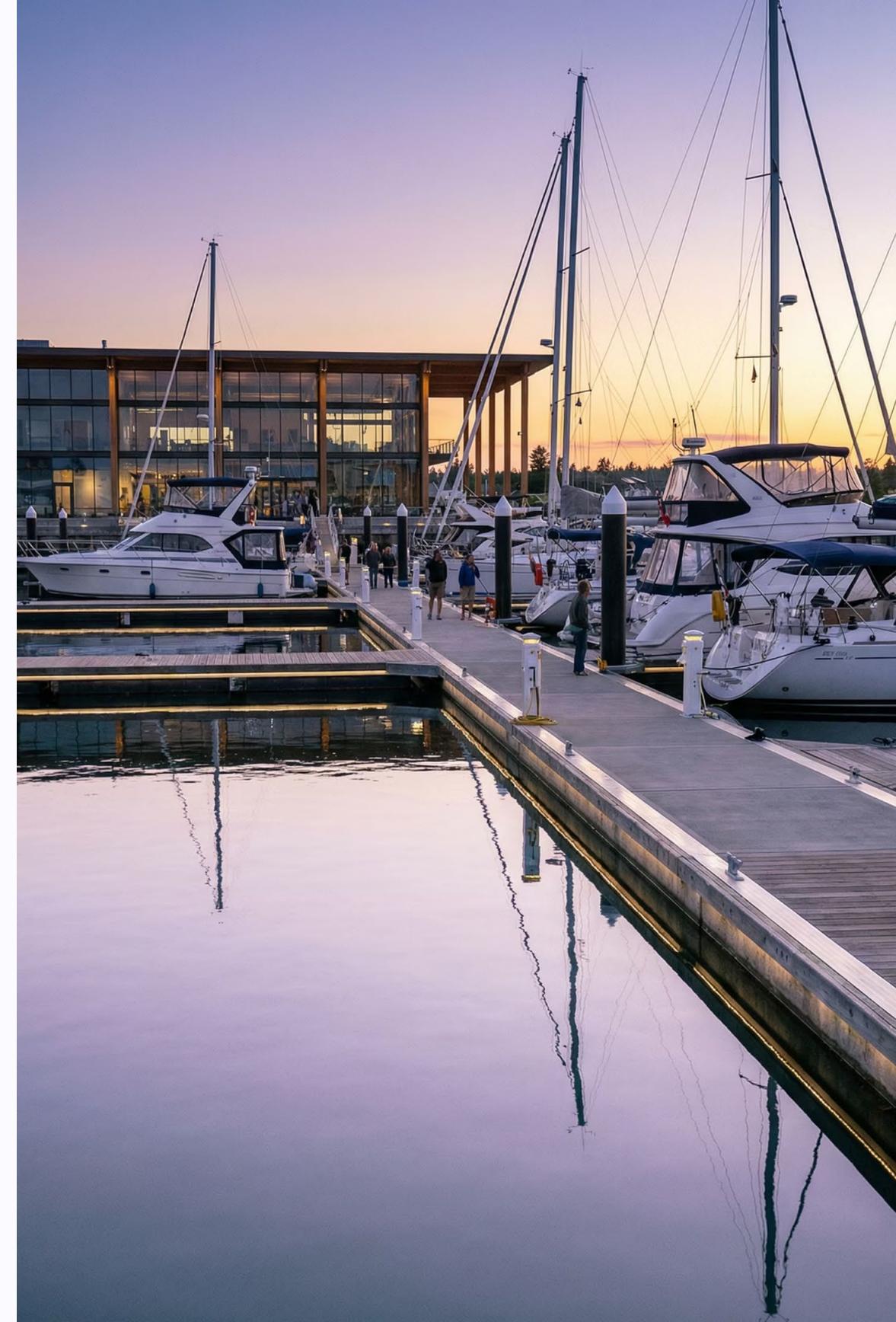


# Preparing Pump - Out Systems for Hurricanes and Floods

Protecting Your Marina Investment – A Guide from EMP Industries

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# Today's Agenda

01

## EMP Product Overview

Types and models of pump-out systems

03

## Preparedness Protocol

Step-by-step protection measures

02

## Storm Risks

How hurricanes and floods threaten your equipment

04

## Recovery Best Practices

Post-storm actions and resources



# Who we are: EMP Industries

Since pioneering peristaltic pump technology for marine applications in 1992, EMP Industries has installed thousands of SaniSailor systems worldwide. All models feature reliable TEFC motors (115/230V AC, 2 -3 HP options), NEMA-rated enclosures, and deliver exceptional vacuum performance with easy maintenance.

## Strength

Up to 29" Hg for efficient waste removal

## Durability

Built for continuous marine operation

## Simplicity

Simple maintenance protocols

# EMP Industries: Product Lines

## Marine Pumpout Solutions



SaniSailor Product Line

## Recycling Boatwash Systems



AquaClean Product line.

## Marine Firefighting Solutions



FastAttack Product Line.

# SaniSailor System Categories

## Mobile



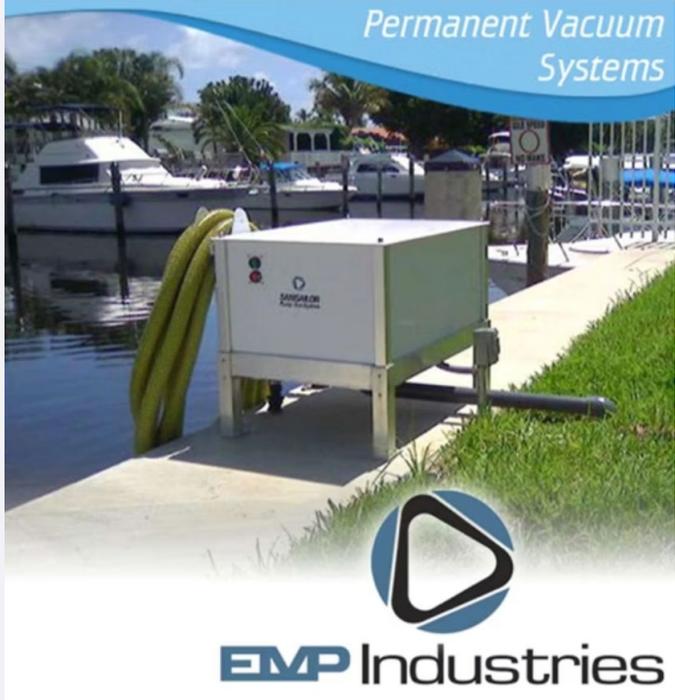
Dockmate or cart -mounted for slipside service. Models S30, S55, and DM55 feature 1.5 HP peristaltic pumps ideal for larger yachts and live-aboards.

## Central Vacuum Systems



Maintain vacuum at multiple hydrants and stanchions with automatic on/off via switches. Models CVX400 and CVX600 provide seamless multi -point service.

## Point of Pump



Centralized units intended to pump adjacent to docked vessels. mSeries pumps provide excellent



# Understanding Storm Threats to Pump-Out Systems

Hurricanes and floods pose multiple, cascading risks to marine pump out infrastructure. Understanding these vulnerabilities is the first step toward effective protection and rapid recovery.

# Primary Storm Risks



## Storm Surge & Flooding

Water levels can rise 10 -20+ feet, submerging fixed units, electrical enclosures, and piping. Uncapped lines allow backflow contamination and potential structural failure.

## High Winds & Flying Debris

Winds exceeding 100 mph displace portable Dockmate units, tear hoses and coils, and damage stanchions and hydrants with airborne debris.

# Electrical and Operational Hazards

## Power System Failures

Flooded NEMA-rated enclosures can short circuit even robust systems. Explosion-proof motors on fuel docks face elevated risks per NEC requirements. Lightning strikes damage control relays and electrical components.

## System - Specific Vulnerabilities

Remote piping extending up to 1,000 feet is exposed to surge damage. Damaged hoses create friction loss. Residual sewage increases contamination and odor risks when flooded. Lift stations and basins overflow without functioning high-water alarms.

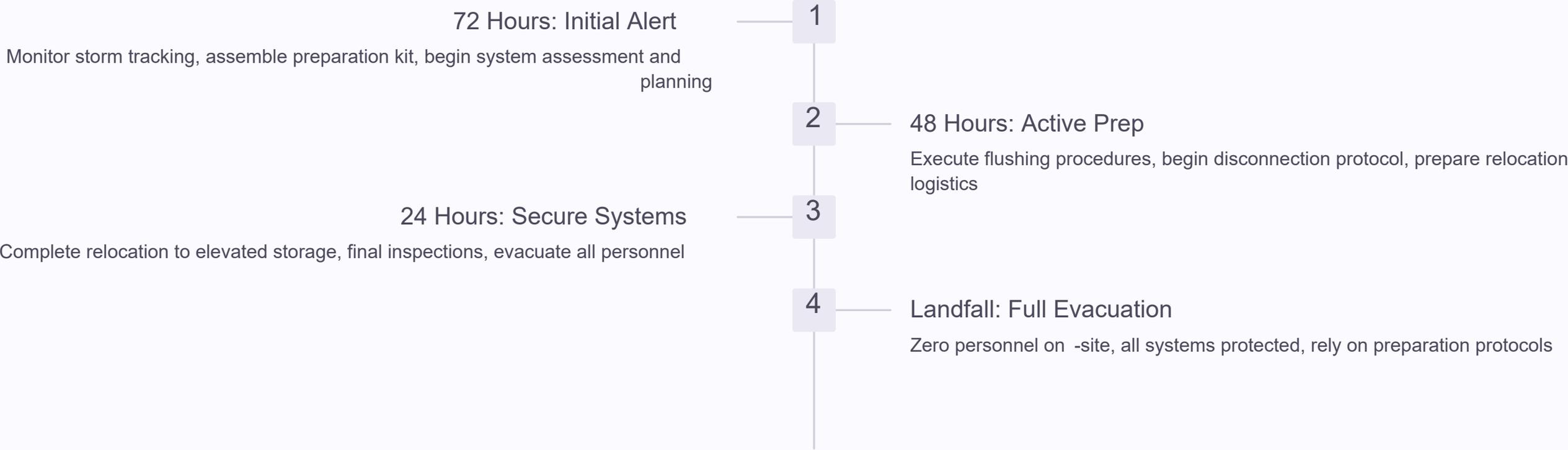
## Secondary Complications

Debris clogs intakes and valves. Prolonged submersion accelerates corrosion and promotes mold growth. Extended downtime during peak season impacts revenue streams and regulatory compliance obligations.

**Key Insight:** Proactive preparation—draining systems, relocating equipment, and sealing entry points—dramatically minimizes damage. SaniSailor systems are exceptionally durable, but no equipment is invincible against extreme storm conditions.

# The Critical 72 -Hour Preparation Window

Effective storm preparation requires early action and systematic execution. Begin your preparation protocol 72 -48 hours before a anticipated landfall by actively monitoring NOAA and National Weather Service alerts. This timeline provides sufficient opportunity to complete all protective measures without rushing critical steps that safeguard your equipment investment.



## Safety First Protocol

Evacuate the entire area before storm conditions arrive. No personnel should remain on -site during the hurricane regardless of equipment status or monitoring needs.

## Preparation Kit Essentials

- Heavy-duty straps and tie -downs
- Caps and ball valves (multiple sizes)
- Waterproof tarps
- Standard maintenance tools
- Personal protective equipment
- Lockout/tagout devices

# Step 1: System Flush and Initial Shutdown

## Flushing Protocol

Start at the furthest hydrants and flush with clean water for 10-15 minutes until discharge runs clear. Run the pump to expel all residual sewage, adapting the manual's routine flushing guidelines to storm preparation.

## Securing Access Points

Close and cap all hydrants, valves, and hose connections with watertight seals to block surge water and debris infiltration.

## Electrical Shutdown

Kill power at the main breaker, apply lockout/tagout procedures, and disconnect electrical connections to protect TEFC motors and control relays from water damage.



# Step 2: Pump Disconnection and Discharge Line Protection



## Remove Unions

Disconnect unions on suction and discharge sides carefully.



## Cap Immediately

Install ball valves or threaded plugs to seal all openings.



## Complete Drainage

Drain all lines fully; run pump briefly dry if safe to do so.

# Step 3: Relocation and Equipment Securing



## Safe Pump Removal

Use four or more personnel with a forklift or pallet jack to remove the pump unit. Secure it to a pallet for safe transport.

## Elevation Strategy

Relocate equipment to areas well above anticipated surge levels. Consult local flood maps and aim for the highest, driest available location ideally indoors or in reinforced structures

## Portable Systems

Store Dockmate carts and portable units indoors or in elevated locations. Anchor and tie down any remaining fixed components. Secure all hoses, coils, and accessories indoors to prevent wind damage.

# Post-Storm Recovery Protocol

## Initial Assessment

Wait for official all-clear from authorities. Inspect from a safe distance, documenting damage with photos for insurance claims.

## Debris and Safety

Clear debris carefully. Check for gas leaks, structural damage, and compromised electrical systems before approaching equipment.

## System Restoration

Arrange professional electrical inspection before restart. Flush and sanitize the entire system thoroughly. Perform leak-up test.

## Documentation

Contact EMP Industries at 1-800-355-7867 for repair support. Update your preparedness plan based on lessons learned from the event.

# Resources and Next Steps

## Key Contacts and Support

**EMP Industries Technical Support:** 1-800-355-7867  
[sales@empind.net](mailto:sales@empind.net) [www.bestmarinepumps.com](http://www.bestmarinepumps.com)

**Weather and Emergency Resources:** NOAA National Weather Service  
Local emergency management offices

**Industry Guidance:** SSPMA (for lift station protocols)

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## Action Items

- Review your SaniSailor system documentation (Parts II, X)
- Conduct annual storm preparedness drills
- Verify insurance coverage adequacy
- Integrate pump -out protocols into marina -wide emergency plans

## Protect Your Investment Today

Understanding your SaniSailor system, recognizing storm risks, and following proven preparation steps will safeguard your marina assets and enable rapid operational recovery.

**Contact EMP Industries today** to review your setup and ensure you're fully prepared for the next storm season.

Questions?