 remains on schedule.

Stakeholders

The reopening of Highway 5 following the 2022 floods requires the involvement of a wide range of stakeholders, each contributing essential knowledge, resources and decision-making power. Because the highway represents a vital transportation route for communities, businesses and emergency services across British Columbia, stakeholder participation is central to ensuring that the project meets public needs, adheres to safety and environmental standards, and progresses efficiently. Effective stakeholder involvement also reduces the likelihood of conflict, encourages cooperation and ensures that all groups feel represented and informed throughout the reconstruction process.

The **Provincial Government of British Columbia** is the principal stakeholder responsible for funding, overseeing compliance and coordinating all major project decisions. Their involvement ensures that the project aligns with provincial infrastructure policies and recovery plans established after the floods. They also provide communication updates to the public, helping maintain transparency and trust.

The **contractors, engineering firms and technical teams** form another crucial group. These stakeholders are directly involved in structural assessments, bridge repairs, slope stabilisation, drainage reconstruction and safety installations. Their role requires close collaboration with government representatives to

ensure that technical standards, deadlines and budget requirements are met. As the project moves through different phases, their expertise guides decision-making and ensures that solutions remain practical and effective.

Local communities and residents also play a significant role. They are directly affected by detours, construction noise, temporary closures and access limitations during the reconstruction. Engaging with residents through consultations and public updates helps ensure that their concerns are addressed. Their feedback often provides valuable insight into local mobility needs, emergency access issues and environmental sensitivities.

Transport companies, logistics operators and commercial stakeholders depend heavily on Highway 5 to move goods across the region. Their involvement is essential in prioritising reopening efforts, planning detour routes and estimating economic impacts. By maintaining dialogue with these stakeholders, project managers can better coordinate traffic management and minimise the disruption to supply chains.

Additionally, **environmental agencies and specialists** monitor and advise on environmental protection during reconstruction. Their role helps ensure that slope stabilisation, drainage improvements and construction materials comply with environmental regulations and do not contribute to additional erosion or habitat damage.

Finally, **emergency services** must be actively involved, as the highway is critical for ambulance, fire and rescue operations. Maintaining access for emergency responses throughout reconstruction is essential.

Overall, stakeholder involvement strengthens the project by promoting communication, maintaining accountability and ensuring that the reopening of Highway 5 supports community, economic and environmental needs.

Allocation of Resources

The allocation of resources is one of the most important elements in ensuring the successful reopening of Highway 5 after the 2022 floods. Because this project involves large-scale structural repairs, environmental considerations and coordination across multiple agencies, resources must be distributed strategically and monitored throughout each phase. Effective resource allocation not only prevents delays but also ensures that the project remains safe, cost-efficient and aligned with provincial standards.

The first category of resources is **financial resources**, provided mainly by the Provincial Government of British Columbia. This funding supports material purchasing, labour costs, equipment use, environmental protection measures and emergency contingencies. Budget allocation must be proportional to the complexity of each phase. For example, execution requires the largest share of funds due to equipment-intensive activities such as slope stabilisation, bridge reconstruction and drainage upgrades. Careful budgeting also helps avoid overspending and ensures accountability throughout the project.

Human resources are equally essential. Engineers, construction crews, geotechnical specialists, project managers, environmental consultants and safety officers all play critical roles. These professionals contribute specialised expertise that ensures the highway is rebuilt safely and to modern standards. A major aspect of resource planning is scheduling human resources in a way that avoids downtime or overlap. For instance, geotechnical teams must complete slope assessments before construction crews begin repairs. Similarly, safety officers must be present throughout the project to oversee compliance.

Material resources include steel, concrete, asphalt, drainage pipes, safety barriers, erosion control materials and slope reinforcement structures. Post-flood reconstruction requires high-quality materials to ensure long-term resilience against future extreme weather events. Material availability must be coordinated with suppliers to prevent shortages, which could cause delays.

The project also relies heavily on **equipment resources**, such as excavators, cranes, stabilising machinery, transport trucks, drilling equipment and asphalt pavers. Equipment scheduling is vital, particularly in mountainous areas where access is limited. Efficient planning prevents bottlenecks and ensures that machinery is available when required.

Another important aspect is **time allocation**, which directly affects costs, community impact and logistics. The project timeline must balance urgency with safety. Completing the work quickly would benefit residents and businesses, but rushing reconstruction could compromise structural integrity. Time is therefore treated as a resource that must be managed with precision.

Finally, **communication resources** including project reports, stakeholder feedback channels, signage, and digital updates play a major role in keeping all groups aligned and informed.

Overall, allocating resources effectively ensures that the reopening of Highway 5 is safe, well-managed and resilient, supporting both the immediate recovery and the long-term stability of the region.

Risk Analysis

The reopening of Highway 5 after the 2022 floods involves a series of risks that must be carefully analysed to ensure that the project is completed safely, efficiently and within the expected timeframe. Because the highway traverses mountainous terrain with a history of unstable slopes and weather-related events, risk analysis plays a critical role in identifying vulnerabilities and preparing appropriate mitigation strategies. Understanding these risks early allows project managers to allocate resources more accurately, avoid unexpected delays and protect both workers and the public.

One of the most significant risks is **extreme weather conditions**, including heavy rainfall, snowfall or rapid temperature changes. These conditions can cause new slope failures, delay construction activities or compromise worker safety. The likelihood of extreme weather remains high due to the changing climate patterns in the region. Its impact on the project could be severe, leading to temporary shutdowns or extended timelines. Mitigation strategies include flexible scheduling, on-site weather monitoring and the use of protective equipment and reinforced materials.

Another key risk is **unstable terrain**. The floods weakened several slopes and embankments along the corridor. Even after initial assessments, unexpected subsurface instability may arise during excavation or reconstruction. This risk carries a high impact due to the potential for landslides or collapse. The mitigation approach includes detailed geotechnical surveys, continuous monitoring, and the installation of retaining walls, drainage channels and erosion control systems.

Supply chain disruptions represent another major risk. Post-disaster reconstruction requires large volumes of materials such as concrete, steel and drainage components. Delays in material delivery can slow progress significantly, especially during the execution phase. To reduce this risk, the project relies on multiple suppliers, early procurement planning and contingency stock for critical materials.

Workforce availability is also a risk, particularly due to the need for specialised engineers and certified construction crews. If labour shortages occur, project deadlines may be affected. Mitigation includes advanced scheduling, recruitment planning and ensuring competitive working conditions.

Additionally, **environmental risks** need to be considered. Reconstruction work may disturb sensitive habitats or create erosion if not managed carefully. Environmental

agencies must therefore be involved throughout the process to ensure compliance with regulations and best practices.

Finally, **community impact risks** relate to disruptions in mobility, noise and temporary road closures. These can create frustration among residents and businesses. Effective communication, clear signage and maintaining emergency access help reduce these issues.

Overall, risk analysis ensures that the reopening of Highway 5 remains safe, coordinated and adaptable, allowing the project to respond effectively to challenges that may arise during reconstruction.

Conclusion

The reopening of Highway 5 stands as a vital and symbolic step in the recovery process following the severe flooding events that affected British Columbia in 2022. This Project Management Plan has presented a structured, methodical and practical approach to managing the reconstruction of one of the region's most important transportation corridors. Through the development of the introduction, project description, scope, WBS, quad chart, Gantt chart, stakeholder analysis, resource allocation plan and risk assessment, it becomes clear that restoring this highway is not simply an engineering task it is a coordinated effort aimed at reconnecting communities, stabilising the economy and improving long-term resilience against climate-related disasters.

The analysis of stakeholders demonstrates the importance of collaboration between government authorities, engineering teams, environmental specialists, transport companies and residents. Each group contributes essential knowledge and perspectives that help shape a reconstruction process that is safe, inclusive and aligned with community needs. Their involvement ensures transparency, strengthens public trust and improves decision-making at all stages of the project.

The allocation of resources highlights the complexity of managing finances, equipment, materials and specialised labour in a post-disaster context. It also reinforces the importance of planning ahead, prioritising efficiency and ensuring accountability. Equally, the risk analysis section shows that the project does not only face technical challenges but also environmental, logistical and social uncertainties. Identifying these risks in advance enables the team to implement effective mitigation strategies, reducing disruptions and enhancing safety.

The Work Breakdown Structure and Gantt Chart provide the backbone of the project's organisation, breaking the work into manageable tasks and establishing a timeline that is both ambitious and realistic. These tools support coordination between teams, ensure clarity in responsibilities and allow progress to be monitored throughout the project's lifecycle.

Overall, the reopening of Highway 5 represents more than restoring a damaged road it symbolises resilience, recovery and future preparedness. By applying formal project management techniques, the reconstruction can be approached in a way that maximises safety, reduces delays and delivers long-term benefits for residents, businesses and emergency services. This plan demonstrates how structured project management contributes to rebuilding essential infrastructure with confidence, clarity

and responsibility. With strong coordination and thoughtful planning, Highway 5 can be restored not just to its former condition but improved to withstand future challenges and support the wellbeing and connectivity of the region for years to come.

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