

A PRACTICAL GUIDE FOR YMCA FACILITY TEAMS

The YMCA Pool & HVAC Uptime Guide

Keep pools, spas, boilers, and air handlers running, and catch problems before members notice.

VLogic

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HOW TO USE THIS GUIDE

Catch the warning before members feel the failure.

Members don’t see your boiler room. They see a cold shower, a foggy natatorium, or a sign on the pool door. This guide covers the equipment behind those moments and the habits that catch trouble early.

1 Pools & spas

Pumps, filters, heaters, chemical feed, whirlpools, and therapy pools. The systems most likely to close a space.

2 Hot water

Boilers and water heaters behind pool heat, showers, and building heat, plus scald and Legionella control.

3 Air

Air handlers, rooftop units, and natatorium dehumidification, exhaust, and air quality.

Who this is for

Facilities directors, maintenance leads, and aquatics directors at a single Y or across an association’s branches. Use it to set up rounds, train new staff, or explain to leadership why uptime needs a plan and a budget.

How it’s built

- Chapters 1 and 2 set priorities, spare parts, and failure plans.
- Chapters 3 to 6 give rounds and warning signs for each system.
- Chapters 7 and 8 turn rounds into an early-warning system and split the work across your team.
- Chapters 9 and 10 cover the budget case, tools, and next steps.

Contents

01	The Cost of Finding Out Last	3
02	Rank Your Critical Equipment	4
03	Pool Systems	5
04	Spas, Therapy Pools, and Water Safety	7
05	Boilers and Water Heaters	8
06	Air Handlers and Natatorium Air	10
07	Build an Early-Warning System	12
08	Who Does What, and Where to Save	13
09	Clipboards and the Budget Case	14
10	Where to Start	15

BEFORE YOU START

This guide is general operating guidance, not a substitute for your state and local codes, manufacturer instructions, or licensed professionals. Pool and spa water chemistry and safety checks belong with certified pool operators (CPO or AFO). Boiler and pressure-vessel inspections follow your jurisdiction’s requirements. Check your insurer’s aquatics and water management requirements too; many carriers have their own.

CHAPTER 01

The Cost of Finding Out Last

Most equipment gives warning before it fails. The warning just lands in the wrong place: a clipboard, a text thread, or a technician's memory. When nobody connects the signals, members become your alarm system.

1 in 8

routine public pool inspections ended in immediate closure for serious health or safety violations

~80%

of routine public pool inspections found at least one violation

55%+

of maintenance activity at an average facility is still reactive

Pool data: CDC, MMWR Surveillance Summaries 65(5), May 2016 (84,187 inspections of all public aquatic facilities in five states, 2013; not YMCA-specific). Reactive share: U.S. DOE Federal Energy Management Program, O&M Best Practices Guide, Release 3.0, 2010.

What members notice first

WHAT THEY SEE	WHAT USUALLY FAILED	WHAT IT COSTS YOU
"Pool closed" sign	Circulation, filtration, chemical feed, or a damaged drain cover	Lessons, swim team, and therapy sessions canceled or moved
Whirlpool or therapy pool closed	Spa heater, sanitizer feed, or jet pump	Arthritis and senior programs lose their warm-water space
Cold showers or a cold pool	Boiler, pool heater, or water heater	Complaints, refunds, and emergency service rates
Coughing guards, stinging eyes	Chloramine buildup: water chemistry plus weak air exchange	Staff health complaints, health department attention, swimmers who stop coming
Foggy, heavy natatorium air	Dehumidification or exhaust	Comfort complaints now, corrosion and building damage later
Hot fitness floor	Rooftop unit or air handler	Peak-hour members leave early, or leave for good

The case for planned work

The Department of Energy's O&M guide estimates a preventive maintenance program saves **12% to 18%** over a purely reactive one, and notes facilities that rely mostly on reactive work could save more.

Why Ys feel it harder

A Y's highest-stakes systems run long hours, serve children and older adults, and often have no backup. One pump or one boiler can take a whole program offline.

CHAPTER 02

Rank Your Critical Equipment

You can't watch everything equally. Score each major asset at each branch, then put your closest attention, and your spare parts budget, on the top of the list.

Score each asset from 1 (low) to 3 (high)

FACTOR	ASK THIS	SCORES A 3 WHEN
Member impact	If this fails at 6 a.m. on a Monday, what closes?	A pool, locker room, or whole building
Safety and compliance	Does failure create a health, safety, or code issue?	Water quality, air quality, scald, or pressure safety
Backup	Is there a second unit that can carry the load?	No redundancy at all
Recovery time	How long to get parts, a vendor, and a fix?	Specialty parts or a long lead time
Condition	How old is it, and how often has it been called in?	Near end of life or repeat calls

Add the five scores. Assets at **12 to 15** get weekly attention, a written failure plan (Chapter 8), and spares on the shelf. **8 to 11** stay on your regular PM schedule. Below 8, follow manufacturer intervals. Adjust the bands to your branches.

Typical top tier at a Y, and the spares to keep on hand

ASSET	SPARES WORTH STOCKING
Pool circulation pumps and motors	Mechanical seal kit, gaskets and O-rings; a spare motor or a vendor with one in stock
Pool filters and chemical controllers	pH and ORP probes, calibration solutions, feeder tubing and pump parts
Pool and spa heaters, heat exchangers	Igniter, flame sensor, and gaskets for your model
Whirlpool and therapy pool equipment	Jet pump seal kit, filter cartridges, temperature sensor
Natatorium dehumidification unit	Filters, belts, condensate pump
Boilers and domestic water heaters	Igniter, flame sensor, mixing valve cartridge, anode rods
Air handlers, rooftop units, exhaust fans	Belts, filters, contactors, capacitors

Match part numbers to each unit's manual. Stock the longest-lead parts first.

IN VLOGIC

Your ranking lives on the asset, not in a spreadsheet.

Record criticality, condition, and location on each asset record, see every branch's equipment on interactive floor plans, and filter PM schedules and reports to your top tier. When a new pump goes in, the record updates instead of a file someone has to find.

CHAPTER 03

Pool Systems

The pool is usually a Y's most visible and most regulated system. Most closures start with something a daily round could have caught: flow dropping, pressure climbing, combined chlorine creeping up, or a controller that drifted.

ROUNDS

EVERY SHIFT

- ☐ Log flow rate and filter pressure
- ☐ Compare controller pH and chlorine to a manual test, including combined chlorine*
- ☐ Confirm UV or secondary disinfection is running, if equipped
- ☐ Listen for pump noise or vibration
- ☐ Check for leaks at pumps, valves, and feeders
- ☐ Pool lift charged, working, and in place

WEEKLY

- ☐ Clean strainer baskets
- ☐ Check chemical tank levels and feed lines
- ☐ Inspect drain covers and grates for cracks or loose screws*
- ☐ Check chemical storage: acid and chlorine kept apart, eyewash working, SDS posted
- ☐ Review the week's readings for trends

MONTHLY TO ANNUAL

- ☐ Inspect pump seals, bearings, and couplings
- ☐ Service the heater and heat exchanger
- ☐ Calibrate controller probes
- ☐ Check drain cover certified service-life dates (VGB Act)
- ☐ Replace UV lamps at rated hours
- ☐ Plan the annual shutdown around the program calendar

** Water chemistry, drain cover, and safety checks belong with certified pool operators, following your state code. The CDC's Model Aquatic Health Code (MAHC) sets combined chlorine at 0.4 ppm or less; confirm your state's limit.*

Pool Warning Signs

Most of these show up in your logs days or weeks before a closure. Each one has a clear first move.

Early warning signs

SIGNAL	WHAT IT OFTEN MEANS	DO THIS
Filter pressure climbing	Filter loading or a valve problem; flow is about to drop	Backwash or service per manufacturer
Flow rate trending down	Clogged strainer, failing pump, or air in the line	Inspect now, before turnover suffers
Controller and manual test disagree	Probe drift or a feed issue	Calibrate; have aquatics staff verify
Combined chlorine rising, “chlorine smell”	Chloramines building up. It usually means too little free chlorine for the bather load, not too much	Aquatics staff correct chemistry; check natatorium air exchange (Ch. 6)
Drain cover cracked, loose, or past its rated life	Suction entrapment risk	Close the pool until it’s replaced
Pool lift won’t run or battery is low	Members who need it can’t get in; an ADA access issue	Swap or charge the battery; fix before the next open swim
Pump running hot or loud	Bearing wear or cavitation	Open a work order; check spare parts

IN VLOGIC

Rounds become records you can trend.

Schedule recurring pool PMs by branch, let staff complete them on a phone or tablet at the equipment, and keep every reading and repair tied to the pump or filter it came from. A slow climb in filter pressure shows up in the history instead of a binder.

CHAPTER 04

Spas, Therapy Pools, and Water Safety

Whirlpools and warm-water therapy pools are small but high-risk: hot water, a heavy bather load for the volume, and members who are often older or recovering from injury. Together with showers and hot water systems, they are also where Legionella can grow.

SPA AND THERAPY POOL ROUNDS

EVERY SHIFT

- ☐ Log water temperature; spas no higher than 104°F
- ☐ Test sanitizer and pH, more often than the main pool if code requires*
- ☐ Confirm jets, blowers, and emergency shutoff work

WEEKLY

- ☐ Scrub the waterline and check for slimy biofilm
- ☐ Clean or rinse filters
- ☐ Inspect suction covers and fittings*

MONTHLY TO SCHEDULED

- ☐ Drain, clean, and refill on your code's or bather-load schedule
- ☐ Replace filter cartridges
- ☐ Service heater, jet pump, and sensors

** Spa chemistry and safety checks belong with certified pool operators, following your state code.*

Build a Legionella water management program

CDC and ASHRAE Standard 188 lay out the approach. Your insurer or health department may already expect one.

- **Form a team:** facilities, aquatics, and your water treatment vendor.
- **Map your water:** hot water, showers, spas, ice machines, decorative fountains, and any cooling tower.
- **Find the risk spots:** lukewarm or stagnant water, low disinfectant, dead legs, and showers nobody uses.
- **Set limits and monitor:** hot water temperatures, disinfectant levels, and flushing of low-use fixtures.
- **Document and review** every year, after renovations, and after shutdowns.

SIGNAL	DO THIS
Spa above 104°F or swinging	Check the heater controls; close it if you can't hold temperature
Cloudy water or slimy surfaces	Biofilm; aquatics staff treat, clean, and drain if needed
Low-use showers and fixtures	Flush on a schedule so water doesn't sit
Water reopening after a shutdown	Flush and verify disinfectant before members return

CDC notes Legionella grows best between 77°F and 113°F.

IN VLOGIC

Your water management plan, on a schedule.

Set flushing, temperature checks, and spa drain-and-refill as recurring PMs with owners and due dates. Every completed check is time-stamped, so the records are ready when the health department or your insurer asks.

CHAPTER 05

Boilers and Water Heaters

Hot water is invisible until it's gone, or until it's too hot. At many Ys the same plant heats the pool, the showers, and the building, so one failure can hit all three at once.

HOT WATER TARGETS

Storage temperature	140°F or higher
Delivered at showers	120°F or lower

Store water hot enough to keep Legionella from growing, then use thermostatic mixing valves to deliver it safely. When a mixing valve fails, children and older adults are the first to get burned. Commonly cited guidance; confirm with your plumbing code.

ROUNDS

DAILY

- [ ] Log supply temperature and pressure
- [ ] Check for water at the base or relief valves
- [ ] Note alarms, lockouts, or resets
- [ ] Confirm showers are hot, but not too hot
- [ ] Check CO detectors in the mechanical room

MONTHLY

- [ ] Inspect burners and flame for changes
- [ ] Check circulators, expansion tanks, and controls
- [ ] Test low-water cutoffs per manufacturer
- [ ] Check mixing valve outlet temperatures
- [ ] Review water treatment logs; count service calls per unit

ANNUALLY

- [ ] Complete required jurisdiction inspections
- [ ] Schedule combustion and safety testing
- [ ] Pre-season startup before heating season
- [ ] Flush or descale water heaters; service mixing valves
- [ ] Re-score criticality and condition

Inspection rules vary by state. Use licensed technicians for combustion, low-water cutoff, and safety work.

Boiler and Hot Water Warning Signs

Most boiler failures announce themselves first as resets, slow recovery, or water where it shouldn’t be. Two of these signals are safety issues, not maintenance items.

Early warning signs

SIGNAL	WHAT IT OFTEN MEANS	DO THIS
Short cycling	Control, sizing, or flow problem; wears parts faster	Have a technician check controls
Longer recovery after peak hours	Scale buildup or a heater losing capacity	Flush, descale, and trend recovery time
Shower temperature swinging or too hot	Mixing valve failing	Treat as urgent: scald risk
Relief valve weeping, water at the base	Excess pressure, or a tank or exchanger leak starting	Treat as urgent; call a licensed tech and plan replacement
CO alarm or combustion smell	Venting or combustion problem	Clear the area; call the utility or a licensed tech

IN VLOGIC

Every reset counts, even the quick ones.

When resets and small fixes are logged as work orders against the boiler, repeat calls are easy to see. Reporting shows which units keep coming back, so the replacement request arrives with the service history to back it up.

CHAPTER 06

Air Handlers and Natatorium Air

A natatorium is one of the hardest spaces in any building to keep healthy. Warm, wet, chemical-laden air attacks the structure and the people in it.

NATATORIUM TARGETS

Relative humidity	50% to 60%
Air temperature	2°F to 4°F above water, up to 86°F
Pressure	Slightly negative to adjacent spaces

Commonly cited ASHRAE recommendations. Confirm with your design engineer and equipment manufacturer.

WHY IT MATTERS

Warmer air slows evaporation. High humidity feeds corrosion and mold. Negative pressure keeps pool air out of lobbies. Chloramines are heavier than air and settle where swimmers and guards breathe, so fresh air has to reach the water surface.

ROUNDS

DAILY

- [ ] Log natatorium RH and air temperature
- [ ] Look for fog or window condensation
- [ ] Log odor, cough, or eye complaints from members and lifeguards
- [ ] Check for pool smell in the lobby or locker rooms

MONTHLY

- [ ] Change or check filters
- [ ] Inspect belts, bearings, and drain pans
- [ ] Confirm exhaust fans are running
- [ ] Confirm outside-air dampers open to set point

SEASONAL

- [ ] Service coils and refrigerant circuits
- [ ] Inspect ductwork and structure for rust
- [ ] Test controls before summer and winter
- [ ] Have air balance and pressure verified
- [ ] Plan extra outside air for swim meets

Natatorium and HVAC Warning Signs

Natatorium problems build slowly. They show up in the air, on the windows, and in complaints from guards and members before the equipment fails.

Early warning signs

SIGNAL	WHAT IT OFTEN MEANS	DO THIS
Fog or dripping windows	Humidity too high or air too cool	Check dehumidifier and set points
Guards coughing, eyes stinging	Chloramines building up in the air	Increase outside air; aquatics checks combined chlorine
Pool smell in the lobby or locker rooms	Natatorium has gone positive	Check exhaust fans, dampers, and door closers
Rust on ceilings, ducts, or fixtures	Long-term moisture or chemical exposure	Document and add to the capital plan
Hot fitness floor at peak hours	Rooftop unit or air handler losing capacity	Service before the season peaks
Squealing belts, loaded filters	PM falling behind	Move the PM up; review the schedule

IN VLOGIC

Seasonal work that never slips.

Set filter, belt, and coil PMs on recurring schedules with alerts when they come due, so pre-summer service happens before the fitness floor heats up instead of after.

CHAPTER 07

Build an Early-Warning System

Rounds only help if someone reads them, and alarms only help if someone answers them. Five habits turn scattered checks into an early-warning system that works across every shift and every branch.

1 **Set a baseline for every critical asset**
Record what normal looks like: flow, pressure, temperature, run time. A reading only means something next to its normal range.

2 **Log every reading in one place**
Paper logs, texts, and memory can't be trended. If a reading isn't written down where others can see it, it didn't happen.

3 **Watch for repeat calls**
Pick a trigger, such as three work orders on one asset in 90 days. When an asset hits it, review whether to repair, replace, or budget.

4 **Give every check an owner and a due date**
A round with no name on it gets skipped during the busiest weeks, which is exactly when equipment is under the most stress.

5 **Make sure someone gets the 2 a.m. alarm**
Your Y opens at 5 a.m. Route building automation and controller alarms for pool flow, boiler lockout, and natatorium humidity to an on-call phone with a backup name and a vendor emergency line. Test the call chain every quarter.

Your weekly uptime review

Fifteen minutes, same day every week, facilities and aquatics together.

- ☐ Which readings moved outside normal?
- ☐ Which PMs are overdue, and why?
- ☐ Which assets hit the repeat-call trigger?
- ☐ Did any after-hours alarms go unanswered?
- ☐ Are spare parts on hand for top-tier assets?
- ☐ What needs a vendor before next week?
- ☐ Any water management checks missed?
- ☐ What moves to the deferred-maintenance list?

PAIR IT WITH THE CHECKLISTS

When an asset can't be kept running at a reasonable cost, log it in **The YMCA Deferred-Maintenance Checklist** and sort it to Fix now, Replace, Budget, or Monitor. Use **The YMCA Year-End Facilities Checklist** to carry it into next year's plan.

CHAPTER 08

Who Does What, and Where to Save

Many branches run with one or two maintenance staff, and at 5 a.m. the only people in the building may be lifeguards. Decide who owns each check before you write the rounds.

A starting split for a typical branch

CHECK	OWNER	BACKUP OR ESCALATION
Water chemistry and manual tests	Aquatics (certified operator)	Facilities if a feeder or controller fails
Flow, filter pressure, pump sounds	Aquatics on opening and closing shifts	Facilities reviews weekly and repairs
Drain and suction covers	Aquatics, daily visual check	Facilities or pool contractor replaces
Natatorium RH, temperature, odor	Aquatics (on deck all day)	Facilities or HVAC vendor
Boilers, water heaters, mixing valves	Facilities	Licensed boiler or plumbing tech
Combustion, low-water cutoff, inspections	Licensed tech or inspector	Facilities schedules and files records
Legionella program	Facilities lead with aquatics	Water treatment vendor
After-hours alarms	On-call facilities staff	Vendor emergency line

Train opening-shift guards on what to log, what "abnormal" looks like, and who to call. Across an association, use the same rounds, asset names, and scoring at every branch, so readings and costs can be compared. Test the after-hours call chain every quarter.

What goes in a written failure plan

- **Who gets called first,** and who backs them up
- **The vendor** and their after-hours number
- **The spare** on the shelf, and where it is
- **The workaround:** rental unit, schedule change, or closure
- **Who tells** members, the front desk, and program staff
- **Whether** the health department must be notified

Where to save: the pool is usually your biggest utility load

Variable-speed pumps

Pump power falls roughly with the cube of speed, so a small slowdown overnight saves a lot. Keep turnover within code.

Pool covers

Evaporation is the biggest source of pool heat loss. Covering the pool overnight cuts heating and dehumidifier load.

Heat recovery

Many natatorium dehumidifiers return heat to the pool water. Check that recovery mode is actually running.

Track utility costs by branch next to maintenance history. Savings you can show are the easiest way to fund the next project.

CHAPTER 09

Where Clipboards Break Down, and the Budget Case

The habits in Chapters 7 and 8 are simple. Keeping them going across shifts, staff turnover, and multiple branches is not, and neither is turning them into a budget.

THE TASK	ON CLIPBOARDS AND SPREADSHEETS	IN VLOGIC
Rounds and PMs	Remembered, or rebuilt from last year's calendar	Recurring PM schedules by asset and branch, with alerts when work comes due
Readings	On paper in the mechanical room	Completed on mobile at the equipment and kept with the asset record
Repeat calls	Spotted only if the same tech catches it	Work order history by asset makes repeat problems visible
Water management records	A binder in the office, if it's current	Flushing and temperature checks scheduled, assigned, and time-stamped
Finding equipment	Ask the person who's been here longest	Assets mapped on interactive floor plans for every branch
Multi-branch view	Each branch tracks its own way	One system across the association, with dashboards and reporting
Budget requests	"It keeps breaking" with no history	Service history and costs that support repair-or-replace decisions

Bring this to your finance committee

Put typical service life next to each top-tier asset's age and repair history. That turns "it keeps breaking" into a replacement schedule.

EQUIPMENT	TYPICAL LIFE	BASIS
Base-mounted pumps (pool circulation)	20 years	ASHRAE median
Inline and pipe-mounted pumps	10 years	ASHRAE median
Hot water boilers, steel / cast iron	24 / 35 years	ASHRAE median
Rooftop units	15 years	ASHRAE median
Roof-mounted exhaust fans	20 years	ASHRAE median
Commercial water heaters, dehumidifiers	Varies widely	Use the manufacturer's rating

Median service life from the ASHRAE Applications Handbook. Chlorinated natatorium air and hard water can shorten it.

CHAPTER 10 · NEXT STEPS

Where to Start

Before you look at any tool, answer three questions with your facilities and aquatics teams.

1 **Which three assets would close the most programs if they failed tomorrow?**
Use the Chapter 2 scoring. Start there, not everywhere, and check you have their spares.

2 **Where do your readings and repairs live today?**
Count the clipboards, spreadsheets, and text threads across every branch.

3 **What did unplanned downtime cost you this year?**
Canceled lessons, refunds, emergency rates, and the replacement nobody budgeted for.

Stop finding out last.

Uptime is a system, not a heroic effort. Bring your three answers, and we'll show you how VLogic keeps work orders, PMs, asset records, and history for every pool, spa, boiler, and HVAC unit in one place.

VLogic

Book a Demo →

What you'll see in the demo

1

Top tier on a floor plan

Pumps, boilers, and air handlers mapped by branch, with criticality and condition on each asset.

2

Pool rounds on mobile

Readings logged at the equipment and trended over time, so a slow climb shows up early.

3

Every branch, one view

Overdue PMs, repeat calls, and service costs across the association in one view.

SOURCES

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