PORT EVERGLADES
A FRAMEWORK FOR COOPERATION
WITH THE EPA

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Port Everglades, Florida’s top container port and one of the three busiest cruise ports in
the world, readily accepted a challenging
opportunity with the US Environmental
Protection Agency’s Office of Transportation
and Air Quality (EPA) to partner and coordinate
research and modeling for covering port-
related operations, technologies, and growth
scenarios. Port Everglades is the first port in
the United States to partner with the EPA in
this way. Other seaports called it a bold and
brave partnership. We called it the right thing
to do.

Port Everglades’ leadership agreed to work
together with the EPA to teach them about port operations and to allow them to use
Port Everglades as a training ground. This
way, they could evaluate various effective
technology and operational clean air strategy
scenarios for seaports in a real port versus
a virtual port. By collaborating to research
and model port operation and technology
scenarios in terms of air quality outcomes and
solutions, EPA can now cite practical seaport
centric examples in discussions with other
ports, related agencies, and stakeholders
about lessons learned.

Since participating in the program, the
EPA has used the Port Everglades model in
their presentations for reaching out to other
seaports across the United States.

A WAY TO MEASURE AIR EMISSIONS

However, Port Everglades did not previously
have a baseline year air emissions inventory
in part because Broward County currently
meets EPA’s environmental standards for
air quality. Port Everglades decided to
create a benchmark or baseline by which
to measure future changes in emissions to
take necessary actions to maintain air quality
standards.

As part of our commitment to the EPA
partnership and to our community, Starcrest
Consulting Group, LLC, was hired to collect
the data required for the inventory. We
asked our customers to voluntarily submit
vehicle and vessel movements and facilities
and operational information to Starcrest
with the understanding that it would be
kept confidential vis-à-vis their individual
companies.

As one of two main considerations, we
made sure our customers understood that
the inventory would not result in a policy
document or policy recommendations. We
also ensured that when we were asked
by our customers what was in it for them,
we could explain that some regulatory
agencies currently estimate emissions for
certain ports using a method that is more
of a screening technique using surrogate
data and may not reflect actual conditions.
Estimating port-related emissions without
significant local data can overstate port
emissions.

Once this was explained, 95% of Port
Everglades’ customers chose to participate.
After one full year of data collection
and collaboration with a technical working
group comprised of local environmental
professionals, the Port Everglades 2015
Baseline Air Emissions Inventory was
completed and released to the public in
December, 2016.
POLLUTANTS ASSESSED
The study presents a detailed overview of port-related emissions on the major mobile source categories associated with marine activities which are ocean-going vessels, harbor vessels, cargo handling equipment, on-road heavy-duty and light-duty vehicles, and rail operations. It also includes greenhouse gas emissions from electrical power consumption for buildings and lighting. The geographical domain for the landside source categories is within the Port jurisdictional boundary and its associated terminals. The marine-side geographical domain includes the port jurisdiction and extends three nautical miles beyond the entrance channel.

The inventory estimated certain Clean Air Act-identified criteria pollutants and precursors (nitrogen oxides, sulfur dioxide, volatile organic compounds, particulate matter, and carbon monoxide); greenhouse gases (carbon dioxide, methane and nitrous oxide); and diesel particulate matter. All of the baseline data relate to the 2015 calendar year. Subsequent studies will be conducted every few years and the baseline data will serve as a benchmark for how well Port Everglades maintains its air quality without compromising growth initiatives.

ESTIMATING EQUIPMENT EMISSIONS
Data gathered included detailed information on cargo handling equipment, such as the type, engine model year, fuel type, horsepower and hours of operation. Similar data was collected about harbor craft vessels, as well as the mooring and hoisting of cruise vessels. Truck gate moves and moves within the terminal were also calculated. The energy consumption for stationary generators, air-conditioning systems and all electricity use were also factored into the comprehensive report. EPA did not receive confidential business information or terminal-specific information. The Port also permitted the EPA to discuss the data with Starcrest to obtain a deeper understanding of the collection methodologies and emission calculations used. Allowing them to use actual factual data instead of surrogate data refines and substantiates their ability to make solid recommendations and lessons learned.

The port has immediately benefited from the study by quantifying our air emission source data. For instance, out of the 485 pieces of inventoried non-road equipment, for example forklifts, yard tractors, cranes, and loaders. 87% were diesel, 10% were electric, 2% ran on propane and 1% used gasoline. Electric equipment was included in the count to note its presence within port boundaries. When we make investments in new equipment now, or use electric power rather than diesel for our generators, we will record our positive impact on our air quality. The same will be true in terms of any reduction in idling of port-related vehicles and equipment.

- The partnership initiative has sharpened our focus. We can see that a long-term clean-air strategy that incorporates real data, scientific projections, management solutions, and governmental outreach support or action is essential to maintain high air quality in and around the port.

This is especially important as our seaport continues to expand and we help our customers enhance their operations. Both the EPA partnership and the Air Emission study will help us to prepare climate adaptation strategies and incorporate methods to reduce greenhouse gas emissions inventories into our 20-Year Master/Vision Plans.

- As a result of the study, all of our customers have been advised of purchasing decisions and operational changes that can be made to further reduce emissions.

- We are working together on these initiatives, which include applying for grants and seeking investments to match port funding.

- We also anticipate completing a 2020 air emissions inventory that will give us a new standard that will tell where we've improved.

EPA PORTS INITIATIVE
The voluntary partnership between Port Everglades and EPA is also part of EPA's broader Ports Initiative. In fact, the EPA is conducting a separate emissions assessment for areas outside the port's jurisdictional boundaries, such as the highways and rail lines used by the port's customers. The goal is to identify where emission reductions would provide the best public health and environmental benefits. Port Everglades takes environmental stewardship seriously. Good air quality where we live and work improves overall quality of life. Air pollution is caused in part by mobile sources such as ships, rail, trucks and off-road equipment, as well as stationary sources like buildings and power plants. These different sources can produce health-related problems. It is important to continuously seek ways to reduce emissions, and we will use the air emissions inventory baseline to measure our efforts.

As custodians of one of the most diverse ecosystems in the country, Port Everglades remains steadfast in its dedication to careful, ecologically sound growth. Broward County's leaders recognize that maintaining a careful balance between commerce and the environment is essential for the region's well-being.

Our commitment is to ensure the long-term interest of both the maritime community and the fragile environment within and around the Port by adhering to stringent governmental regulations, employing best management practices, careful study, and advancing progressive remedial and protective measures.

ABOUT THE ORGANISATION
As one of Florida's leading economic powerhouses, Broward County's Port Everglades is the gateway for international trade and cruise vacations. The Port Everglades Department is a self-supporting Enterprise Fund of Broward County, Florida government with operating revenues of more than $163 million in Fiscal Year 2016. It does not rely on local tax dollars for operations. The total value of economic activity related to Port Everglades is nearly $30 billion. More than 222,000 Florida jobs are impacted by the Port, including almost 13,000 people who work for companies that provide direct services to Port Everglades.

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