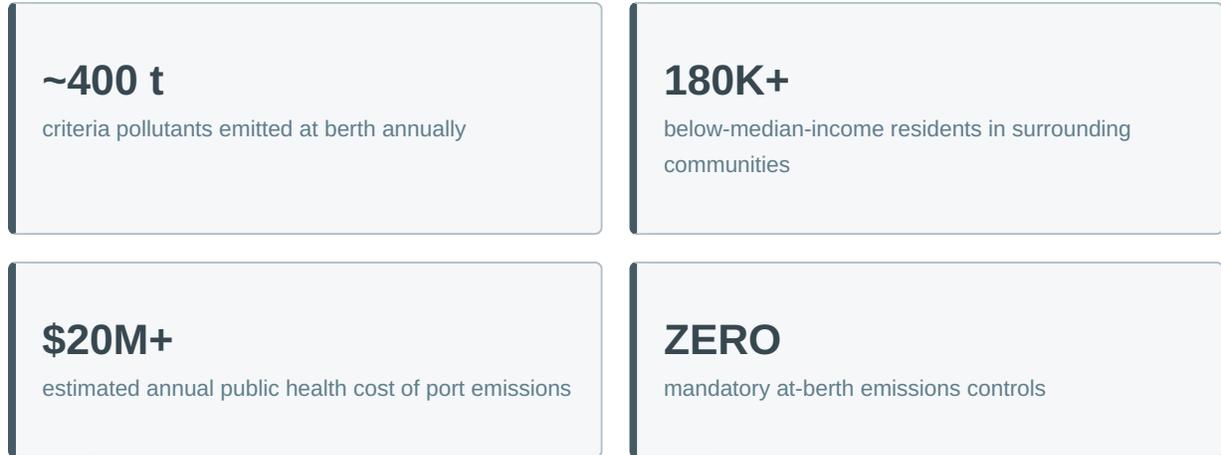


# Port Everglades

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## South Florida's Cruise Capital — And the Hidden Cost of Hotel Load

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Sources: ICCT Port Emissions Screening (2024); EPA/Port Everglades 2015 Baseline Air Emissions Inventory; Port Everglades Shore Power Study (2023); U.S. Census ACS

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## Port Overview

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Port Everglades in Broward County, Florida, is the third-busiest cruise homeport in the world, Florida's number-one petroleum port, and one of the nation's leading container gateways. In fiscal year 2025, the port set simultaneous records across all three business lines: 4.77 million cruise passengers (up 16% year-over-year), 1.17 million TEUs in containers, and 131.9 million barrels of petroleum products. The port recorded 5,251 total vessel arrivals.

Cruise ships present a unique at-berth emissions challenge. Unlike container ships that spend 24–48 hours at berth, cruise ships maintain full hotel load for thousands of passengers while docked — running massive auxiliary engines for power, air conditioning, lighting, and onboard services. The emissions per berth-hour from a modern cruise ship can exceed those of a container vessel by a factor of 3–5, making cruise-heavy ports like Port Everglades disproportionately impacted by at-berth pollution.<sup>1</sup>

## Who Is Affected

Port Everglades is located in a densely populated urban area, with residential communities immediately adjacent to cruise and cargo terminals. Dania Beach, the closest residential area, sits directly south of the port's cruise terminals.

Community	Population	Key Health Burden
Dania Beach	32,000+	Immediately south of cruise terminals; elevated PM2.5 exposure from vessel operations
Fort Lauderdale (south)	60,000+	Downwind neighborhoods; proximity to port truck corridors on I-595 and US-1
Hollywood	154,000+	Adjacent community; port-related truck traffic on Sheridan Street corridor
Davie (east)	105,000+	Downwind of port and petroleum terminal operations
Broward County (broader)	1,950,000	County-wide exposure from port as Florida's #1 petroleum distribution hub

### Environmental Justice

Port Everglades is the first port to have partnered directly with EPA's Office of Transportation and Air Quality on a baseline air emissions inventory (2015). That partnership identified oceangoing vessels — particularly cruise ships and tankers — as the dominant mobile source emissions category at the port. The 2023 Shore Power Study found that full shore power implementation across all eight cruise terminals would reduce port-area CO2 by 25%, NOx by 75%, and SO2 by 51%. But shore power alone cannot address petroleum tankers or the vessels that cannot physically connect — and shore power infrastructure at Port Everglades is not yet operational.<sup>2</sup>

## Health Impact Analysis

Using the EPA/Port Everglades 2015 Baseline Air Emissions Inventory, the 2023 Shore Power Study projections, and the EPA's concentration-response methodology, we model the health outcomes attributable to at-berth vessel emissions and the benefits of their reduction.

The scenario below models outcomes using the performance of currently deployed, CARB-certified barge-mounted capture systems (99% PM2.5, 95% NOx removal — independently verified by Yorke Engineering LLC). Capture technology is particularly relevant for Port Everglades' cruise and tanker vessels where shore power faces technical and timeline challenges.

Health Outcome	Current Annual Burden	With At-Berth Capture
PM2.5 emissions at port (tonnes/yr)	~100 t	69–99% reduction
NOx emissions at port (tonnes/yr)	~240 t	Up to 95% reduction
Premature deaths from port PM2.5	Estimated 3–9/year	2–9 lives saved/year
Cardiovascular & respiratory hospitalizations	Estimated 12–35/year	8–33 avoided/year
Childhood asthma ED visits	Estimated 18–50/year	12–48 avoided/year
<b>Monetized public health benefit (EPA VSL)</b>	<b>\$20M+/year</b>	<b>\$15–\$25M saved/year</b>

**Methodology Note**

Premature death estimates use EPA's concentration-response function for PM2.5 (Krewski et al. 2009, ACS CPS-II) and EPA Value of Statistical Life (\$11.8M, 2024-adjusted). Emissions baseline from the EPA/Port Everglades 2015 Air Emissions Inventory, with adjustments for vessel traffic growth through FY2025 (5,251 vessel arrivals). Port Everglades' cruise-heavy profile means a disproportionate share of at-berth emissions come from hotel load operations. Ranges reflect uncertainty in dispersion modeling. All estimates are conservative — they exclude SOx and secondary PM2.5 formation.

## The Cruise Ship Problem

Port Everglades' distinction as the third-busiest cruise homeport in the world creates a unique emissions challenge. With 4.77 million cruise passengers in FY2025 — served by Disney Cruise Line, Royal Caribbean, Celebrity, Holland America, and others across eight terminals — the port's cruise operations generate emissions at a scale disproportionate to its cargo-only peers.

A modern cruise ship at berth runs auxiliary engines generating 10–20 MW of power to maintain hotel services for 3,000–6,000 passengers and crew. This continuous load produces significant PM2.5, NOx, and SOx emissions throughout the turnaround period. At Port Everglades, where vessels typically berth for 8–12 hours during passenger embarkation and debarkation, each cruise call generates emissions equivalent to multiple container ship calls.

The port's \$160 million shore power plan — covering all eight cruise terminals at \$20 million each, with full implementation targeted for FY2030/31 — would reduce port NOx by 75% and CO2 by 25%. But this timeline means years of continued uncontrolled emissions, and shore power does not address petroleum tankers, which handle 131.9 million barrels annually as Florida's primary fuel distribution hub.

Barge-mounted capture technology could bridge this gap immediately — reducing cruise ship at-berth emissions by 99% for PM2.5 and 95% for NOx without waiting for shore power infrastructure construction.<sup>3</sup>

## The Regulatory Gap

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California's CARB At-Berth Regulation has been in effect since 2014 and was strengthened in 2020. In October 2023, the EPA authorized California's regulation under the Clean Air Act, which legally enables other states to adopt the identical standard. **Florida has not adopted at-berth vessel controls, and no rulemaking is underway.**

Port Everglades has taken a proactive approach to environmental management through its EPA partnership, Green Marine participation, and shore power planning. Broward County prohibits the discharge of ballast water and scrubber washwater in port waters. However, none of these voluntary measures require at-berth emissions controls for vessel exhaust.

### Pathways to Action

Several pathways exist for reducing at-berth emissions at Port Everglades:

- **State adoption of CARB-equivalent regulation:** Florida could adopt California's at-berth standard under the EPA authorization
- **Broward County ordinance:** County government could require at-berth controls as a condition of cruise terminal agreements
- **Cruise line voluntary commitment:** Major cruise lines marketing sustainability could commit to at-berth emissions control at homeports
- **Shore power acceleration:** Accelerating the \$160M shore power plan from FY2030/31 to near-term, supplemented by capture technology for non-shore-power-compatible vessels
- **Carbon credit incentives:** Voluntary carbon market frameworks could fund capture deployment at cruise terminals
- **Federal EPA Clean Ports funding:** The \$3 billion Clean Ports Program (IRA Section 60102) — disbursement status under current administration requires FOIA verification

## What Comes Next

This assessment is a screening-level analysis using publicly available data, anchored by the EPA/Port Everglades 2015 Baseline Air Emissions Inventory. A full site-specific assessment for Port Everglades — with updated emissions modeling, localized health data, and cruise-ship-specific analysis — is available through our [research services](#).

Port Health Watch is also developing:

- **Air Quality Health Units (AQHUs):** The first tradable health benefit asset class for port pollution reduction, under development for submission to Verra's SD VISta program. [Learn more →](#)
- **Carbon credit methodology:** A Verra VCS methodology for at-berth maritime carbon capture, targeting July 2026 submission. [Learn more →](#)

### The Opportunity

At-berth emissions capture at Port Everglades could save 2–9 lives per year, prevent dozens of hospitalizations, and deliver \$15–\$25 million annually in monetizable health benefits — with particular impact on the cruise terminal emissions that dominate this port's profile. As the third-busiest cruise homeport in the world, Port Everglades is a test case for whether the cruise industry will address at-berth pollution or leave it to communities to absorb.

1. Port Everglades statistics (FY2025); Sun-Sentinel, "Port Everglades blows away records in cruise passengers, cargo and energy in 2025" (December 2025); ICCT, "Nationwide port emissions screening for berthed vessels" (September 2024). [↔](#)
2. EPA, "EPA and Port Everglades Partnership: Emission Inventories and Reduction Strategies"; Port Everglades 2023 Shore Power Study; Port Everglades Air Emissions Inventory page. [↔](#)
3. Port Everglades Shore Power Study (January 2023); Sun-Sentinel, "Shore power: Cruise ships to get charged up at Port Everglades" (April 2023). [↔](#)

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This assessment was produced by Port Health Watch, a research initiative of Civil Ledger Lab, operated by EcoAsset Lab LLC. For site-specific assessments with higher-resolution modeling, contact [research@porthealthwatch.org](mailto:research@porthealthwatch.org).