



LCLM5003 PROJECT MANAGEMENT

Component 1 - Individual Poster

Integrated Sustainable Redevelopment of the Central Transport Hub

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INTRODUCTION

The shutdown of the city’s central transport hub has led to widespread disruption affecting economic activity, social connectivity, and logistical operations across the metropolitan area. Transport infrastructure plays a critical role in enabling urban productivity and accessibility, and disruptions can significantly impact regional economies (Kerzner, 2022). Smart transport systems increasingly rely on data-driven digital infrastructure to improve mobility efficiency, optimise passenger flow, and reduce congestion (Department for Transport, 2017; Turban et al., 2018). This project management framework presents a systematic strategy for redeveloping the site at scale, with the aim of reinstating full transport functionality while embedding sustainability, digital transformation, and inclusive design principles. Structured project methodologies are essential to ensure successful delivery within defined time, cost, and quality constraints (Lock, 2020).

PROJECT DESCRIPTION AND OBJECTIVES

This initiative focuses on the full reconstruction of the current transport hub into a contemporary, integrated interchange. The redesigned facility will combine rail, bus, and freight services within a unified system supported by advanced digital technologies. Integration of transport systems is recognised as a key factor in improving operational efficiency and user experience (Maylor, 2010). These innovations are intended to improve passenger movement, streamline operational coordination, and enhance logistics efficiency. In addition, the project will adopt environmentally responsible construction methods, renewable energy integration, and fully accessible infrastructure to ensure compliance with environmental regulations and inclusive design standards (Heagney, 2016).

KEY FINDINGS, SCOPE & BOUNDARIES

The project includes the demolition of structurally unsafe buildings, development of modern transport infrastructure, introduction of smart ticketing systems, and deployment of real-time data platforms alongside renewable energy solutions. However, it excludes improvements to surrounding road networks and does not cover privately operated transport services. Key constraints include a fixed budget, regulatory compliance requirements, and a strict delivery timeframe of 36 months. The plan assumes continued public sector funding and sufficient availability of skilled professionals throughout the project lifecycle. Transport hubs increasingly use digital twins and integrated data systems to simulate and manage passenger flow and operations (Smart Cities Council, 2025). Freight and passenger systems benefit from IoT-enabled coordination and data-driven optimisation tools (Department for Transport, 2017).

WORK BREAKDOWN STRUCTURE (WBS)

The programme is structured into seven main phases: initiation, detailed planning and design, procurement of resources and contractors, physical construction, implementation of digital systems, testing and commissioning, and final project closure. A Work Breakdown Structure (WBS) enables the decomposition of complex projects into manageable components, improving control and accountability (Heagney, 2016). Each phase is subdivided into smaller tasks to support monitoring, control, and effective delivery.

KEY STAKE HOLDERS

Local Authority and City Council
Department for Transport
Transport operators (rail, bus, freight)
Local businesses and residents
Environmental agencies
Contractors and project delivery teams

STRATEGIC VALUE OF THE PROJECT

This project delivers long-term economic, social, and environmental benefits. It supports regional growth by restoring supply chains, improves accessibility for all users, and aligns with national sustainability goals. The integration of digital systems enhances efficiency and resilience, positioning the city as a leader in smart urban transport infrastructure.

HIGH-LEVEL RISKS AND TRADE-OFFS

- a) Budget overruns vs quality outcomes
- b) Construction delays vs rapid delivery expectations
- c) Disruption during construction vs long-term benefits
- d) Technological complexity vs operational efficiency



STAKEHOLDER INVOLVEMENT

High Power, High Interest	Government, City Council
High Power, Low Interest	Regulatory bodies
Low Power, High Interest	Local community
Low Power, Low Interest	General public

CONCLUSION

Redeveloping the central transport hub is critical to restoring mobility and strengthening the city’s economic resilience. Large-scale infrastructure projects require structured planning, stakeholder coordination, and robust risk management to ensure successful delivery (Kerzner, 2022). Through the application of established project management practices, the initiative aims to achieve efficient delivery, stakeholder alignment, and long-term sustainable outcomes.



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PART B- FEEDBACK FROM LECTURER

The feedback I received from my tutor for my poster showed both what I did well and what I need to improve. It confirmed that I have a good understanding of project management and the importance of sustainable redevelopment, especially for the central transport hub.

One of my main strengths is that I clearly explained the purpose of my project. I showed how the closure of the transport hub has caused problems and why redevelopment is needed. My focus on digital solutions, sustainability, and inclusive design was seen as relevant and appropriate. This means I successfully linked my project to real-world needs. Another strength is that I included important project management tools like the Work Breakdown Structure (WBS), stakeholder mapping, and project phases. These show that I understand how large projects are planned and managed. I also did well in identifying key stakeholders and explaining the benefits of the project, such as better access, economic growth, sustainability, and improved efficiency. Using relevant literature also helped support my ideas.

However, there are some areas I need to improve. One key issue is that my project aims and objectives were not clearly written in a SMART way (Specific, Measurable, Achievable, Relevant, and Time-bound). This makes it harder to measure success. I also need to improve how I discuss risks. Although I mentioned some risks, I need to explain them in more detail and show how I would manage or reduce them. This will make my project stronger and more realistic.

Another point from the feedback is that some parts of my poster had too much text. This can make it harder for people to read and understand. To improve this, I should use more visual tools like charts, timelines, and diagrams. These will make the information clearer and more engaging for the audience.

The feedback has helped me understand what changes I need to make for my final project plan. I will rewrite my aims and objectives using the SMART format, so they are clear and easy to measure. I will also add a detailed risk section, including a risk matrix to show the level of risk and how I will deal with it. In addition, I will improve the layout by adding more visuals and reducing long paragraphs.

Finally, I will include more critical thinking, especially when discussing risks and decisions.

In conclusion, the feedback was very helpful in showing both my strengths and what I need to improve. By making these changes, I will create a stronger and more professional final project plan.

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PART C: PROJECT MANAGEMENT PLAN

C1. Introduction

The closure of the central transport hub has created significant challenges for the city, affecting residents, businesses, and visitors who rely on the facility for daily travel, employment, and commercial activities. The disruption has resulted in increased congestion, longer journey times, and difficulties in the movement of goods and services.

Transport infrastructure plays a vital role in supporting economic development, social inclusion, and the efficient movement of people; therefore, effective redevelopment is essential to restore and improve transport connectivity (Department for Transport, 2021).

The redevelopment of the transport hub requires a structured project management approach to ensure that the project is delivered successfully. Effective project management involves planning, organising, monitoring, and controlling resources to achieve specific objectives within agreed timescales, costs, and quality requirements (Project Management Institute, 2021).

This project management plan provides a framework for delivering a modern transport hub that meets current needs while preparing for future demands.

MAIN AIMS AND OBJECTIVES

The main aim of this project is to redevelop the central transport hub into a modern, efficient, and sustainable facility that improves mobility and supports the city's long-term economic and social development.

To achieve this aim, the project has several key objectives. Firstly, the project will create an integrated transport system that connects rail, bus, and freight services to improve coordination and accessibility. Integrated transport systems can improve efficiency by allowing different modes of transport to operate together more effectively (European Environment Agency, 2022).

Secondly, the project will introduce advanced digital technologies, including smart ticketing systems, real-time passenger information, and data management platforms. Digital transformation within transport infrastructure allows organisations to improve operational performance, enhance customer experience, and make better decisions through data analysis (Department for Transport, 2022).

Thirdly, the project aims to improve environmental sustainability by incorporating renewable energy solutions, energy-efficient systems, and sustainable construction methods. Sustainable construction approaches can reduce environmental impact while supporting long-term economic value (HM Government, 2023).

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The project will also ensure that the transport hub is inclusive and accessible for all users, including disabled passengers, elderly people, and families. Accessibility is a key requirement of modern transport design because public infrastructure should provide equal opportunities for all members of society (Equality Act, 2010).

Finally, the project aims to complete the redevelopment within the planned 36-month timeframe and allocated budget while reducing risks through effective planning, stakeholder communication, and regular performance monitoring. Clear objectives and measurable outcomes are important because they provide direction and allow project performance to be evaluated effectively (Project Management Institute, 2021).

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C2. Project Description

The project involves rebuilding the current transport hub into a modern and integrated system. The new hub will connect different types of transport, including trains, buses, and freight services. This will make it easier for people and goods to move smoothly across the city.

One of the most important features of the new hub is the use of digital technology. Smart systems will be introduced to improve passenger flow and manage logistics more effectively. For example, real-time data will help passengers plan their journeys better, while digital systems will help manage freight movement efficiently. Smart transport aims to improve journey planning, ticketing systems, and logistics coordination through data sharing (Department for Transport, 2026)

The project will also focus on sustainability. This means reducing environmental impact by using renewable energy, energy-efficient systems, and eco-friendly materials. The hub will aim to reduce carbon emissions and support the city's long-term environmental goals.

In addition, the project will also priorities' accessibility and inclusive design. The new facility will include step-free access, accessible platforms, clear signage, improved pedestrian routes, and facilities that support passengers with different needs. Inclusive design ensures that public infrastructure is usable by the widest possible range of people regardless of age or ability (Equality Act, 2010).

Overall, the project is not just about rebuilding a transport hub. It is about creating a smarter, greener, and more efficient system that meets the needs of the future.

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C3. Scope

The scope of the project defines what is included and what is not included. This helps to avoid confusion and ensures that the project stays focused.

Inclusions

The project will include:

- Demolition of unsafe and outdated infrastructure
- Construction of new transport facilities
- Installation of smart ticketing systems
- Development of real-time data and digital platforms
- Implementation of sustainable energy solutions such as solar panels
- Transport hubs increasingly use digital twins and integrated data systems to simulate and manage passenger flow and operations (Smart Cities Council, 2025).

These elements are essential to achieve the project's goals of efficiency, sustainability, and innovation.

Digital technologies such as integrated data systems and digital modelling can support better planning, monitoring, and operational management of transport infrastructure projects (Smart Cities Council, 2023).

Exclusions

The project will not include:

- Upgrades to external road networks
- Private transport services such as taxis or ride-sharing systems

By clearly defining exclusions, the project team can avoid taking on additional work that is outside the project's objectives. Defining exclusions ensures that the project team maintains control over resources and avoids additional work that falls outside the original project objectives (Project Management Institute, 2021).

Constraints

The project has several limitations:

- A fixed budget
- Strict regulations and legal requirements
- A deadline of 36 months

These constraints must be carefully managed to ensure project success. Project constraints must be carefully managed because limitations relating to cost, time, and resources can significantly affect project success (Association for Project Management, 2023).

Assumptions

The plan is based on the following assumptions:

- Government funding will continue throughout the project
- Skilled workers and materials will be available when needed

If these assumptions change, the project plan may need to be updated. If these

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assumptions change, the project plan may require adjustment through formal change management procedures. Effective change management helps projects respond to uncertainty while maintaining control over objectives and outcomes (Project Management Institute, 2021).

C4. Work Breakdown Structure (WBS)

The Work Breakdown Structure (WBS) divides the project into smaller, manageable parts. This makes it easier to plan, monitor, and control the project. According to the Project Management Institute (2021), WBS provides a structured approach to organising project work and improving control throughout the project lifecycle.

1. Project Initiation

This is the first phase. It includes defining the project goals, identifying stakeholders, and creating initial plans. Approval from key authorities is also obtained during this stage.

2. Planning and Design

In this phase, detailed designs are created. This includes architectural plans, engineering designs, and digital system planning. Risk assessments and cost estimates are also completed. Effective planning reduces uncertainty and improves decision-making because potential problems can be identified before construction begins (Kerzner, 2022).

3. Procurement

This phase involves purchasing materials and hiring contractors. Contracts are signed, and suppliers are selected based on cost, quality, and reliability. Successful procurement management helps ensure that projects receive the required resources at the right time while controlling costs and maintaining quality standards (Project Management Institute, 2021).

4. Construction

This is the main building phase. It includes demolition of old structures and construction of new facilities. Safety and quality checks are carried out regularly.

5. Digital System Implementation

Smart technologies are installed during this phase. This includes ticketing systems, data platforms, and monitoring systems.

6. Testing and Commissioning

All systems and structures are tested to ensure they work properly. Any problems are fixed before the hub becomes operational.

7. Project Closure

The final phase includes handing over the project, completing documentation, and reviewing performance. Lessons learned are recorded for future projects.

C5. Quad Chart

The Quad Chart provides a simple overview of the main elements of a project. It allows stakeholders to quickly understand the project objectives, schedule, budget, and risks. Effective communication tools are important because stakeholders require clear information to support decision-making (Morris, 2013).

Objectives

The main objective is to create a safe, efficient, and sustainable transport hub that meets future needs.

Schedule

The project will be completed within 36 months. Each phase has a specific timeline to ensure progress.

Budget

The estimated cost is limited. This includes construction, technology, and contingency funds.

Risks

Key risks include construction delays, cost increases, and stakeholder disagreements. These risks must be carefully managed throughout the project.

The Quad Chart helps stakeholders quickly understand the key aspects of the project.

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C6. Gantt Chart

The Gantt Chart is an important project management tool that shows the full timeline of the project. It helps the project team understand what tasks need to be completed, when they start, how long they last, and how different phases overlap. According to Kerzner (2022), scheduling tools such as Gantt Charts are valuable because they improve coordination and resource planning.

In this transport hub redevelopment project, the total duration is 36 months, and the work is divided into several key phases. Instead of completing each phase one after another, some activities are planned to run at the same time. This is known as overlapping or parallel scheduling, and it helps to save time and improve efficiency.

For example, the procurement phase begins before the design phase is fully completed. This allows the project team to order materials and hire contractors early, reducing delays later in the project. Similarly, digital system development can begin while construction is still ongoing, ensuring that technology is ready when the building is completed.

Detailed Phase Breakdown

<i>Project PHASE TIMELINE</i>	<i>Key Activities</i>	<i>OUTCOME</i>
<u>Project Initiation</u> (Month 0–3) This is the starting phase of the project.	During this time: ❖ Project goals are defined ❖ Stakeholders are identified ❖ Initial feasibility studies are completed ❖ Approvals are obtained	This phase is short but very important because it sets the foundation for the entire project. ✓ Project approval
<u>Planning and Design</u> (Month 2–6) This phase overlaps slightly with initiation to save time.	It includes: ❖ Architectural and engineering designs ❖ Environmental and sustainability planning ❖ Cost estimation and budgeting ❖ Risk	By the end of Month 6, the design is completed. ✓ Final design completed

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	assessments	
Procurement (Month 5–10) Procurement starts before design is fully finished.	This phase includes: ❖ Selecting contractors and suppliers ❖ Purchasing construction materials ❖ Signing contracts	This overlap helps ensure that construction can begin immediately after procurement ends. ✓ Resources secured
Construction (Month 9–30) This is the longest phase of the project..	It includes: ❖ Demolition of old infrastructure ❖ Building new transport facilities ❖ Installing structural components	Construction begins slightly before procurement is fully complete to avoid delays. Construction Completion (Month 30) ✓ New Hub built
Digital System Implementation (Month 18–32). This phase overlaps with construction.	It includes: ❖ Installing smart ticketing systems ❖ Setting up real-time data platforms ❖ Integrating logistics coordination systems	Starting this phase earlier ensures that digital systems are ready when construction ends. ✓ Digital systems ready
Testing and Commissioning (Month 30–36) Once construction and digital systems are complete, everything must be tested	These tests are: ❖ Safety checks ❖ System performance testing ❖ Operational trials	This ensures that the hub is safe and fully functional. ✓ Hub ready for operation
Project Closure (Month 34–36)	The final phase includes: ❖ Final inspections ❖ Handover to authorities ❖ Documentation and reporting ❖ Review of lessons learned	Final Commissioning (Month 36) Handing over the project ✓ Project completed

Why the Gantt Chart is Important

The Gantt Chart helps:

- Track progress against the timeline

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- Identify delays early
- Manage overlapping tasks effectively
- Ensure resources are used efficiently

By clearly showing milestones and dependencies, the project team can stay organised and make better decisions.

Final Insight

This Gantt structure shows that the project is carefully planned to reduce idle time and avoid delays. By overlapping key phases like procurement, construction, and digital implementation, the project can be completed within the 36-month deadline while still maintaining quality and efficiency.

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C7. Stakeholder Involvement

Stakeholders are people or groups who are affected by the project or have an interest in it. Managing stakeholders is very important for project success. Effective stakeholder engagement helps build support, manage expectations, and reduce resistance to change (Freeman, 2010).

Interest These stakeholders have strong influence and care deeply about the project. Examples: Government and City Council must be closely involved in	High Power, Low Interest These stakeholders have influence but may not be very involved. Examples: Regulatory bodies need to be kept satisfied and informed.
Interest These stakeholders are very interested but have less influence. Examples: Local community should be kept informed and consulted	Low Power, Low Interest These stakeholders have limited interest and influence. Examples: General public require basic communication.

Communication Plan

A communication plan ensures stakeholders receive accurate information at appropriate stages of the project. Regular communication reduces misunderstandings and improves collaboration between project participants (Association for Project Management, 2023).

C8. Allocation of Resources

Resources must be carefully managed to ensure the project runs smoothly. Poor resource allocation can lead to delays, increased costs, and reduced project quality (Kerzner, 2022).

DEPARTMENT	WHO?
Human Resources	This includes engineers, architects, project managers, and construction workers. Each role is important for completing different tasks.
Financial Resources	The project is funded by the government. A contingency budget is also included to handle unexpected costs.
Material Resources	Sustainable materials will be used to reduce environmental impact. This includes recycled materials and energy-efficient equipment.
Technological Resources	Digital systems such as smart ticketing and data platforms are essential for modernising the transport hub. Proper allocation of resources helps control costs and ensures that the project is completed on time.

C9. Risk Analysis

Risk management is a key part of project management. It involves identifying potential problems and planning how to deal with them. Effective risk management improves project resilience and increases the likelihood of successful delivery (Project Management Institute, 2021).

Financial Risk	There is a risk that costs may exceed the budget.	Mitigation: Use strict cost control and regular financial monitoring.
Operational Risk	Construction delays may occur due to weather, labour shortages, or supply issues.	Mitigation: Use backup plans and flexible scheduling.
Technical Risk	Digital systems may fail or not work as expected.	Mitigation: Conduct thorough testing and use reliable technology providers.
Environmental Risk	The project may fail to meet sustainability targets.	Mitigation: Follow environmental regulations and use eco-friendly practices.

Each risk is assessed based on how likely it is to happen and how serious its impact would be. Regular monitoring helps reduce these risks.

C10. Conclusion

In conclusion, this assignment shows how using a clear and organised project management approach can help successfully redevelop a complex project like the central transport hub. The closure of the hub caused serious economic, social, and transport problems, so it is important to create a solution that not only fixes these issues but also prepares for the future.

The project uses important project management tools such as defining the scope, breaking the work into phases, using a Gantt Chart for scheduling, and managing stakeholders. These tools help keep the project organised, ensure resources are used properly, and allow progress to be tracked over the 36-month timeline.

The project also focuses on sustainability and digital technology. Features like smart systems, real-time data, and environmentally friendly design help make the transport hub more efficient and modern. At the same time, risks such as delays, extra costs, and technical problems are identified and managed.

Overall, this project offers a practical and effective solution. It will improve transport services, support the economy, and create a better experience for users. Sustainable transport infrastructure is essential for developing resilient cities and supporting long-term economic and environmental goals (United Nations, 2015). By combining good planning with modern technology, the redevelopment will provide long-term benefits for the city and its people.

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