MANKATO ICE HOCKEY ARENA

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Abstract

Minnesota State University, Mankato is planning to build a new ice hockey stadium because the current stadium Mayo Clinic Health System Event Center (MCHSEC) has been declared a historical landmark and cannot be used for games anymore. In the year 2025, Minnesota State University, Mankato (MSU) has major victories in the hockey championships and has decided to build a new environmentally friendly hockey stadium on campus to celebrate its success.

This paper aims to describe the complete project plan to build a new hockey stadium in Minnesota, Mankato. The report highlights the project definition, project plan, project execution, and project closure phase of the project management. It also explains the project execution by providing detailed steps of the task with clear milestones to track progress and make sure everything is on schedule. Additionally, in the final stage of project closure, the documents and contracts are handed over to the university, and training is provided to the employees.

The new environmentally friendly hockey stadium is expected to be around 50,000 square feet and will include modern facilities to enhance the experience for the players, fans, and staff. The stadium has a capacity of 5,000 fans with facilities such as digital scoreboards, Fan Zones, etc. The project is expected to cost $50 million, making the stadium one of a kind in Mankato with its commitment to environmentally friendly design and construction.

Keywords: Hockey Stadium, Innovation, Risk Management, Minnesota State University (MSU)

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Project Definition

Minnesota State University, Mankato is constructing a new ice hockey stadium to replace the historic Mayo Clinic Health System Event Center (MCHSEC) after winning 3 consecutive championships. The new stadium will be built on campus with sustainability and eco-friendly design principles in mind to incorporate the current winning team to provide world-class facilities in the stadium.

Project Scope

As a result of the current hockey stadium of Minnesota State University, Mankato not being able to serve, a new hockey stadium needs to be constructed. This project aims to build a hockey stadium by parking lot 2 of Minnesota State University, Mankato whose arena size will be 200 feet by 85 feet and the audience sitting size of 5000. The project budget is $ 5 million and is targeted to be completed by October 2027 meeting the standard of the domestic hockey games to be played by the college teams. (Cost to build an ice rink for permanent use, n.d.). The map of Minnesota State University, Mankato is shown in Figure 1 with the proposed area for stadium construction highlighted.

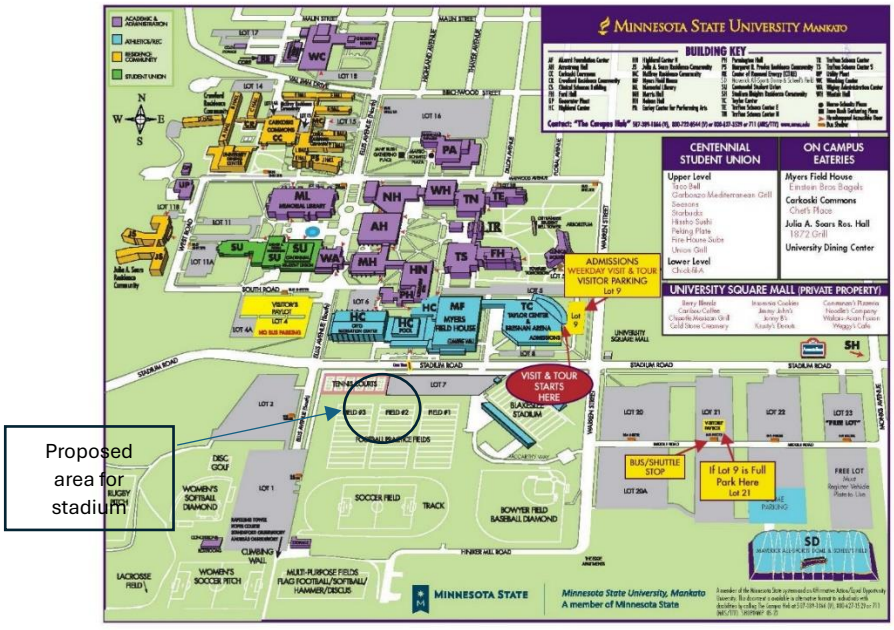


Figure 1: Purposed Location for Construction of Hockey Stadium

Project One Pages Document

Project one pager is made to help understand the project better.

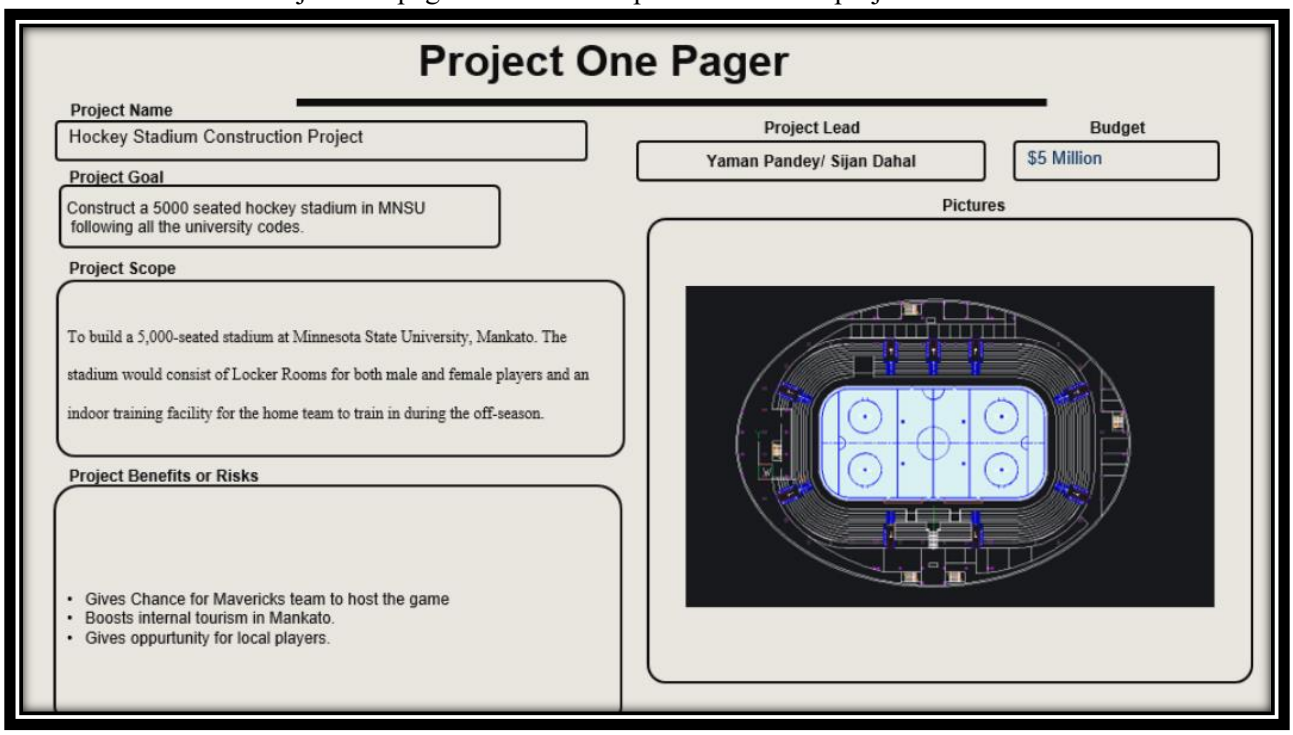


Figure 2: Project One-Pager

Scope

The main scope of this project is to build a 5,000-seated stadium at Minnesota State University, Mankato. The stadium will consist of the following features.

Locker Rooms: The locker rooms for the men and women will be separate and will include facilities like attached bathrooms, Kitbag Storage, and multiple TVs. The size of the locker room will be around 1100 square feet.

- **Ice Rink:** The Ice Hockey Rink will be designed and developed by a world-renowned company called Everything Ice. The plan is to create a world-class platform for the players where they can easily get the best out of themselves. Our team will work together with the company to construct the best quality ice ring.

- **Seating Zone:** The hockey stadium will feature a well-designed and developed seating capacity which is planned to make sure the fans get value for their money. The stadium will have a general seating zone for the general ticket holders. The stadium will also have a 50-seat capacity to include VIP ticket holders who have services such as a private Entrance, Complimentary drinks, and other amenities. Additionally, the stadium also will have accessible seating where disabled people can get to the stadium with the help of a dedicated ramp, wheelchairs, and special staff who are there to help them.

Project Deliverables

The following deliverables are defined for the project:

1. **Facilities**
    - A modern stadium with 5,000 seating capacity.
    - Locker Room with bathroom and TVs attached.
    - Fan Zones separating General, VIP, and Accessible seating zones.
    - Parking zone separated by tickets; VIP, General.

2. **Technology**
    - TVs in the locker room.
    - High-Speed Internet.
    - The layout of the stadium includes a 3D design.

3. **Construction**
    - Material purchasing for construction
    - Labor hiring
    - Planning to park construction vehicles.

4. **Commissioning**
    - Final customer meeting.
    - Handover of the stadium to the university.

Milestones

Milestone	Date	Description
Get the design and construction approved	**Nov 2025**	Get the design and construction approved from Minnesota State University, Mankato
Permits finalization and contracts with Everything Ice	**Dec 2025**	Permits finalization and contracts with the Everything Ice contractor for building the Ice Rink
Kicking off construction	**Jan 2026**	Kicking off construction with tasks such as land clearing, leveling, and initial groundwork.
Agreement kickoff with Everything Ice	**Mar 2026**	The agreement kickoff with the company is for Everything Ice to build the Ice Rink.
Start structural framework construction	**May 2026**	Starting to build a structural framework such as a roof for the seating places.
Construction of locker rooms and seating zones	**Aug 2026**	Begin construction of the locker rooms with attached bathrooms and seating zones with the proper seats to the different zones (General, VIP, Accessible)
Installation of Ice Rink	**Dec 2026**	Installation and configuration of the ice rink with *Everything Ice* including cooling systems and resurfacing equipment.
Completion of IT infrastructure	**May 2027**	Finalize Information technology infrastructure such as High-speed internet, Digital Scoreboard, and commentary box.
Testing of systems	**Aug 2027**	Testing of audio-visual systems, commentary box, and internet speeds to ensure proper functioning.
Testing of Ice Rink features	**Sep 2027**	Test the ice rink features, including ice cooling, temperature settings, and resurfacing equipment.

Project finalization and handover meeting	**Oct 2027**	Complete all tasks and hold a final meeting with MSU for the handover of the stadium.
Grand opening and first match	**Dec 2027**	Officially open the stadium with a grand opening event, including the first hockey match between MSU and the University of Minnesota with the guest of current Vikings captain Justin Jefferson.

Table 1: Milestones for the project

Technical Requirement

To ensure that the hockey stadium meets the university, domestic tournament, and QHSE requirements, technical requirements are reviewed. The technical requirements for the project are defined as follows:

Size: 30,000 square feet
Capacity: 5000-seater stadium
Cost: 50 million Dollars

1) **Ice Rink Technical Requirements according to National Hockey League (NHL)**
    - The dimension of the playing field of 200 feet by 85 feet.
    - According to NHL Standard, the thickness of the ice should be approximately 1 inch, which is 2.5cm.
    - The Ice Rink must be equipped with a cooling system by the contact company Everything Ice. It is important to maintain the ice temperature of 22 degrees Fahrenheit for professional games.
    - Protective glasses and barriers for the safety of the spectators.
    - Proper lighting and visibility for the player to play the matches during the day and night.

2) **Scoreboard/ Videoboard Dimensions**
    - **Height:** 12 feet
    - **Width:** 20 feet
    - **Resolution:** 4K resolution for clear, high-quality visuals
    - **Multifunctionality:** Real-time data update in the scoreboard along with important events highlights such as Goals, Misses, and cards.

3) **Electrical Installations**

To maintain the safety of the people inside the stadium, it is important to install and maintain the electrical systems in the stadium.

- **NFPA 70** – The code requirement for the electrical wiring.
- **NFPA 70B** – The code for the electric equipment maintenance,
- **NFPA 70E** – The code for the standard of electric safety in the stadium.

- **NFPA 110** – The code for the emergency and alternative power in the stadium.

HVAC (Heating, Ventilation, and Air Conditioning)

- **ASHRAE 62 Specifications (ASHRAE, 2012)**
  The ASHRAE 62 code is the ventilation for acceptable indoor quality.

Limits and Exclusions

Having limited time, funding, and resources, the limits are set for the project. This will prevent the possibility of scope creeping during or after the project.

- The contractor Everything Ice will only be responsible for the issue of the Ice Rink for a year.
- The budget of the project is $50 million and cannot exceed that amount.
- The exceeding parking will be covered by Minnesota State University, Mankato with their other lots (Gold, Silver) on the school premises.
- This project will not include any cafeteria on the stadium premises.

Customer Review

The customer for this project is Minnesota State University, Mankato. Communication will be maintained with the University throughout the project. The official means of communication with the University will be email. Updates will be provided in the form of reports. Some of the important communication channels are:

- **Frequency of Communication** – We plan to provide updates to the university in a bi-weekly manner.
- **Meeting and Presentations** – Monthly meetings and presentations regarding the updates with the key stakeholders.
- **Point of Contact –** Responsible for overseeing communications
  - **Name:** Minnesota State University, Mankato
  - **Title:** Owner of the project

Project Priority Matrix

The Project Priorities Matrix is a management tool used to prioritize and clarify project constraints. It emphasizes the three main constraints of time, cost, and scope (quality), and shows how adjustments in one area may impact the others. This matrix helps define which aspects are most critical to the project's success and which can be flexible.

In this project, the cost is constrained which is supposed to cost 50 million dollars to the Minnesota Stadium University, Mankato. The cost cannot exceed more than the allocated budget, which is tightly constrained, and exceeding the budget is not acceptable. The stadium must be constructed within the limited budget which makes cost a major constraint.

The scope of this project is to create a world-class stadium in Mankato with various features such as a digital Scoreboard and Eco-friendly practices. The main idea is to enhance the stadium by providing the best facilities such as a locker room, and advanced technology available on the market to the players and spectators. The fans will experience a brilliant atmosphere with a fan zone which will boost the players to win.

The project must be completed by October 2027. There might be some challenges in finishing up or some details of the project which might need extra time as needed. So, if there are any challenges the project cannot be extended by a couple of months. The extra time needed to complete any requirements of the project should be documented and completed. In summary, the following could be described as constraints:

Cost is Constrained because it has a fixed budget of $50 million.

The scope is enhanced because the project should exceed expectations.

Time is accepted as it is non-negotiable and should be completed by October 2027.

	Time	Scope	Cost
Constrain			X
Enhance		X	
Accept	X		

Table 2: Project Priority Matrix

Work Breakdown Structure (WBS)

The Work Breakdown Structure (WBS) is a method used to break down the project into manageable sections, known as work packages. This hierarchical structure ensures that all tasks required for project completion are identified and organized, facilitating better planning and management. The detailed work breakdown structure can be found in Figure 2 below,

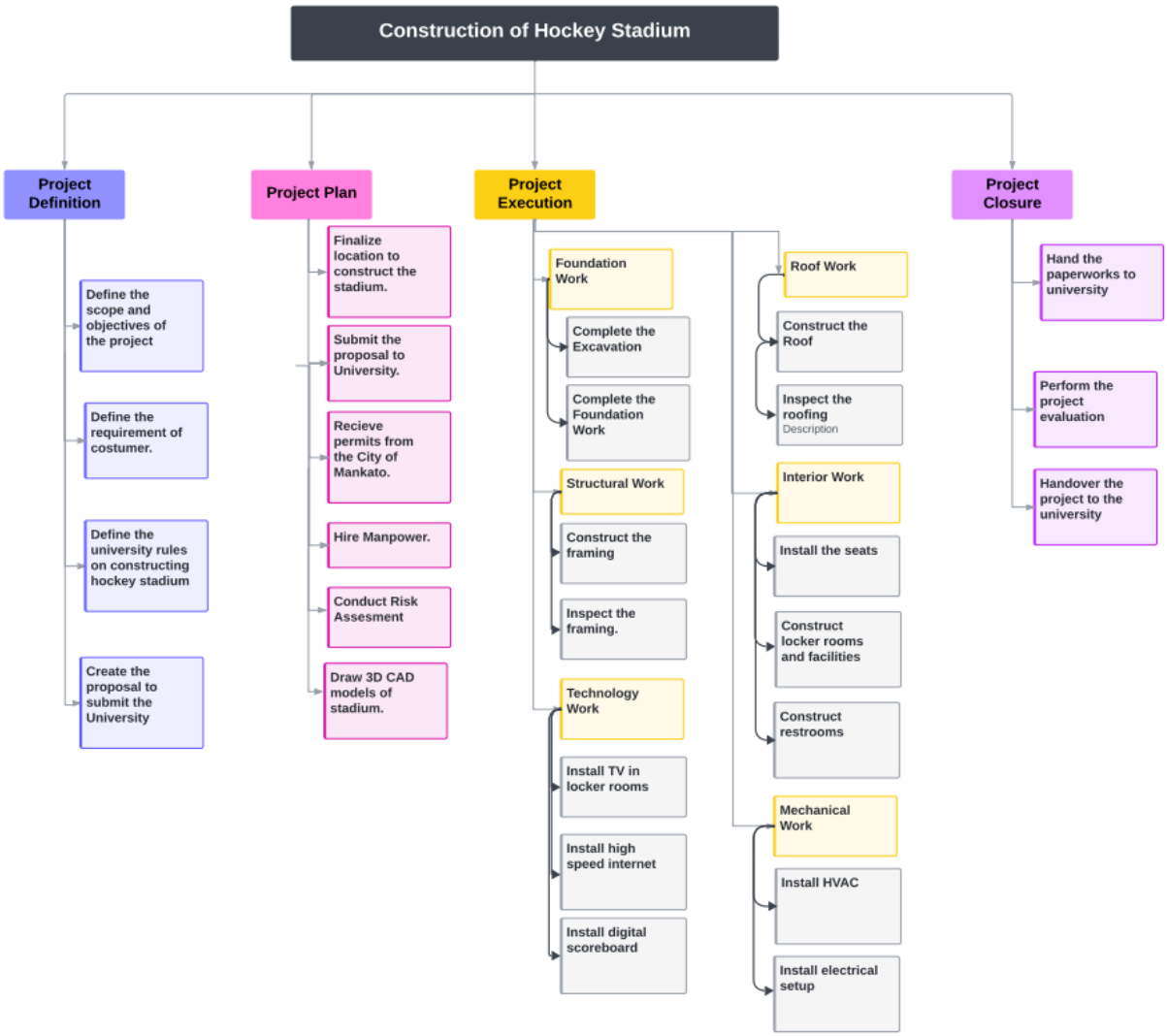


Figure 3 : Work Breakdown Structure

Network Analysis

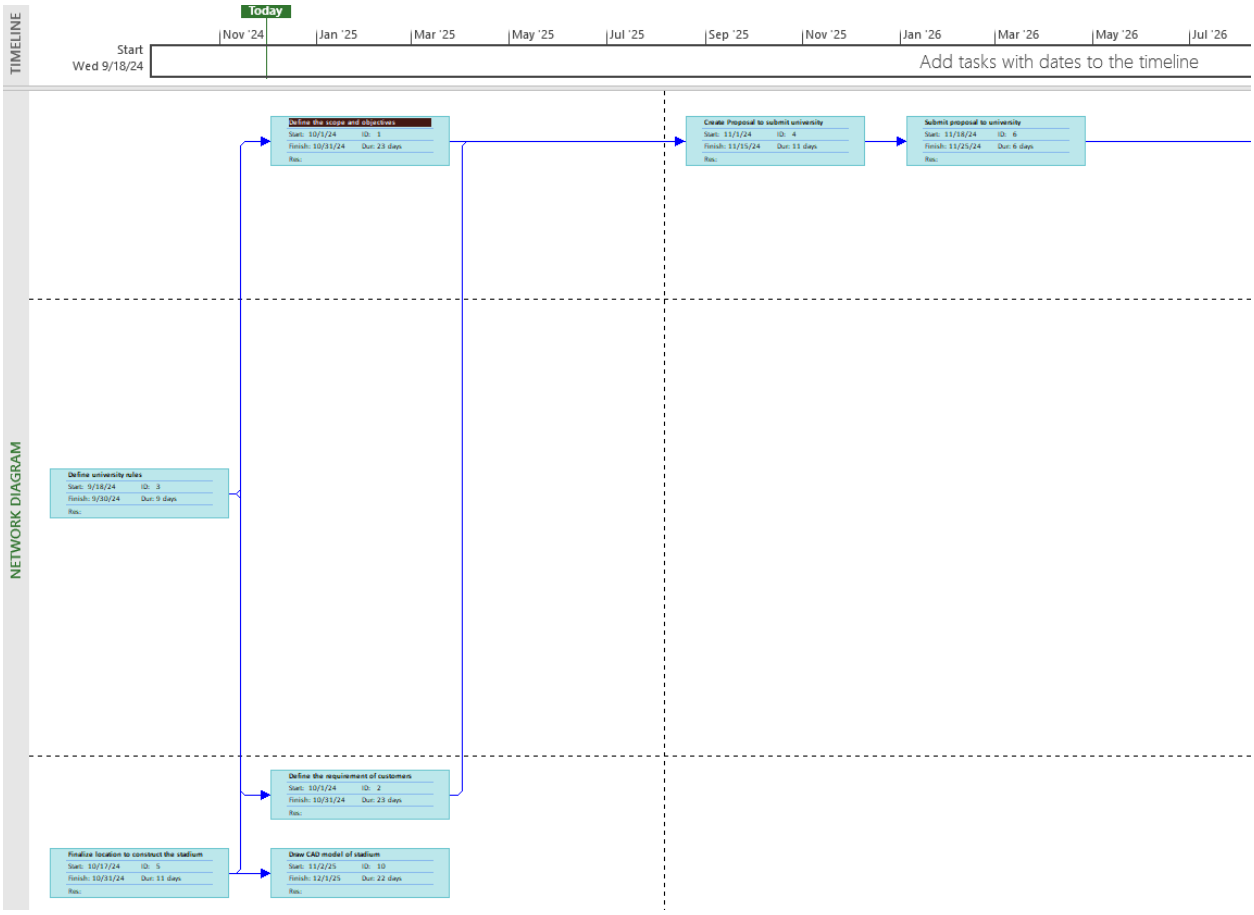


Figure 2: Network Analysis

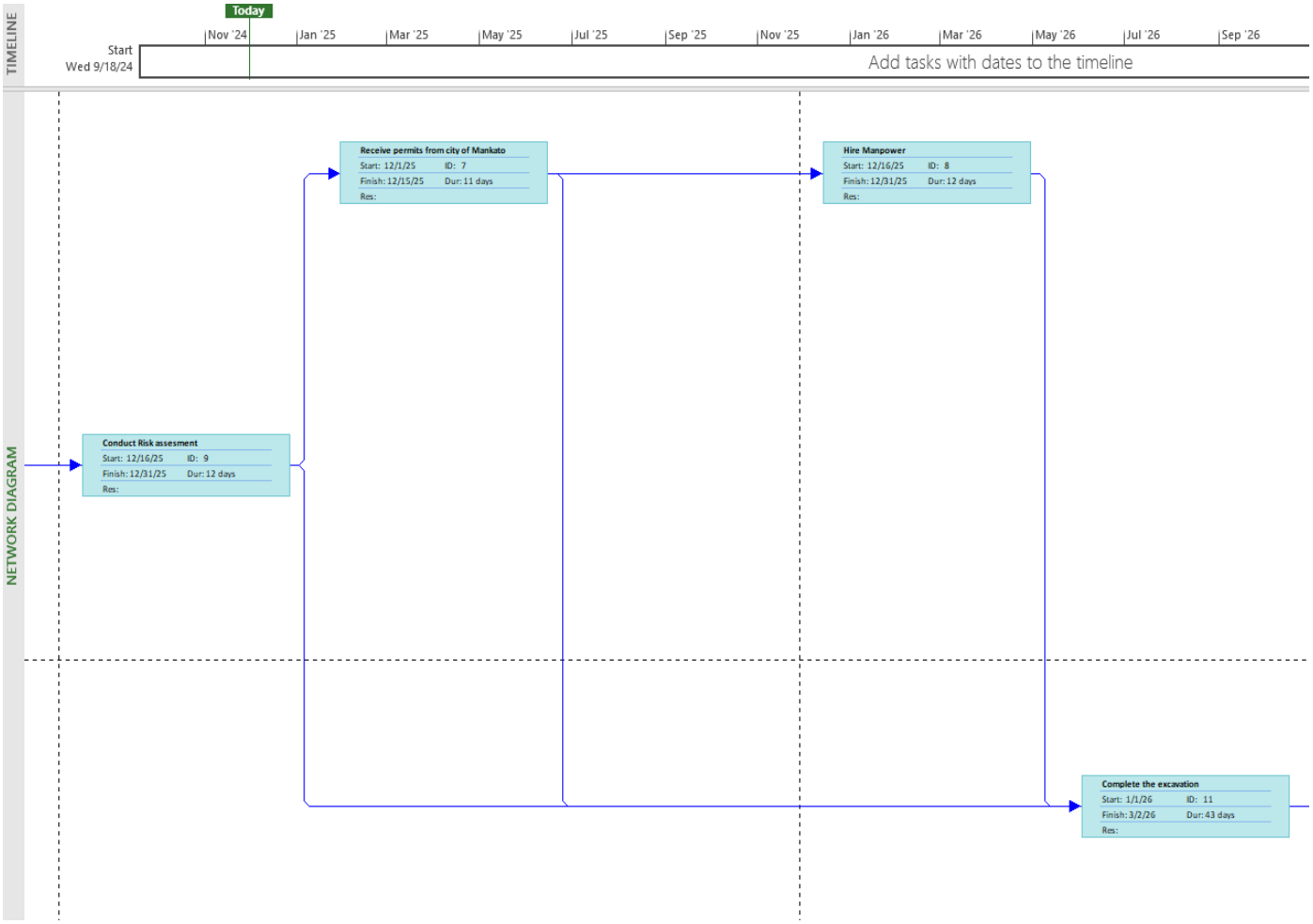


Figure 3: Network Analysis Cont.

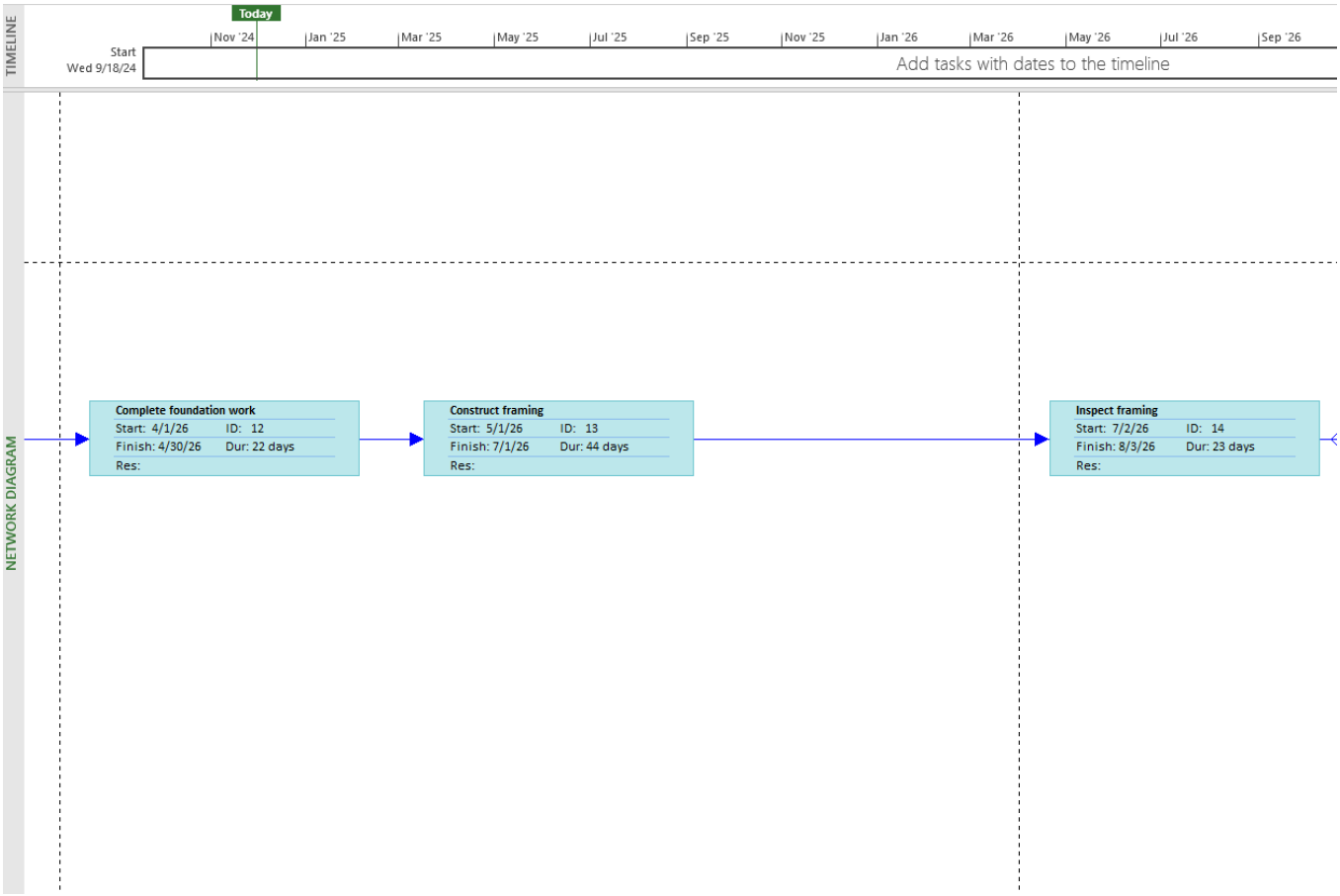


Figure3: Network Analysis Cont.

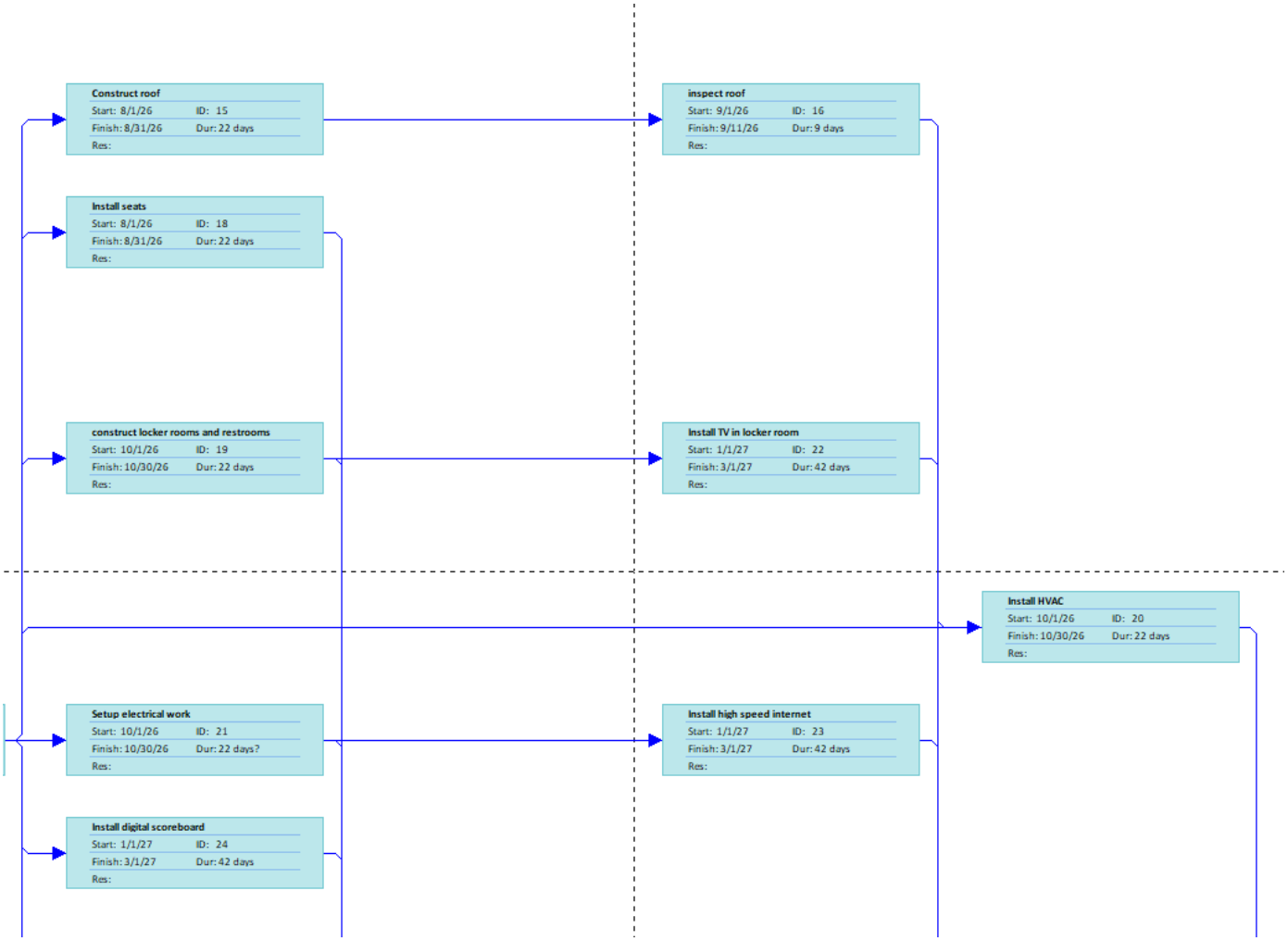


Figure 3: Network Analysis cont.

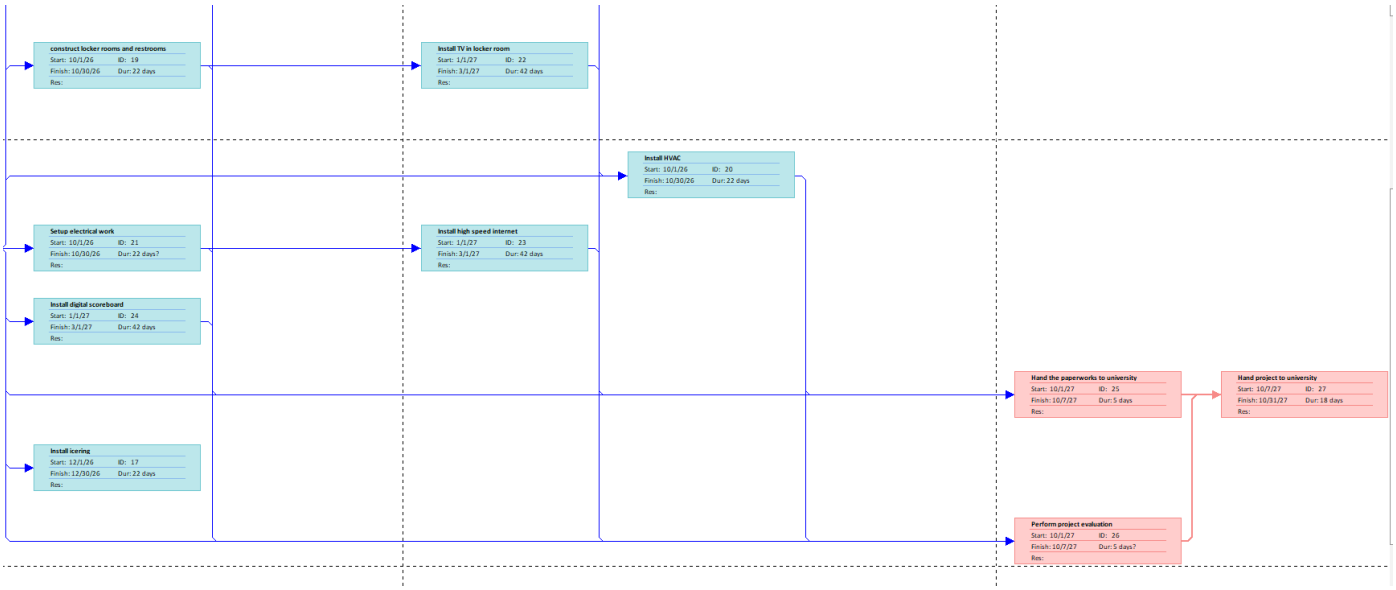


Figure 4: Network Analysis Final

Responsibility Matrix

The responsibility matrix below is created for the Hockey Stadium project where Sijan and Yaman are involved in supporting the tasks and being responsible for them. The matrix shown in Table 2 assigns clear roles and responsibilities to the team members.

Task	Sijan	Yaman
Definition	S	R
Project Plan	R	S
Construction Work	R	R
Mechanical & Electrical Work		R
Information Technology Infrastructure	R	
Project Closure & Testing	R	R

Table 3: Responsibility Matrix

Legend
R == Responsible
S == Support

Communication Plan

A communication plan is being created to update our customers on the project's progress. This plan ensures the smooth flow of communication between the project team and the customer. The communication plan can be found in Table 3 below.

What Information	Target Audience	When?	Method of Communication	Provider
Milestone Report	Senior Management & Project Manager	Bimonthly	E-mail & Hardcopy	Yaman
Project status report & agendas	Staff and customer	Weekly	E-mail & Hardcopy	Yaman
Team status Report	Project Manager and project office	Weekly	Email	Yaman
Issues Report	Staff and customer	Weekly	Email	Yaman
Budget Report	Senior Management and Customer	Weekly	Email & Hardcopy	Sijan

Table 4: Communication Plan

NOTE

Sijan - Team Recorder

Yaman - Project Manager

Gantt Chart

The Gantt chart is made for easier tracking of the time in the project. This chart will be followed during the entire project to ensure the tasks are completed on time. The milestones are presented in the Gantt chart too. The Gantt chart can be found in figure 3 below.

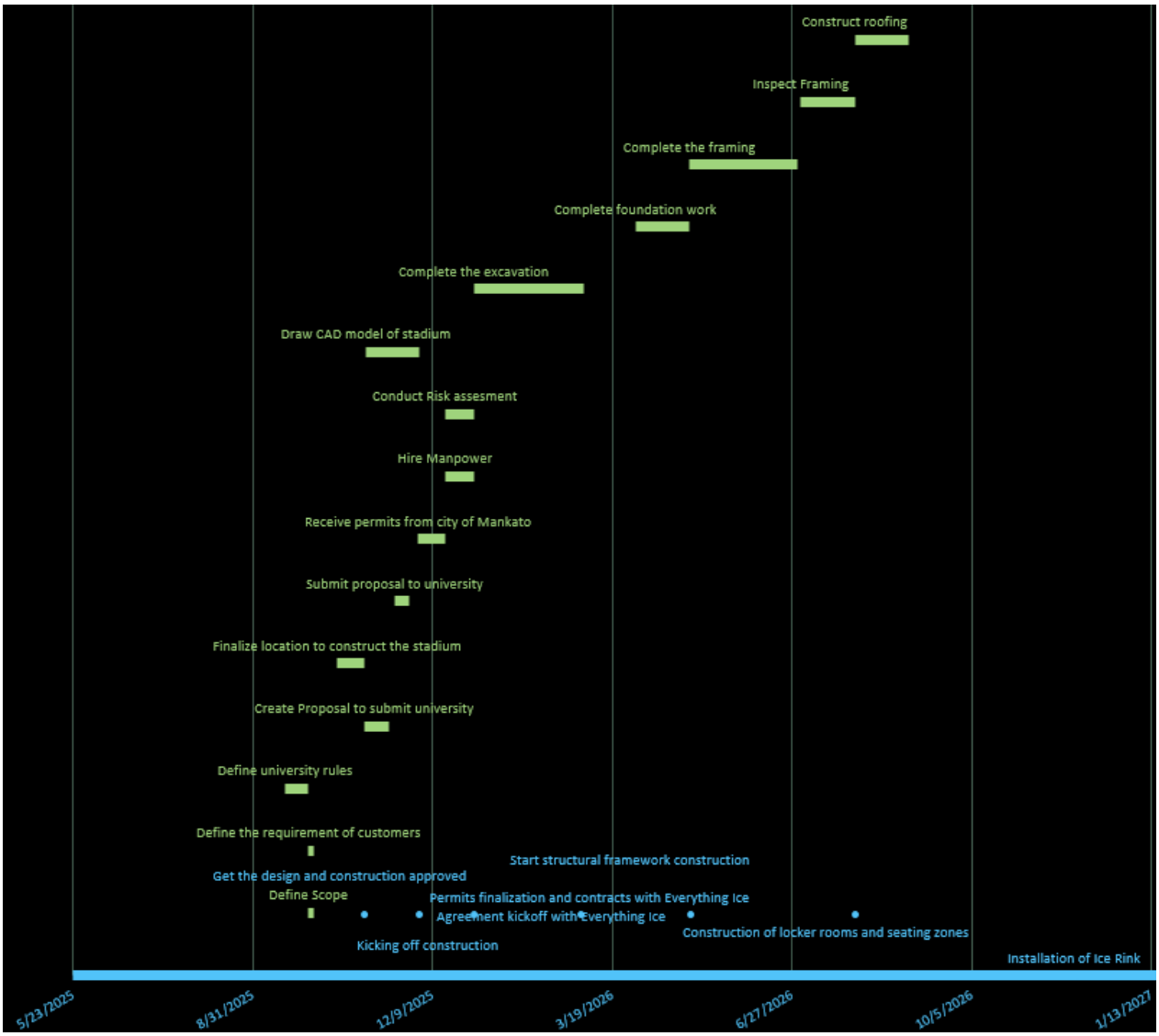


Figure 5: Gantt Chart

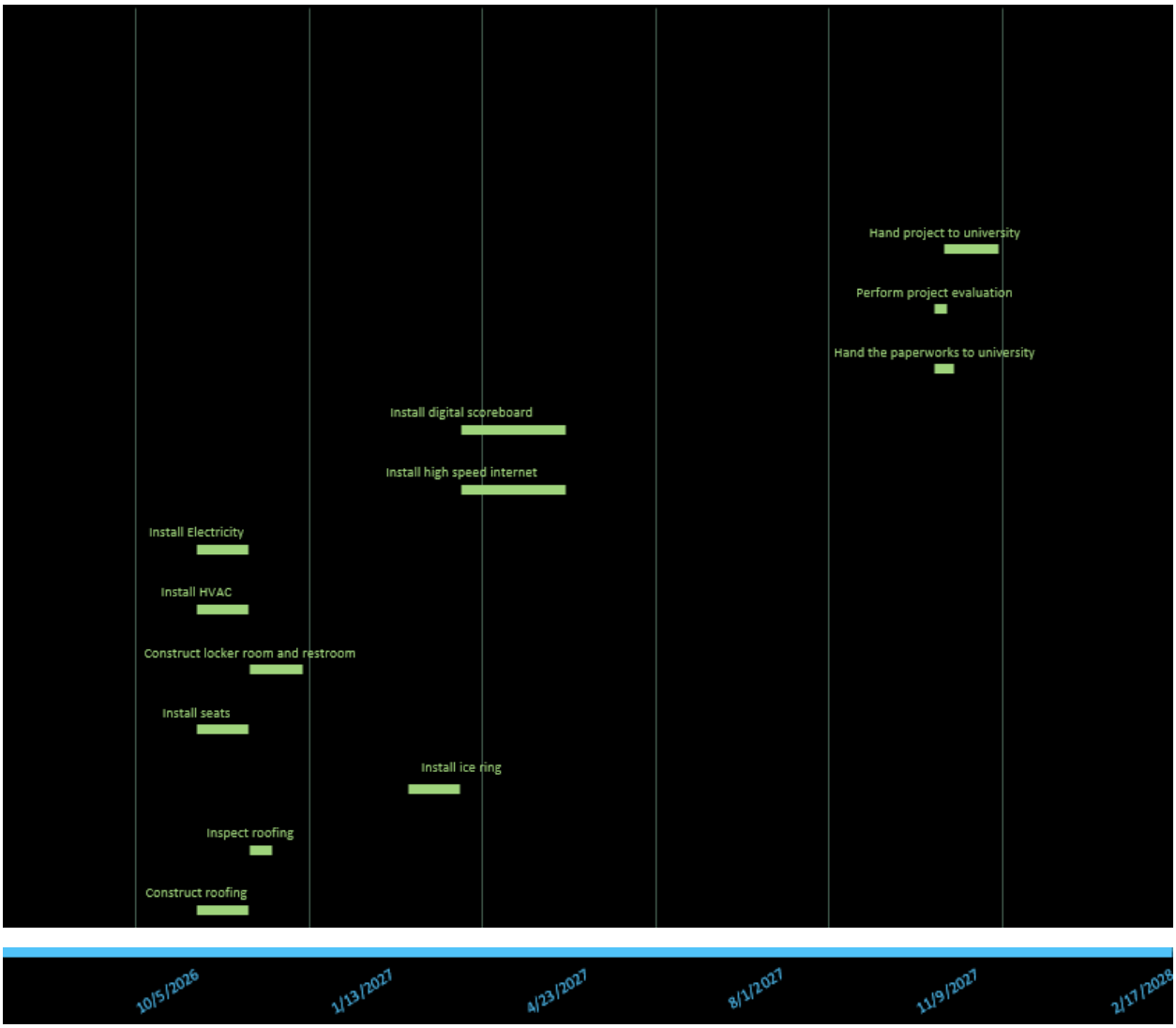


Figure 6: Gantt Chart Cont.

Risk Management

Risk management is one of the critical phases of project management. It is a process of identifying, analyzing, and responding to the risk factors throughout the life of a project and in the best interests of its objectives (Pym, 1987, p. 34). Table 5 below presents the potential risks involved in the project identifies them and classifies them according to Technical, Financial, Labor, and Project management risks.

Risk Breakdown Structure

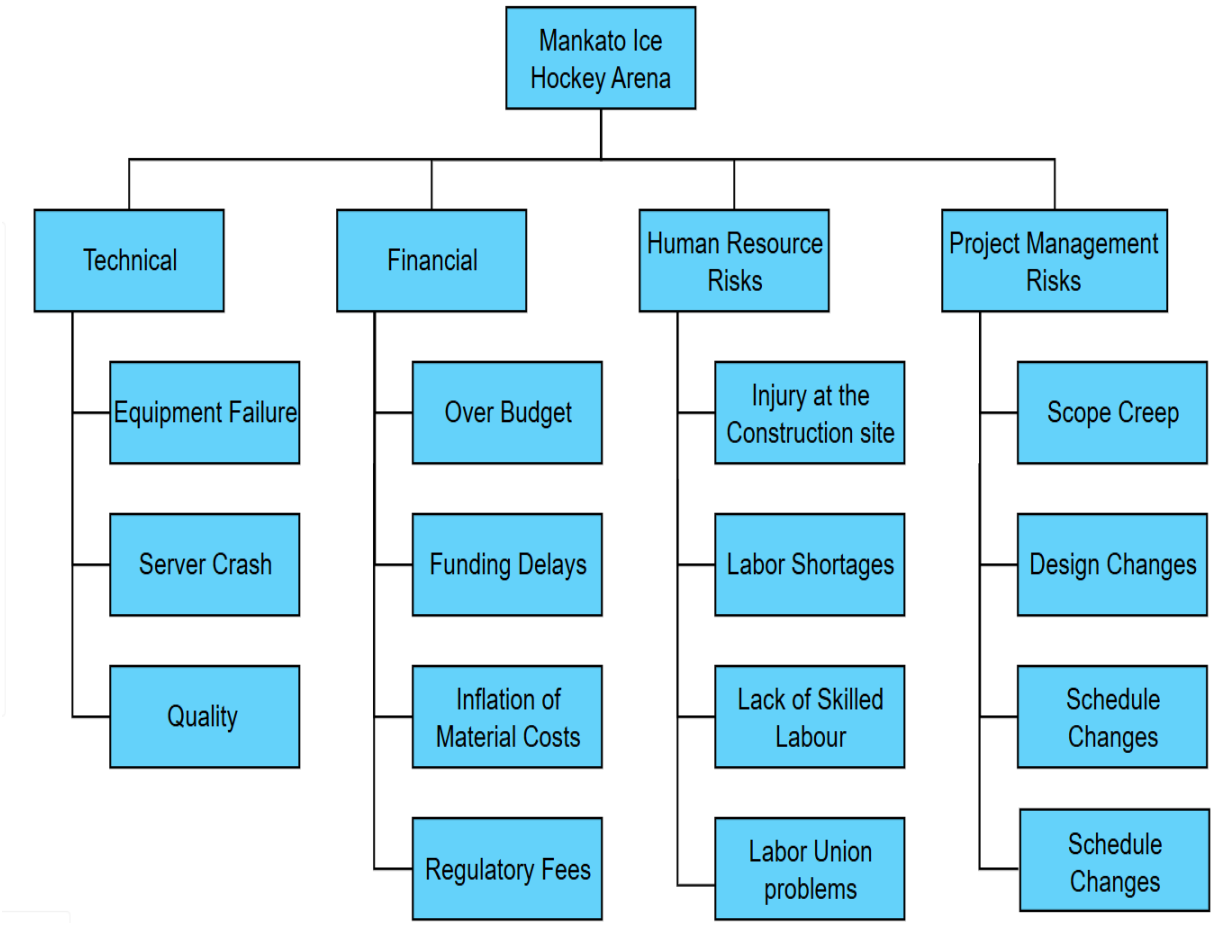


Figure 6: Risk breakdown structure

Category	Subcategory	Risk

Human Resources Risks	Labor Shortage Risk	Not getting enough labor can significantly affect the project.
	Injury Risk	Any physical injury to the workers can be a cause of a lawsuit.
Project Planning Risk	Over Budget	Getting the project over the budget limit brings the risk of not completing the project.
	Late equipment delivery	Not getting equipment delivered on time could significantly increase the project completion time.
	Design Change	Changing the design at the last moment can cost the project considerable time and money.
Natural Risk	Weather challenges	Snow Blizzards, heavy rain, tornados, fire, and earthquakes can become a huge risk to the project.

Table 5: Risk Breakdown

Risk Severity Matrix / Table

To construct a risk severity matrix, all the risks are listed and the likelihood of it is determined. The probability of the risk is measured in the number of 1,2 or 3. The higher the number, the greater the possibility. The impact of the risk is also measured in the number of 1,2, or 3. The higher the number, the greater the impact. By multiplying the two numbers, a risk severity number is found.

Risk severity from 1-3 is considered a low risk, risk severity from 4-6 is regarded as a medium risk, and risk severity from 7-9 is considered a high risk. The risk severity matrix can be found below. Red shows a high risk, yellow shows a medium risk, and red shows a high risk.

Risk	Likelihood	Impact	Severity	Category
Labor Shortages	3	3	9	High
Design Change	1	2	2	Low
Weather Challenges	2	2	4	Medium
Over Budget	1	2	2	Low
Injury at site	2	3	6	Medium
Equipment late delivery	1	2	2	Low

Table 5: Risk Severity Table/ Matrix

Risk Response Development

Risk Event	Response	Contingency Plan	Trigger	Who is Responsible
Equipment Failure	**Mitigate:** Performing regular maintenance	Making sure the backup equipment is ready	Equipment breakdown	Yaman Pandey

Project Delays	**Schedule:** Regularly monitoring the project's progress and milestones	Additional human resource	Tasks fall behind the scheduled date	Sijan Dahal
Labor Shortages	**Mitigate:** Hiring additional staff, Hiring the employee from the staffing company	Hiring contractors and backup employees ready in case someone leaves	All staff occupied; Employees left the work for good	Sijan Dahal
Weather Challenges	**Acceptance** Monitoring weather regularly, construction work in the summer	Pausing outdoor activities and focusing on indoor works	Extreme weather conditions in MN. Blizzards, Snowstorms	Yaman Pandey
Technology Failure	**Mitigate:** Patching and updating the software with the help of IT professionals	Backup system and tech support team standby	Failure of Scoreboard	Sijan Dahal
Over Budget	**Mitigate:** Minoring costs of the project and breaking down budgets	Reducing project scope	When the cost of the project exceeds by 20%	Yaman Pandey
Equipment Delays	**Mitigate:** Contact the supplier regularly for the logistics	Supply from less than 50 miles i.e. Finding local suppliers	The logistics company delays the shipment	Both

Table 6: Risk Response Development Plan

Project Execution

The project is expected to be completed on **3/23/28.**

The two sensible milestones for the project are Construction work and IT infrastructure installations.

GANTT CHART

	Task Mode	Task Name	Start	Finish	Late Start	Late Finish
1		**1 Mankato Ice Hockey Arena**	**Wed 9/18/24**	**Thu 3/23/28**	**Wed 9/18/24**	**Thu 3/23/28**
2		**1.1 Project Definition**	**Wed 9/18/24**	**Thu 12/12/24**	**Wed 9/18/24**	**Thu 12/12/24**
3		1.1.1 Define the scope and objectives	Tue 10/1/24	Thu 10/31/24	Tue 10/1/24	Thu 10/31/24
4		1.1.2 Define the requirement of customers	Tue 10/1/24	Wed 10/30/24	Tue 10/1/24	Wed 10/30/24
5		1.1.3 Define university rules	Wed 9/18/24	Sat 9/28/24	Wed 9/18/24	Sat 9/28/24
6		1.1.4 Create Proposal to submit university	Fri 11/1/24	Fri 11/15/24	Fri 11/1/24	Fri 11/15/24
7		1.1.5 Finalize location to construct the stadium	Thu 10/17/24	Thu 10/31/24	Thu 10/17/24	Thu 10/31/24
8		1.1.6 Submit proposal to university	Mon 11/18/24	Mon 11/25/24	Mon 11/18/24	Mon 11/25/24
9		1.1.7 Receive permits from city of Mankato	Fri 11/29/24	Thu 12/12/24	Fri 11/29/24	Thu 12/12/24
10		**1.2 Planning and Preperation**	**Tue 12/31/24**	**Tue 12/31/24**	**Tue 12/31/24**	**Tue 12/31/24**
11		1.2.1 Hire Manpower	Tue 12/31/24	Tue 12/31/24	Tue 12/31/24	Tue 12/31/24
12		1.2.2 Conduct Risk assesment	Tue 12/31/24	Tue 12/31/24	Tue 12/31/24	Tue 12/31/24
13		1.2.3 Draw CAD model of stadium	Tue 12/31/24	Tue 12/31/24	Tue 12/31/24	Tue 12/31/24
14		**1.3 Construction Work**	**Thu 1/2/25**	**Wed 12/23/26**	**Thu 1/2/25**	**Wed 12/23/26**
15		1.3.1 Complete the excavation	Thu 1/2/25	Mon 1/20/25	Thu 1/2/25	Mon 1/20/25
16		1.3.2 Complete foundation work	Fri 1/10/25	Thu 1/30/25	Fri 1/10/25	Thu 1/30/25
17		1.3.3 Construct framing	Sat 1/18/25	Thu 1/30/25	Sat 1/18/25	Thu 1/30/25
18		1.3.4 Inspect framing	Thu 7/2/26	Thu 12/10/26	Mon 10/26/26	Tue 4/6/27
19		1.3.5 Construct roof	Sat 8/1/26	Mon 8/31/26	Fri 7/30/27	Tue 8/31/27
20		1.3.6 inspect roof	Fri 12/11/26	Wed 12/23/26	Fri 12/10/27	Thu 12/23/27
21		**1.4 Facilities Installation**	**Sat 8/1/26**	**Thu 11/18/27**	**Sat 8/1/26**	**Thu 11/18/27**
22		1.4.1 Install icering (Contact With Everything Ice)	Tue 12/1/26	Thu 11/18/27	Tue 4/6/27	Thu 3/23/28
23		1.4.2 Install seats	Sat 8/1/26	Mon 8/31/26	Thu 12/23/27	Mon 1/24/28
24		1.4.3 construct locker rooms and restrooms	Thu 10/1/26	Thu 11/5/26	Thu 10/21/27	Thu 11/25/27
25		1.4.4 Install HVAC	Thu 10/1/26	Fri 10/30/26	Thu 12/23/27	Mon 1/24/28
26		1.4.5 Setup electrical work	Thu 10/1/26	Fri 2/12/27	Wed 7/14/27	Thu 11/25/27
27		**1.5 IT infrastructure installation**	**Fri 1/1/27**	**Mon 3/1/27**	**Fri 1/1/27**	**Mon 3/1/27**
28		1.5.1 Install TV in locker room	Fri 1/1/27	Mon 3/1/27	Thu 11/25/27	Mon 1/24/28
29		1.5.2 Install high speed internet	Fri 1/1/27	Mon 3/1/27	Thu 11/25/27	Mon 1/24/28
30		1.5.3 Install digital scoreboard	Fri 1/1/27	Mon 3/1/27	Thu 11/25/27	Mon 1/24/28
31		**1.6 Project Closure**	**Fri 10/1/27**	**Wed 12/1/27**	**Fri 10/1/27**	**Wed 12/1/27**
32		1.6.1 Hand the paperworks to university	Fri 10/1/27	Thu 10/7/27	Mon 1/24/28	Mon 1/31/28

Figure 7: Project tasks

Resource Allocation – Before Levelling the Slack

The **Figure 10** below in the project Mankato Ice Hockey Arena shows that the resources are overallocated for Project Manager, Architect/Engineer, Construction, HVAC, IT specialists, Ice Rink Contractor and Quality. The overallocation indicates that these resources are assigned to more work than they can handle. This situation could impact the project milestones leading to project delays and quality issues in the stadium.

TIMELINE

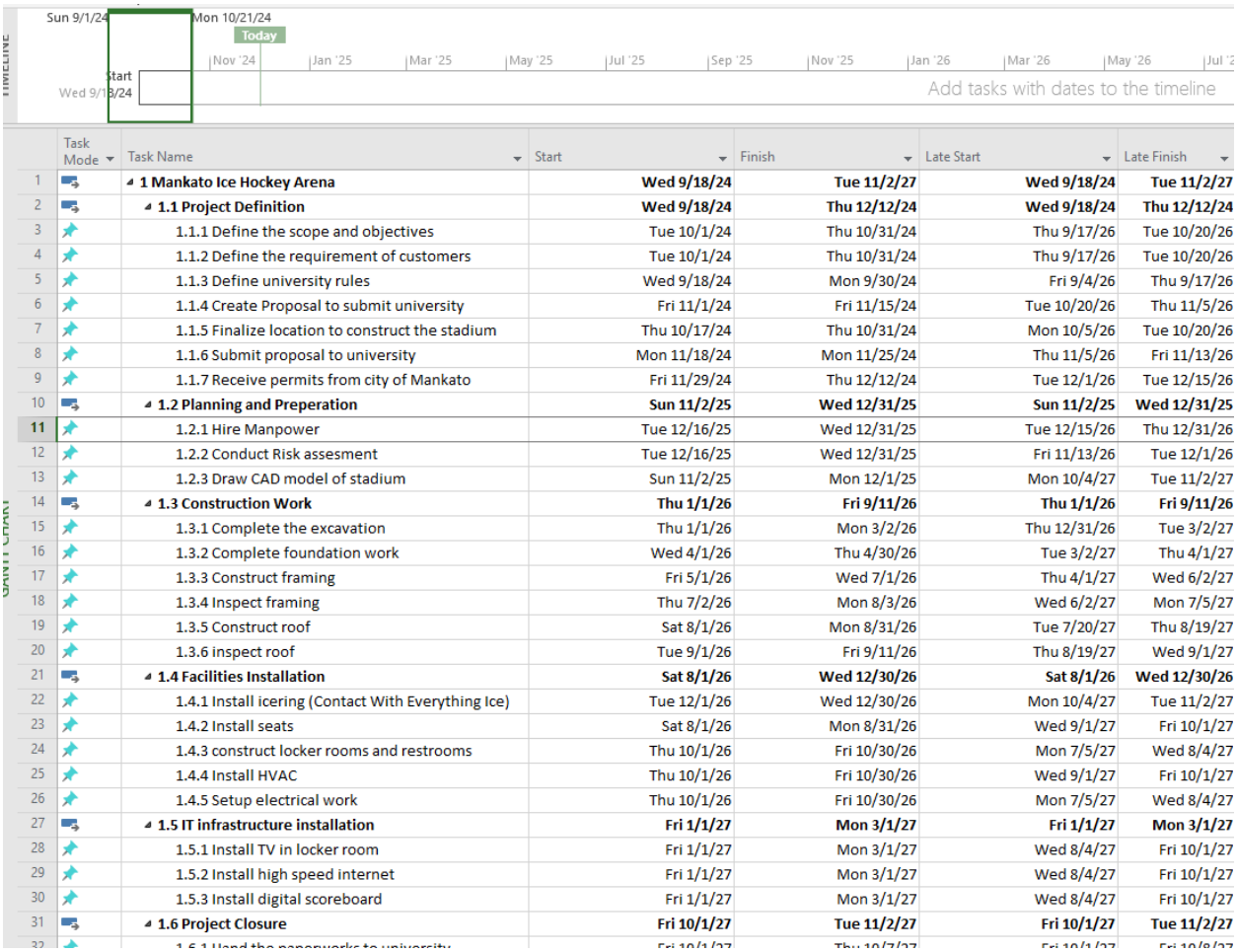
RESOURCE SHEET

		Resource Name	Type	Material	Initials	Group	Max. Units	Std. Rate	Ovt.	Cost/Use	Accrue	Base
1		Project Manager	Work		PRJ	PRJ	300%	$100.00/hr	$0.00/hr	$0.00	Prorated	Standard
2		Architect/ Engineer	Work		ENG	ENG	500%	$90.00/hr	$0.00/hr	$0.00	Prorated	Standard
3		Construction Team	Work		CONS	CONS	400%	$40.00/hr	$0.00/hr	$0.00	Prorated	Standard
4		Legal and Compliance team	Work		LEG	LEG	300%	$150.00/hr	$0.00/hr	$0.00	Prorated	Standard
5		HVAC and Electrical Team	Work		HVAC	HVAC	300%	$70.00/hr	$0.00/hr	$0.00	Prorated	Standard
6		IT Specialists	Work		IT	IT	300%	$80.00/hr	$0.00/hr	$0.00	Prorated	Standard
7		Interior team for Locker room and bathroom installations	Work		INT	INT	300%	$45.00/hr	$0.00/hr	$0.00	Prorated	Standard
8		Ice Rink Contractor - Everything Ice	Work		ICE	ICE	500%	$100.00/hr	$0.00/hr	$0.00	Prorated	Standard
9		Quality Assurance Team	Work		QUA	QUAL	200%	$70.00/hr	$0.00/hr	$0.00	Prorated	Standard
10		Administrative Staff	Work		ADM	ADM	400%	$30.00/hr	$0.00/hr	$0.00	Prorated	Standard
11		Equipment Cost	Material	per sq. ft	E	EQIP		$900.00		$0.00	Prorated	
12		IT Infrastructure cost	Material	Items	IT	IT		$1,000,000.00		$0.00	Prorated	

Figure 8: Resource Allocation - Before levelling within the slack

Project Timeline without Levelling the Slack

The figure 11 below shows that before levelling the slack the start date is 9/18/24 and the end date is 11/2/2027.



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4		1.1.2 Define the requirement of customers	Tue 10/1/24	Thu 10/31/24	Thu 9/17/26	Tue 10/20/26
5		1.1.3 Define university rules	Wed 9/18/24	Mon 9/30/24	Fri 9/4/26	Thu 9/17/26
6		1.1.4 Create Proposal to submit university	Fri 11/1/24	Fri 11/15/24	Tue 10/20/26	Thu 11/5/26
7		1.1.5 Finalize location to construct the stadium	Thu 10/17/24	Thu 10/31/24	Mon 10/5/26	Tue 10/20/26
8		1.1.6 Submit proposal to university	Mon 11/18/24	Mon 11/25/24	Thu 11/5/26	Fri 11/13/26
9		1.1.7 Receive permits from city of Mankato	Fri 11/29/24	Thu 12/12/24	Tue 12/1/26	Tue 12/15/26
10		**1.2 Planning and Preperation**	**Sun 11/2/25**	**Wed 12/31/25**	**Sun 11/2/25**	**Wed 12/31/25**
11		1.2.1 Hire Manpower	Tue 12/16/25	Wed 12/31/25	Tue 12/15/26	Thu 12/31/26
12		1.2.2 Conduct Risk assesment	Tue 12/16/25	Wed 12/31/25	Fri 11/13/26	Tue 12/1/26
13		1.2.3 Draw CAD model of stadium	Sun 11/2/25	Mon 12/1/25	Mon 10/4/27	Tue 11/2/27
14		**1.3 Construction Work**	**Thu 1/1/26**	**Fri 9/11/26**	**Thu 1/1/26**	**Fri 9/11/26**
15		1.3.1 Complete the excavation	Thu 1/1/26	Mon 3/2/26	Thu 12/31/26	Tue 3/2/27
16		1.3.2 Complete foundation work	Wed 4/1/26	Thu 4/30/26	Tue 3/2/27	Thu 4/1/27
17		1.3.3 Construct framing	Fri 5/1/26	Wed 7/1/26	Thu 4/1/27	Wed 6/2/27
18		1.3.4 Inspect framing	Thu 7/2/26	Mon 8/3/26	Wed 6/2/27	Mon 7/5/27
19		1.3.5 Construct roof	Sat 8/1/26	Mon 8/31/26	Tue 7/20/27	Thu 8/19/27
20		1.3.6 inspect roof	Tue 9/1/26	Fri 9/11/26	Thu 8/19/27	Wed 9/1/27
21		**1.4 Facilities Installation**	**Sat 8/1/26**	**Wed 12/30/26**	**Sat 8/1/26**	**Wed 12/30/26**
22		1.4.1 Install icering (Contact With Everything Ice)	Tue 12/1/26	Wed 12/30/26	Mon 10/4/27	Tue 11/2/27
23		1.4.2 Install seats	Sat 8/1/26	Mon 8/31/26	Wed 9/1/27	Fri 10/1/27
24		1.4.3 construct locker rooms and restrooms	Thu 10/1/26	Fri 10/30/26	Mon 7/5/27	Wed 8/4/27
25		1.4.4 Install HVAC	Thu 10/1/26	Fri 10/30/26	Wed 9/1/27	Fri 10/1/27
26		1.4.5 Setup electrical work	Thu 10/1/26	Fri 10/30/26	Mon 7/5/27	Wed 8/4/27
27		**1.5 IT infrastructure installation**	**Fri 1/1/27**	**Mon 3/1/27**	**Fri 1/1/27**	**Mon 3/1/27**
28		1.5.1 Install TV in locker room	Fri 1/1/27	Mon 3/1/27	Wed 8/4/27	Fri 10/1/27
29		1.5.2 Install high speed internet	Fri 1/1/27	Mon 3/1/27	Wed 8/4/27	Fri 10/1/27
30		1.5.3 Install digital scoreboard	Fri 1/1/27	Mon 3/1/27	Wed 8/4/27	Fri 10/1/27
31		**1.6 Project Closure**	**Fri 10/1/27**	**Tue 11/2/27**	**Fri 10/1/27**	**Tue 11/2/27**

Figure 9: Project Timeline before levelling the slack.

Project Timeline after levelling the slack

The figure below shows that the project's finish date has extended from **12/31/2027 to 3/23/2028** because of resource levelling where the overloaded workloads were balanced.

TIMELINE

Wed 10/1/25 Today Tue 5/4/27 | 2026 | 2028 Start Finish | Add tasks

GANTT CHART

	Task Mode	Task Name	Start	Finish	Late Start	Late Finish
1		**1 Mankato Ice Hockey Arena**	**Wed 9/18/24**	**Thu 3/23/28**	**Wed 9/18/24**	**Thu 3/23/28**
2		**1.1 Project Definition**	**Wed 9/18/24**	**Thu 12/12/24**	**Wed 9/18/24**	**Thu 12/12/24**
3		1.1.1 Define the scope and objectives	Tue 10/1/24	Thu 10/31/24	Tue 10/1/24	Thu 10/31/24
4		1.1.2 Define the requirement of customers	Tue 10/1/24	Wed 10/30/24	Tue 10/1/24	Wed 10/30/24
5		1.1.3 Define university rules	Wed 9/18/24	Sat 9/28/24	Wed 9/18/24	Sat 9/28/24
6		1.1.4 Create Proposal to submit university	Fri 11/1/24	Fri 11/15/24	Fri 11/1/24	Fri 11/15/24
7		1.1.5 Finalize location to construct the stadium	Thu 10/17/24	Thu 10/31/24	Thu 10/17/24	Thu 10/31/24
8		1.1.6 Submit proposal to university	Mon 11/18/24	Mon 11/25/24	Mon 11/18/24	Mon 11/25/24
9		1.1.7 Receive permits from city of Mankato	Fri 11/29/24	Thu 12/12/24	Fri 11/29/24	Thu 12/12/24
10		**1.2 Planning and Preperation**	**Tue 12/31/24**	**Tue 12/31/24**	**Tue 12/31/24**	**Tue 12/31/24**
11		1.2.1 Hire Manpower	Tue 12/31/24	Tue 12/31/24	Tue 12/31/24	Tue 12/31/24
12		1.2.2 Conduct Risk assesment	Tue 12/31/24	Tue 12/31/24	Tue 12/31/24	Tue 12/31/24
13		1.2.3 Draw CAD model of stadium	Tue 12/31/24	Tue 12/31/24	Tue 12/31/24	Tue 12/31/24
14		**1.3 Construction Work**	**Thu 1/2/25**	**Wed 12/23/26**	**Thu 1/2/25**	**Wed 12/23/26**
15		1.3.1 Complete the excavation	Thu 1/2/25	Mon 1/20/25	Thu 1/2/25	Mon 1/20/25
16		1.3.2 Complete foundation work	Fri 1/10/25	Thu 1/30/25	Fri 1/10/25	Thu 1/30/25
17		1.3.3 Construct framing	Sat 1/18/25	Thu 1/30/25	Sat 1/18/25	Thu 1/30/25
18		1.3.4 Inspect framing	Thu 7/2/26	Thu 12/10/26	Mon 10/26/26	Tue 4/6/27
19		1.3.5 Construct roof	Sat 8/1/26	Mon 8/31/26	Fri 7/30/27	Tue 8/31/27
20		1.3.6 inspect roof	Fri 12/11/26	Wed 12/23/26	Fri 12/10/27	Thu 12/23/27
21		**1.4 Facilities Installation**	**Sat 8/1/26**	**Thu 11/18/27**	**Sat 8/1/26**	**Thu 11/18/27**
22		1.4.1 Install icering (Contact With Everything Ice)	Tue 12/1/26	Thu 11/18/27	Tue 4/6/27	Thu 3/23/28
23		1.4.2 Install seats	Sat 8/1/26	Mon 8/31/26	Thu 12/23/27	Mon 1/24/28
24		1.4.3 construct locker rooms and restrooms	Thu 10/1/26	Thu 11/5/26	Thu 10/21/27	Thu 11/25/27
25		1.4.4 Install HVAC	Thu 10/1/26	Fri 10/30/26	Thu 12/23/27	Mon 1/24/28
26		1.4.5 Setup electrical work	Thu 10/1/26	Fri 2/12/27	Wed 7/14/27	Thu 11/25/27
27		**1.5 IT infrastructure installation**	**Fri 1/1/27**	**Mon 3/1/27**	**Fri 1/1/27**	**Mon 3/1/27**
28		1.5.1 Install TV in locker room	Fri 1/1/27	Mon 3/1/27	Thu 11/25/27	Mon 1/24/28
29		1.5.2 Install high speed internet	Fri 1/1/27	Mon 3/1/27	Thu 11/25/27	Mon 1/24/28
30		1.5.3 Install digital scoreboard	Fri 1/1/27	Mon 3/1/27	Thu 11/25/27	Mon 1/24/28
31		**1.6 Project Closure**	**Fri 10/1/27**	**Wed 12/1/27**	**Fri 10/1/27**	**Wed 12/1/27**
32		1.6.1 Hand the paperworks to university	Fri 10/1/27	Thu 10/7/27	Mon 1/24/28	Mon 1/31/28

Figure 8: Project Timeline after levelling with Slack

Status Report - Thu 1/30/25

Overall Progress

Total Project Completion: The project is **15%** complete.

Phases Completed:

- **Project Definition** (100%)
- **Planning and Preparation** (100%)

Current Phase: The project has transitioned to Construction Work – **Inspect Framing** phase (4.3) which is currently 21% complete.

Remaining Work: 79% of the work is left to be completed.

The project is on track which means that the project is aligned with the time and budget.

TIMELINE

Fri 8/1/25 Today Sat 8/ 2026 Start Add tasks

GANTT CHART

	Task Name	Act. Start	Act. Finish	% Comp.	Act. Dur.	Rem. Dur.	Act. Cost
1	**1 Mankato Ice Hockey Arena**	**Wed 9/18/24**	**NA**	**15%**	**126.07 days**	**704.93 days**	**$18,474,400.00**
2	**1.1 Project Definition**	**Wed 9/18/24**	**Thu 12/12/24**	**100%**	**62 days**	**0 days**	**$424,040.00**
3	1.1.1 Define the scope and objecti	Tue 10/1/24	Thu 10/31/24	100%	23 days	0 days	$131,560.00
4	1.1.2 Define the requirement of customers	Tue 10/1/24	Wed 10/30/24	100%	22 days	0 days	$116,160.00
5	1.1.3 Define university rules	Wed 9/18/24	Sat 9/28/24	100%	9 days	0 days	$32,400.00
6	1.1.4 Create Proposal to submit university	Fri 11/1/24	Fri 11/15/24	100%	11 days	0 days	$48,400.00
7	1.1.5 Finalize location to construct the stadium	Thu 10/17/24	Thu 10/31/24	100%	11 days	0 days	$34,320.00
8	1.1.6 Submit proposal to university	Mon 11/18/24	Mon 11/25/24	100%	6 days	0 days	$31,200.00
9	1.1.7 Receive permits from city of Mankato	Fri 11/29/24	Thu 12/12/24	100%	10 days	0 days	$30,000.00
10	**1.2 Planning and Preperation**	**Tue 12/31/24**	**Tue 12/31/24**	**100%**	**1 day**	**0 days**	**$6,200.00**
11	1.2.1 Hire Manpower	Tue 12/31/24	Tue 12/31/24	100%	0 days	0 days	$0.00
12	1.2.2 Conduct Risk assesment	Tue 12/31/24	Tue 12/31/24	100%	1 day	0 days	$3,680.00
13	1.2.3 Draw CAD model of stadium	Tue 12/31/24	Tue 12/31/24	100%	1 day	0 days	$2,520.00
14	**1.3 Construction Work**	**Thu 1/2/25**	**NA**	**21%**	**105.53 days**	**405.47 days**	**$18,044,160.00**
15	1.3.1 Complete the excavation	Thu 1/2/25	Mon 1/20/25	100%	13 days	0 days	$14,560.00
16	1.3.2 Complete foundation work	Fri 1/10/25	Thu 1/30/25	100%	15 days	0 days	$16,800.00
17	1.3.3 Construct framing	Sat 1/18/25	Thu 1/30/25	100%	10 days	0 days	$18,012,800.00
18	1.3.4 Inspect framing	NA	NA	0%	0 days	115 days	$0.00
19	1.3.5 Construct roof	NA	NA	0%	0 days	22 days	$0.00
20	1.3.6 inspect roof	NA	NA	0%	0 days	9 days	$0.00
21	**1.4 Facilities Installation**	**NA**	**NA**	**0%**	**0 days**	**338 days**	**$0.00**
22	1.4.1 Install icering (Contact With Everything Ice)	NA	NA	0%	0 days	253 days	$0.00
23	1.4.2 Install seats	NA	NA	0%	0 days	22 days	$0.00
24	1.4.3 construct locker rooms and restrooms	NA	NA	0%	0 days	24.75 days	$0.00
25	1.4.4 Install HVAC	NA	NA	0%	0 days	22 days	$0.00
26	1.4.5 Setup electrical work	NA	NA	0%	0 days	95.33 days	$0.00
27	**1.5 IT infrastructure installation**	**NA**	**NA**	**0%**	**0 days**	**42 days**	**$0.00**

Figure 119: Status Report - 1/30/2025

Changing Working Time due to Holidays

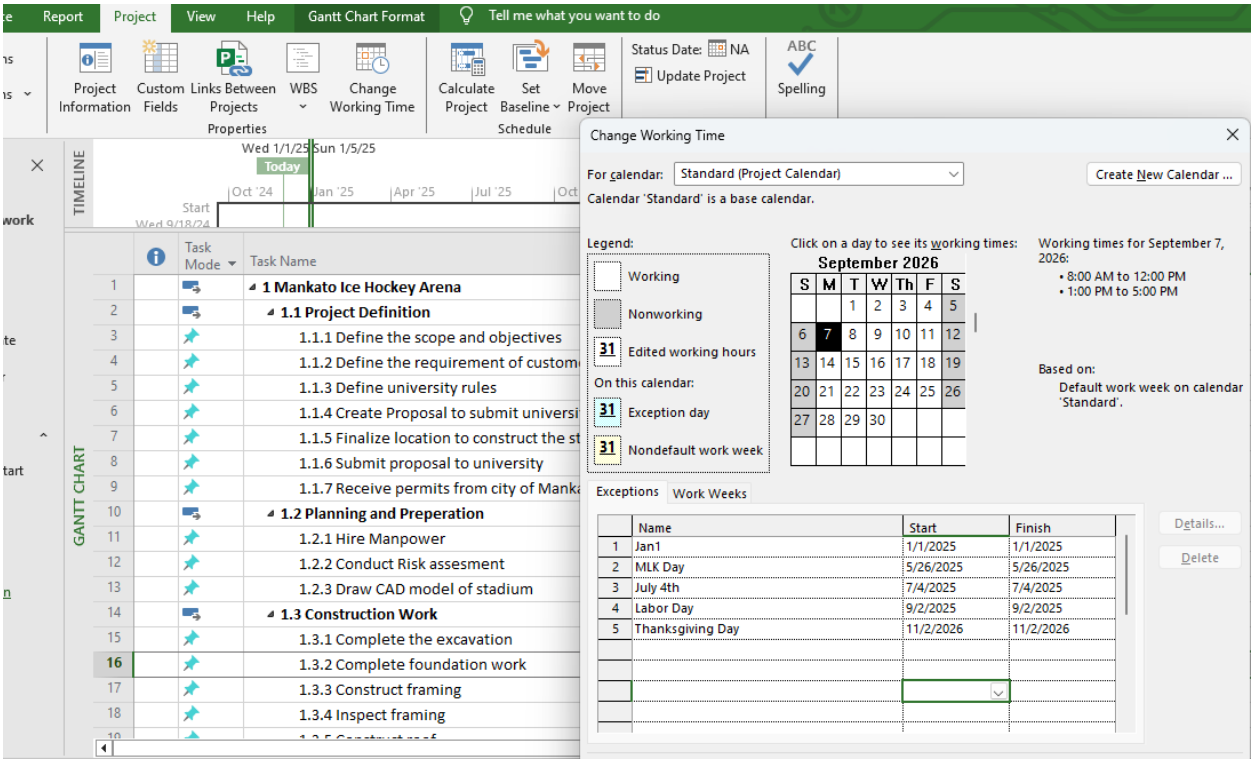
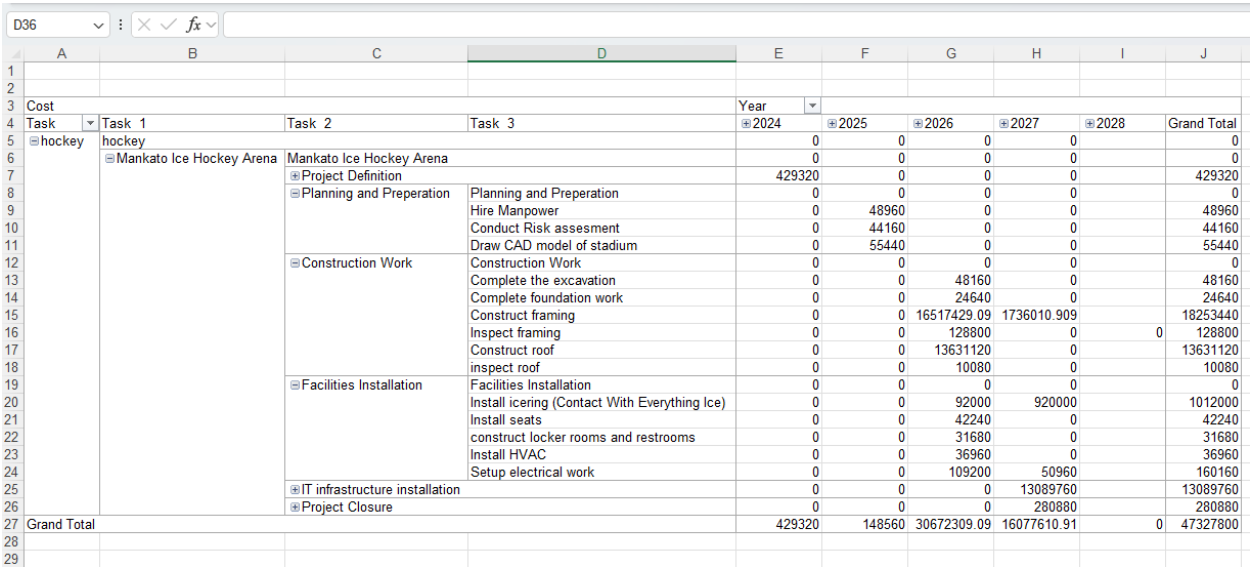


Figure 12: Changing Working Time due to Holidays

Cash Flow Statement

The cash flow statement table below outlines the cost breakdown for the Mankato Ice Hockey Arena project from 2024 to 2028. The significant spending is in the year 2026 when most of the spending is allocated towards construction work.



Cost				Year					
Task	Task 1	Task 2	Task 3	2024	2025	2026	2027	2028	Grand Total
hockey	hockey			0	0	0	0		0
	Mankato Ice Hockey Arena	Mankato Ice Hockey Arena		0	0	0	0		0
		Project Definition		429320	0	0	0		429320
		Planning and Preperation	Planning and Preperation	0	0	0	0		0
			Hire Manpower	0	48960	0	0		48960
			Conduct Risk assesment	0	44160	0	0		44160
			Draw CAD model of stadium	0	55440	0	0		55440
		Construction Work	Construction Work	0	0	0	0		0
			Complete the excavation	0	0	48160	0		48160
			Complete foundation work	0	0	24640	0		24640
			Construct framing	0	0	16517429.09	1736010.909		18253440
			Inspect framing	0	0	128800	0	0	128800
			Construct roof	0	0	13631120	0		13631120
			inspect roof	0	0	10080	0		10080
		Facilities Installation	Facilities Installation	0	0	0	0		0
			Install icering (Contact With Everything Ice)	0	0	92000	920000		1012000
			Install seats	0	0	42240	0		42240
			construct locker rooms and restrooms	0	0	31680	0		31680
			Install HVAC	0	0	36960	0		36960
			Setup electrical work	0	0	109200	50960		160160
		IT infrastructure installation		0	0	0	13089760		13089760
		Project Closure		0	0	0	280880		280880
Grand Total				429320	148560	30672309.09	16077610.91	0	47327800

Figure 103: Cash Flow Statement

Cash Flow Report

The figure below the Cash Flow Report represents the total cost of the project. The bar depicts the total amount of the cost to make a stadium which is around $47.5 million dollars. The below data is the sum of all the years from (2024 October – 2028 December).

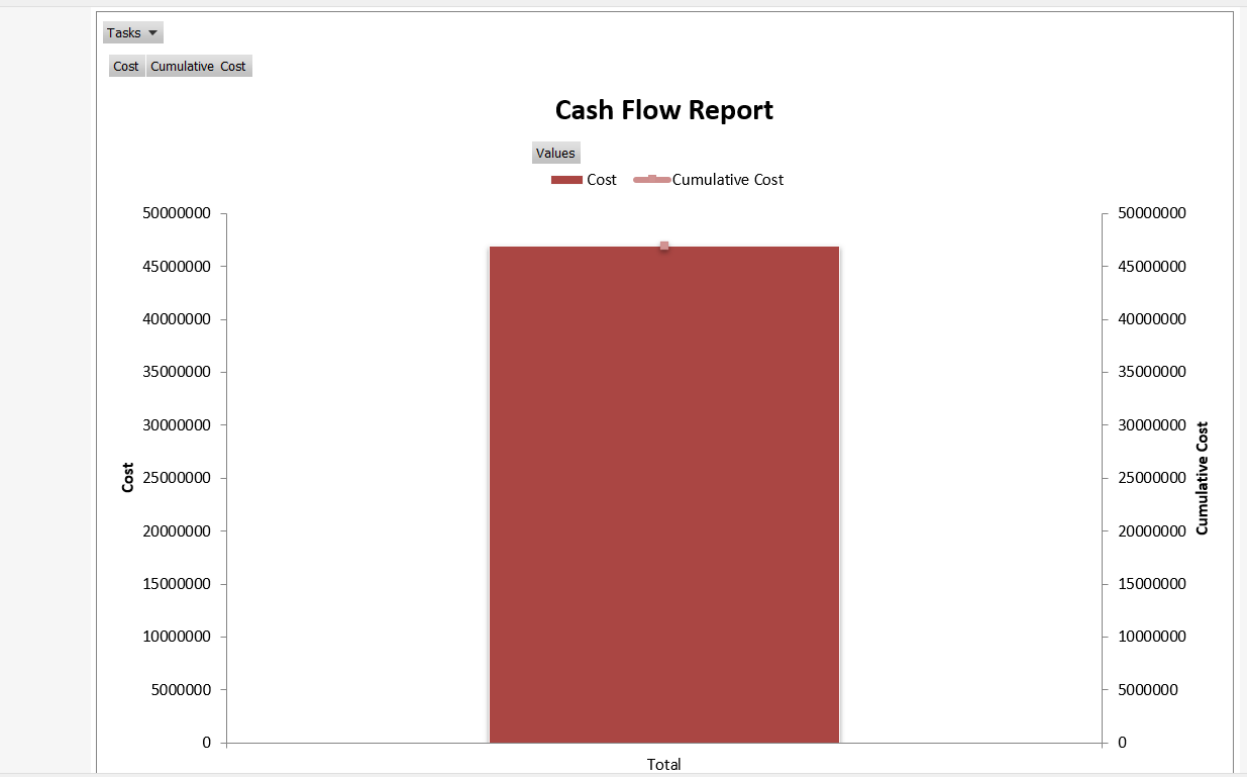


Figure 14: Cash Flow Report

Earned Value Table

The table below provides a detailed comparison of the planned costs, actual costs and the earned value for the Mankato Ice Hockey arena.

TIMELINE

Sun 9/1/24 Sun 9/28/25

oday

|2026 |2028

Start Finish

Add tasks

GANTT CHART

	Task Name	Planned Value - PV (BCWS)	Earned Value - EV (BCWP)	AC (ACWP)	SV	CV	EAC	BAC	VAC
1	**1 Mankato Ice Hockey Arena**	**$429,320.00**	**$18,855,160.00**	**$18,474,400.00**	**$18,425,840.00**	**$380,760.00**	**$46,619,524.99**	**$47,580,360.00**	**$960,835.01**
2	**1.1 Project Definition**	**$429,320.00**	**$429,320.00**	**$424,040.00**	**$0.00**	**$5,280.00**	**$424,040.00**	**$429,320.00**	**$5,280.00**
3	1.1.1 Define the scope and objectives	$131,560.00	$131,560.00	$131,560.00	$0.00	$0.00	$131,560.00	$131,560.00	$0.00
4	1.1.2 Define the requirement of customers	$121,440.00	$121,440.00	$116,160.00	$0.00	$5,280.00	$116,160.00	$121,440.00	$5,280.00
5	1.1.3 Define university rules	$32,400.00	$32,400.00	$32,400.00	$0.00	$0.00	$32,400.00	$32,400.00	$0.00
6	1.1.4 Create Proposal to submit university	$48,400.00	$48,400.00	$48,400.00	$0.00	$0.00	$48,400.00	$48,400.00	$0.00
7	1.1.5 Finalize location to construct the stadium	$34,320.00	$34,320.00	$34,320.00	$0.00	$0.00	$34,320.00	$34,320.00	$0.00
8	1.1.6 Submit proposal to university	$31,200.00	$31,200.00	$31,200.00	$0.00	$0.00	$31,200.00	$31,200.00	$0.00
9	1.1.7 Receive permits from city of Mankato	$30,000.00	$30,000.00	$30,000.00	$0.00	$0.00	$30,000.00	$30,000.00	$0.00
10	**1.2 Planning and Preperation**	**$0.00**	**$99,600.00**	**$6,200.00**	**$99,600.00**	**$93,400.00**	**$9,247.71**	**$148,560.00**	**$139,312.29**
11	1.2.1 Hire Manpower	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$48,960.00	$48,960.00
12	1.2.2 Conduct Risk assesment	$0.00	$44,160.00	$3,680.00	$44,160.00	$40,480.00	$3,680.00	$44,160.00	$40,480.00
13	1.2.3 Draw CAD model of stadium	$0.00	$55,440.00	$2,520.00	$55,440.00	$52,920.00	$2,520.00	$55,440.00	$52,920.00
14	**1.3 Construction Work**	**$0.00**	**$18,326,240.00**	**$18,044,160.00**	**$18,326,240.00**	**$282,080.00**	**$31,602,210.27**	**$32,096,240.00**	**$494,029.73**
15	1.3.1 Complete the excavation	$0.00	$48,160.00	$14,560.00	$48,160.00	$33,600.00	$14,560.00	$48,160.00	$33,600.00
16	1.3.2 Complete foundation work	$0.00	$24,640.00	$16,800.00	$24,640.00	$7,840.00	$16,800.00	$24,640.00	$7,840.00
17	1.3.3 Construct framing	$0.00	$18,253,440.00	$18,012,800.00	$18,253,440.00	$240,640.00	$18,012,800.00	$18,253,440.00	$240,640.00
18	1.3.4 Inspect framing	$0.00	$0.00	$0.00	$0.00	$0.00	$128,800.00	$128,800.00	$0.00
19	1.3.5 Construct roof	$0.00	$0.00	$0.00	$0.00	$0.00	$13,631,120.00	$13,631,120.00	$0.00
20	1.3.6 inspect roof	$0.00	$0.00	$0.00	$0.00	$0.00	$10,080.00	$10,080.00	$0.00
21	**1.4 Facilities Installation**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$1,535,600.00**	**$1,535,600.00**	**$0.00**
22	1.4.1 Install icering (Contact With Everything Ic	$0.00	$0.00	$0.00	$0.00	$0.00	$1,012,000.00	$1,012,000.00	$0.00
23	1.4.2 Install seats	$0.00	$0.00	$0.00	$0.00	$0.00	$42,240.00	$42,240.00	$0.00
24	1.4.3 construct locker rooms and restrooms	$0.00	$0.00	$0.00	$0.00	$0.00	$31,680.00	$31,680.00	$0.00
25	1.4.4 Install HVAC	$0.00	$0.00	$0.00	$0.00	$0.00	$289,520.00	$289,520.00	$0.00
26	1.4.5 Setup electrical work	$0.00	$0.00	$0.00	$0.00	$0.00	$160,160.00	$160,160.00	$0.00
27	**1.5 IT infrastructure installation**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$13,089,760.00**	**$13,089,760.00**	**$0.00**
28	1.5.1 Install TV in locker room	$0.00	$0.00	$0.00	$0.00	$0.00	$3,161,280.00	$3,161,280.00	$0.00
29	1.5.2 Install high speed internet	$0.00	$0.00	$0.00	$0.00	$0.00	$8,794,080.00	$8,794,080.00	$0.00
30	1.5.3 Install digital scoreboard	$0.00	$0.00	$0.00	$0.00	$0.00	$1,134,400.00	$1,134,400.00	$0.00
31	**1.6 Project Closure**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$280,880.00**	**$280,880.00**	**$0.00**
32	1.6.1 Hand the paperworks to university	$0.00	$0.00	$0.00	$0.00	$0.00	$40,200.00	$40,200.00	$0.00

Figure 11: Earned Value Table

The Ice Hockey project is progressing well with 38.8% budget being utilized and minimal cost overruns in most cases.

Network Diagram

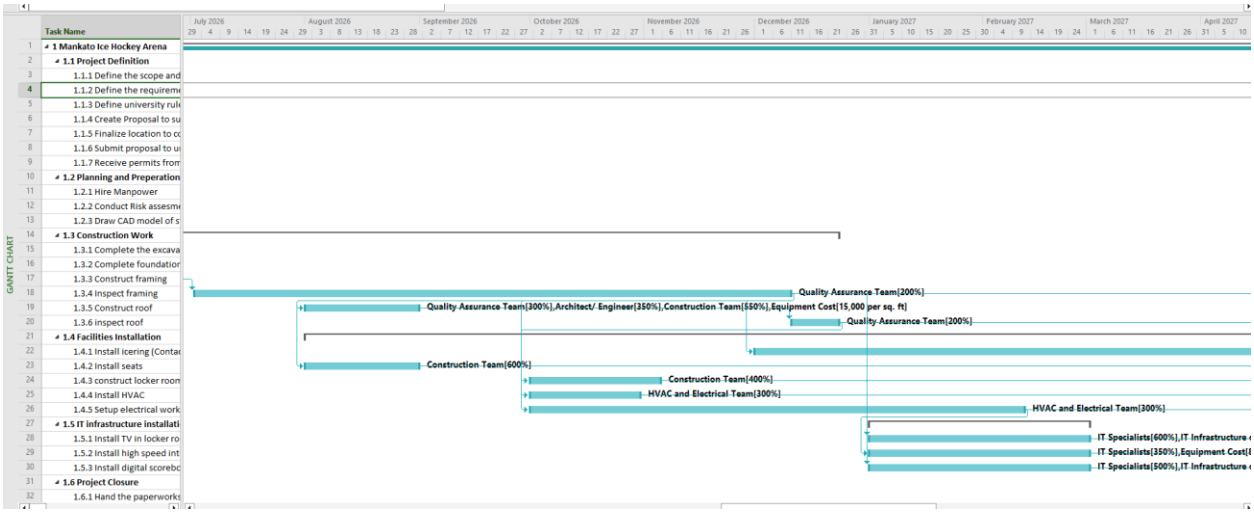
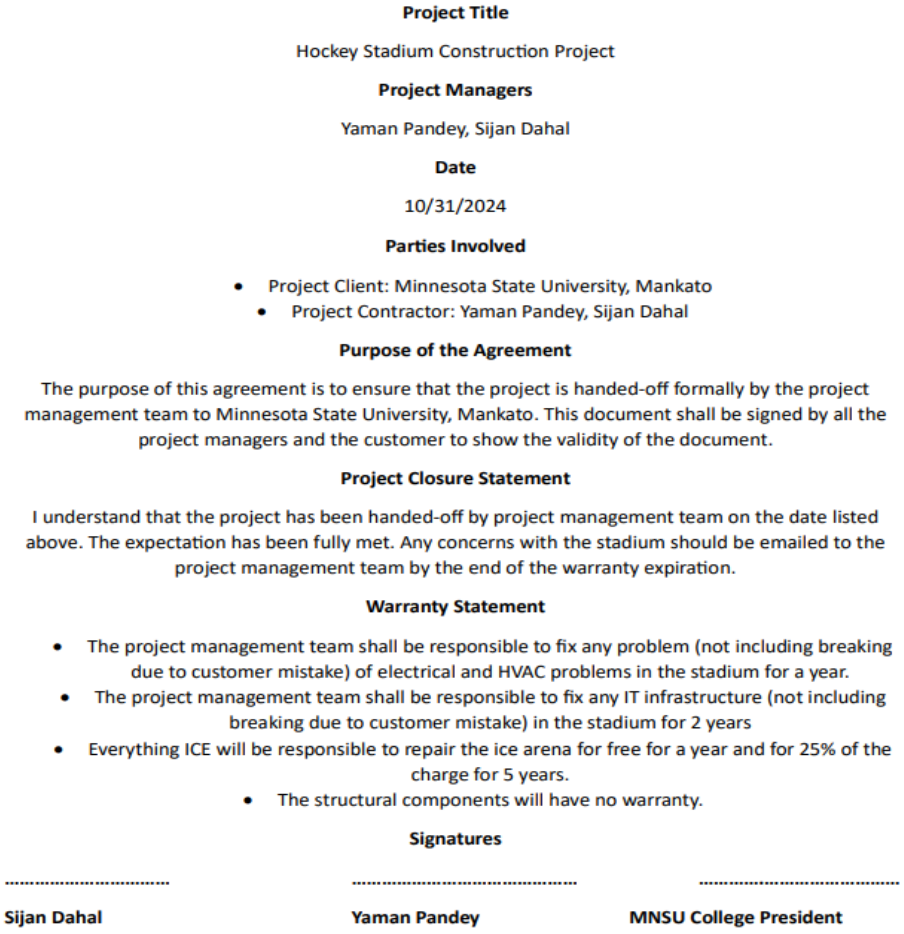


Figure 12 - Network Diagram

Project Closure

Purpose: The purpose of the Project Closure document is to formally close a project and authorize the handoff from project to operations. It would include final information about the project deliverables, scope, milestones and budget, as well as lessons learned. The contract shown in the figure shall be used for the official project closure document.



Project Title

Hockey Stadium Construction Project

Project Managers

Yaman Pandey, Sijan Dahal

Date

10/31/2024

Parties Involved

- Project Client: Minnesota State University, Mankato
- Project Contractor: Yaman Pandey, Sijan Dahal

Purpose of the Agreement

The purpose of this agreement is to ensure that the project is handed-off formally by the project management team to Minnesota State University, Mankato. This document shall be signed by all the project managers and the customer to show the validity of the document.

Project Closure Statement

I understand that the project has been handed-off by project management team on the date listed above. The expectation has been fully met. Any concerns with the stadium should be emailed to the project management team by the end of the warranty expiration.

Warranty Statement

- The project management team shall be responsible to fix any problem (not including breaking due to customer mistake) of electrical and HVAC problems in the stadium for a year.
- The project management team shall be responsible to fix any IT infrastructure (not including breaking due to customer mistake) in the stadium for 2 years
- Everything ICE will be responsible to repair the ice arena for free for a year and for 25% of the charge for 5 years.
- The structural components will have no warranty.

Signatures

.....	.....	.....
Sijan Dahal	**Yaman Pandey**	**MNSU College President**

Figure 16: Project Closure Contract

Project Description

The project Mankato Ice Hockey area has been constructed for Minnesota State University, Mankato. The stadium is designed and constructed using eco-friendly materials for sustainability. The project involved submitting the proposal, designing the hockey stadium CAD model, construction of the ice ring and installing all the required electrical and ventilation systems.

Scope Statement

The scope of the project included designing the ice hockey arena which required permits from the blue earth county. The construction of this stadium is done with modern equipment to make sure players get all the facilities such as, Seating, Locker room, HVAC system and score boards.

Project Accomplishments

Project Name:	**Mankato Ice Hockey Arena**
Governing Body:	Minnesota State University, Mankato
Executive Sponsor:	Minnesota State University, Mankato
Project Manager:	Sijan Dahal & Yaman Pandey
Date:	12/11/2027

Accomplishment	**Details**
Mankato Arena Design Completion	The designed was done by Architecture and was approved by MSU.
Permits Secured	The necessary permits to start the construction was approved from blue earth county.
Construction Completion	The Ice Hockey arena was completed on time and within budget of $ 50 million
Operational and IT infrastructure setup	All the infrastructures such as Ice Rink, Cooling System, Digital Scoreboard have been finalized.

Table 8: Project Accomplishment

Project Milestones

Milestone	Date	Description
Get the design and construction approved	**Nov 2025**	Get the design and construction approved from Minnesota State University, Mankato
Permits finalization and contracts with Everything Ice	**Dec 2025**	Permits finalization and contracts with the Everything Ice contractor for building the Ice Rink
Kicking off construction	**Jan 2026**	Kicking off construction with tasks such as land clearing, leveling, and initial groundwork.
Agreement kickoff with Everything Ice	**Mar 2026**	The agreement kickoff with the company is for Everything Ice to build the Ice Rink.
Start structural framework construction	**May 2026**	Starting to build a structural framework such as a roof for the seating places.
Construction of locker rooms and seating zones	**Aug 2026**	Begin construction of the locker rooms with attached bathrooms and seating zones with the proper seats to the different zones (General, VIP, Accessible)
Installation of Ice Rink	**Dec 2026**	Installation and configuration of the ice rink with *Everything Ice* including cooling systems and resurfacing equipment.
Completion of IT infrastructure	**May 2027**	Finalize Information technology infrastructure such as High-speed internet, Digital Scoreboard, and commentary box.
Testing of systems	**Aug 2027**	Testing of audio-visual systems, commentary box, and internet speeds to ensure proper functioning.
Testing of Ice Rink features	**Sep 2027**	Test the ice rink features, including ice cooling, temperature settings, and resurfacing equipment.
Project finalization and handover meeting	**Oct 2027**	Complete all tasks and hold a final meeting with MSU for the handover of the stadium.
Grand opening and first match	**Dec 2027**	Officially open the stadium with a grand opening event, including the first hockey match between MSU and the University of Minnesota with the guest of current Vikings captain Justin Jefferson.

Table 9: Project Milestones

Transfer to Operations

Role	Name	Transition Date
Functional Owner	Yaman Pandey	10/31/2027
Service Owner	Sijan Dahal	10/31/2027
Service Manager	Yaman Pandey, Sijan Dahal	10/31/2027

Table 10: Transfer to Operations

Lessons Learned

During the entire project, the team learned a lot of things. The learning experience could be used in future projects to make the project better. The lessons learned are listed below.

1. Team Communication: The biggest lesson learned from this project is that team communication is the most important aspect of the project. To ensure that everyone is in the loop, communication plays a vital role. For that, various informal and formal meetings were held. The problem of team members not showing up in the meeting and not inputting their ideas was a big gap in the team initially. This problem was resolved by a formal meeting and taking appropriate action.

2. Time Management: Time management was the other gap the team was experiencing. Meeting the deadlines and submitting the reports on time was an initial issue. This could be resolved by planning the time ahead of time and making the use of tools such as Gantt chart

Project Manager Comments

Despite having some problems within the team at the beginning, the project was planned and executed properly. Communication with the customer was made in reports and presentations, and various iterations were presented. The risks were defined and all the resources needed for project completion were identified. Both project managers worked as a team and helped with the project to the best of our expertise. Overall, the project is a remarkable success.

Project Completion Acceptance

Project Role	Name	Signature (Electronic is acceptable)	Date
Executive Sponsor	Minnesota State University, Mankato		
Functional Owner	Yaman Pandey		
Service Owner	Sijan Dahal		
Project Manager	Yaman Pandey, Sijan Dahal		
SPMO Director	*Yaman Pandey*		

Table 11: Project Completion Acceptance

Conclusion

In conclusion, the project could be considered a success. The stadium as per customer requirements was handed over to Minnesota State University, Mankato. Communication was made with the customers throughout the project to ensure that the customer was in a loop with the project. As the risks for the project were identified beforehand, planning was done prior, and the tools such as Gantt chart were used, the project went smoothly for most of the part. The team had some lesson learning experiences too. As this project was completed using the philosophy of agile project management, the project was relatively easier to plan, execute, and close. The customer is happy with the final product and a proper handover was done.

References

Cost to build an ice rink for permanent use. (n.d.). Retrieved from Sport Venue Calculator: https://sportsvenuecalculator.com/knowledge/ice-rinks/ice-rink-cost/