🏆 Wire-Free Sewer Vision Hackathon Judging Criteria

This scorecard is designed to evaluate prototypes focused on developing a wire-free, autonomous, and durable device capable of providing visual or sensory data from subterranean sewer environments.

1. 💡 Technical Innovation & Environmental Durability (35%)

This is the most heavily weighted category, focusing on solving the core engineering challenges of the theme.

Sub-Criteria	Description	Max Points
Wireless Performance	Effectiveness and reliability of the data transmission method in a confined, often wet, and subterranean environment.	10
Environmental Resilience	Quality of the physical design (enclosure, seals, materials) to resist moisture (IP rating standard), corrosion, impact, and sustained operation in a dirty environment.	10
Power Efficiency	Energy usage relative to run-time. Novel approaches to ultra-low power consumption for extended, wire-free deployment.	8
Sensing System Novelty	The creativity and suitability of the vision system or sensors used (e.g., thermal imaging, acoustic profiling, LiDAR, or unique lighting/lens systems optimized for total darkness).	7
Category Total		35

2. ✦ Data Utility & Analysis (30%)

This category evaluates the quality of the output data and its potential usefulness to infrastructure managers.

Sub-Criteria	Description	Max Points
Data Quality/Clarity	The sharpness, resolution, and relevance of the data collected (e.g., clarity of images/video, accuracy of distance measurements, integrity of sensor readings).	10
Actionable Insights	Does the system process or present the data in a way that provides immediate, actionable insights (e.g., automated blockage detection, structural defect mapping, or flow rate anomalies)?	8
System Integration	Ease of integration of the collected data into existing municipal or visualization platforms (e.g., data format, API compatibility, cloud connectivity).	7
Miniaturization	The device's size and form factor. Is it small and agile enough to navigate standard sewer pipes without causing blockages or requiring large access ports?	5
Category Total		30

3. ☿ Real-World Impact and Scalability (20%)

This section assesses the potential value of the solution in a broader municipal context.

Sub-Criteria	Description	Max Points
Problem Solved	How significantly does this solution reduce operational costs, increase inspection frequency, or improve public safety compared to traditional wire-based systems?	8
Scalability	Feasibility of mass production and deployment. Is the solution cost-effective and built using readily available components?	6

	Clarity of the planned lifecycle (battery replacement, cleaning, retrieval). Is the device designed for easy field service?	
Maintenance Model	Clarity of the planned lifecycle (battery replacement, cleaning, retrieval). Is the device designed for easy field service?	6
Category Total		**20**

4. 🗣️⬜ Presentation and Prototype Demonstration (15%)

This evaluates the clarity of the presentation and the team's ability to demonstrate a working proof-of-concept.

Sub-Criteria	Description	Max Points
Clarity of Pitch	Was the problem, solution, and value proposition communicated clearly, concisely, and persuasively?	5
Live Demonstration	Effectiveness of the live demo. Did the team successfully simulate the key wire-free and vision capabilities?	5
Team Q&A	Ability to handle technical and business questions from the judges thoughtfully and accurately.	5
Category Total		**15**

TOTAL POINTS: 100