

Designing a Greener Future

FHWA Talking Freight Seminar

June 21, 2017



STARCREST CONSULTING GROUP, LLC
ENVIRONMENTAL MANAGEMENT
AIR QUALITY • CLIMATE • SUSTAINABILITY

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U.S. Ports with Recent Air Emission Inventories

- Not unusual action.
- First in Florida.
- First to voluntarily partner with EPA.



U.S. EPA - Port Everglades Partnership



Working together to develop:

- Activity-based baseline inventory for facilities and operations.
- Emission reduction scenarios and inventories for future analysis years.
- Methods, lessons learned, and practical examples that EPA can be shared with other ports, related agencies, and stakeholders to support and encourage sustainable development.

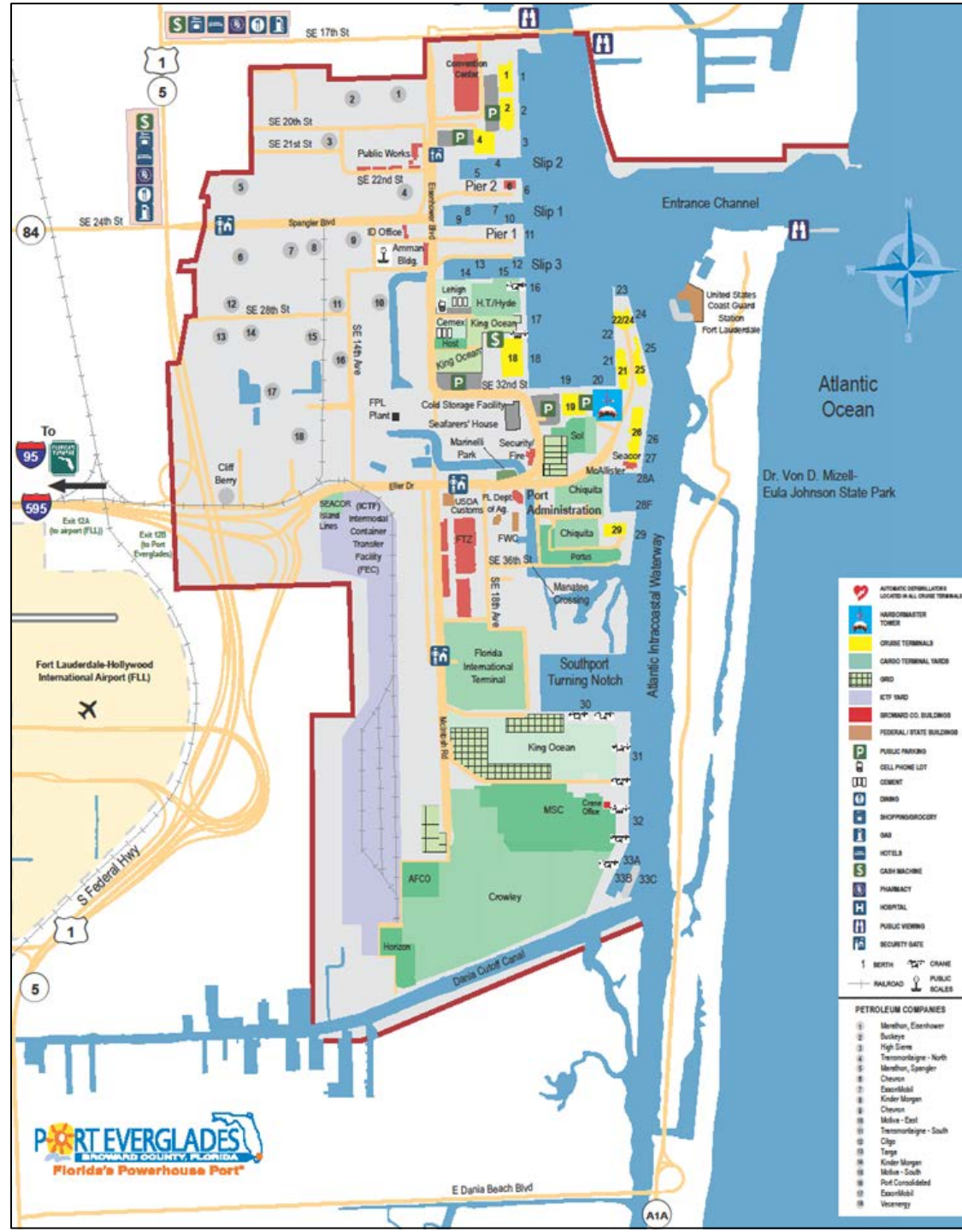
The Port Everglades 2015 Baseline Air Emissions Inventory is available at:

www.porteverglades.net/environment/air-quality/air-emissions-inventory.

Also see: www.epa.gov/ports-initiative/epa-partnership-agreement-broward-countys-port-everglades.

Geographic Domain

Landside Port Facilities



Geographic Domain

Marine-Side 3 NM Offshore



Emission Source Categories

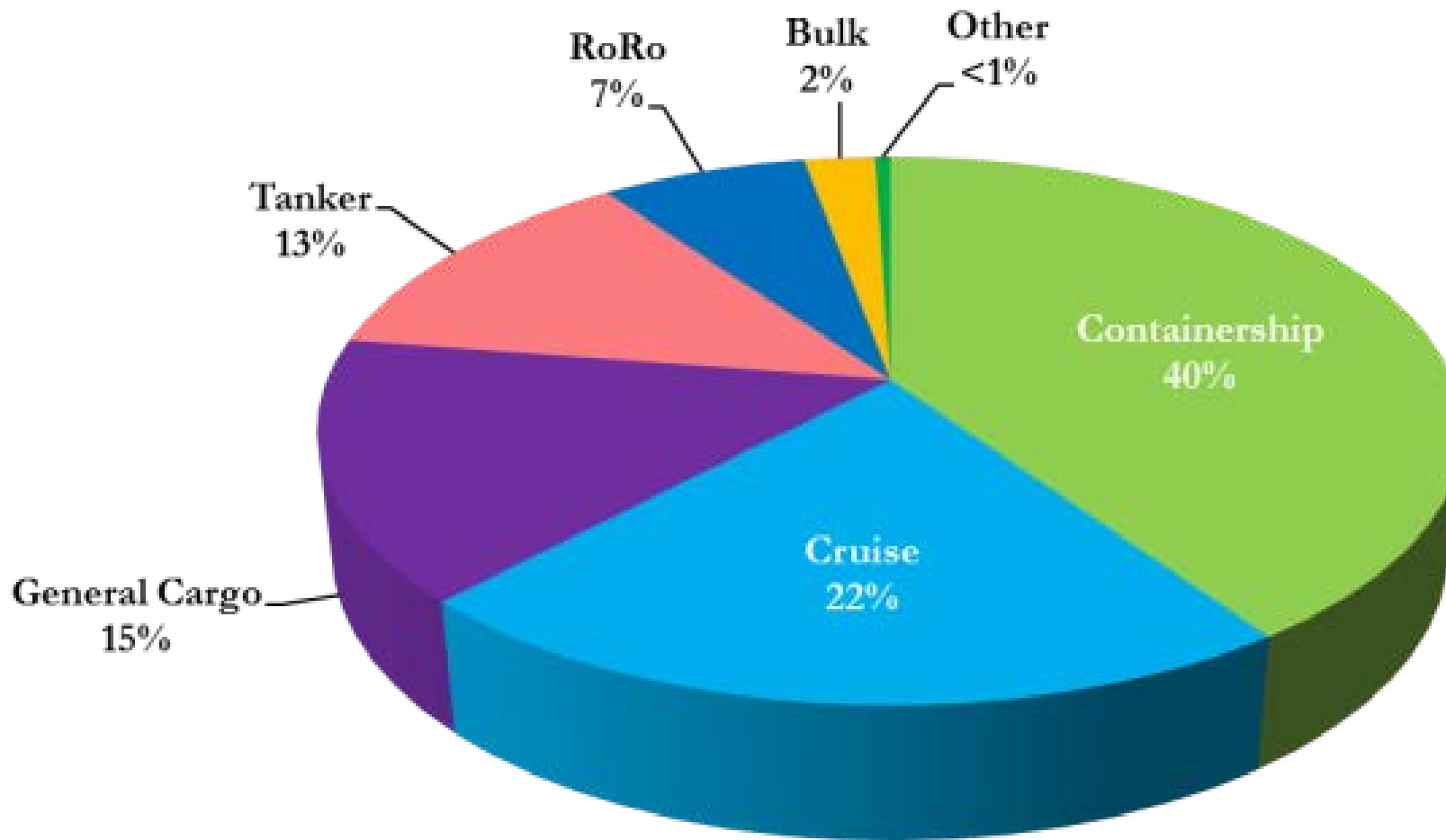
1. Ocean Going Vessels
2. Harbor Craft
3. Cargo Handling Equipment
4. Onroad Vehicles
5. Locomotives



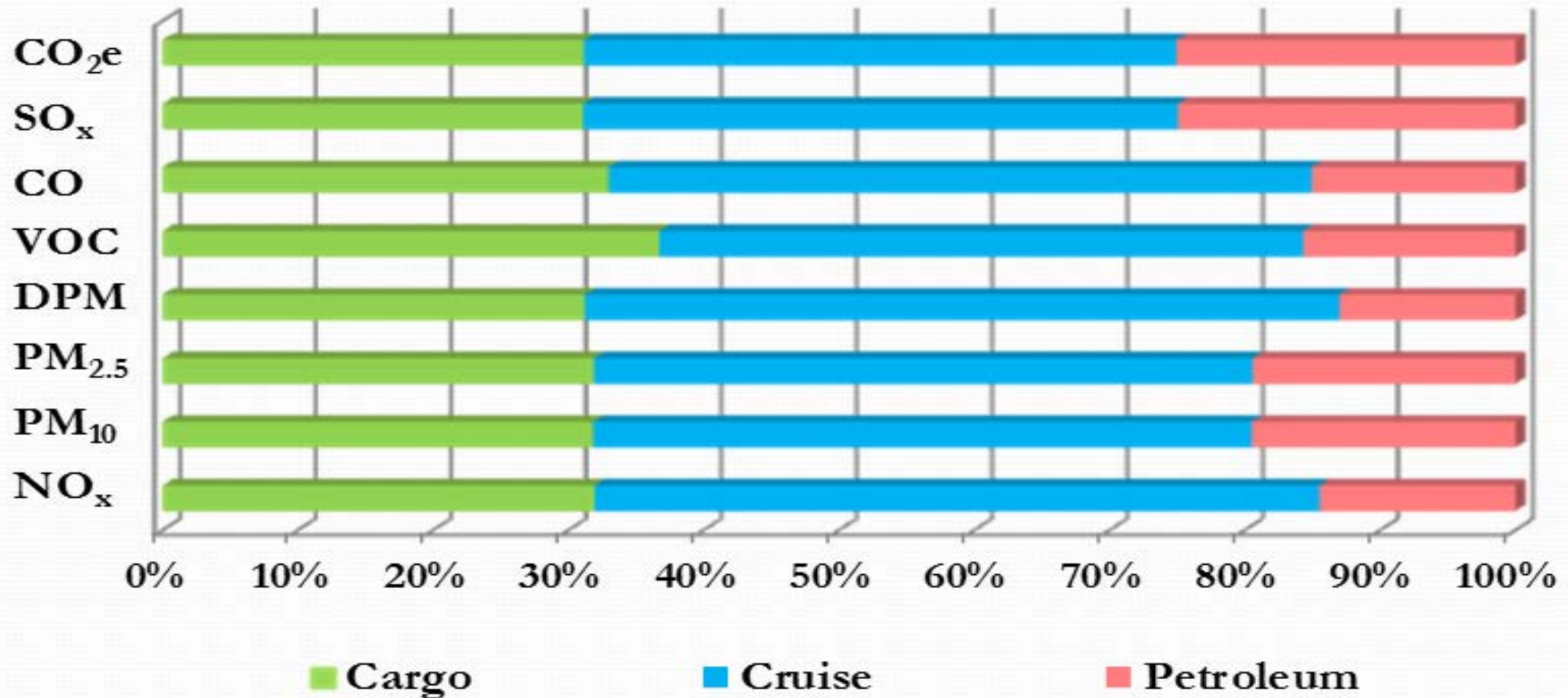


1. Ocean Going Vessels

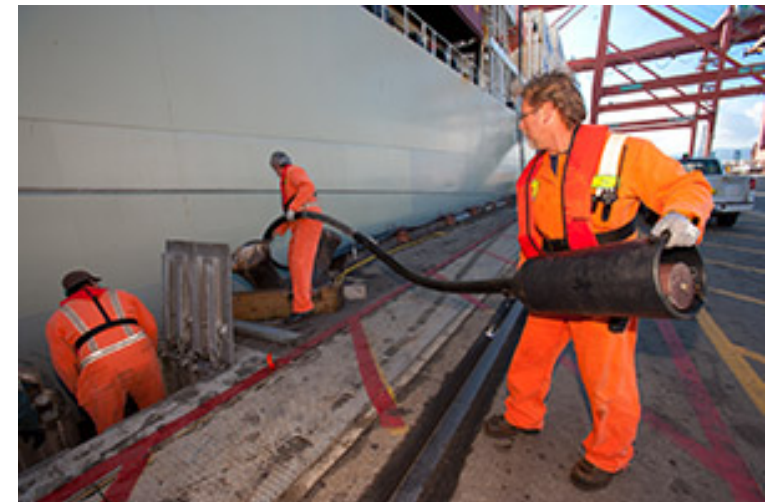
- Auto
- Bulk
- Containership
- Cruise
- General
- Ro-Ro
- Tanker



2015 Distribution of Calls by Vessel Type



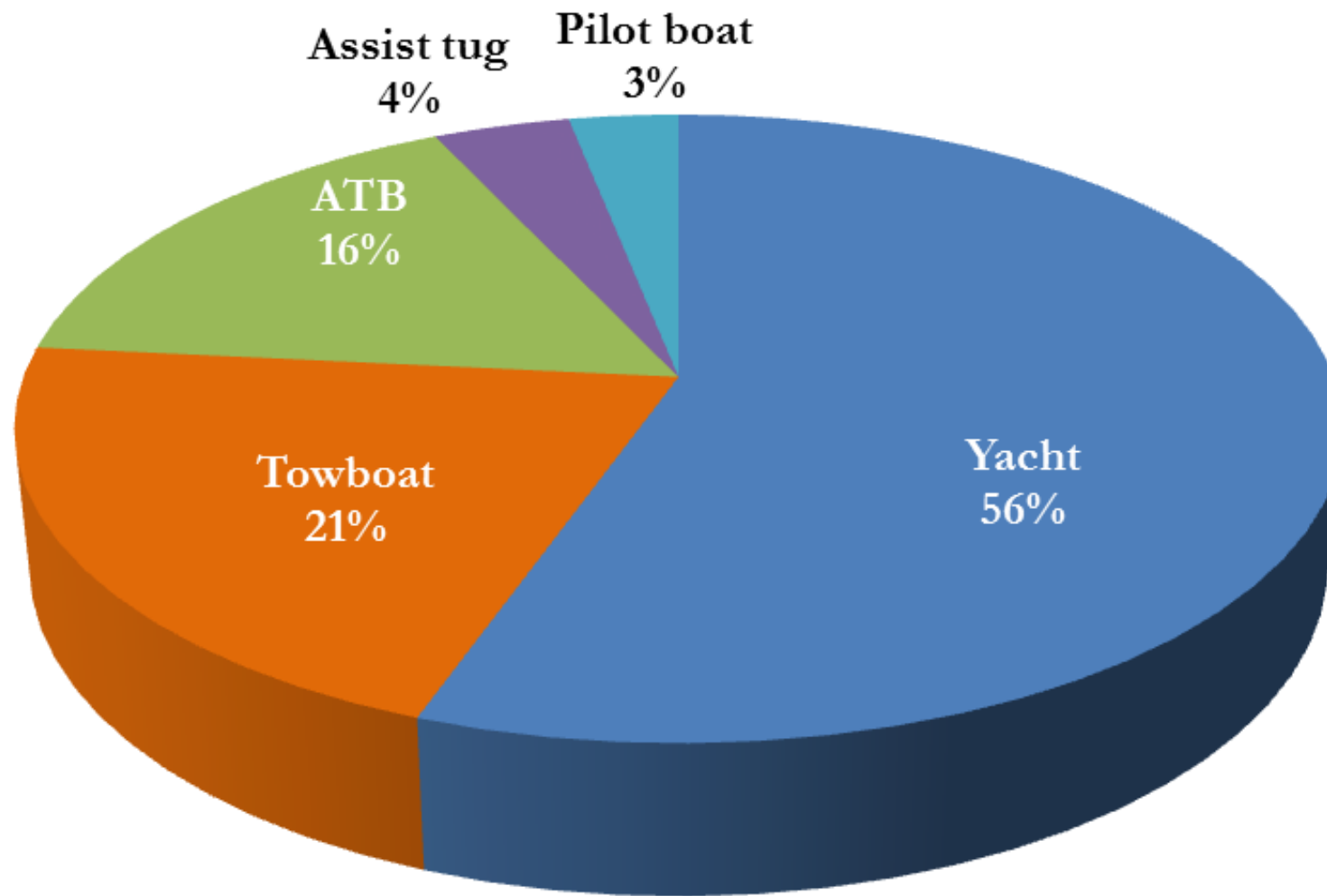
1. Reduce emissions during transit and hoteling.
2. Vessel speed reduction.
3. Alternative fuels.
4. At-berth emissions reduction.
5. Integrate emission reduction technologies in OGV applications .





2. Harbor Craft

- Assist Tugboats
- Articulated Tug Barges (ATB)
- Pilot Boats
- Towboats
- Yachts

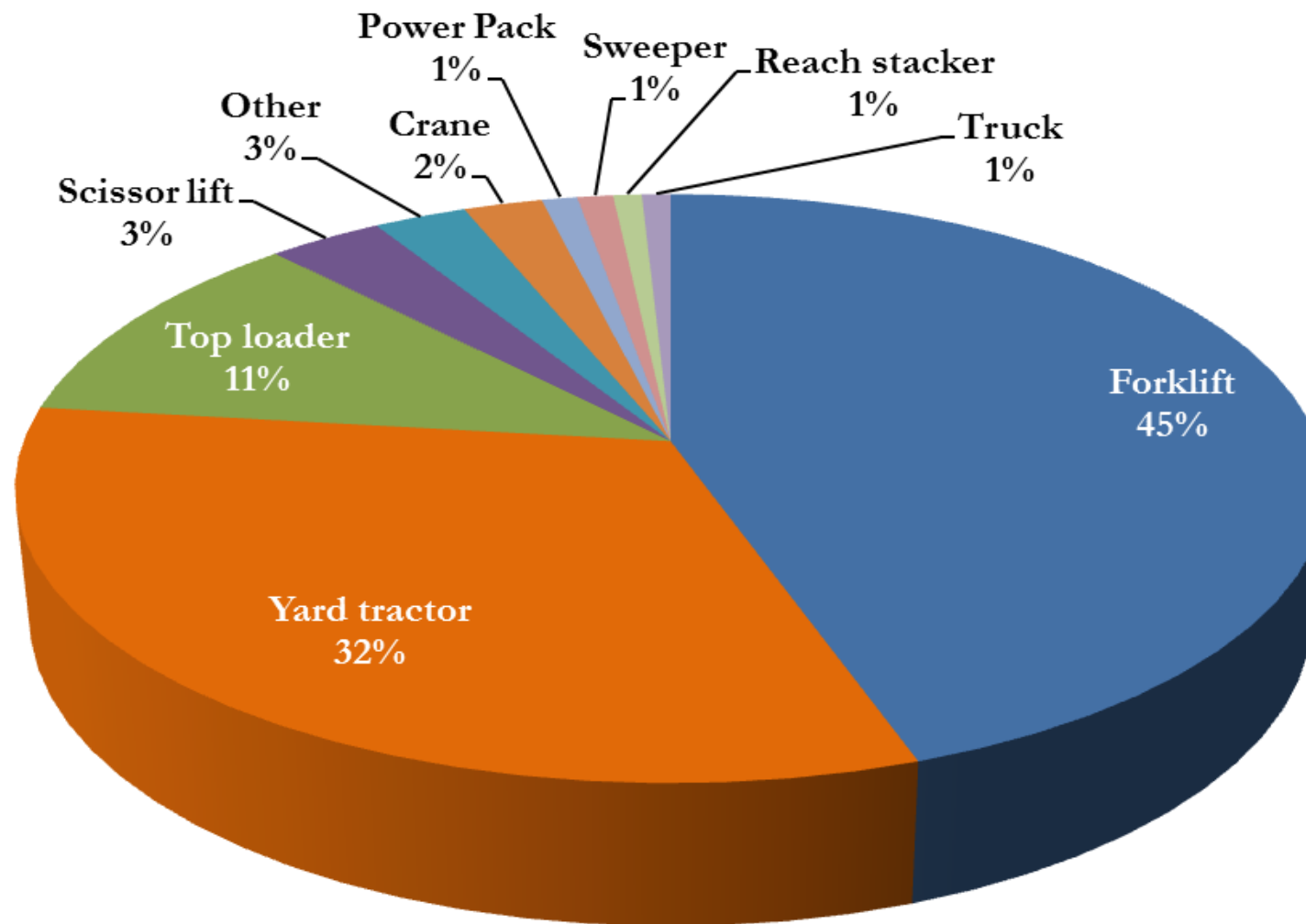


1. Repower/upgrade vessels.
2. Apply for consumer grants to help subsidize repowers.





3. Cargo Handling Equipment



1. Upgrade equipment, latest diesel or electric.
2. Install reefer plugs to replace power packs.
3. Apply for consumer grants to help subsidize equipment replacements.
4. Maintain equipment records for future air emissions inventories.





4. Onroad Vehicles

- Heavy-Duty Trucks
- Cruise Passenger Transport Vehicles
- Port-Owned Fleet Vehicles

1. Upgrade trucks.
2. Idle reduction.
3. Install diesel oxidation catalysts.

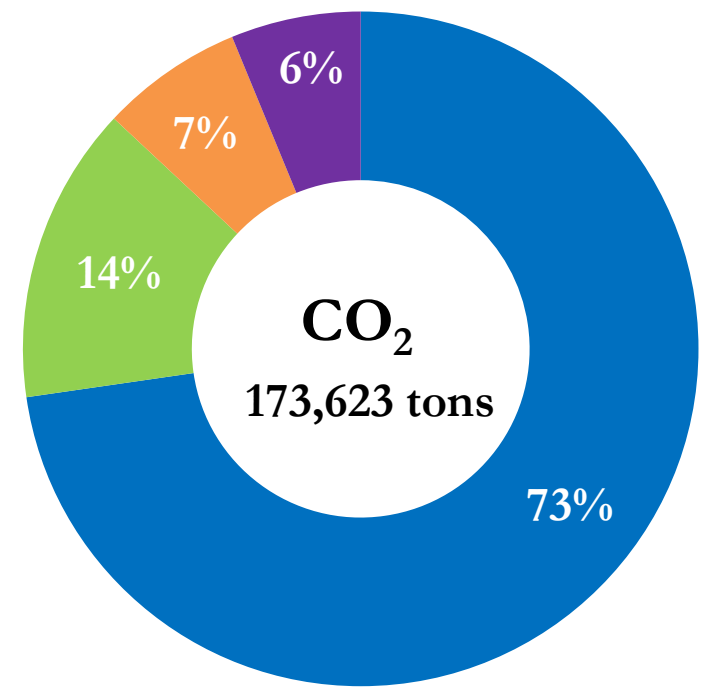
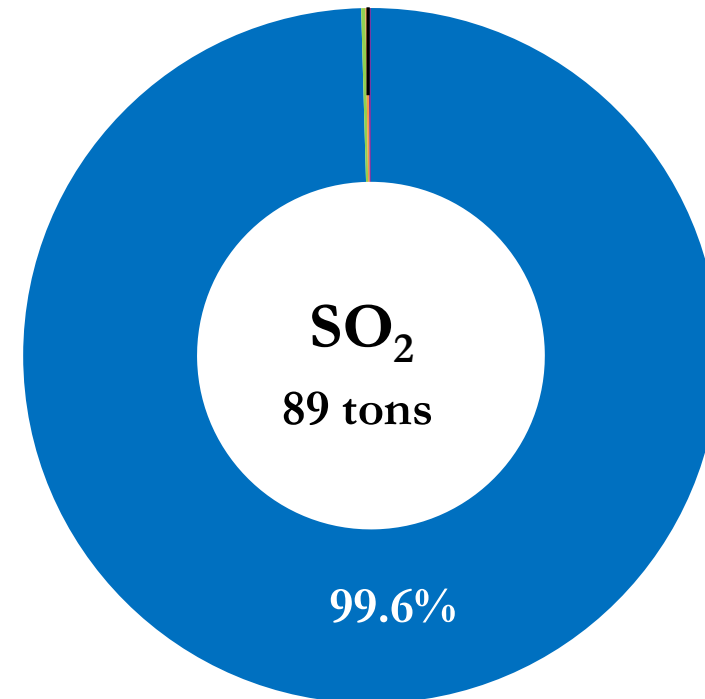
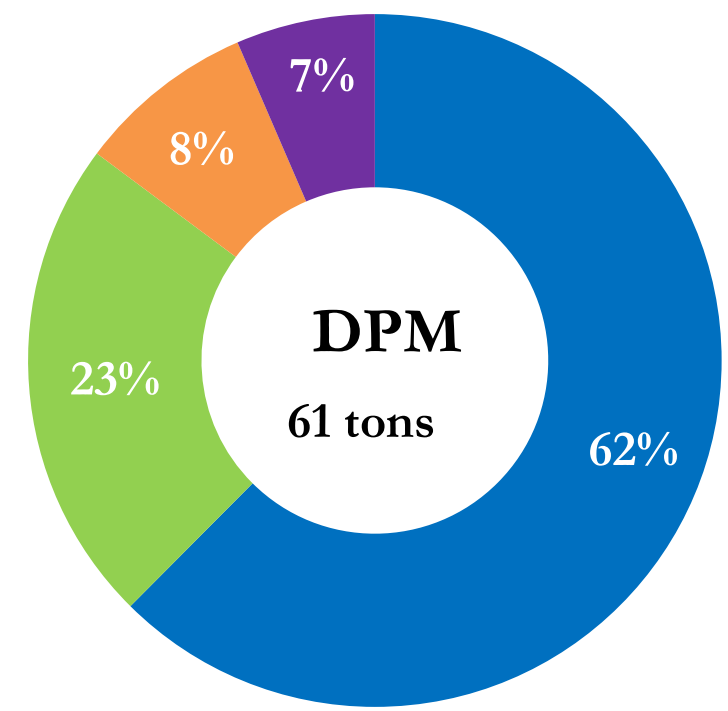
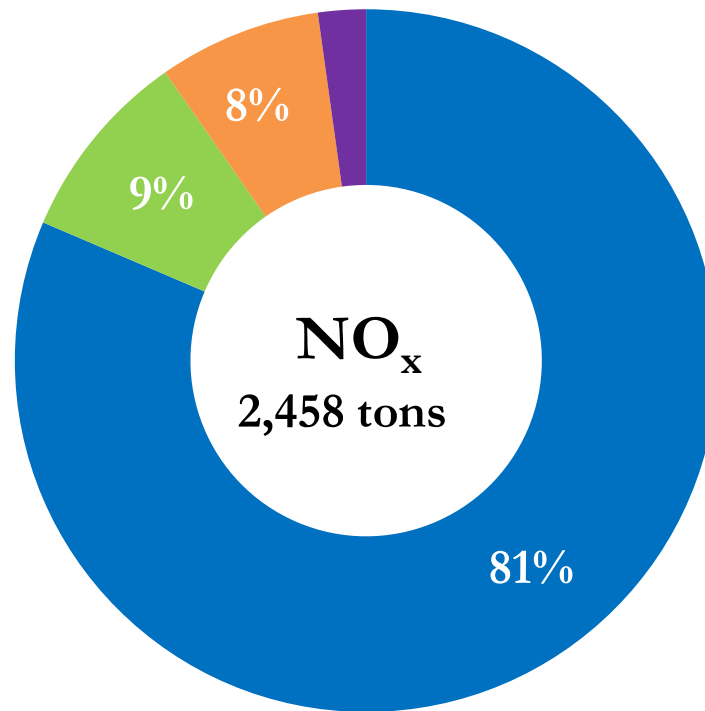




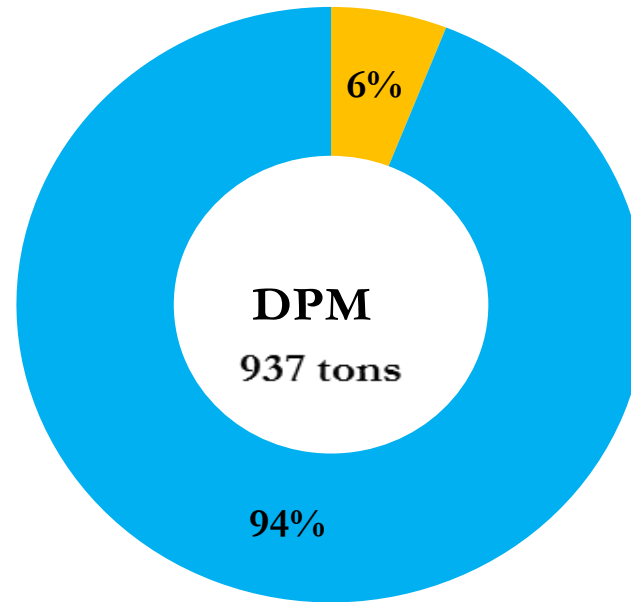
2015 Baseline Results

- Will be used for to evaluate effective technology and operational strategies.

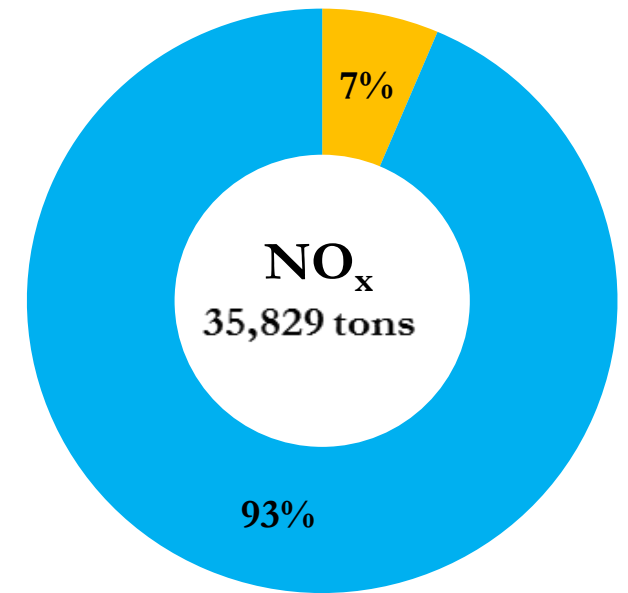
- Ocean-going vessels
- Cargo handling equipment
- Harbor craft
- On-road vehicles



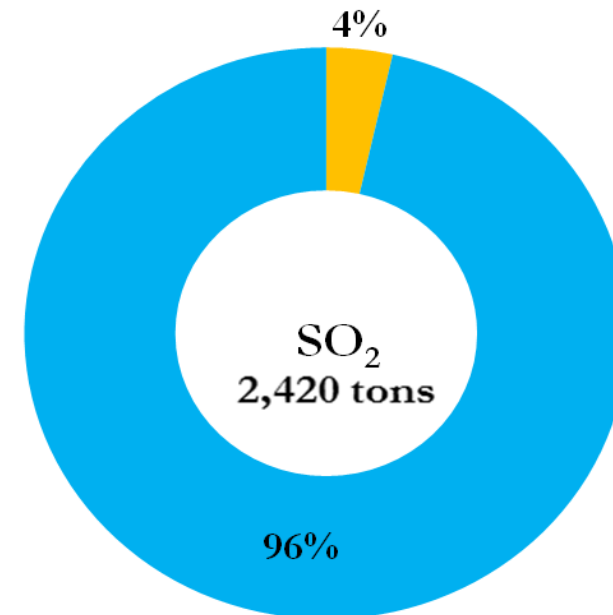
2015 Baseline Regional Contributions



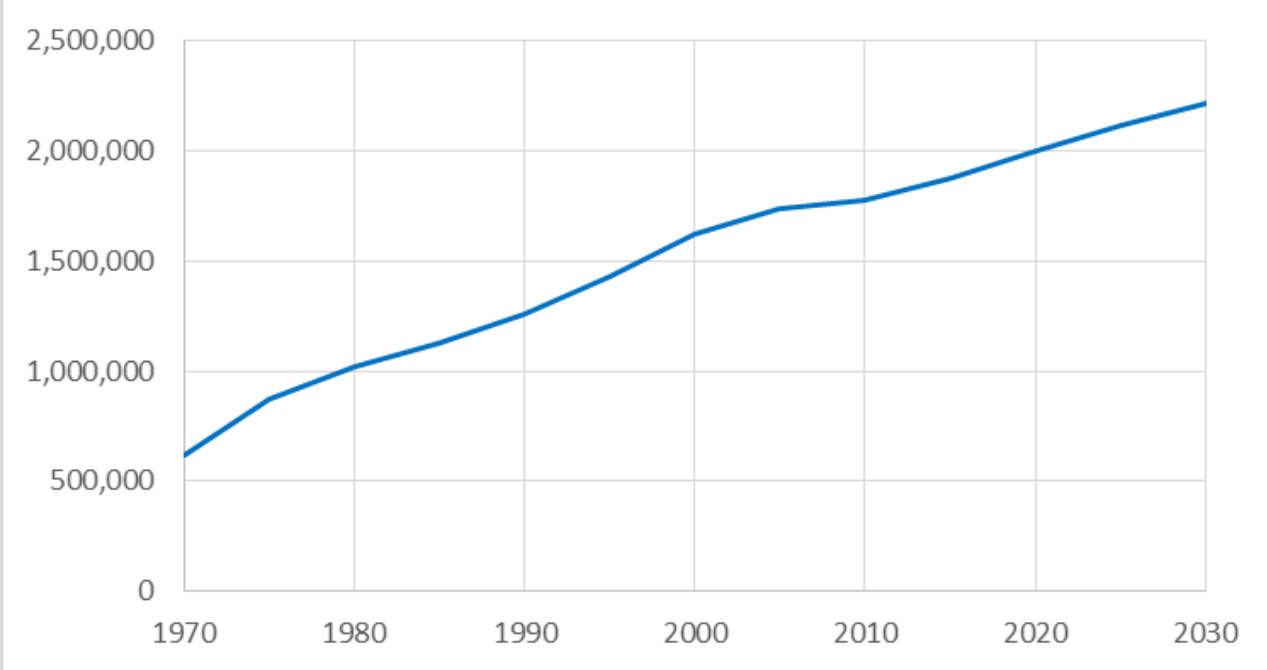
■ Port Everglades ■ Broward County



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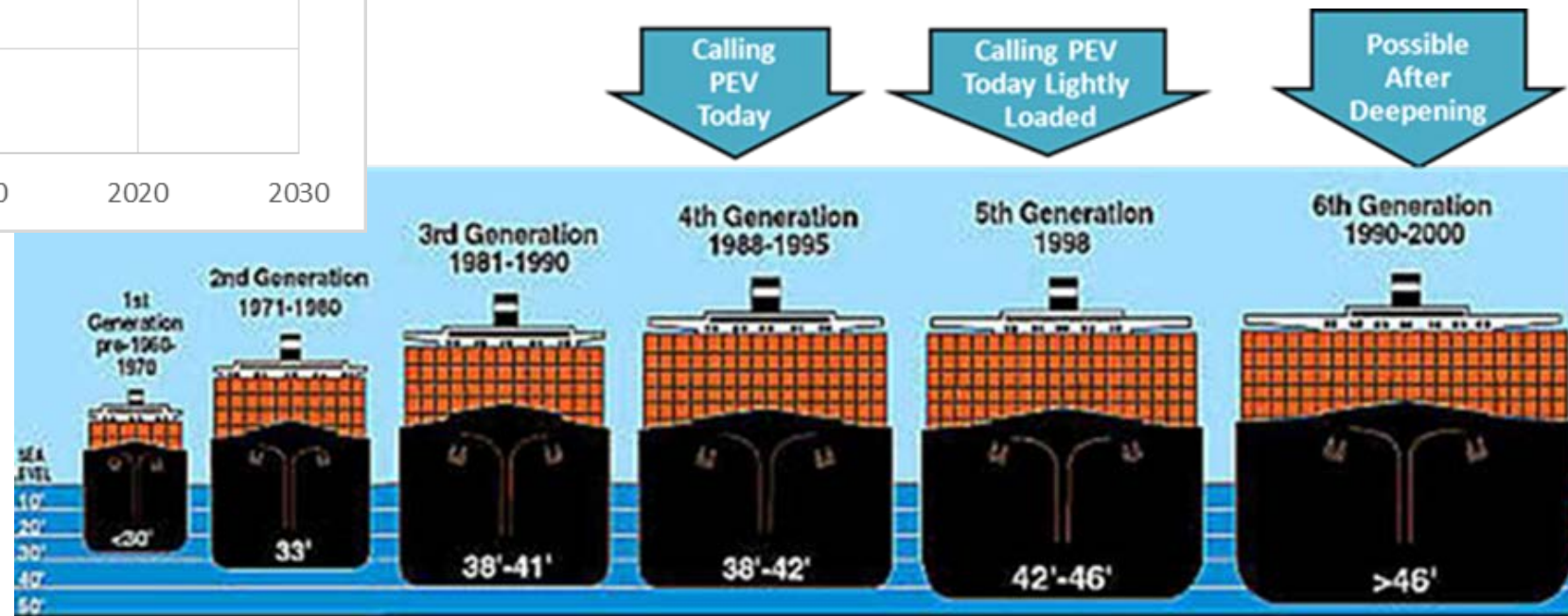


■ Port Everglades ■ Broward County



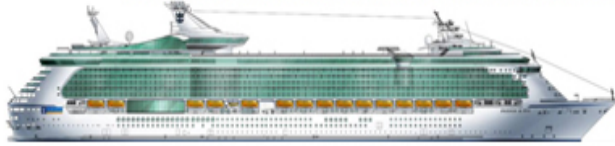
Broward County Population

Source: Broward County Planning and Development Management Division





2009 Oasis of the Seas 220 000 2712 Cabins GT 360 × 47 × 9,1



2006 Freedom of the Seas 158 000 1816 Cabins GT 339 × 38,60 × 8,50 m



1999 Voyager of the Seas 137 300 GT 1557 Cabins 311,12 × 38,60 × 8,60 m



1996 Grandeur of the Seas 74 000 GT 975 Cabins 279,8 × 32,20 × 7,60 m



1990 Fantasy 70 400 GT 1028 Cabins 260,8 × 31,50 × 7,80 m



1982 Song of America 37 600 GT 707 Cabins 214,51 × 28,41 × 6,80 m



1970 Song of Norway 18 400 GT 377 Cabins 168,32 × 23,96 × 6,70 m

Harmony of the Seas

Largest cruise passenger ship in the world



2016 • 226,963 GT 1,188 ft. • 6,700 Max Passengers • 2,747 Cabins



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