Project Design Phase-I
Proposed Solution Template

Date	06 May 2023
Team ID	NM2023TMID02708
Project Name	Project – IoT Based Weather Adaptive Street Lighting System

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The problem that the IoT-based weather adaptive street lighting system aims to solve is the lack of adaptability and efficiency of traditional street lighting systems. These systems are typically operated based on a pre-defined schedule, regardless of weather conditions, resulting in energy waste, light pollution, and increased maintenance costs.
2.	Idea / Solution description	The IoT-based weather adaptive street lighting system is a modern solution to the inefficiencies of traditional street lighting systems. By using various sensors and machine learning algorithms, the system can adapt lighting intensity to real-time weather conditions, reducing accidents caused by poor visibility. The system is easily integrated with existing street lighting infrastructure and can be deployed in both urban and rural areas. It enhances public safety, reduces energy consumption and costs, and minimizes light pollution, making it a desirable solution for modern cities looking to improve their sustainability and livability. The system's scalability and adaptability ensure it is a long-term solution, easily updated and maintained, and future-proofed against changing technology trends.
3.	Novelty / Uniqueness	The IoT-based weather adaptive street lighting system is a unique and innovative solution that addresses the inefficiencies of traditional street lighting systems. The system's novelty lies in its ability to adapt to changing weather conditions, ensuring optimal lighting levels for both drivers and pedestrians. This is achieved through the use of various sensors and machine learning algorithms that constantly monitor and adjust lighting intensity based on real-time weather data. Furthermore, the system's machine learning algorithms can predict upcoming weather conditions and optimize lighting

		settings accordingly, reducing the likelihood of accidents caused by poor visibility. This is a unique feature that sets the IoT-based weather adaptive street lighting system apart from traditional street lighting systems, which are typically operated based on a pre-defined schedule. Another unique feature of the system is its scalability and adaptability. The system can be easily integrated with existing street lighting infrastructure, reducing the need for costly hardware upgrades. This makes the system suitable for deployment in both urban and rural areas, and adaptable to different street lighting configurations.
4.	Social Impact / Customer Satisfaction	The IoT-based weather adaptive street lighting system has a significant positive impact on public safety and customer satisfaction. By adapting lighting intensity to real-time weather conditions, the system reduces accidents caused by poor visibility, enhancing public safety. The system is energy-efficient and reduces light pollution, making it a desirable solution for modern cities looking to improve their sustainability and livability. Customers benefit from reduced energy costs and ongoing maintenance services, creating a mutually beneficial relationship with the provider.
5.	Business Model (Revenue Model)	The IoT-based weather adaptive street lighting system's revenue model will be based on a combination of upfront hardware and installation costs, ongoing maintenance fees, and energy savings. The system will be sold to municipalities, utility companies, and other organizations responsible for street lighting infrastructure. The ongoing maintenance and energy savings will be offered as a service, with a percentage of the savings being retained by the provider. The revenue model is designed to create a sustainable and mutually beneficial relationship between the provider and the customer, while incentivizing energy efficiency and reducing the environmental impact of street lighting.
6.	Scalability of the Solution	The IoT-based weather adaptive street lighting system is highly scalable and adaptable to different street lighting configurations, making it suitable for deployment in both urban and rural areas. The system is designed to be easily integrated with existing street lighting infrastructure, reducing the need for costly hardware upgrades. This means that the system can be deployed in a phased manner, starting with a small pilot and scaling up as

		required. Additionally, the system's software can be easily updated to incorporate new features and functionalities, making it future-proof and adaptable to changing technology trends. Overall, the scalability of the solution makes it a highly desirable option for modern cities looking to improve their sustainability and livability