



2026 Infrastructure Modernization Program - Lift Stations



BROCHURE: LIFT STATION HARDENING & MODERNIZATION PROGRAM	3
OPERATING MISSION-CRITICAL WASTEWATER INFRASTRUCTURE AT SCALE	3
THE PROBLEM WE SOLVE	3
THE VIRIDI SOLUTION	3
WHAT CHANGES AT THE LIFT STATION	4
<i>Energy Resilience</i>	4
<i>Diesel Generator Displacement</i>	4
<i>Digital Modernization (No Equipment Replacement)</i>	4
OPERATIONAL IMPACT	4
<i>From Reactive to Predictive Operations</i>	4
<i>Fleet-Level Intelligence</i>	4
BUSINESS VALUE DELIVERED	4
PROVEN IN THE FIELD: ERIE COUNTY, NY	5
DESIGNED FOR SCALE	5
VIRIDI BESS RETURN ON INVESTMENT	6
IN THE NEWS! ERIE COUNTY MODERNIZES WASTEWATER LIFT STATION	7
ABOUT VIRIDI	8
INDOOR/OUTDOOR PRODUCT LINECARD	8
APPENDIX A: RPSLINKIN BESS	9
RPSLINKIN SPECIFICATIONS – MODULAR ENERGY STORAGE FOR INTERNAL INSTALLATIONS	9
WHITE PAPER: THE COST OF WASTEWATER LIFT STATION FAILURES	10
A ONE-YEAR ASSESSMENT OF DIRECT AND INDIRECT FINANCIAL DAMAGES	10
WHY THESE COSTS REMAIN LARGELY HIDDEN	10
WHAT TYPICALLY HAPPENS WHEN A LIFT STATION FAILS	10
PUBLICLY OBSERVABLE INCIDENT FREQUENCY IN A TYPICAL YEAR	11
DIRECT FINANCIAL DAMAGES: OBSERVED MUNICIPAL COSTS	11
<i>Emergency Response and Mitigation</i>	11
<i>Repair and Equipment Replacement</i>	12
<i>Cleanup, Disposal, and Regulatory Compliance</i>	12
BLENDED DIRECT COST PER INCIDENT	12
ONE-YEAR DIRECT FINANCIAL IMPACT (STATEWIDE)	12
INDIRECT AND SECONDARY FINANCIAL DAMAGES	13
TOTAL ANNUAL FINANCIAL BURDEN	13
WHY THESE DAMAGES ARE LARGELY PREVENTABLE	13
POLICY RELEVANCE FOR NEW YORK STATE	13
CONCLUSION	14
BIBLIOGRAPHY AND REFERENCE SOURCES	14

Brochure: Lift Station Hardening & Modernization Program

Operating Mission-Critical Wastewater Infrastructure at Scale

Municipal wastewater lift stations are among the most critical, and most vulnerable assets in public infrastructure. Power interruptions, aging diesel generators, and limited visibility into remote sites create operational risk, regulatory exposure, and escalating maintenance costs.

Viridi delivers a **resilience-first, digitally enabled modernization platform** that hardens lift stations against outages while transforming legacy assets into visible, optimized infrastructure—without disruptive equipment replacement. Viridi’s Battery Energy Storage Systems (BESS) are fully FEOC-compliant and qualify for up to 40% in available federal incentives.

The Problem We Solve

Lift stations today: Depend on aging diesel generators with high O&M costs • Experience frequent short and medium-duration outages • Operate as blind, unmanned assets • Drive costly emergency responses and truck rolls • Create risk of overflows, fines, and public health events.

Generators are oversized for inrush current, underutilized in practice, and expensive to maintain despite being needed only during rare extended outages.

▼ **Inrush Current:** Starting a pump requires a high surge of power, but once operational, the power demand drops significantly. Generators must be oversized to handle these peaks, leading to inefficient fuel consumption.

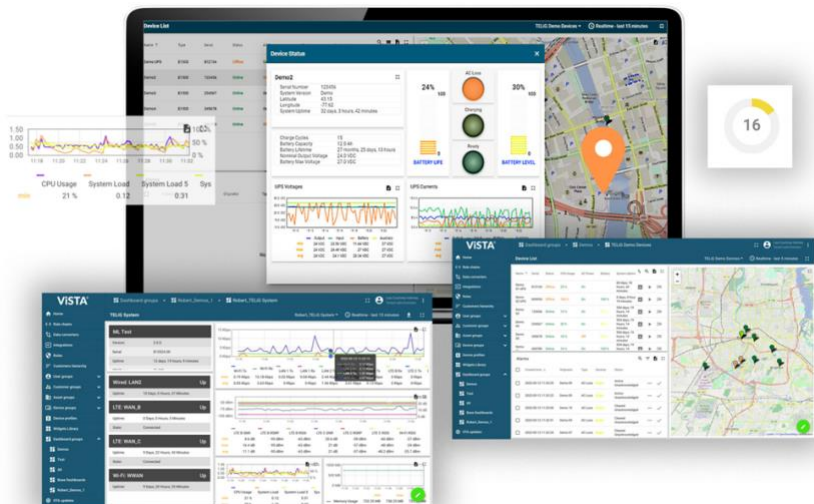
▼ **Frequent Cycling:** Pumps often run four times per hour for less than two minutes each cycle. This start-stop pattern causes wear on both the pump and the generator.

The Viridi Solution

A Resilient, Intelligent Lift Station Platform

Viridi combines fail-safe battery energy storage, secure IoT connectivity, and fleet-level software intelligence into a single, standardized deployment model that can scale to any size requirements indoors or outdoors.

- ▼ **RPSLinkIN:** Fail-safe battery backup replacing primary generator duty
- ▼ **VCom™ Edge Gateway:** Secure IoT connectivity & EMS
- ▼ **VISTA® Platform:** Real-time monitoring, alerts, and predictive analytics
- ▼ **Optional Generator Integration:** Preserved as last-resort asset



What Changes at the Lift Station

Energy Resilience

- ▼ Instantaneous backup during grid outages
- ▼ Seamless power continuity with no start delay
- ▼ Majority of real-world outages absorbed by battery system
- ▼ Dramatic reduction in generator starts and runtime

Diesel Generator Displacement

- ▼ Fewer test cycles and maintenance events
- ▼ Lower fuel consumption and logistics
- ▼ Improved generator reliability when truly needed
- ▼ Reduced lifecycle cost across the fleet

Digital Modernization (No Equipment Replacement)

- ▼ Real-time visibility into pumps, motors, and electrical systems
- ▼ Monitoring of runtime, load behavior, and thermal conditions
- ▼ “Eyes on” remote stations for the first time
- ▼ Secure data collection from analog assets

Operational Impact

From Reactive to Predictive Operations

- ▼ Early detection of abnormal operating trends
- ▼ Maintenance prioritized by condition, not alarms
- ▼ Fewer blind truck rolls and emergency dispatches
- ▼ Extended asset life and improved uptime

Fleet-Level Intelligence

- ▼ Standardized deployment across counties or states
- ▼ Centralized dashboards and reporting
- ▼ Compliance-ready documentation
- ▼ Scalable operations without proportional staffing increases

Business Value Delivered

Risk Reduction - Lower overflow probability • Real-time visibility of performance • Improved public health and environmental protection • Ability to triage resources based on real-time data • Ability to see all assets and anticipate when fuel/charge will run out

Cost Reduction - Elimination of unnecessary generator O&M • Reduced fuel, labor, and emergency response costs • Fewer truck-rolls and site visits • Extended generator life (deferred capex) • “Command Center” comes included in the project with multiple logins

Capital Efficiency - Deferred generator replacements • Extended life of existing pumps and controls
• Opportunities for managed service model shifts spend from CapEx to predictable OpEx.

Policy & Funding Alignment – Municipalities and government Entities are eligible for Direct Pay of Investment Tax Credit reducing cost 45%) • Climate, resilience, and infrastructure modernization alignment • American-made, compliant technology stack.

Proven in the Field: Erie County, NY

Baseline Implementation - 100 kWh RPSLink deployment per station • Fully charged system cost of \$12.50 provides 32–90 hours of backup runtime • Generator engagement reduced to rare, extended and extreme events • Remote monitoring across distributed stations. Learn more here: [Wastewater Pumping Station – Viridi](#)

Outcome • Lower operating costs • Improved visibility & reliability • Scalable model for countywide rollout.

Designed for Scale

Viridi's lift station solution is purpose-built for: County-by-county deployment • Statewide infrastructure initiatives • Managed service delivery • Policy-driven modernization programs

COMPREHENSIVE PRODUCT LINE

Safe, Smart, Scalable– Capacity for Any Situation

INTELLIGENT, CONNECTED, AI-ENABLED



VCom Edge Computing Platform with ViSTA™ Data Visualization Engine

Our robust lineup features *Smart Power Management* and *Advanced Industrial Connectivity*, empowering you to monitor and manage your assets remotely, anywhere at anytime.

Fail-Safe Lithium-Ion

Designed for uncompromising safety and reliability, approved for installation in occupied spaces and around critical equipment.



Intelligent Manufacturing
Accelerated lithium-ion battery production with automated precision. US Domestic Manufacturing in Western NY.



Off-Grid Industrial Power Solutions
Advanced electrical design for remote and resilient applications.



Scalable Battery Systems
Modular capacities from 50 kWh to 1.2 MWh and beyond.



Advanced Analytics and AI
Leverages real-time data and AI-driven insights to maximize asset performance and efficiency by continuously co-optimizing value streams.



FirstNet®-Enabled Connectivity
High-reliability, secure communication for seamless integration.



faveo
Intelligent
Traffic Backup System



RPS150
Mobile Energy Storage System
30kW/150kWh



RPSLINK-EX
Modular
Energy Storage System
10-30kW, 50-150kWh



RPSLINK-IN
Modular Indoor Battery
Energy Storage System
10-30kW, 50-150kWh



RPS1200
Containerized Energy Storage System
240kW/1200kWh



Discover how our solutions power your success—
explore use cases, specs, and more on our website.

www.viridiparente.com | sales@viridiparente.com | 716.968.8658



© 2026, Viridi Parente, Inc. All rights reserved. Manufactured in Buffalo, NY. Viridi, faveo, and ViSTA are trademarks of Viridi Parente, Inc., registered in the U.S. and other countries and regions. Information as of March 2026.



Built to FECC-compliant
standards TODAY!



Bill Krug, Senior Principal Sales
585.739.3590
bkrug@viridiparente.com

Viridi
1001 E Delavan Ave, Buffalo, NY 14215
ViridiParente.com

Viridi BESS Return on Investment



Typical Return on Investment

1.5–3 yrs

INSTALLATION COST

Item	Amount
Estimated Installed Project Cost	\$130,000
Federal ITC 40% (IRS Section 48E)*	\$52,000
Year-1 Bonus Depreciation	\$21,840
Net Capital Cost	\$56,160

ANNUAL GENERATOR EXPENSE

Cost Component	Typical Range
Routine testing & inspections	\$3,000 – \$5,000
Fuel management	\$2,000 – \$4,000
Preventive maintenance	\$2,000 – \$4,000
Load bank testing	\$1,000 – \$2,000
Total recurring O&M*	\$8,000 – \$15,000
²Annualized replacement deferral ...	\$10,000 – \$20,000
Annual avoided cost.	\$18,000–\$35,000

Note: BESS absorbs the majority of real-world outage events, allowing material reduction in generator runtime, testing frequency, and wear. All figures are illustrative and subject to final system cost, eligibility confirmation, placed-in-service timing, and federal guidance. Municipal entities should review final structures with financial and legal advisors prior to execution. *Municipal entities may elect Direct Pay, which allows the full value of the Investment Tax Credit to be received as a cash payment from the U.S. Treasury. ²At assumed generator replacement cost of \$150,000–\$200,000 and 10–15 year life

1001 East Delavan Ave. | Buffalo, NY 14215 | (716) 968-8658
 sales@viridiparente.com | www.viridiparente.com

Specifications subject to change without notice. | © 2026, Viridi Parente, Inc. All rights reserved. Manufactured in Buffalo, NY. Viridi is a trademark of Viridi Parente, Inc., registered in the U.S. and other countries and regions.

Wastewater Infrastructure, Powered by Batteries

Viridi provides a low-maintenance, low-cost-of-ownership backup power solution for critical applications. The **RPSLinkIN** system leverages the latest fail-safe battery technology to deliver reliable backup power, scalable to meet your required load and runtime.

Designed for long-term reliability, the system requires little to no maintenance throughout its 10-year lifecycle. Viridi's **VISTA™ monitoring and control platform** provides real-time visibility into system performance, early alerts for operational anomalies, and full remote control of your site. The deployment improves operational resilience, significantly reduces lifecycle and O&M costs, and considerably enhances remote capabilities.

By reducing or eliminating fossil-fuel generators, organizations can also significantly lower their carbon footprint—and may qualify for **up to 60%** in federal incentives.



Get the RPS Linkin Spec Sheet.

Explore the features and specs powering seamless energy integration.

DOWNLOAD

<https://rebrand.ly/jcqz5e9>



From diesel to clean backup power.

PV Magazine shows how this lift station project is redefining resilience.

READ NOW

<https://rebrand.ly/megz4yy>

Start Planning Your Project

>> Lease Options Available <<



In the News! Erie County modernizes wastewater lift station

	Spectrum News Projects across New York working to incorporate more battery power
	Newsbreak (30.1M UVM) This New York pump station ditched diesel for battery backup
 Li-ion Battery Industry News & Market Intelligence	Batteries News (36.3K UVM) Erie County Deploys Viridi Fail-Safe Battery Backup System to Modernize Wastewater Pumping Stations and Reduce Diesel Reliance
	Batteries & Energy Storage Technology (32.1K UVM) Viridi BESS fortifies wastewater infrastructure
	GreenTechLeader (2.3K UVM) Renewable energy news: Erie County, NHOA Fortis Enerji, EBRD
	Third News (2.1K UVM) Erie County Leads the Way in Sustainable Energy Solutions with Viridi's New Battery Backup System
	RNA News (1.2K UVM) Viridi replaces New York municipal diesel generator with battery
	Our Health Needs (1.1K UVM) This New York pump station ditched diesel for battery backup
	Electrek (5.7M UVM) This New York pump station ditched diesel for battery backup
	Cleantechnica (1.3M UVM) Battery Storage System Replaces Wastewater Facility Diesel Generator
	Utility Dive Newsletter (391.8K UVM) Daily Dive Feb. 19, 2026
	Solar Power World (80.9K UVM) Viridi replaces New York municipal diesel generator with battery
	North American Clean Energy (14K UVM) Erie County Deploys Viridi Fail-Safe Battery Backup System to Modernize Wastewater Pumping Stations and Reduce Diesel Reliance
	The Battery Magazine (1.3K UVM) Viridi Deploys Fail-Safe Battery System at Erie County Wastewater Pump Station
	Treatment Plant Operator Running Quiet. Running Clean. A New Concept in Pump Station Backup Power.

About Viridi



Viridi is a privately held advanced manufacturing company founded in 2017, fail-safe battery energy storage systems. Headquartered on a 42-acre campus, Viridi employs 135 full-time employees and is backed by \$118 million in funding from leading investors including: **Grand Oaks Capital Management**, founded by Paychex founder Tom Golisano; **Sunbelt Rentals**; **National Grid Ventures**; the **California CEC**; and **WNY Impact Investment Fund**.

From critical infrastructure and industrial applications to remote and off-grid power, Viridi's fail-safe BESS technology combines advanced battery architecture, intelligent connectivity, and scalable configurations to provide dependable power where and when it is needed. With domestic manufacturing in Western New York and California, and proven deployments across critical and resilient applications, Viridi brings together innovative technology, advanced manufacturing, and 24/7 support to help customers power what matters most. [See our capabilities statement.](#)

Indoor/Outdoor Product Linecard



CAPABILITY Statement
Rugged, Resilient, and Reliable Low-Emission Battery Solutions for Any Environment at Any Time

OVERVIEW
Viridi designs and manufactures U.S.-made battery energy storage systems (BESS) featuring a proprietary architecture that eliminates the risk of thermal runaway and fires. Combined with advanced AI-enabled connectivity, Viridi BESS delivers unparalleled safety and performance. Available in both stationary and mobile configurations, Viridi BESS provide versatile energy solutions for diverse applications.

DIFFERENTIATORS
Our innovation design is one of the few solutions on the market that ensures safe installation and operation in occupied spaces and near critical equipment—virtually anywhere. With no need for fire suppression systems, cooling, ventilation, or secondary construction, our batteries connect via the advanced FireBlue® and AI-enabled VConn communication platform, enabling seamless data collection, remote monitoring, and full BESS control. Output capabilities: 240VAC 3PH, 480VAC 3PH, 480VAC 3PH, 400VAC 3PH, 480VAC 3PH.

PAST PERFORMANCES

- Oak Ridge National Laboratory, TN
- Henshaw Woodhead Medical Research Institute (HMI), NY
- Train Desalination Cleanup, OH
- Microgrid Set-Up at Hurricane Helene, NC
- Microgrid Set-Up at West Point Military Academy, NY

POINT OF CONTACT
Nick LaMondula, Technical Sales Specialist
401-251-9688 / 401-251-9689 / 401-251-9690
nlamondula@viridiparente.com

1001 E. Delavan Ave. | Buffalo, NY 14215 | (716) 968-8958
sales@viridiparente.com | www.viridiparente.com

© 2024 Viridi Parente, Inc. All rights reserved. Viridi Parente, Inc. is an Equal Opportunity Employer. Viridi Parente, Inc. is a registered provider of the U.S. and other countries and regions.

CORE COMPETENCIES

- **Fail-Safe Lithium-Ion Energy Storage:** Advanced electrical design for remote and resilient applications.
- **Off-Grid Industrial Power Solutions:** Advanced electrical design for remote and resilient applications.
- **Scalable Battery Systems:** Modular expansion from 10kW to 1.1 MW and beyond.
- **Intelligent Manufacturing:** Automated lithium-ion battery production with automated precision (US Domestic Manufacturing in Henshaw, NY).
- **FireBlue®-Enabled Connectivity:** High-availability, secure communication for proactive integration.
- **Advanced Analytics and AI:** Leverages real-time data and AI-driven insights to maximize system performance and efficiency by continuously re-optimizing entire systems.
- **24/7 Expert Support:** Round-the-clock customer support and troubleshooting product specialists.

COMPANY SNAPSHOT

- **FOUNDING YEAR:** 2017
- **UNB. C/P ALLIANCE:** S&B 100%
- **FEDERAL HUB:** Zone
- **SMALL BUSINESS:** USA Manufactured
- **RESEARCH AND DEVELOPMENT:** Advanced product development, design, and testing.
- **LOCATED IN A DESIGNATED DISTRICT:** of Energy (DOE) "Energy community"

APPENDIX A: RPSLinkIN BESS

RPSLinkIN Specifications – Modular Energy Storage for Internal Installations



RPSLinkIN

Model	480V-3p-300kWh-60kW	480V-3p-150kWh-30kW	480V-3p-100kWh-20kW	208V-3p-150kWh-30kW	208V-3p-100kWh-15kW	208V-3p-50kWh-10kW
System Contains	(1) PCS Cabinet (6) RPS50 Packs	(1) PCS Cabinet (3) RPS50 Packs	(1) PCS Cabinet (2) RPS50 Packs	(1) PCS Cabinet (3) RPS50 Packs	(1) PCS Cabinet (2) RPS50 Packs	(1) PCS Cabinet (1) RPS50 Pack
Nameplate Capacity (kWh)	293.4	146.7	97.8	146.7	97.8	48.9
Usable Capacity (kWh)	260.4	130.2	86.8	130.2	86.8	43.4
Max Continuous Power, Charge/Discharge (kW)	60	30	20	30	15	10
Operating Voltage	480VAC 3Φ			208VAC 3Φ		
Max Continuous Current, Charging/Discharging (A)	72.2	36.1	24.1	83.3	41.6	27.8
Operating Temp. Range	-10°C to 45°C / 14°F to 113°F [1]					
Cycle Life	4,000+ charge / discharge cycles [2]					
Communication / Telematics	BESS uses WIFI / LAN / 5G / LTE to report EMS and performance data to Viridi ViSTA®. RPSLink typically communicates to ViSTA® via LAN or WIFI.					
Backup Power	An optional Sinexcel Intelligent Transfer Switch is required for RPSLink to provide resilient power during a grid outage					
PCS Cabinet Size & Weight	34.8in / 884.8mm wide *** 48.7in / 1237.6mm tall *** 29.7in / 754.4mm deep *** 300lbs (includes mounting skid)					
RPS50 Pack Size & Weight	22.6in / 575.0mm wide *** 44.4in / 1128.6mm tall *** 36.4in / 925.1mm deep *** 1,100lbs (includes mounting skid)					
Certifications	UN 38.3 (cell/module), UL 1973 (cell SGS listed), UL 1973 (pack cETLus recognized), UL 9540A (cell/module/pack UL or CSA tested), UL 1741 & IEEE 1547 (inverter TÜV SÜD listed)					

¹ Operating temperature range mirrors battery cell specifications. The Battery Management System (BMS) is programmed to manage the pack utilization rate to control the internal pack thermal conditions and prevent operation outside of pack interior temperature limits, which can be tailored for different applications/installations. The BMS communicates applicable operating conditions continuously via CAN bus to the inverter and/or system controller.

² Cycle life can be optimized for individual applications and operating conditions (depth of discharge, duty cycle, temperature, charge/discharge rate).

White Paper: The Cost of Wastewater Lift Station Failures

A One-Year Assessment of Direct and Indirect Financial Damages

Wastewater lift and pump stations form the invisible backbone of New York State’s wastewater collection infrastructure. These assets operate continuously, often in unattended or minimally staffed environments, ensuring that sewage is reliably conveyed from homes, businesses, healthcare facilities, and other critical users to treatment plants. When functioning properly, lift stations receive little public attention. When they fail, however, the consequences are immediate, visible, and costly.

Across New York State, lift station failures occur not as rare anomalies but as **routine operational events**. Power interruptions, aging electrical components, controls failures, mechanical wear, and wet-weather stress all contribute to recurring incidents. While individual failures are often resolved locally, their **financial impacts accumulate across municipalities year after year**, creating a substantial but largely hidden taxpayer burden.

This white paper documents the **financial damages that typically occur during a representative 12-month period** in New York State as a result of wastewater lift and pump station failures. The analysis focuses exclusively on **collateral financial damages**—the emergency expenditures, cleanup costs, property impacts, service disruptions, and secondary effects that arise *after* a failure occurs.

This document is intentionally distinct from operating return-on-investment (ROI) analyses related to energy cost reduction, maintenance savings, or capital deferral. Instead, it establishes a clear, defensible baseline for understanding the **avoidable losses associated with a reactive infrastructure posture**.

Why These Costs Remain Largely Hidden

The financial consequences of lift station failures rarely appear as a single, clearly labeled budget item. Emergency response labor may be charged to overtime accounts. Contractor invoices are often categorized as unplanned maintenance. Cleanup and sampling expenses may fall under environmental compliance. Administrative time, claims handling, and public communications are typically absorbed across multiple departments.

Because these costs are fragmented, episodic, and often addressed under emergency conditions, they are systematically underestimated in policy discussions and long-term infrastructure planning. When viewed in isolation, each incident may appear manageable. When aggregated over a full year, however, they represent a **material and recurring draw on municipal resources**.

This white paper consolidates those dispersed expenditures into a single financial narrative that can be readily understood by legislators, budget staff, and agency leadership.

What Typically Happens When a Lift Station Fails

Publicly reported incidents across New York State demonstrate a consistent operational pattern following lift or pump station failures.

An initiating event occurs, most commonly the loss of grid power, a pump or motor failure, or a malfunction within electrical or control systems. During wet-weather conditions, hydraulic overloads often compound these issues.

Municipal crews are then dispatched to investigate alarms and assess the situation. Overtime labor begins to accrue almost immediately. If the failure cannot be resolved quickly, emergency mitigation measures are initiated.

Mitigation actions frequently include bypass pumping, vacuum truck mobilization, deployment of temporary generators, traffic control, and site security. Emergency procurement procedures are often required, increasing both cost and administrative burden.

Environmental and public impacts may follow, including sewage discharges, basement backups, roadway flooding, and contamination of receiving waters. These impacts trigger cleanup obligations, regulatory notifications, and public advisories.

Finally, recovery and documentation occur. Equipment must be repaired or replaced, cleanup completed, samples collected and analyzed, and reports submitted to state agencies. Municipal staff also devote time to public communication and constituent response.

Each stage introduces direct financial costs that are largely unavoidable once a failure has occurred.

Publicly Observable Incident Frequency in a Typical Year

Publicly accessible sources—including New York State sewage discharge notifications, NYS Department of Environmental Conservation (DEC) disclosures, municipal advisories, and local and regional news reporting—demonstrate that wastewater lift and pump station failures are a **regular occurrence statewide**.

Review of these sources indicates that a representative 12-month period includes **approximately 300 to 450 reported lift or pump station-related failure incidents** across New York State. These figures reflect documented, referenceable events rather than modeled projections.

While under-reporting is known to occur, particularly for short-duration incidents, this range provides a conservative and defensible baseline grounded in publicly available information.

Direct Financial Damages: Observed Municipal Costs

Emergency Response and Mitigation

Emergency response represents the first category of financial damage. Municipal records and news coverage routinely reference overtime labor, contractor mobilization, vacuum truck services, bypass pumping operations, temporary generator deployment, fuel consumption, and traffic control measures.

Even short-duration failures frequently generate **five-figure response costs**, particularly when contractors or temporary pumping are required.

Observed cost range: \$10,000 – \$50,000 per incident.

Repair and Equipment Replacement

Once immediate mitigation is underway, municipalities must address equipment damage. This may include pump and motor replacement, electrical panel repairs, controls and communications restoration, or wet well and force main repairs.

Moderate failures commonly trigger emergency authorizations approaching or exceeding six figures.

Observed cost range: \$15,000 – \$100,000 per incident.

Cleanup, Disposal, and Regulatory Compliance

Environmental impacts introduce additional financial burdens. Cleanup of streets, private property, and waterways; disposal of contaminated material; sampling and laboratory analysis; and required reporting all carry costs.

Observed cost range: \$5,000 – \$40,000 per incident.

Blended Direct Cost per Incident

When emergency response, repair, and cleanup costs are combined, publicly reported incidents support the following experience-based cost bands:

Incident Severity	Typical Direct Cost
Minor	\$25,000 – \$50,000
Moderate	\$75,000 – \$150,000
Severe (non-catastrophic)	\$200,000 – \$500,000

Given the observed distribution of incidents, a conservative blended statewide average of **\$75,000 to \$110,000 per incident** is well supported.

One-Year Direct Financial Impact (Statewide)

Applying observed incident frequency to blended cost ranges yields the following annual impact:

Scenario	Incidents	Average Cost	Direct Annual Cost
Low	300	\$75,000	~\$22 million
Base	375	\$90,000	~\$34 million
High	450	\$110,000	~\$50 million

These figures indicate that, in a typical 12-month period, New York State municipalities incur **approximately \$25–50 million in direct, cash-out expenditures** responding to wastewater lift and pump station failures.

Indirect and Secondary Financial Damages

Direct response and repair costs do not capture the full financial impact of failures. Public reporting and municipal risk assessments frequently reference private property damage, traffic disruption, emergency detours, public health advisories, waterway closures, and the administrative burden of claims and communications.

Municipal risk management and infrastructure insurance literature commonly apply **indirect cost adders of 40–60 percent** for service disruption events of this type.

Applied to New York State’s annual direct costs, this implies **\$10–30 million per year** in indirect financial damages.

Total Annual Financial Burden

Cost Category	Estimated Annual Impact
Direct damages	\$25M – \$50M
Indirect damages	\$10M – \$30M
Total annual burden	\$35M – \$80M

These losses recur annually and reflect routine operational failures rather than extraordinary disasters.

Why These Damages Are Largely Preventable

The failure modes described in this paper are not novel or unpredictable. Power interruptions, controls failures, and mechanical degradation are well understood risks within wastewater collection systems. In many cases, the severity of financial damage is driven less by the initial failure than by the absence of resilient backup power, automation, and real-time visibility.

When lift stations lack adequate resilience, even short-duration disruptions can escalate into costly emergency responses, environmental releases, and public disruption. As a result, municipalities remain exposed to predictable and recurring financial losses that compound over time.

Policy Relevance for New York State

From a legislative and budgetary perspective, the costs documented in this paper represent **normalized, recurring taxpayer exposure**, not hypothetical risk. These expenditures occur quietly each year, often outside of capital planning discussions, yet collectively rival the cost of major infrastructure investments.

Understanding the scale of these annual damages provides an essential context for evaluating infrastructure hardening, resilience, and modernization initiatives—not as optional enhancements, but as tools to reduce ongoing financial leakage from critical public systems.

Conclusion

In a typical year, New York State absorbs **tens of millions of dollars** in direct and indirect financial damages from wastewater lift and pump station failures. These costs are predictable, recurring, and widely distributed across municipal budgets.

By documenting these hidden costs in a clear and referenceable manner, this white paper establishes a defensible baseline for understanding the financial consequences of deferred infrastructure resilience and modernization.

Bibliography and Reference Sources

1. New York State Department of Environmental Conservation. *Sewage Pollution Right to Know*.
<https://dec.ny.gov/environmental-protection/water/water-quality/sewage-pollution-right-to-know>
2. New York State Department of Environmental Conservation. *Spill Incident Database*.
<https://appfactory.dec.ny.gov/DERExternalSearch/>
3. U.S. Environmental Protection Agency. *Wastewater Utility Survey*.
<https://www.epa.gov/waterfinancecenter/water-and-wastewater-utility-survey>
4. Water Environment Federation. *Wastewater Collection Systems Resources*.
<https://www.wef.org/resources/topics/a-z-topics/collection-systems/>
5. Regional news reporting on wastewater pump station failures and sewage releases, including outlets such as the *Rochester Democrat and Chronicle*, *Times Union*, *Syracuse.com*, and *Newsday* (various articles, 2022–2025).
6. Municipal board minutes and emergency procurement records from New York cities, towns, and counties documenting lift station repairs and sewer emergency responses (various jurisdictions, 2022–2025).