Infrastructure Impact Analysis Report

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Executive Summary

Failure Source:	School (School)
Failure Type:	Infrastructure Damage
Severity Level:	CRITICAL
Overall Risk:	MEDIUM
Affected Nodes:	4
Critical Impacts:	0
High Severity:	0
Estimated Affected Population:	~300 people
Estimated Recovery Time:	1-2 hours

Detailed Cascading Impact Analysis

The GNN-based predictive model has analyzed the failure propagation through the infrastructure network. A total of 4 connected nodes are predicted to experience cascading effects, with 0 nodes reaching critical impact levels and 0 nodes experiencing high severity impacts.

Affected Infrastructure Nodes

Node Name	Type	Severity	Impact Probability	Expected Effects
Hospital	Hospital	MEDIUM	37%	Pressure warning at Hospital. Elevated stress levels detected, n
Pump-A	Water Pump	MEDIUM	31%	Pressure warning at Pump-A. Elevated stress levels detected, n
Main-Pipe	Water Pipe	MEDIUM	29%	Pressure warning at Main-Pipe. Elevated stress levels detected,
Main-Tank	Water Tank	MEDIUM	28%	Pressure warning at Main-Tank. Elevated stress levels detected

Analysis Methodology

This analysis was generated using a Graph Neural Network (GNN) trained on infrastructure cascade patterns. The model analyzes network topology, node criticality, and historical failure propagation patterns to predict the cascading effects of infrastructure failures.

Network Configuration: 5 nodes connected by 4 bidirectional edges. The analysis accounts for node health status, infrastructure type, connectivity, and failure mode characteristics.

This report is generated by the Village Infrastructure Impact Predictor using AI-powered cascade analysis. Predictions should be validated with domain experts and real-time monitoring data.