March 15, 2022

Overview of Updated Port of Corpus Christi Environmental Policy

Sarah L. Garza | Director of Environmental Planning & Compliance

Presented by PORT CORPUS CHRISTI®

Bottom Line Up Front

- Our Environmental Policy pertains only to Port operations
- Changes include:
  1. Refining prior Sustainability precept to focus on Resilience/Climate Adaptation
  2. Adding a sixth precept – Climate Action
  3. Defining measurable performance targets by precept
- All performance targets are:
  - Data driven and correlated to annual tonnage
  - Extrapolated from current trends in data collected over last several years
  - Achievable with existing department work plan
- Updated policy is an opportunity to enhance transparency around environmental performance

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Presentation Overview

- **Environmental Policy Background & Purpose**
- **Environmental Precept Descriptions**
- Data Basis & Trends Supporting Precept Targets
  - Air Quality
  - Water Quality
  - Soils & Sediments
  - Habitat
  - Resilience / Climate Adaptation
  - Climate Action
- Environmental Department Work Plan Overview

Background and Purpose

- ISO 14001 requires an organization to have an environmental policy
- Foundation of the overall environmental program

Benefits of the Updated Policy	Risks of Not Updating Periodically
Uphold Strategic Plan Goal #4 – Be an Environmental Leader	Regulations drive environmental improvements
Build trust with stakeholders through accountability and transparency	Reactive to environmental issues
Lead by example	Results in uncontrolled costs
Focus environmental efforts on innovation	Hampers our competitiveness
Ensure proactive approach that informs project design and environmental standards	Limitations on growth in the long run

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Environmental Precept Descriptions

- Air Quality – references national ambient air quality standards of Clean Air Act
- Water Quality – references standards for water quality established in Clean Water Act
- Soils and Sediments – protect human health, sediment, and groundwater quality
- Habitat – promote diversity and health of habitat
- Resilience/Climate Adaptation – developments that mitigate for current climate impacts (drought, excessive heat, wind, sea level) and more frequently occurring severe weather events (flooding, freezing, storms)
- Climate Action – references Goal 13 of the Paris Agreement

Basis for References

- Utilize already established standards that are data driven
- Alignment with standards and reference points our stakeholders understand
- Relevant locally and nationally
- Relevant to both imports and exports

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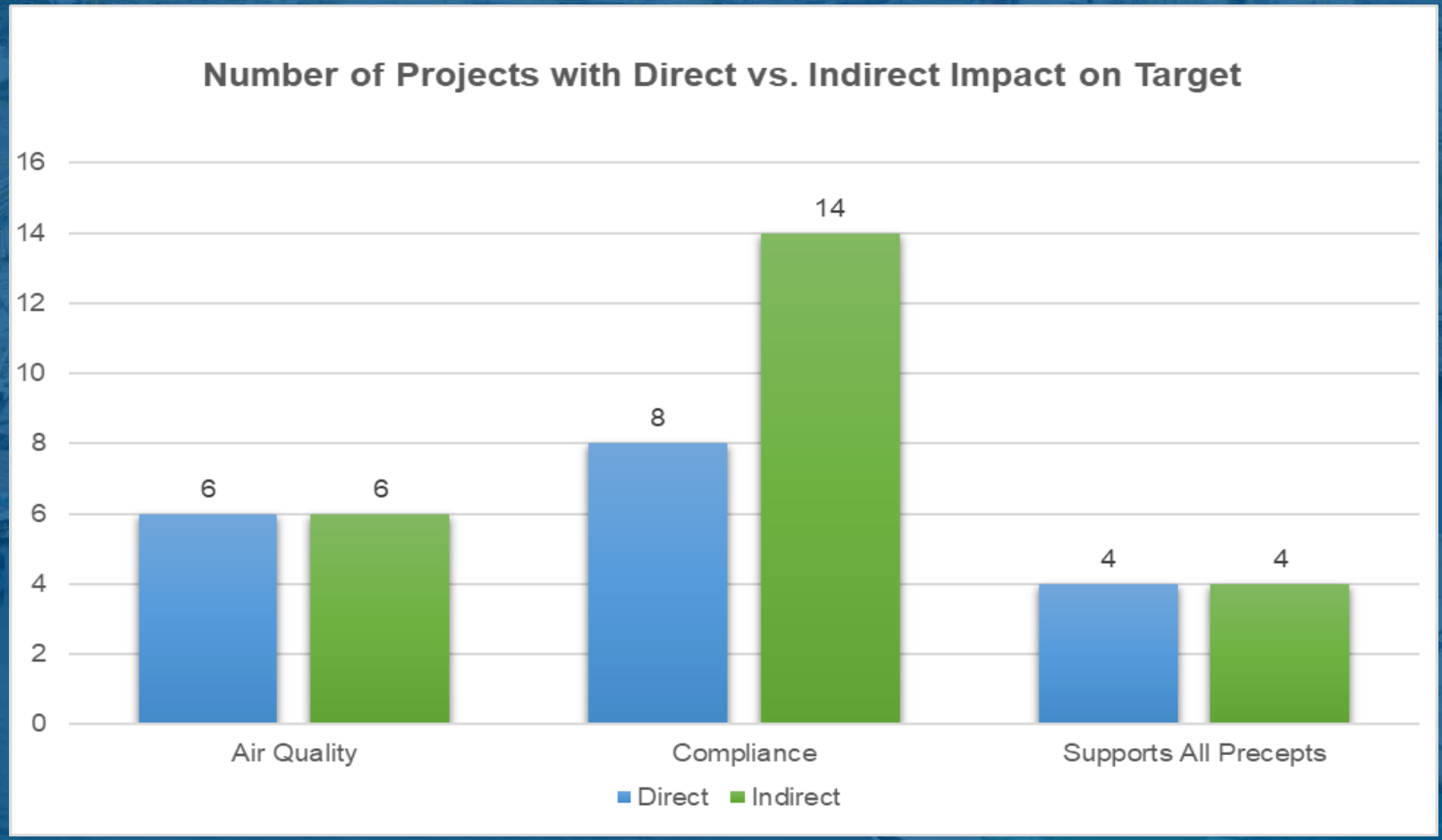
Air Quality – Achieve at least a 15% reduction in PM, VOC, NOx and SOx emissions per cargo ton handled relative to the most current emission inventory every three years.

VANCOUVER FRASER PORT AUTHORITY

30%
Reduction

IN POLLUTANT EMISSIONS FROM 2010-2015 WITH A FORECAST OF AN ADDITIONAL 32% DECREASE BY 2030



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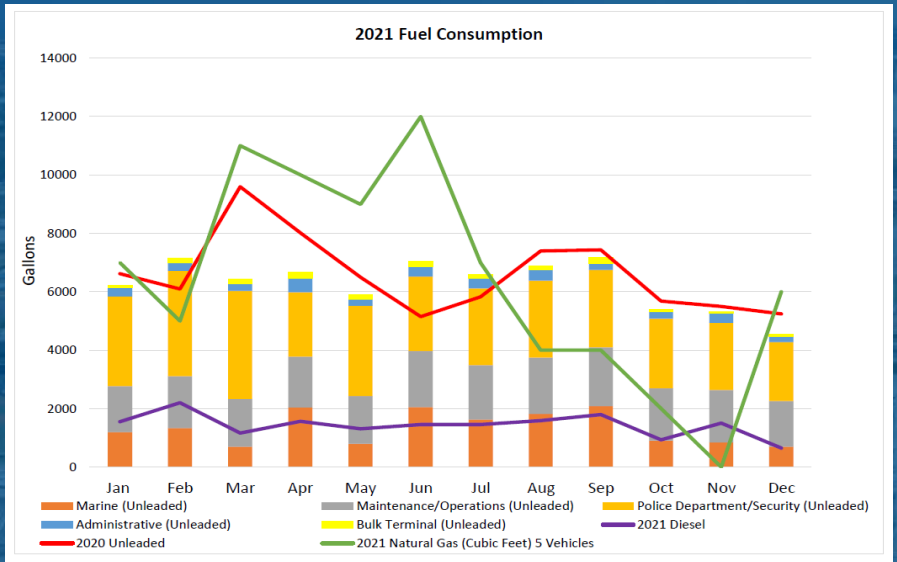
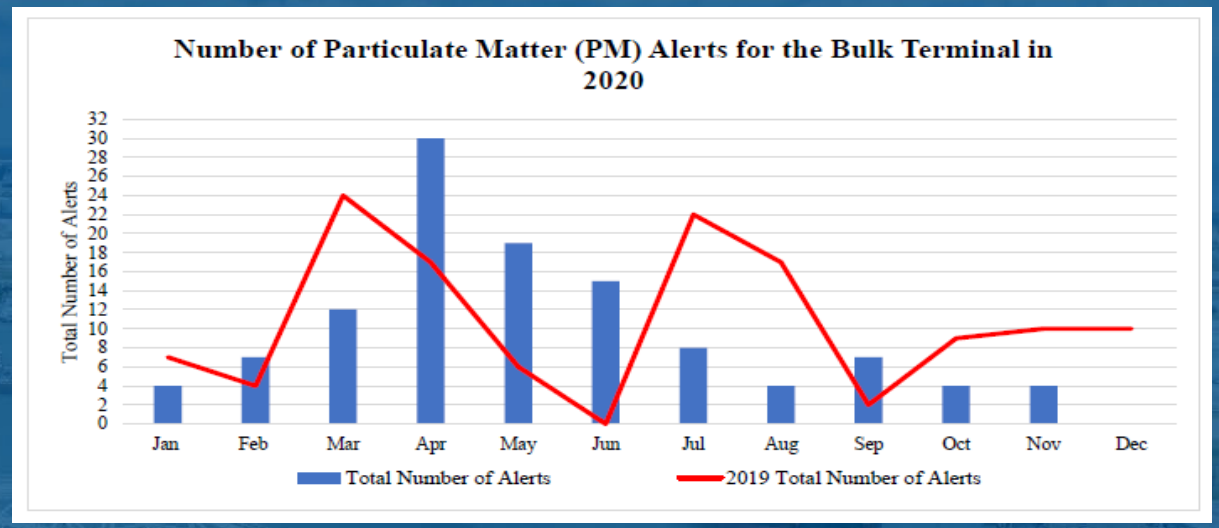
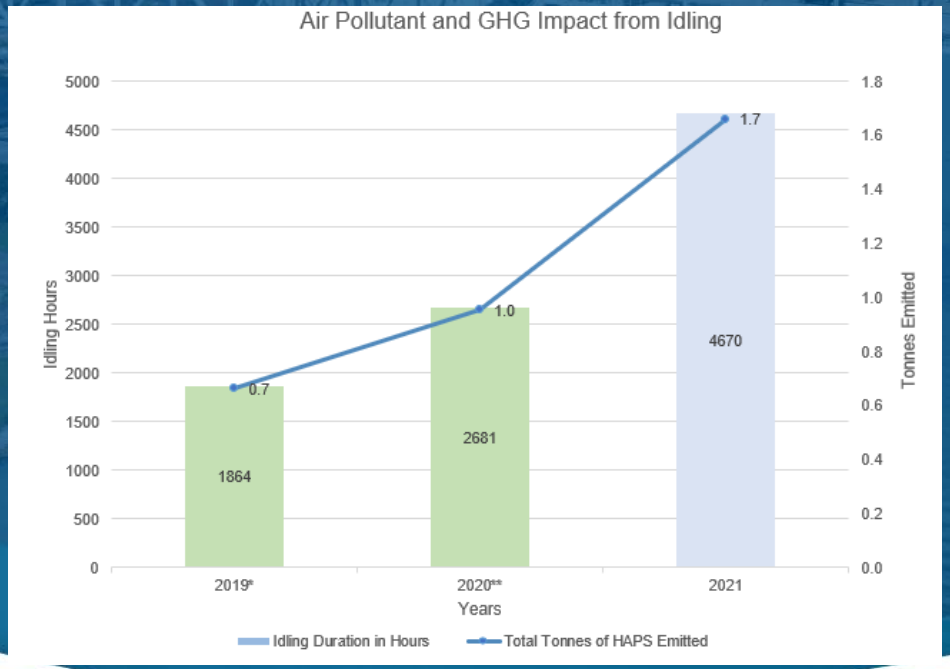
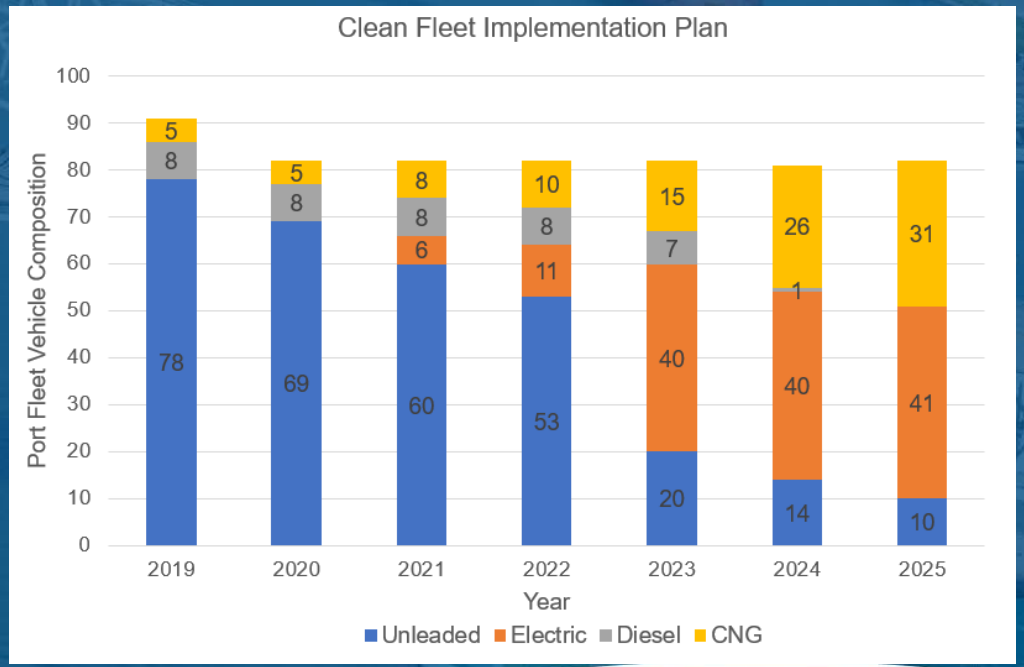
Air Quality – Data Trends









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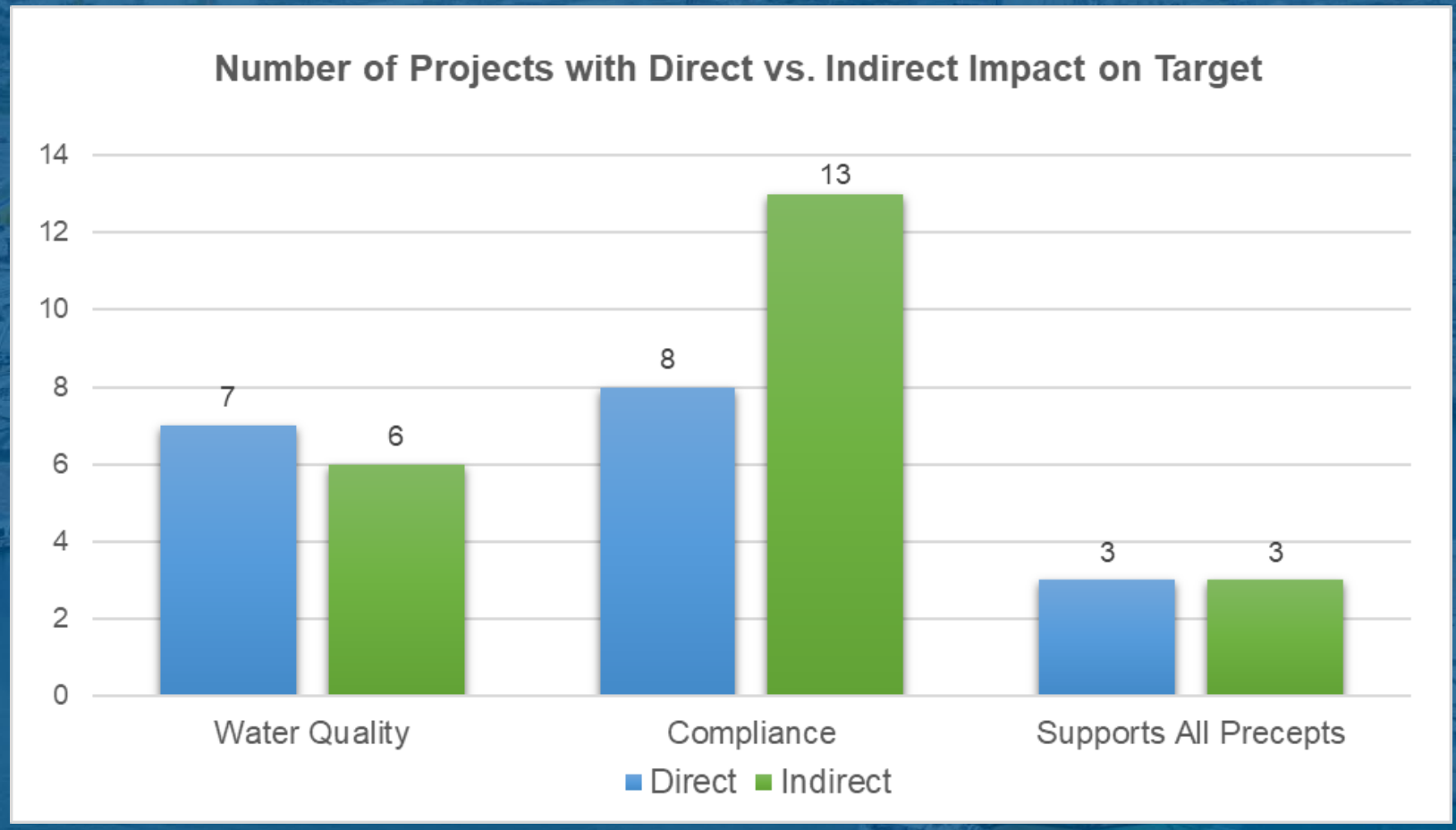
Water Quality - Achieve a 10% annual reduction in each of the measured water quality parameters (Al, Fe, Zn, Pb, and TSS) at each sampling location on Port property.

PORT OF LONG BEACH

2009

MARKED THE ADOPTION OF THE WATER RESOURCES ACTION PLAN OF PROGRAMS TO IMPROVE WATER QUALITY AND SEDIMENT WITHIN THE HARBOR



PORT CORPUS CHRISTI®

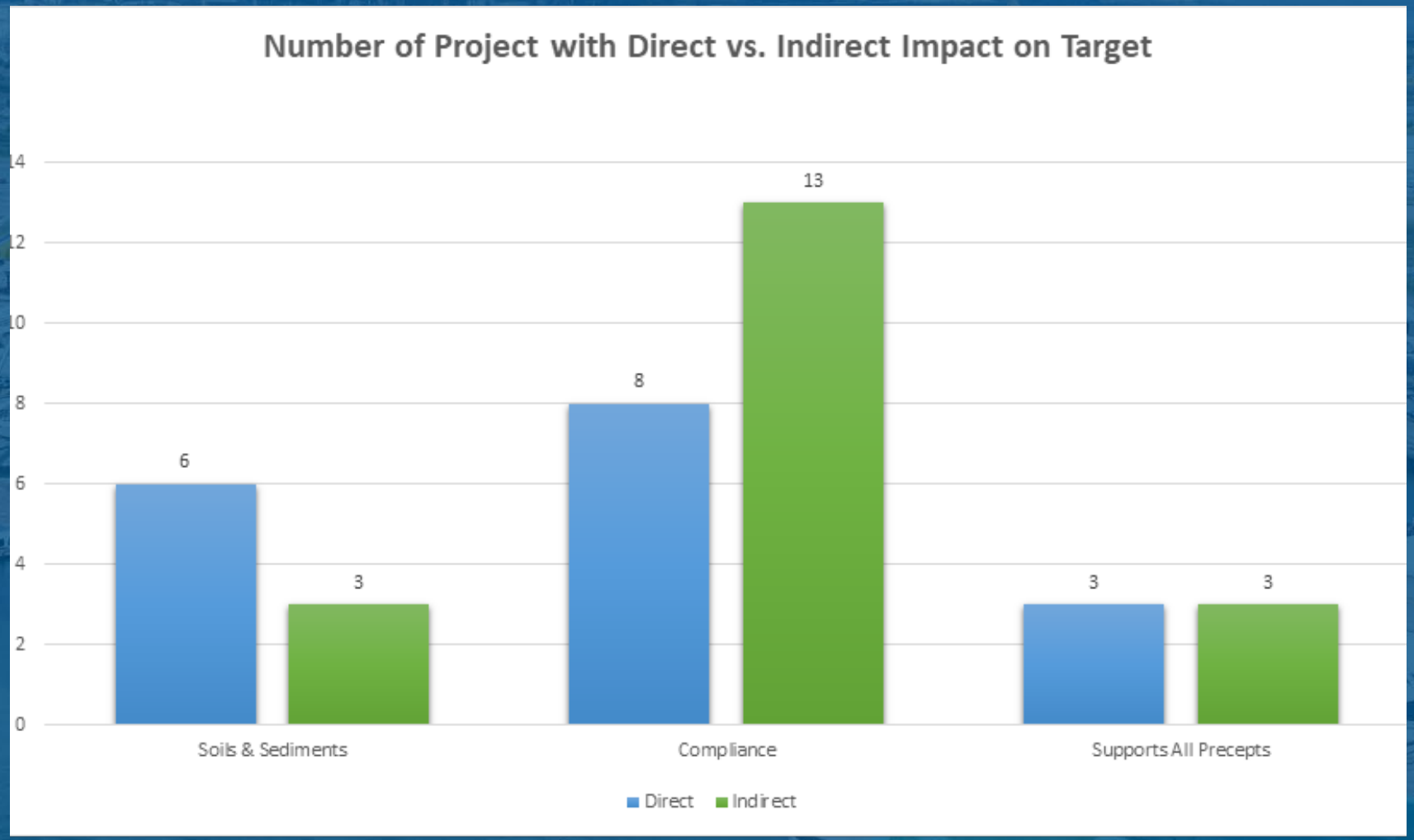
Soils & Sediments - Uphold the current practice of remediating spills that occur on Port property to a residential cleanup standard.

PORT OF TACOMA

~1100

Acres

OF CONTAMINATED SOILS HAS BEEN REMEDIATED WITH PLANS TO CLEAN UP SEVERAL HUNDRED MORE



PORT CORPUS CHRISTI®

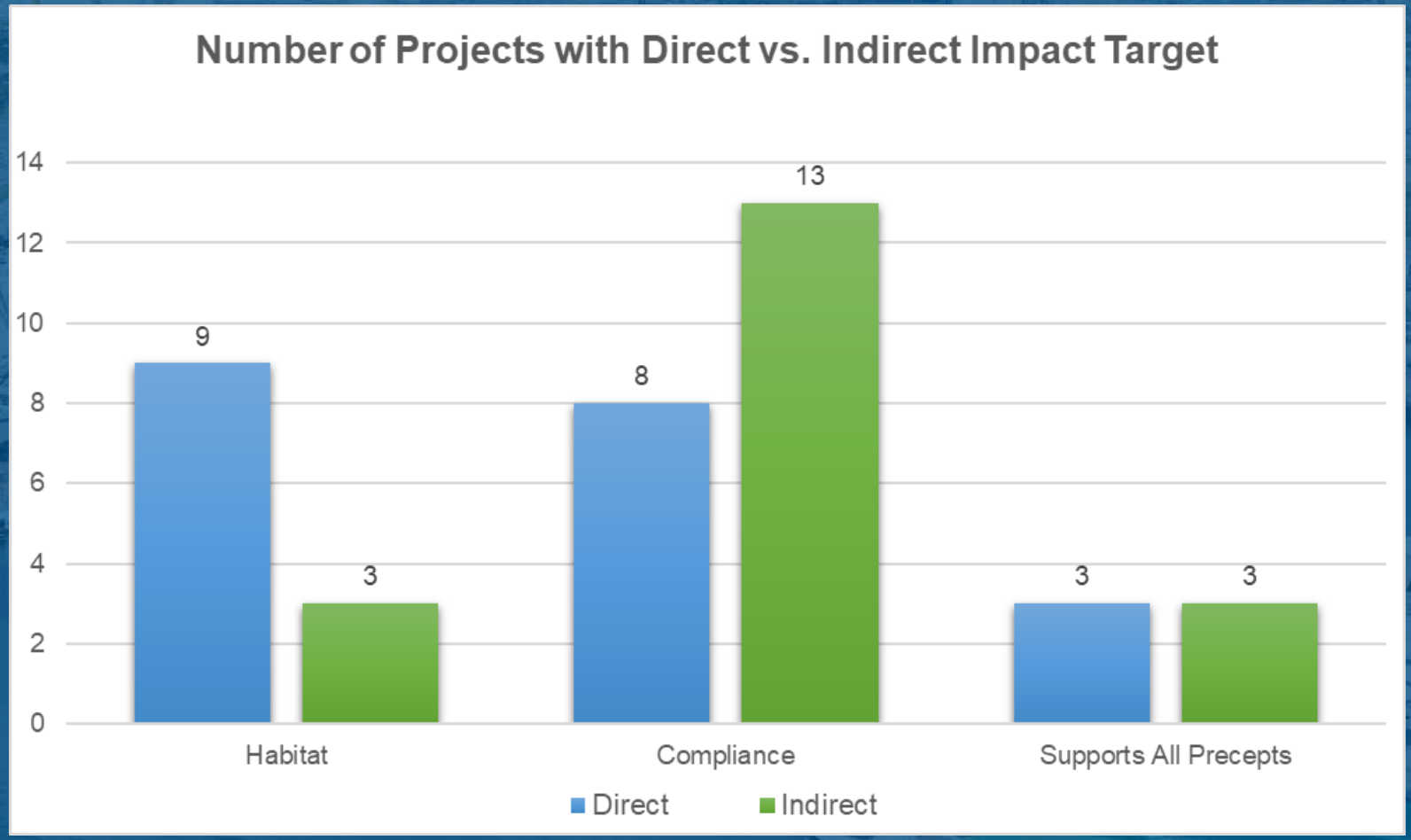
Habitat - Voluntarily create/restore 50 acres of habitat within the Corpus Christi and Aransas Bay systems every three years.

PORT OF MOBILE ALABAMA PORT AUTHORITY

1200

Acres

OF WETLANDS ARE PLANNED TO BE CREATED OVER THE NEXT 10 – 20 YEARS



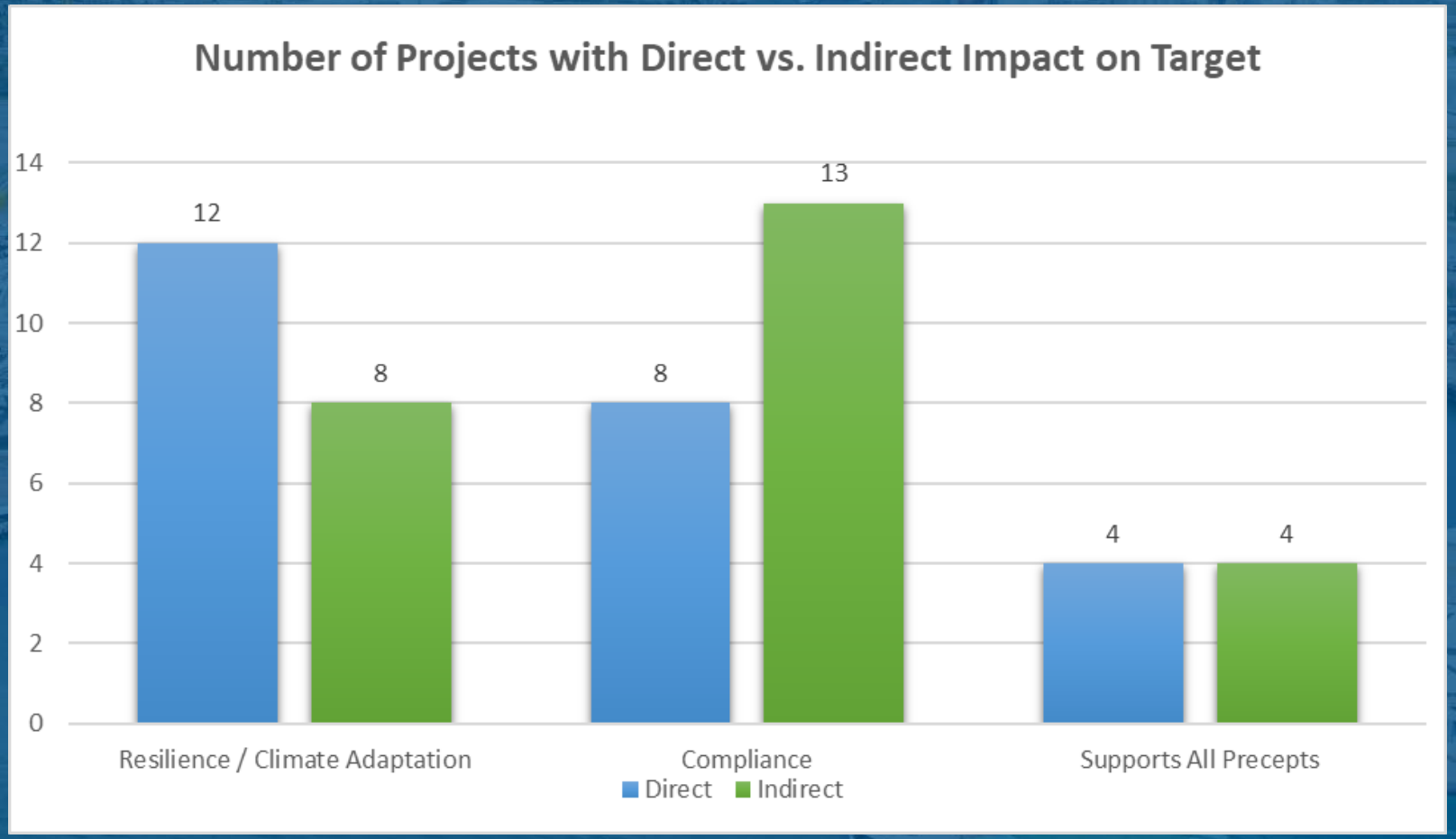
PORT CORPUS CHRISTI®

Resilience / Climate Adaptation – Integrate at least one sustainability strategy from the PCCA Life Cycle Assessment Tool into all projects to which the Port dedicates capital dollars.

PORT OF NEW YORK & NEW JERSEY

Since 2015

CLIMATE RESILIENCE GUIDELINES TO MITIGATE EFFECTS OF CLIMATE CHANGE ON FACILITIES/ INFRASTRUCTURE HAS BEEN IMPLEMENTED



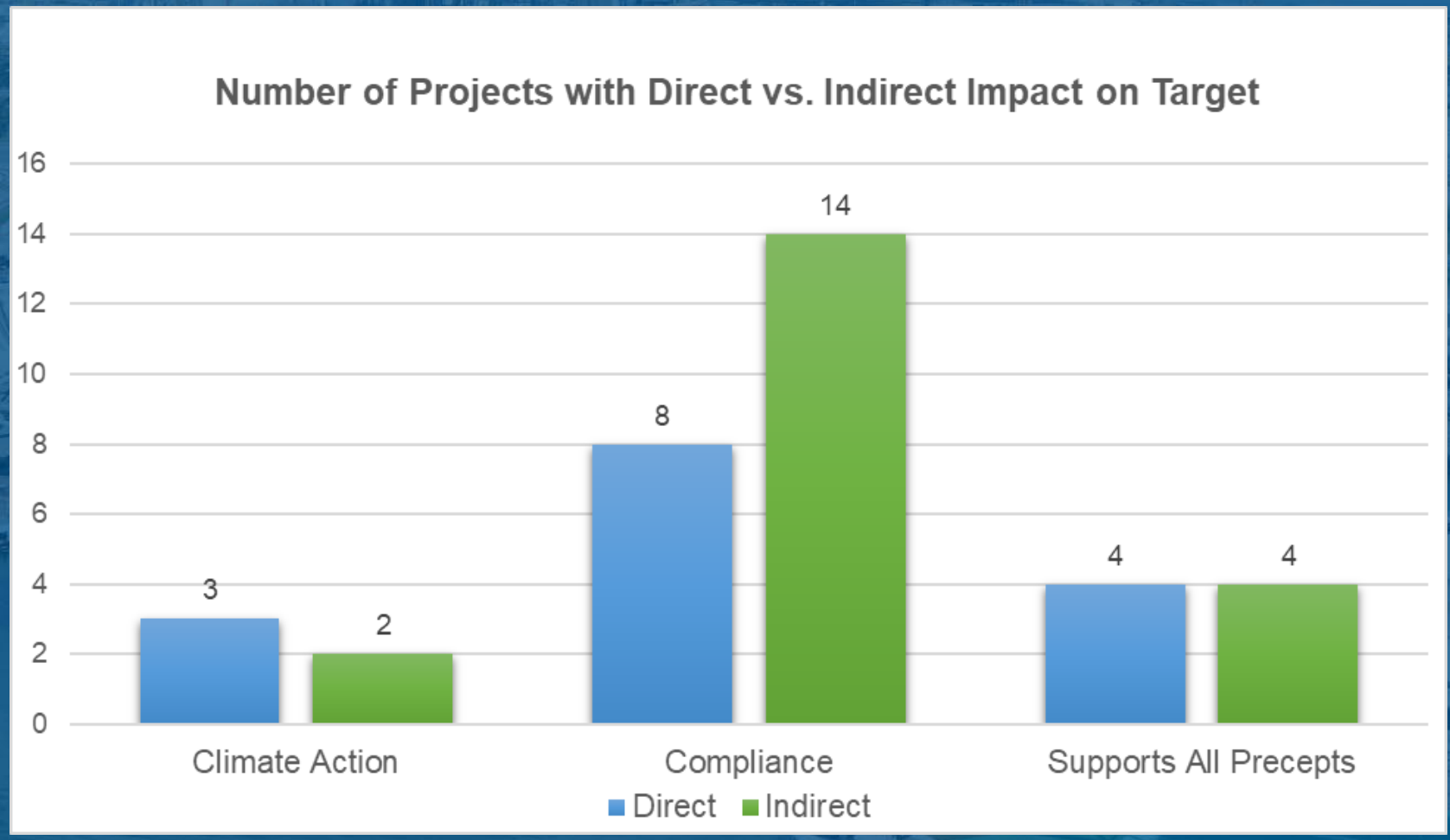
PORT CORPUS CHRISTI®

Climate Action – Achieve a 7.5% annual reduction in GHG emissions per cargo ton handled relative to the current emission inventory.

PORT OF VANCOUVER USA

Carbon Neutral

IS THE GOAL TO BE MET BY 2050



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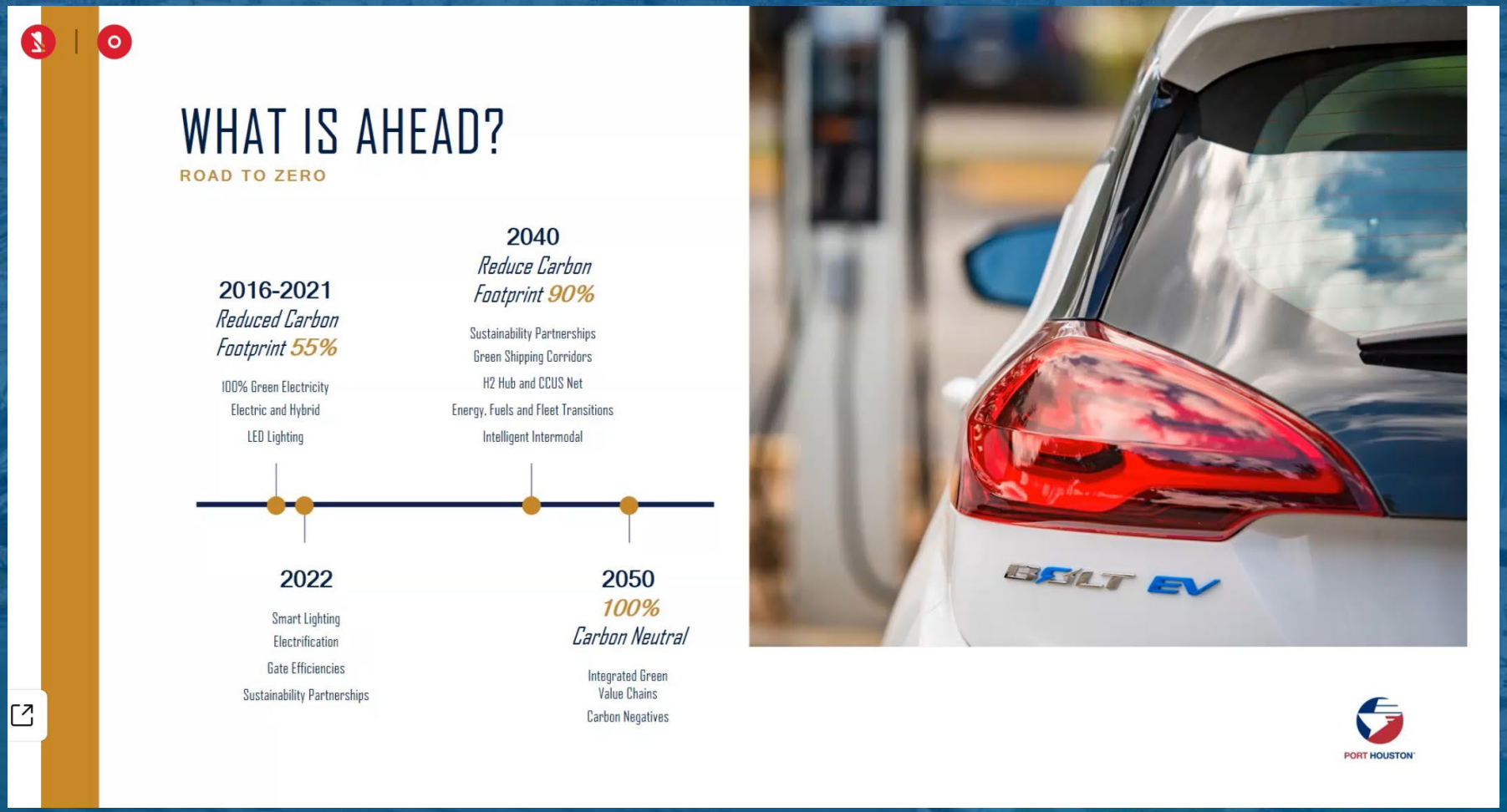
Climate Action – Texas Benchmarks

PORT OF HOUSTON

Carbon Neutral

THEIR GOAL IS TO BE 100% CARBON NEUTRAL BY 2050



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- **Environmental Department Work Plan Overview**

Environmental Department Workplan Overview

- Key Focus Areas & Initiatives
- Includes 102 Project Objectives
- 3 Types of Projects:
  1. Directly Impacts Precept Target
  2. Uphold Compliance Commitments
  3. Collection of Data for Future Decision Making
- Overall Department Costs
  - FTEs
  - Direct Project Costs
  - Grants

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2022 Work Plan Highlights

Key Focus Areas & Initiatives

Resilience & Sustainability

- ✓ PCCA Life Cycle Assessment Tool
- ✓ EMS Fence Line Expansion Feasibility Report
- ✓ Environmental Communications Tool Kit
- ✓ Green Marine Studies

ISO 14001 Certified Environmental Management

Environmental Permitting

- ✓ Comprehensive CCS Deployment Strategy
- ✓ Solar Installation at McCampbell
- ✓ Beneficial Use and Habitat Creation Plans

Leadership

Level 5 in most Green Marine Program Areas by 2023

Environmental Compliance

- ✓ Clean Fleet / Clean Equipment
- ✓ Storm water system improvements
- ✓ Air monitoring networks

Above & Beyond Compliance

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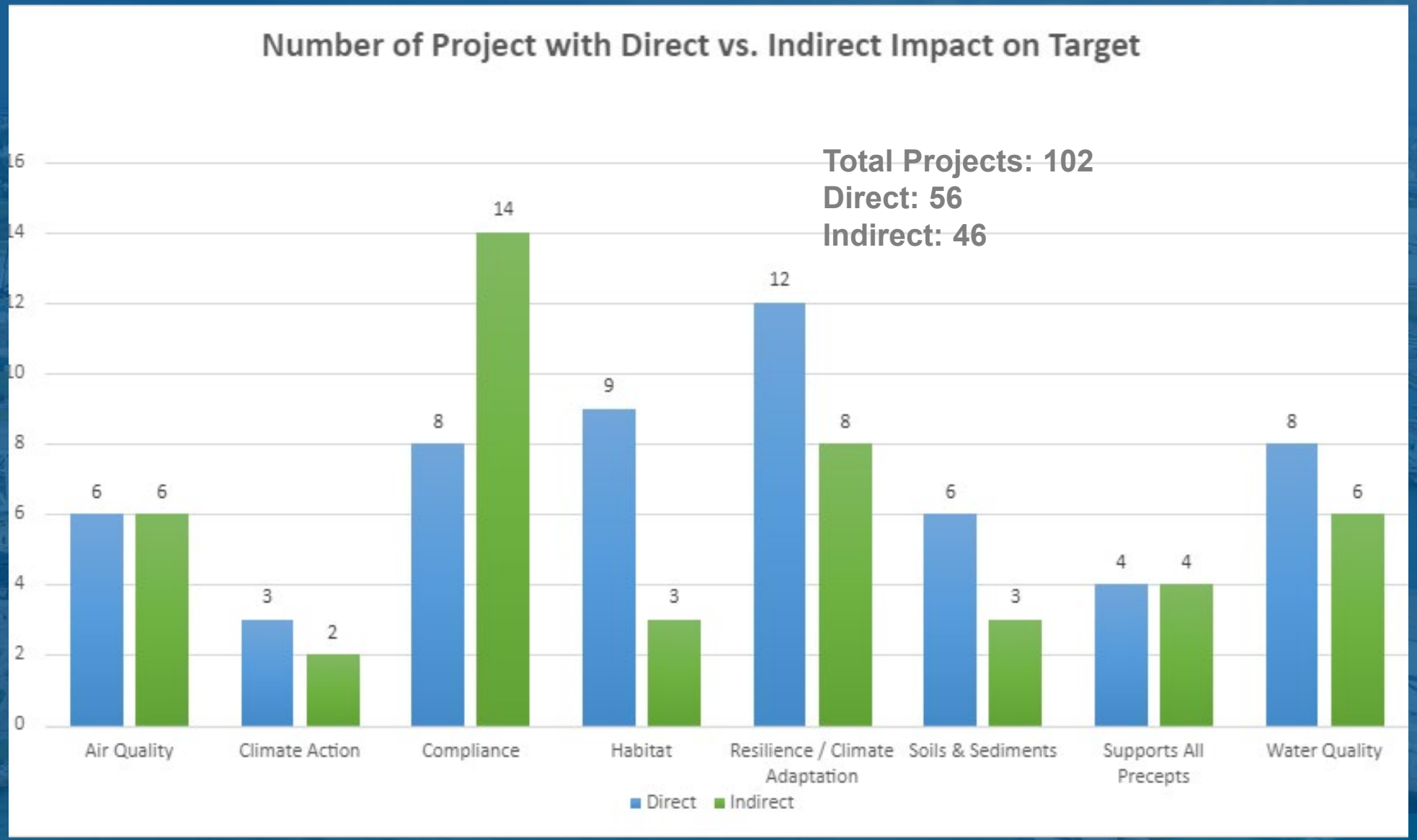
Number of Project with Direct vs. Indirect Impact on Target



Summary

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- Changes include:
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  2. Adding a sixth precept – Climate Action
  3. Defining measurable performance targets by precept
- All performance targets are:
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- Updated policy is an opportunity to enhance transparency around environmental performance

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Thank You

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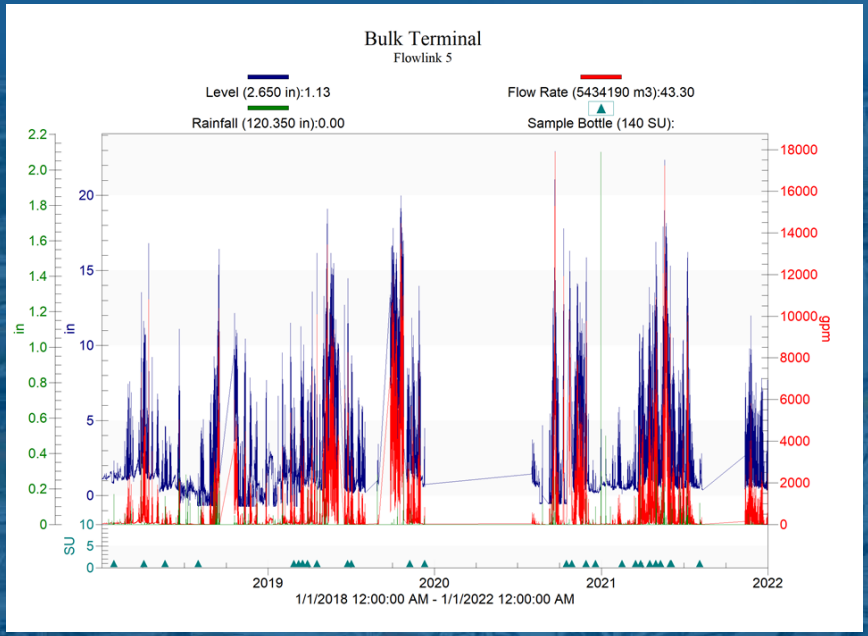
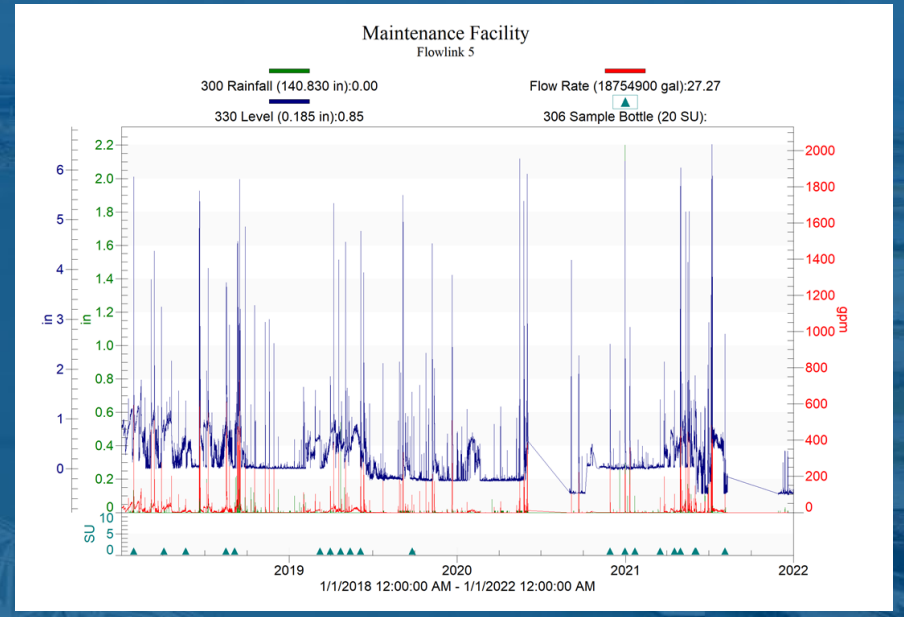
Water Quality – Data Trends

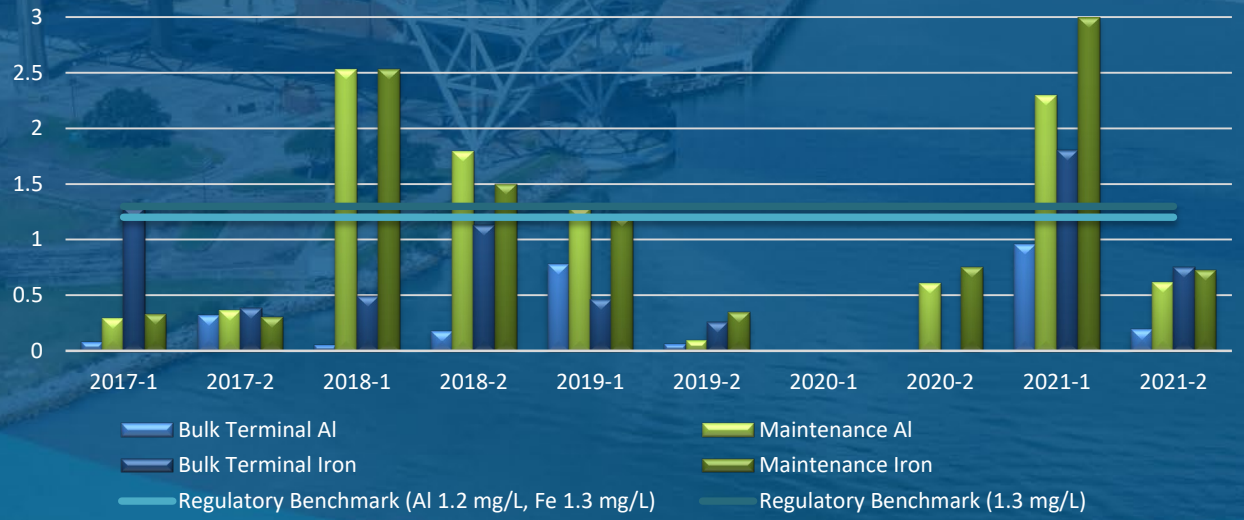


Year	Total Volume of soil removed	Total Cost
2019	1,312 CY	$211,839
2022	1,063 CY	$198,000
2021	1,225 CY	$65,441

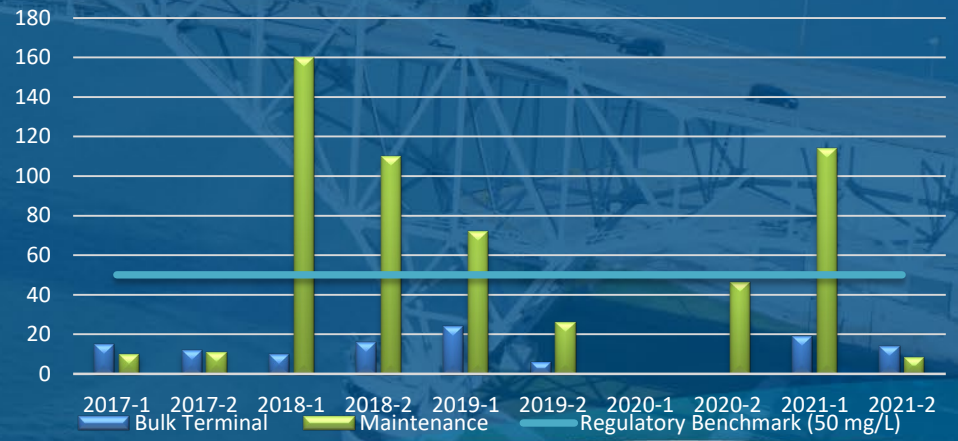
Rainfall Event (Inches)	Frequency	Cumulative %
0.25	304	57.58%
0.50	76	71.97%
0.75	42	79.92%
1.00	28	85.23%
1.25	17	88.45%
1.50	14	91.10%
1.75	10	92.99%
2.00	6	94.13%
>2.00	31	100.00%



Aluminum & Iron (mg/L)



Total Suspended Solids (mg/L)



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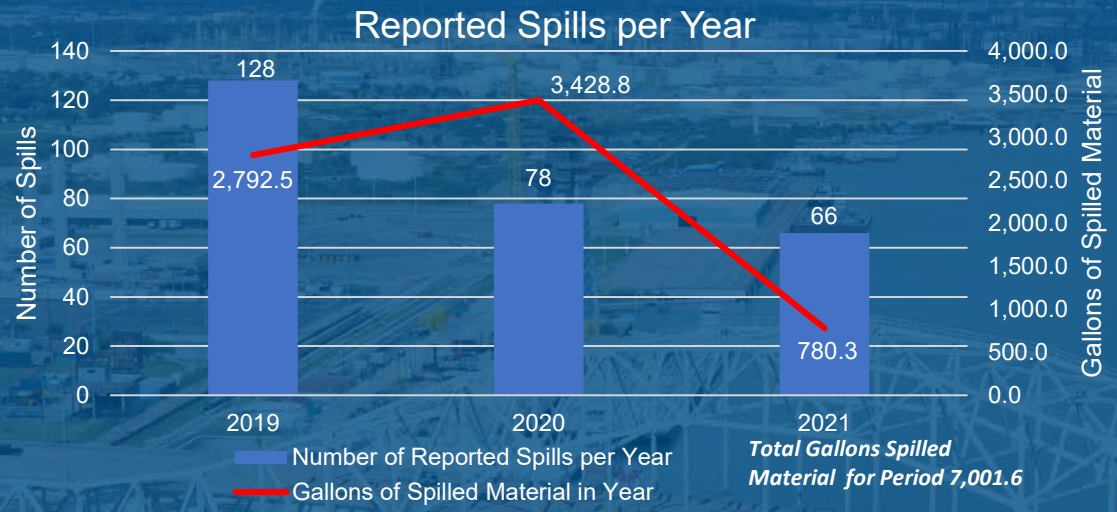
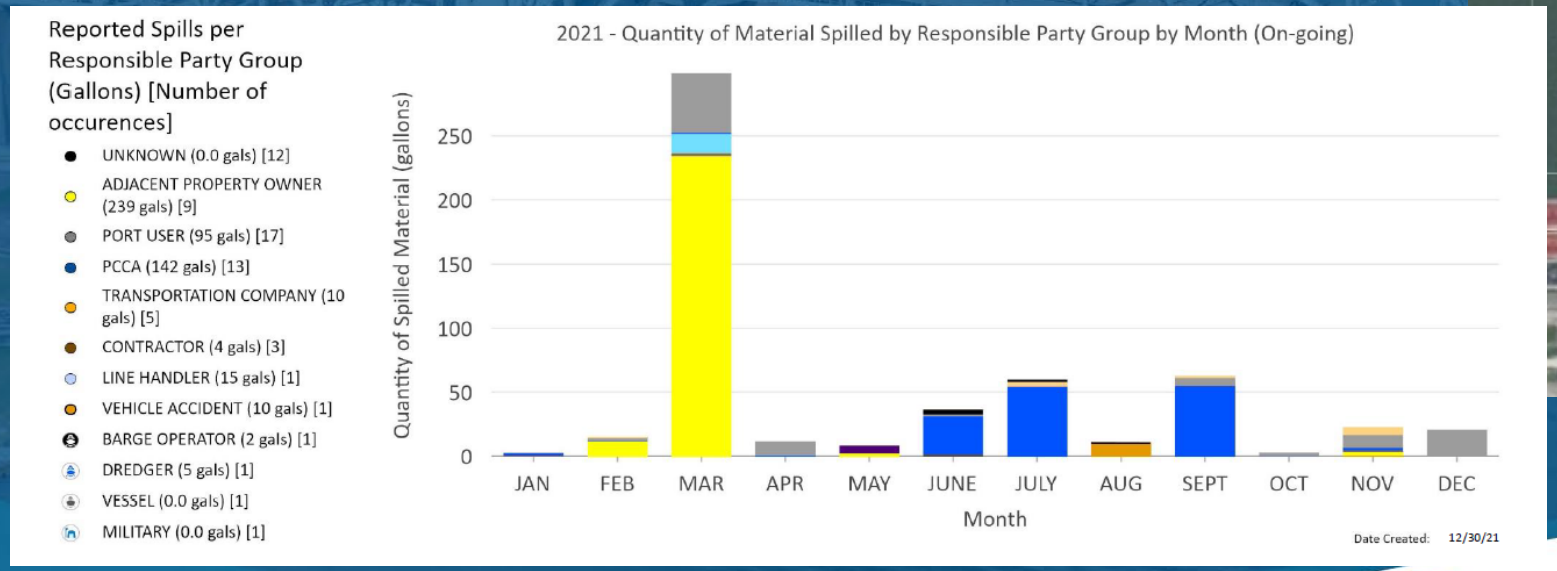
Soils & Sediments – Data Trends





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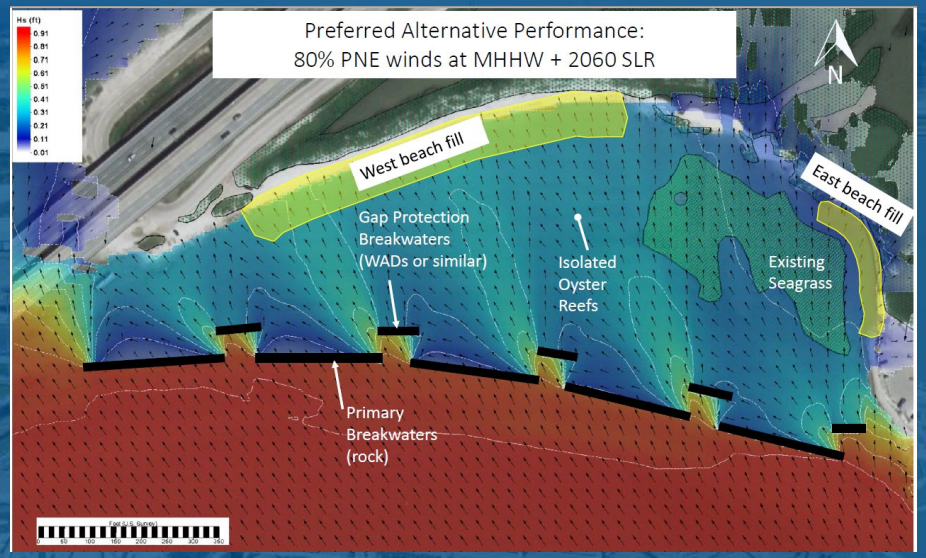
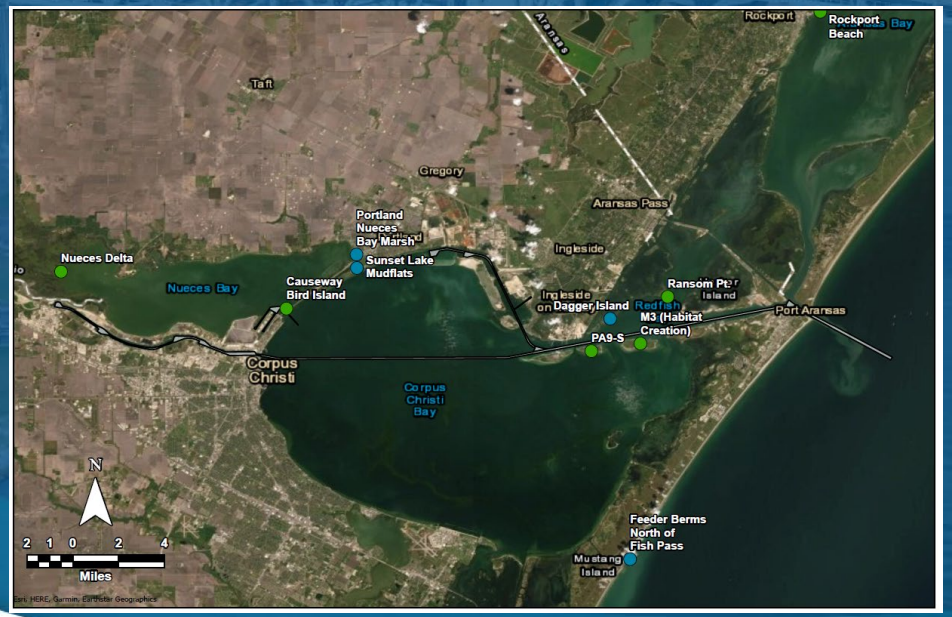
Habitat – Upcoming Projects & Beneficial Use Opportunities





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Resilience / Climate Adaptation – Data Trends

Green Marine Program Benchmarks

Precept	End of Year Level Achieved			
	2020	2021	2022	2023
Aquatic Invasive Species	1	1	1	1
GHG and Air Pollutants	4	5	5	5
Spill Prevention and Stormwater Management	4	5	5	5
Dry Bulk Handling and Storage	4	5	5	5
Community Impacts	2	2	4	5
Environmental Leadership	4	4	5	5
Waste Management	3	3	4	5
Underwater Noise	1	2	3	5
Community Relations	NA	1	3	5
Aquatic Ecosystems	NA	NA	NA	2

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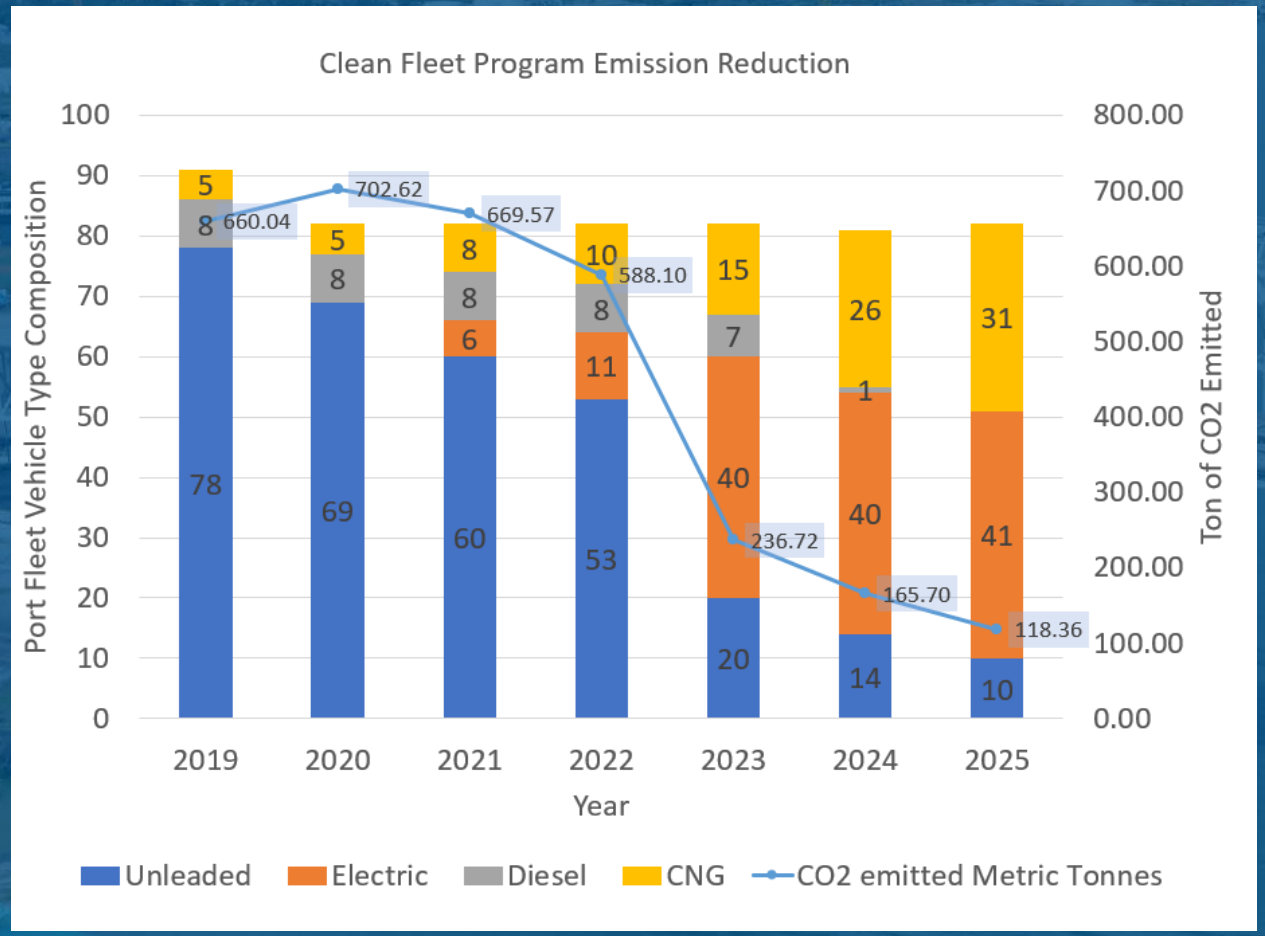
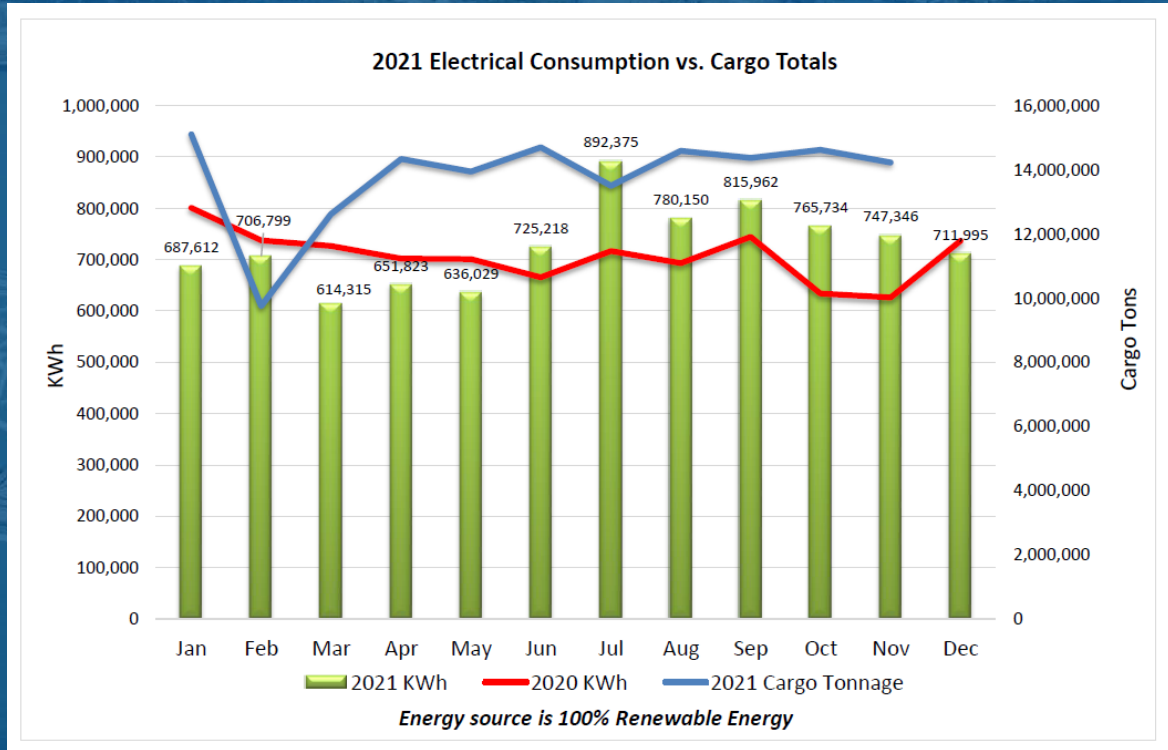
Climate Action Data Trends





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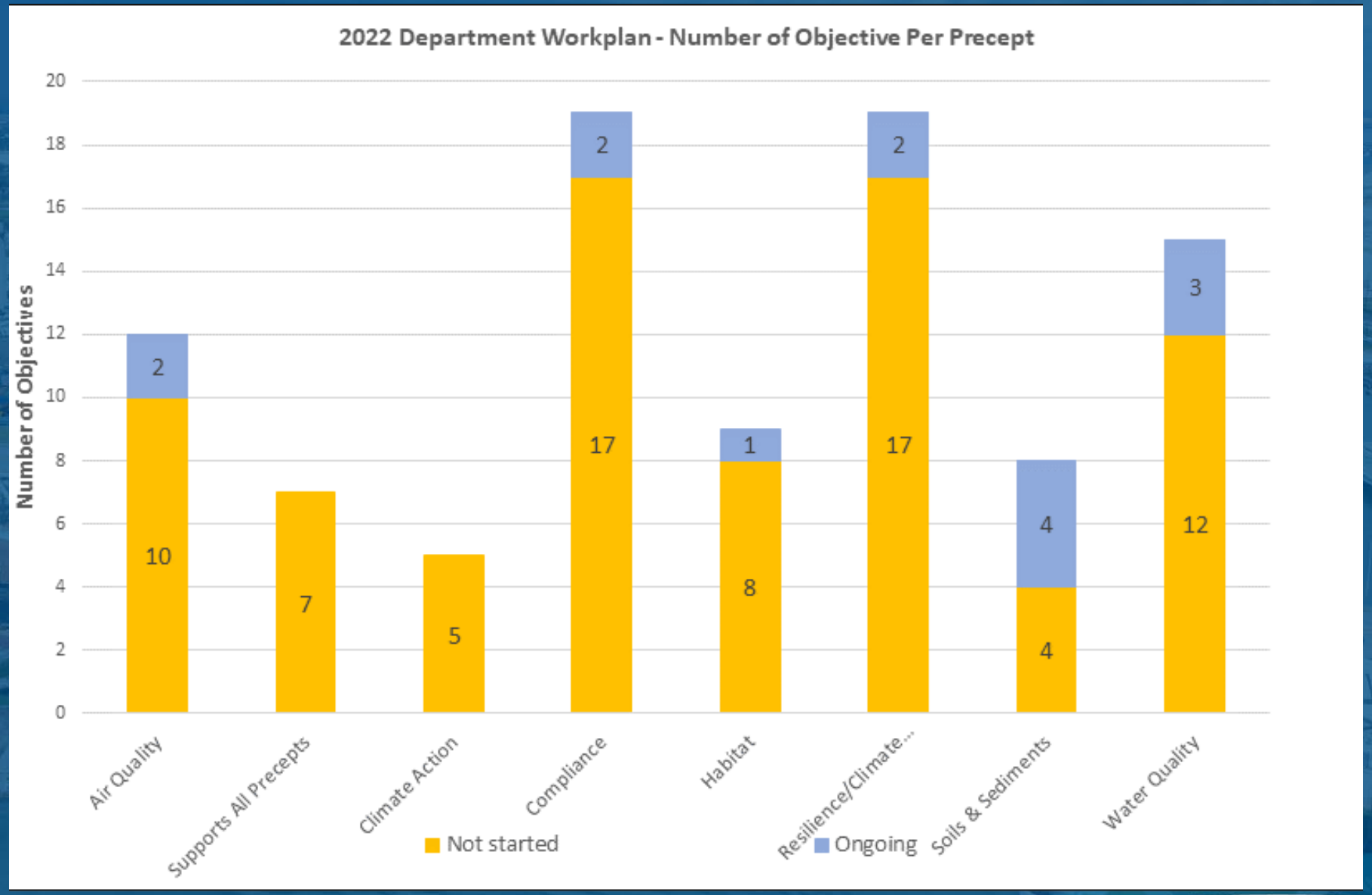
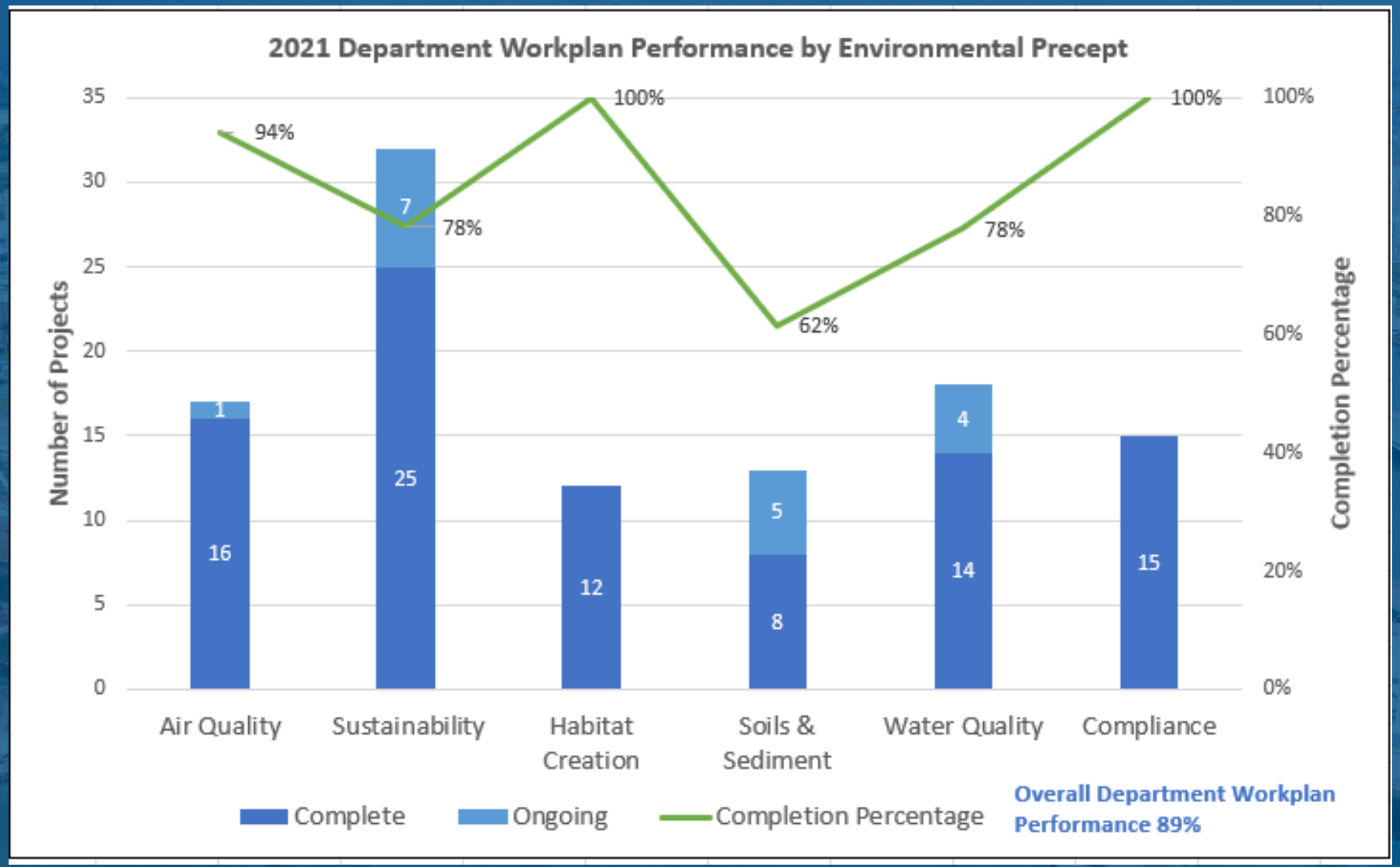
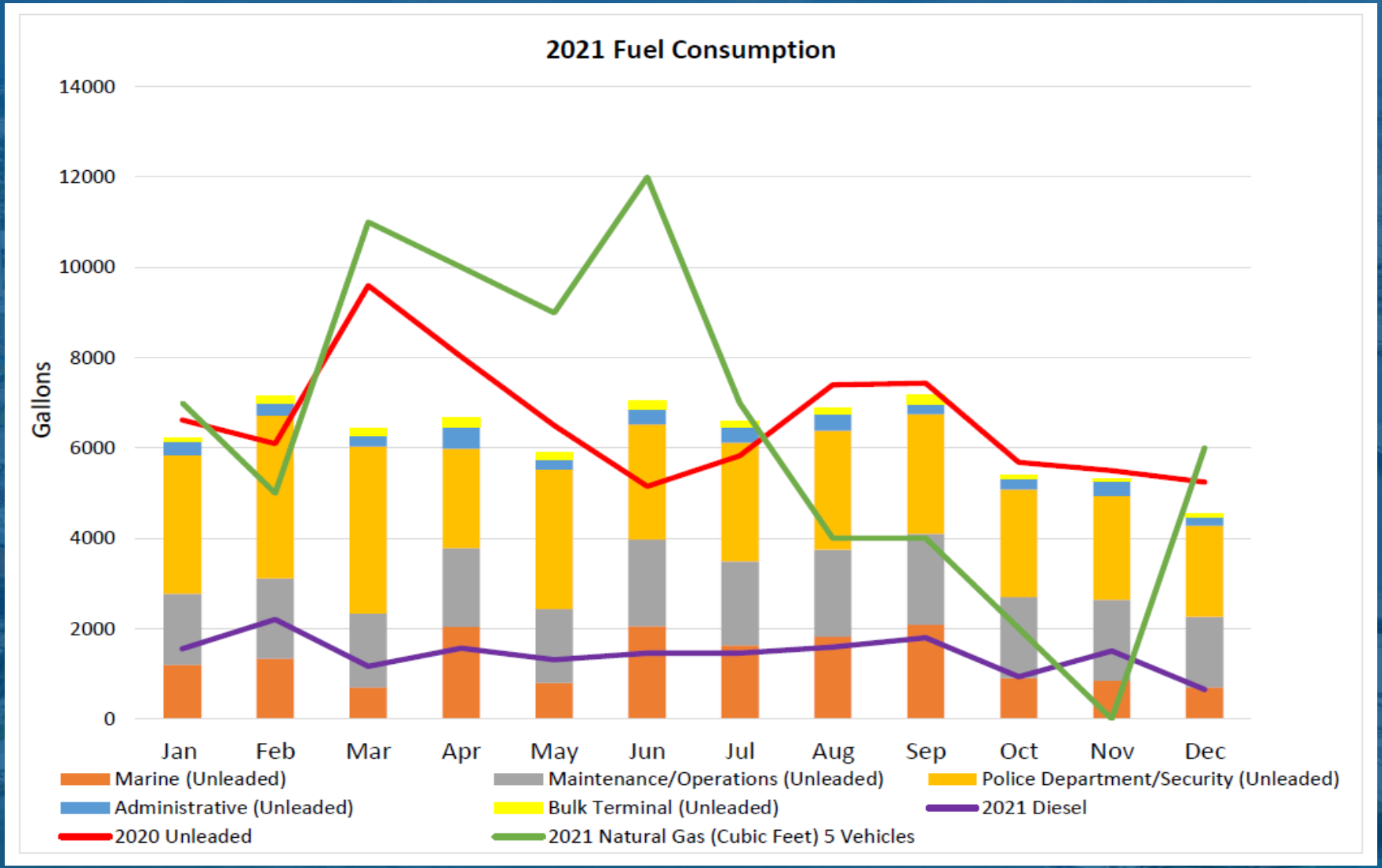

2022 Department Workplan - Number of Objective Per Precept
Number of Objectives
20
18
16
14
12
10
8
6
4
2
0
2
10
7
5
2
17
1
8
2
17
4
4
3
12
Air Quality
Supports All Precepts
Climate Action
Compliance
Habitat
Resilience/Climate...
Soils & Sediments
Water Quality
Not started
Ongoing


2021 Department Workplan Performance by Environmental Precept
Number of Projects
Completion Percentage
35
30
25
20
15
10
5
0
100%
80%
60%
40%
20%
0%
94%
78%
100%
62%
78%
100%
1
16
7
25
12
5
8
4
14
15
Air Quality
Sustainability
Habitat Creation
Soils & Sediment
Water Quality
Compliance
Complete
Ongoing
Completion Percentage
Overall Department Workplan Performance 89%



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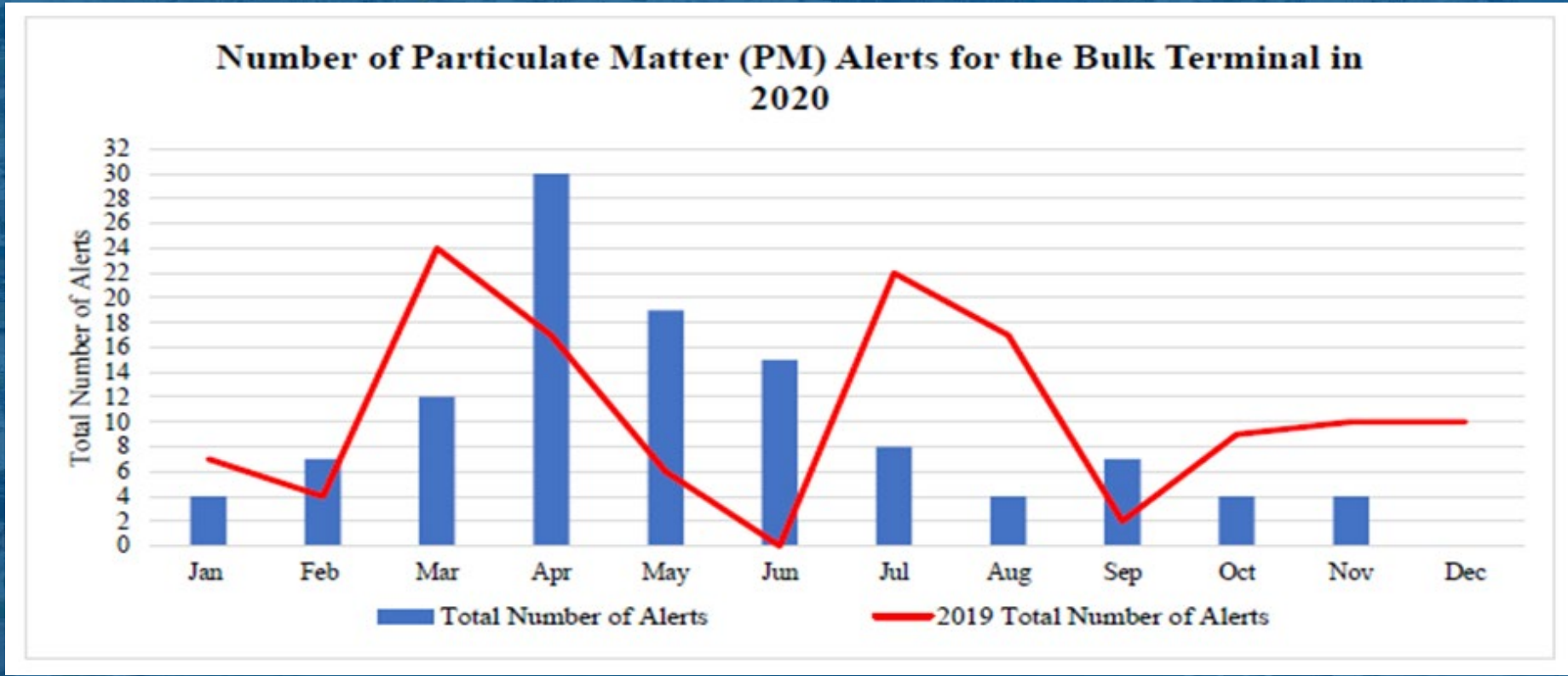
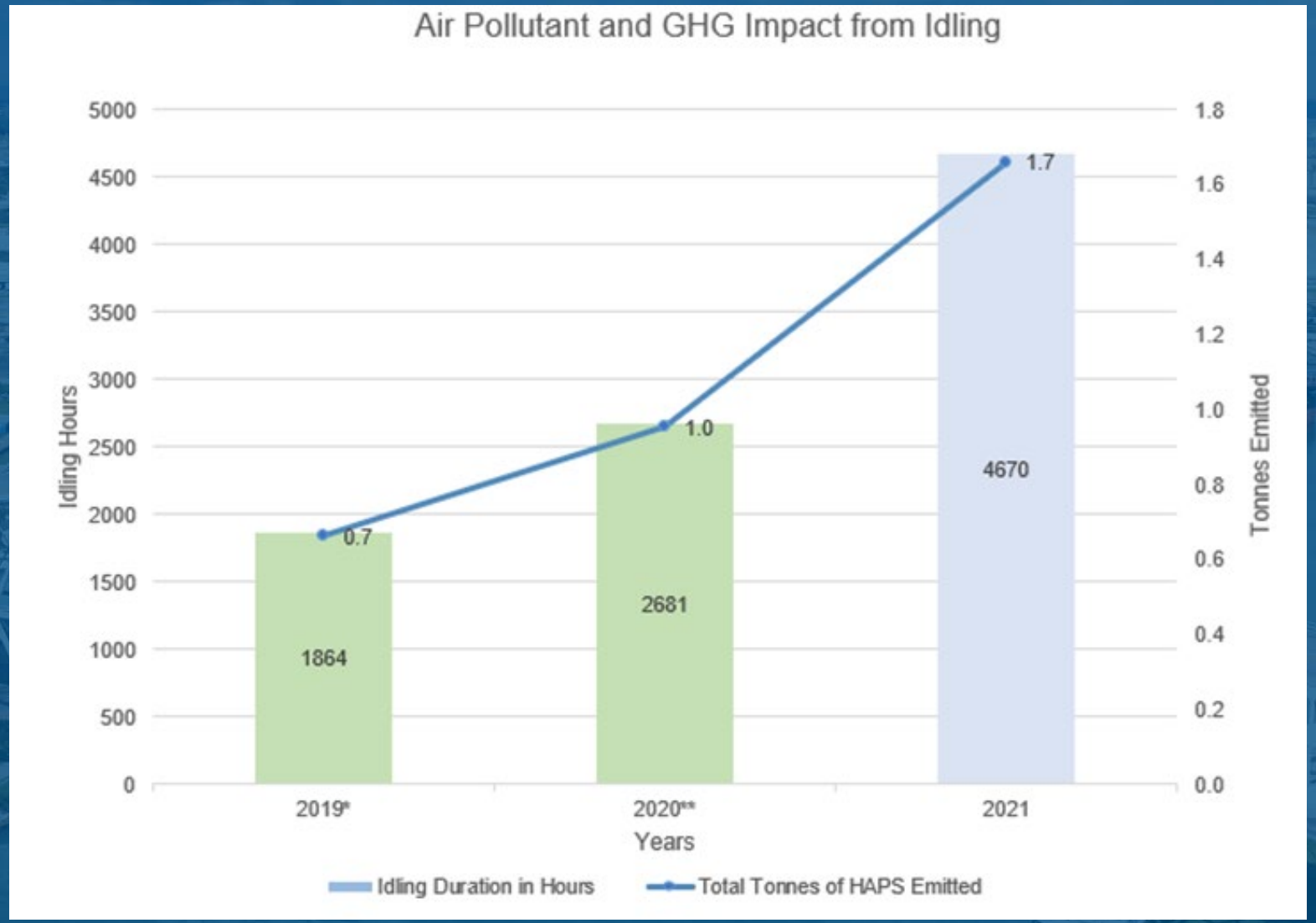
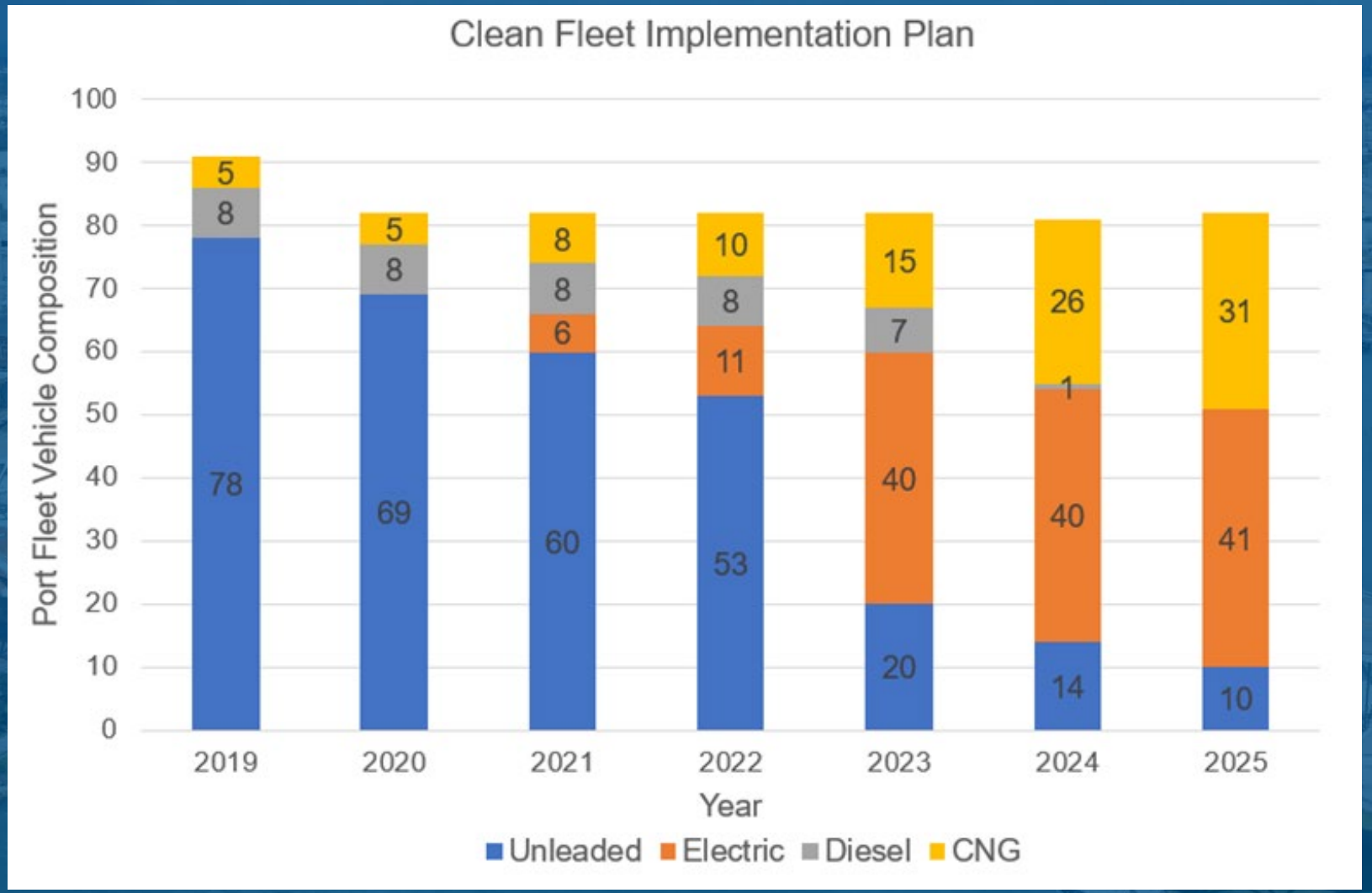
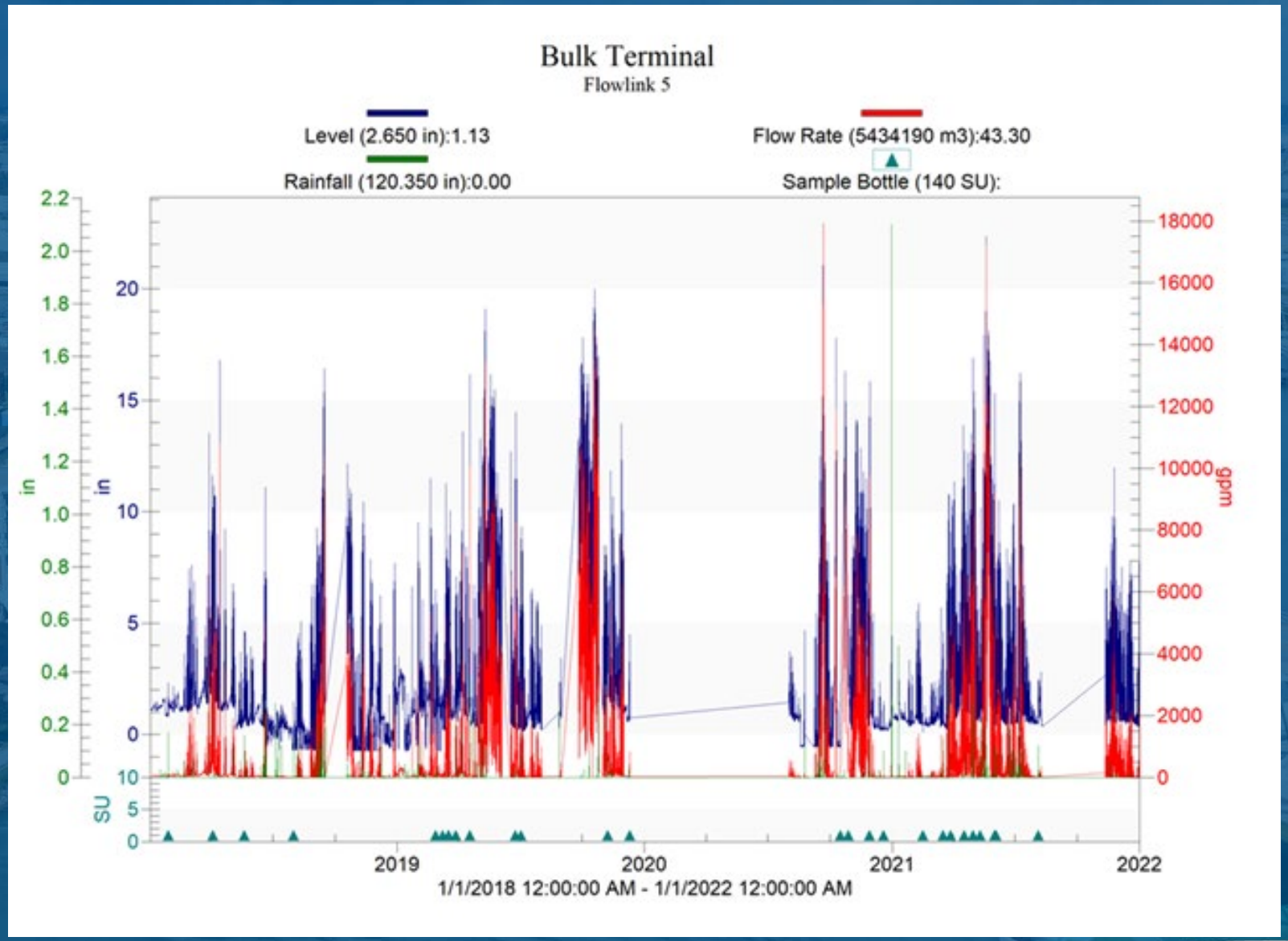
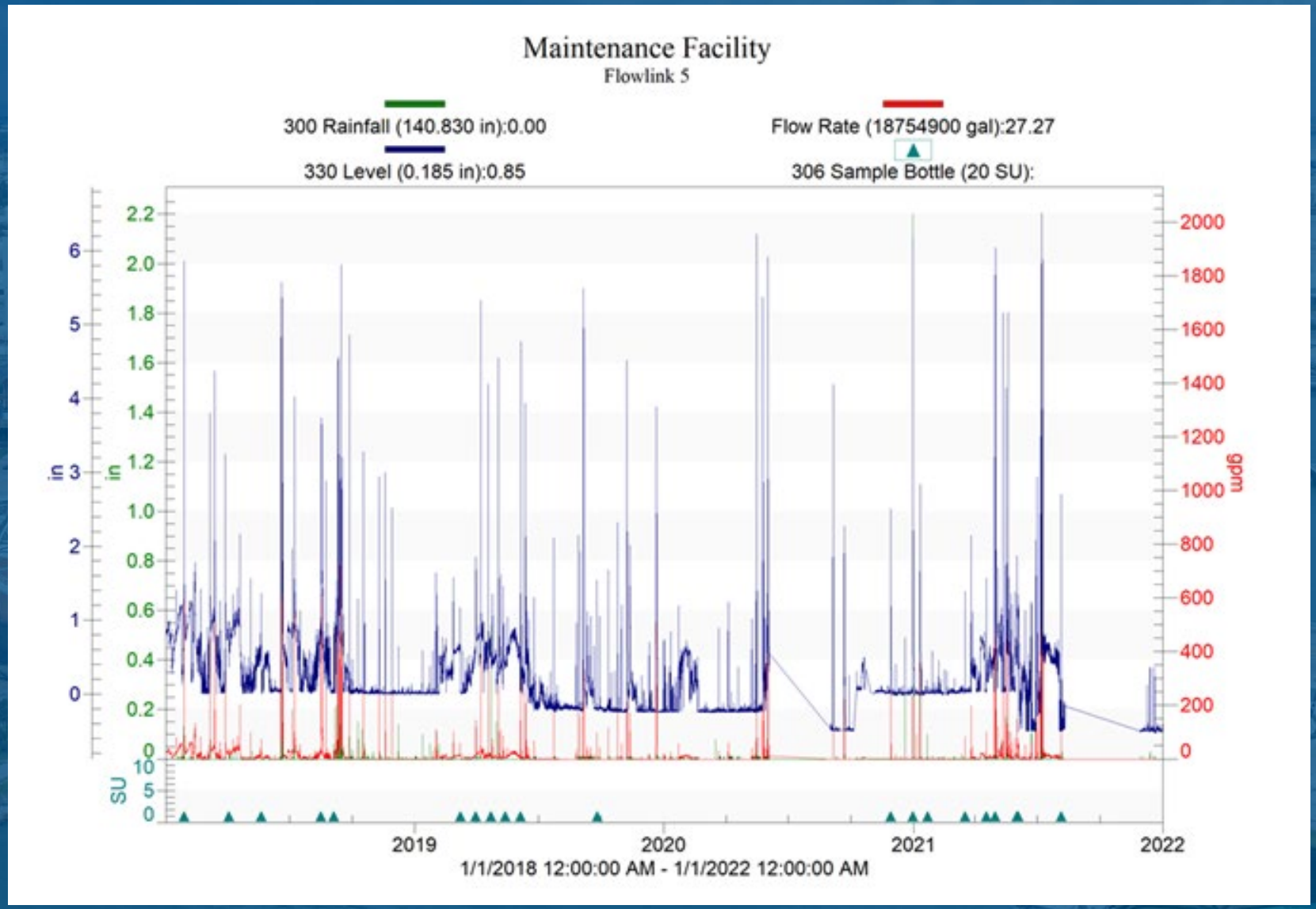

Number of Particulate Matter (PM) Alerts for the Bulk Terminal in 2020
Total Number of Alerts
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Total Number of Alerts
2019 Total Number of Alerts


Air Pollutant and GHG Impact from Idling
Idling Hours
Tonnes Emitted
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0.7
1.0
1.7
1864
2681
4670
2019*
2020**
2021
Years
Idling Duration in Hours
Total Tonnes of HAPS Emitted

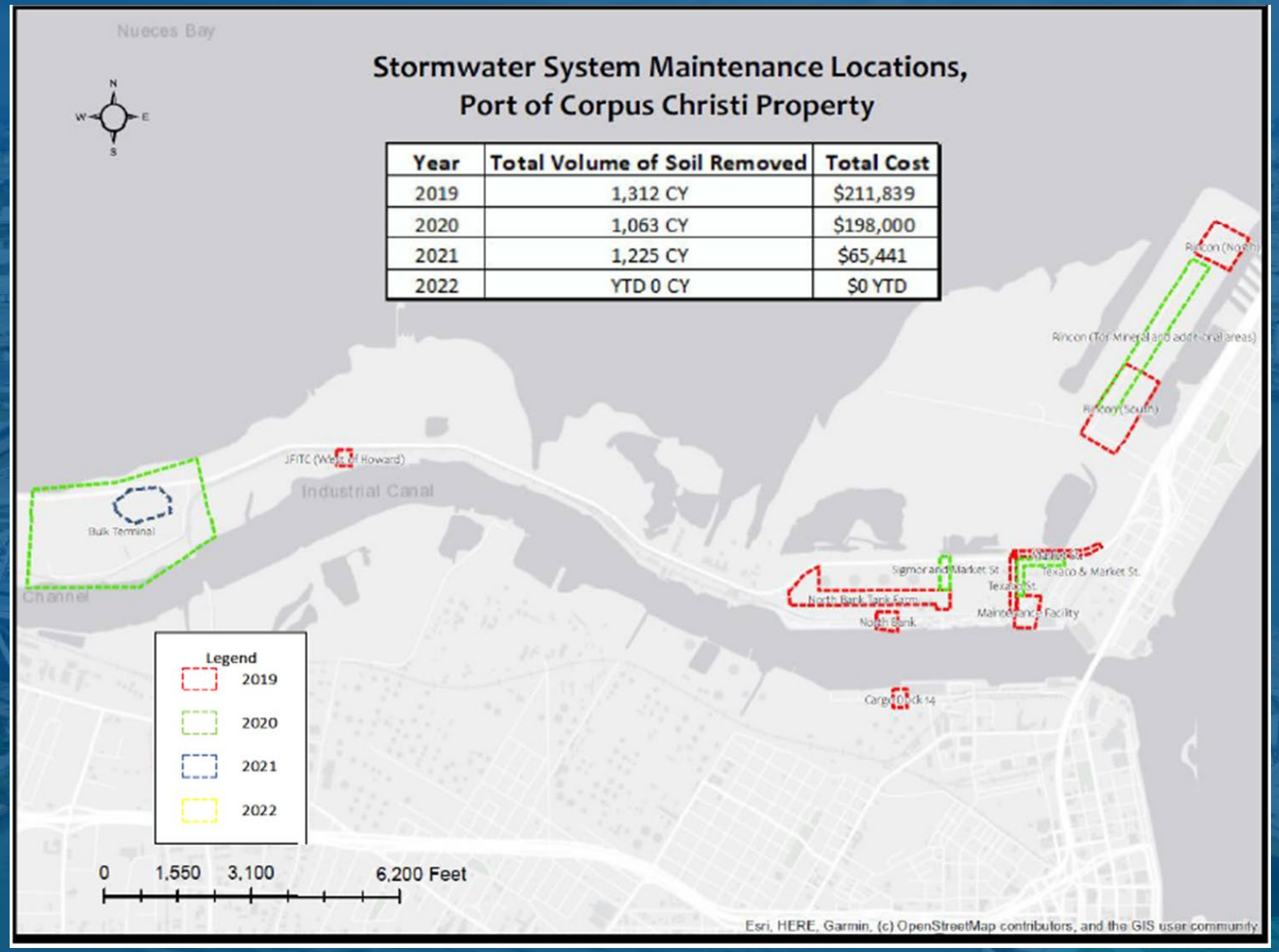

Clean Fleet Implementation Plan
Port Fleet Vehicle Composition
100
90
80
70
60
50
40
30
20
10
0
2019
2020
2021
2022
2023
2024
2025
Year
78
8
5
69
8
5
60
6
8
8
53
11
8
10
20
40
7
15
14
40
1
26
10
41
31
Unleaded
Electric
Diesel
CNG


Bulk Terminal
Flowlink 5
Level (2.650 in):1.13
Flow Rate (5434190 m3):43.30
Rainfall (120.350 in):0.00
Sample Bottle (140 SU):
in
in
gpm
SU
2019
2020
2021
2022
1/1/2018 12:00:00 AM - 1/1/2022 12:00:00 AM

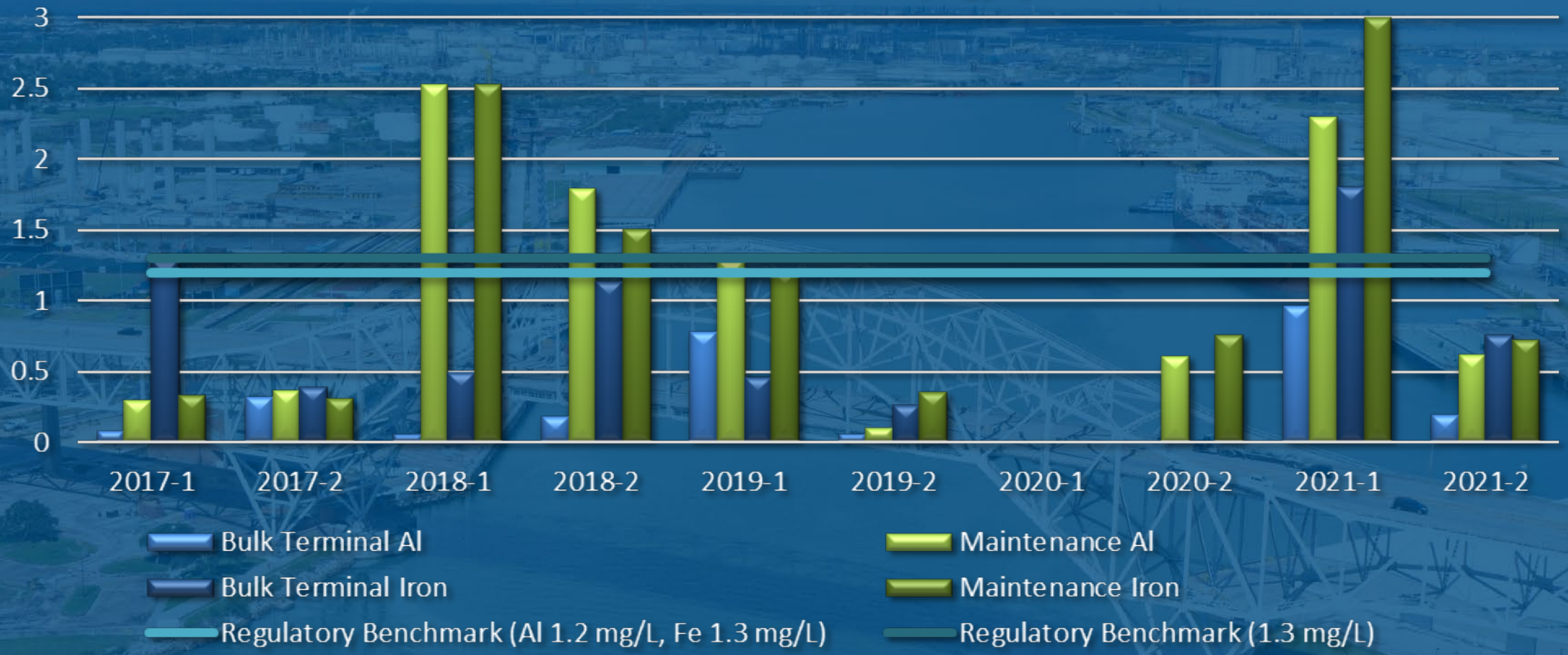

Maintenance Facility
Flowlink 5
300 Rainfall (140.830 in):0.00
330 Level (0.185 in):0.85
Flow Rate (18754900 gal):27.27
306 Sample Bottle (20 SU):
in
in
SU
gpm
2019
2020
2021
2022
1/1/2018 12:00:00 AM - 1/1/2022 12:00:00 AM

Stormwater System Maintenance Locations, Port of Corpus Christi Property

Year	Total Volume of Soil Removed	Total Cost
2019	1,312 CY	$211,839
2020	1,063 CY	$198,000
2021	1,225 CY	$65,441
2022	YTD 0 CY	$0 YTD



Aluminum & Iron (mg/L)



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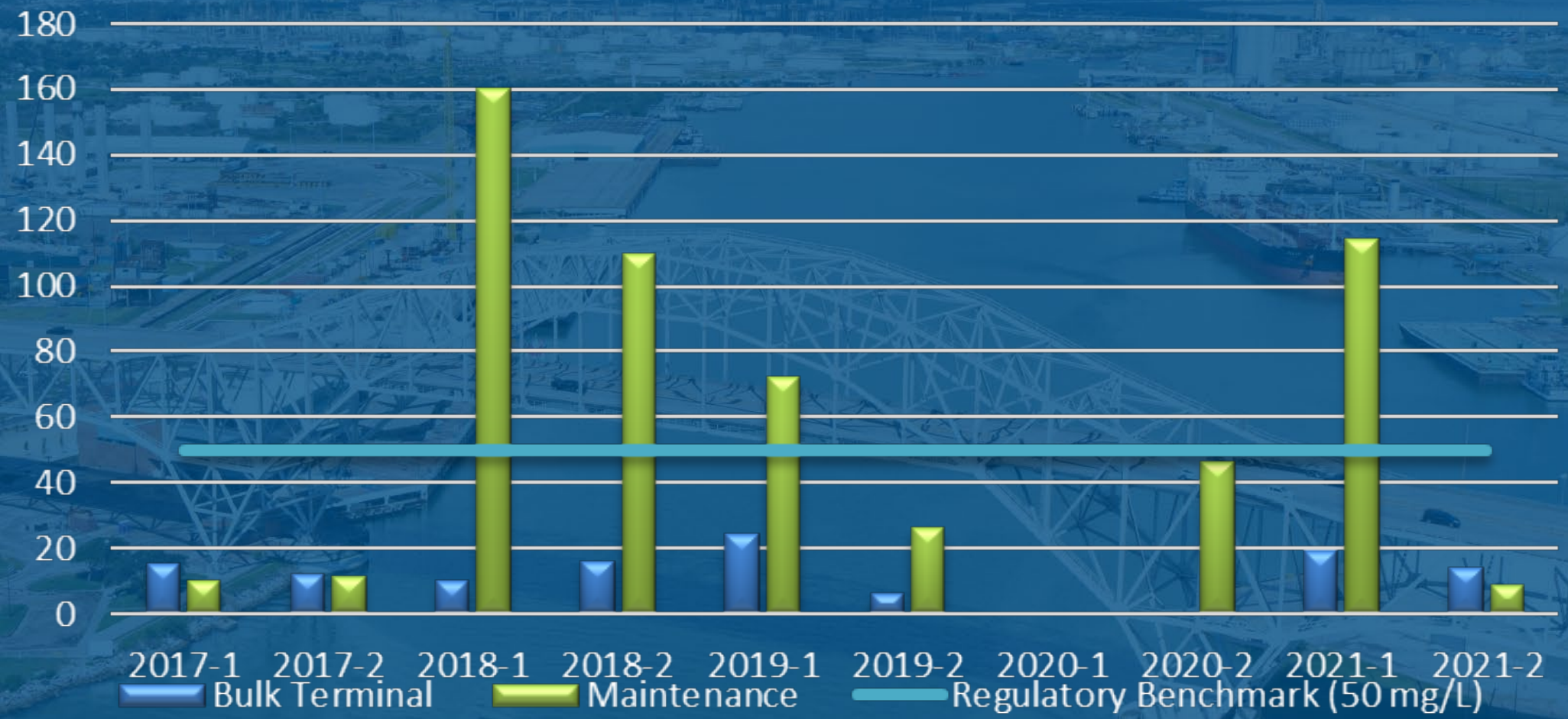
Total Suspended Solids (mg/L)



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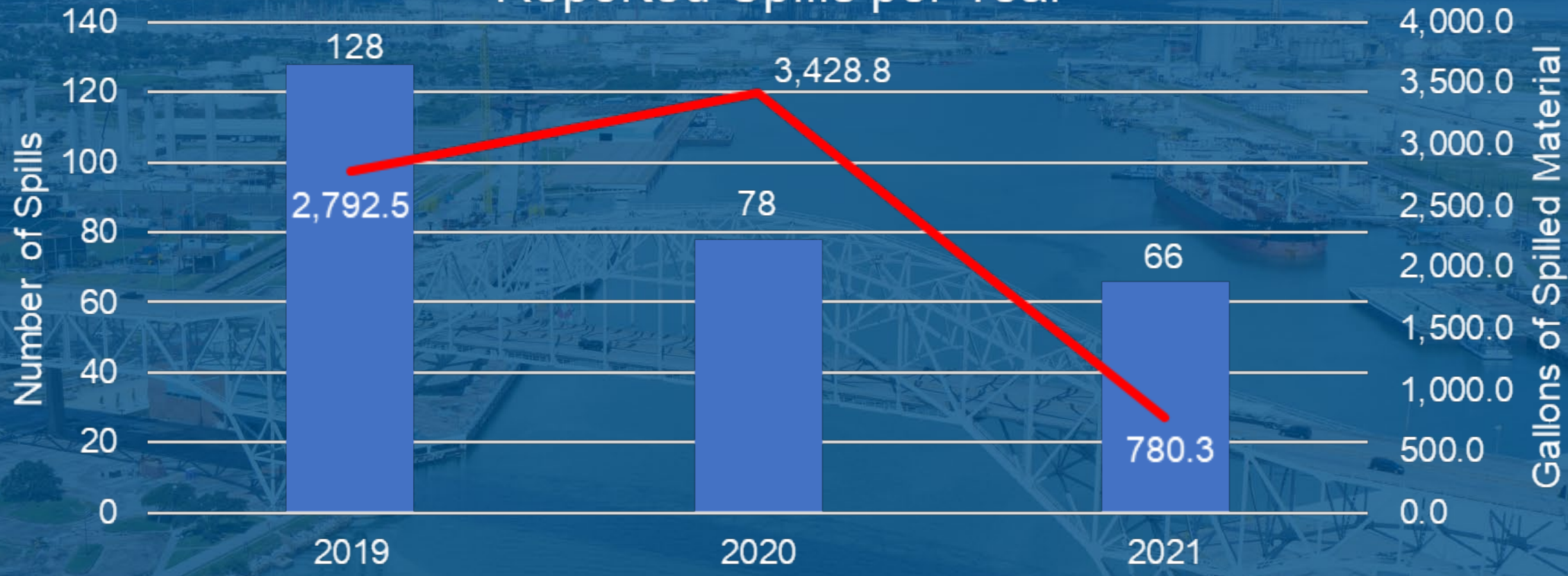
Reported Spills per Year



Total Gallons Spilled Material for Period 7,001.6

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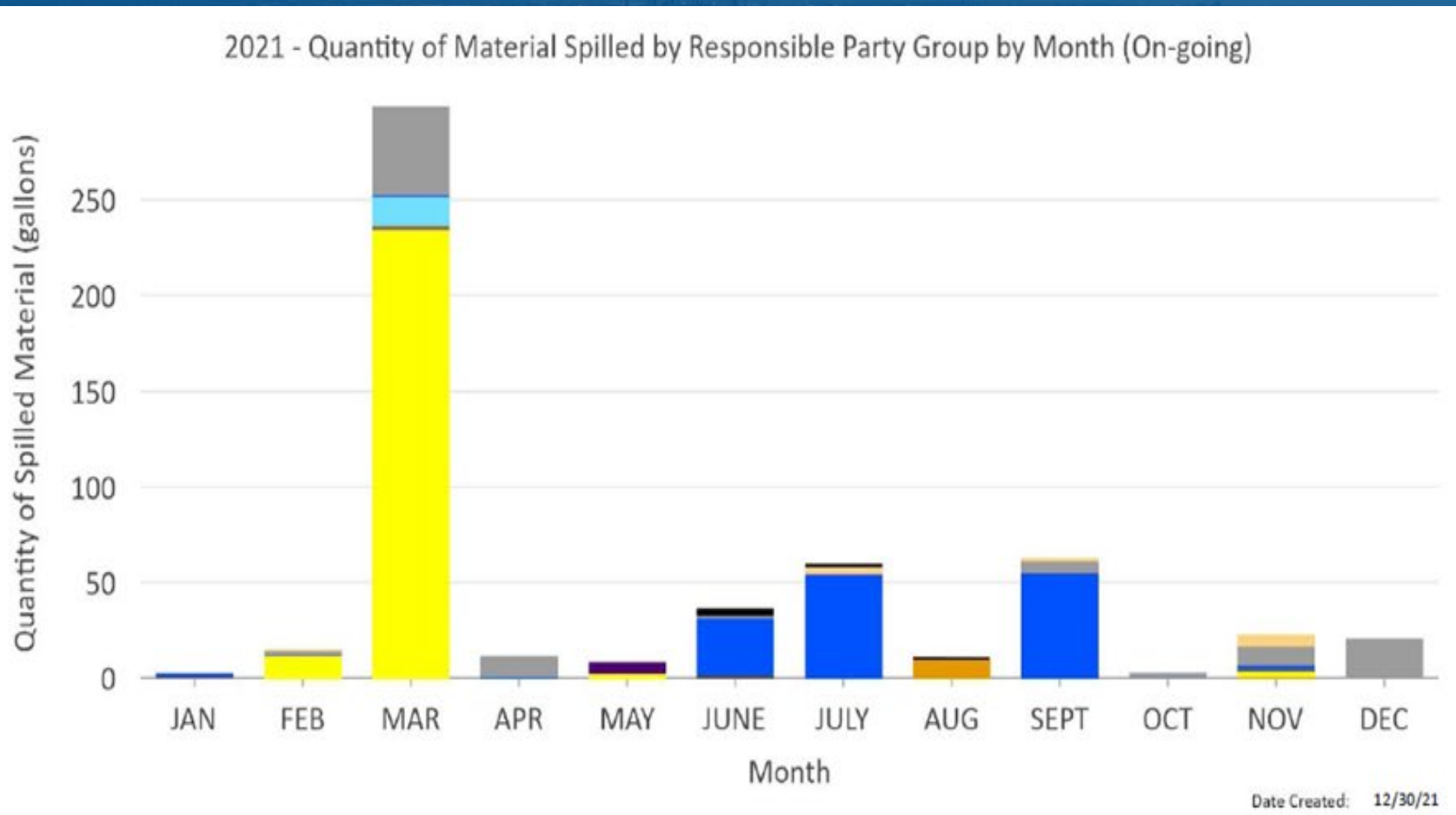
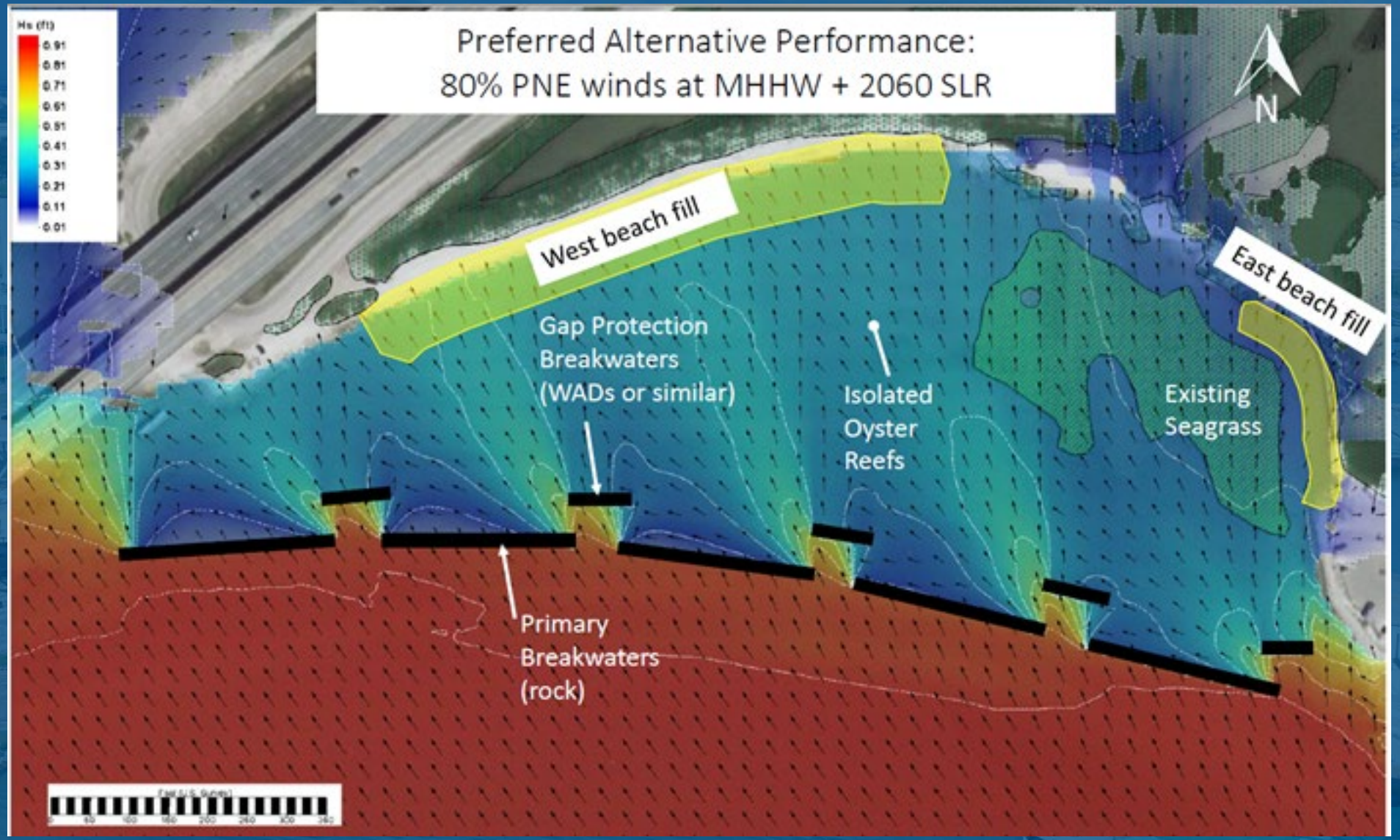
Reported Spills per Responsible Party Group (Gallons) [Number of occurences]

- UNKNOWN (0.0 gals) [12]
- ADJACENT PROPERTY OWNER (239 gals) [9]
- PORT USER (95 gals) [17]
- PCCA (142 gals) [13]
- TRANSPORTATION COMPANY (10 gals) [5]
- CONTRACTOR (4 gals) [3]
- LINE HANDLER (15 gals) [1]
- VEHICLE ACCIDENT (10 gals) [1]
- BARGE OPERATOR (2 gals) [1]
- DREDGER (5 gals) [1]
- VESSEL (0.0 gals) [1]
- MILITARY (0.0 gals) [1]

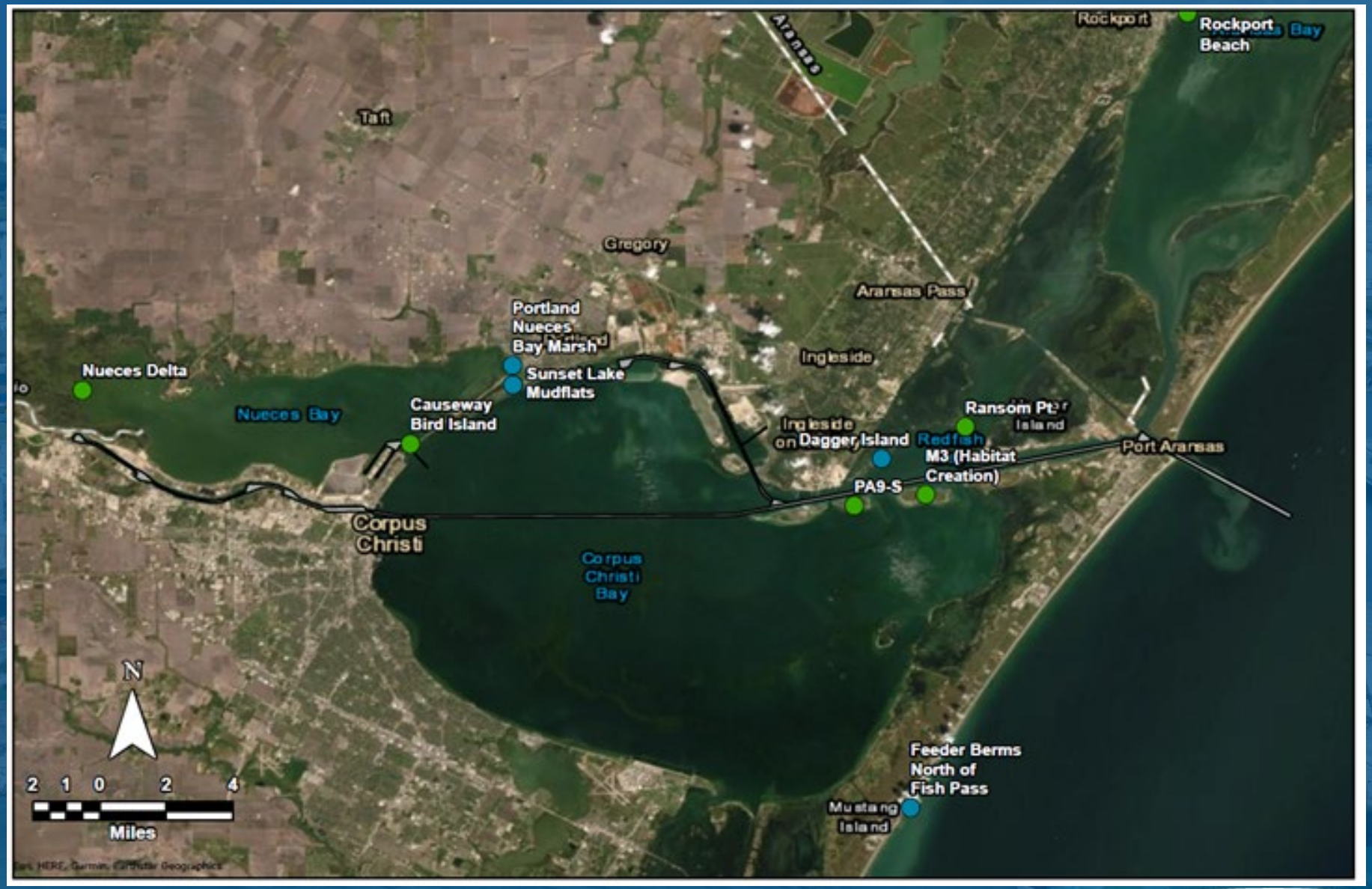


PORT CORPUS CHRISTI®

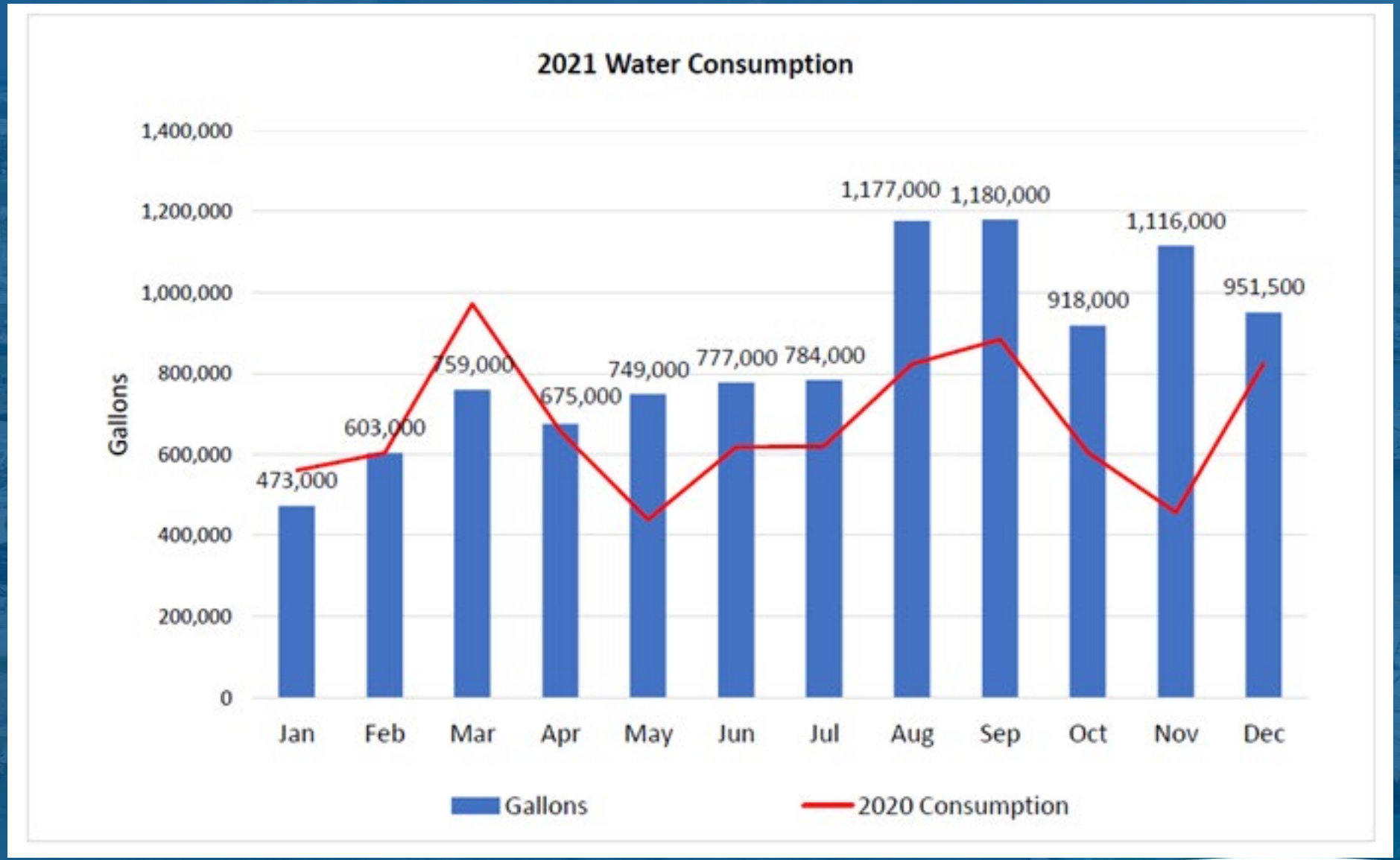
PORT CORPUS CHRISTI®

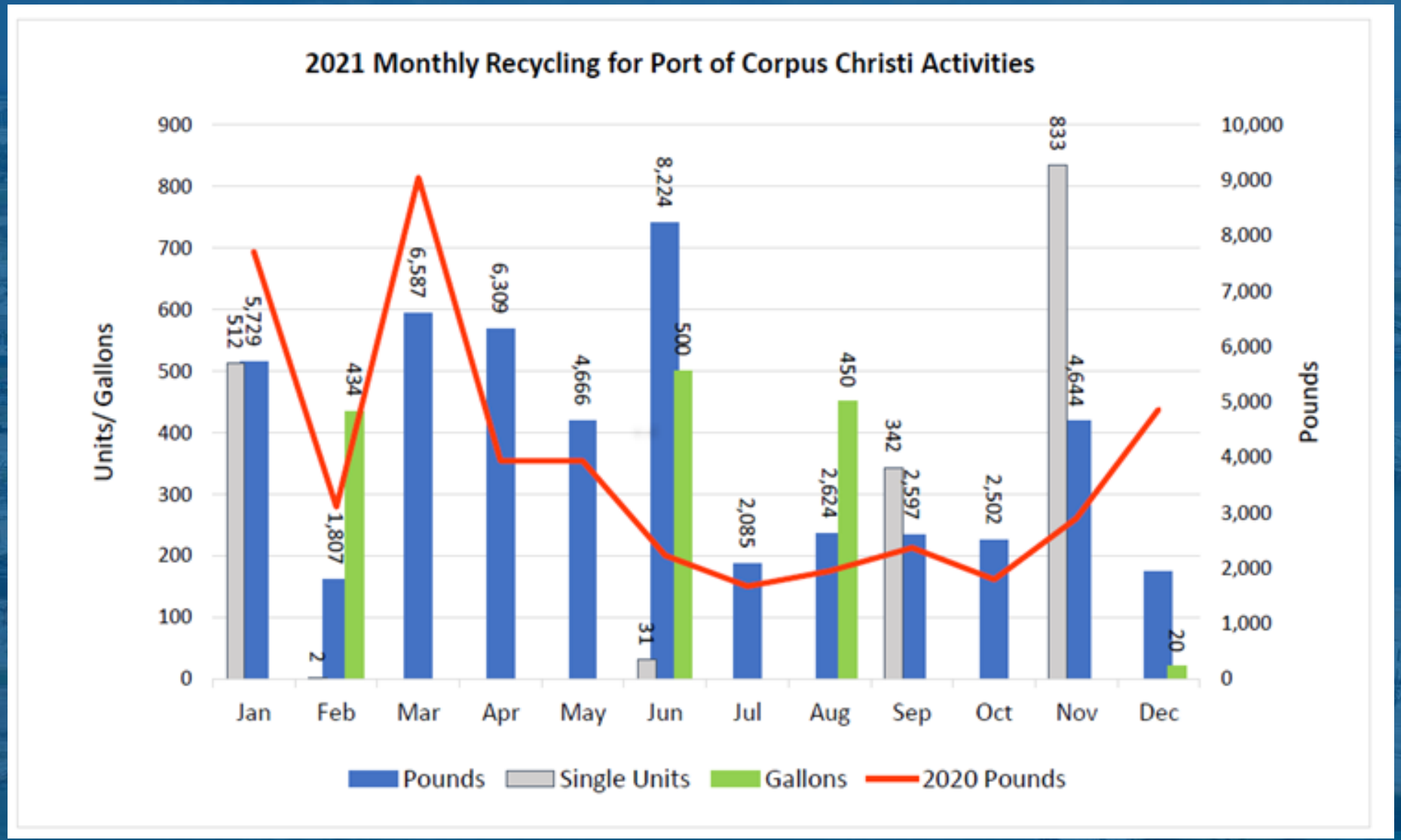


PORT CORPUS CHRISTI®


Rockport
Rockport Beach
Aransas
Taft
Gregory
Aransas Pass
Portland
Nueces
Bay Marsh
Sunset Lake
Mudflats
Nueces Delta
Causeway
Bird Island
Nueces Bay
Ingleside
Ransom Pt
Island
Ingleside on Dagger Island
Redfish
M3 (Habitat
Creation)
Port Aransas
PA9-S
Corpus
Christi
Corpus
Christi
Bay
N
2 1 0 2 4
Miles
Feeder Berms
North of
Fish Pass
Mustang
Island

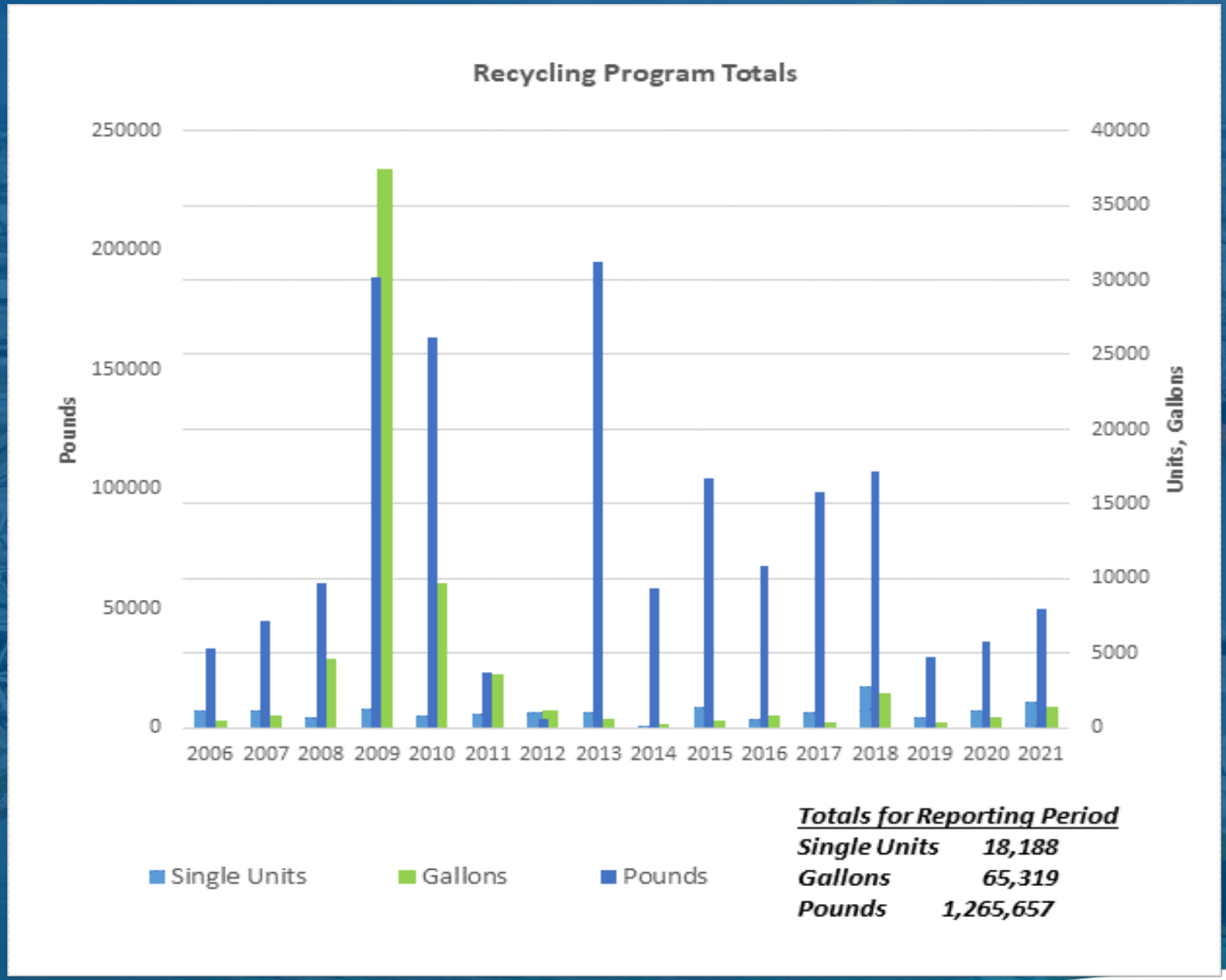

Remove debris
Construct kayak launch
Construct GEOPave public parking
Restore wetland habitat/stabilize degraded shoreline
Lydia Anna Channel
HWY 361
Harbor Island
N
Legend
Habitat Restoration Project
Phase 1 - Invasive Species Removal (22.93ac)
Phase 1 - Public Access Improvement (0.45ac)
Phase 1 - Habitat Creation/Stablization (4.31ac)
Port Aransas Ferry Landing
Corpus Christi Ship Channel

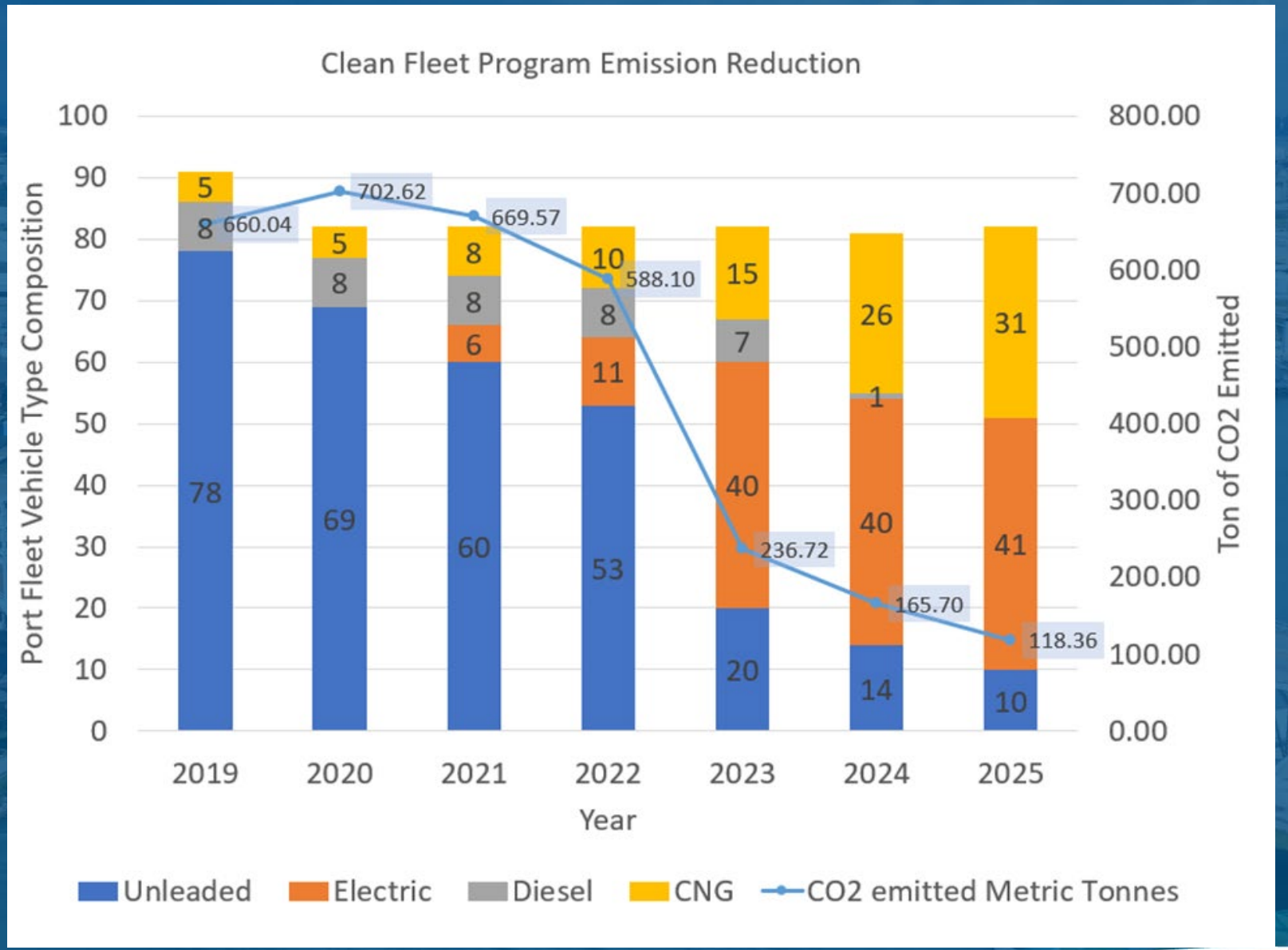

2021 Water Consumption
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
Gallons
473,000
603,000
759,000
675,000
749,000
777,000
784,000
1,177,000
1,180,000
1,116,000
918,000
951,500
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Gallons
2020 Consumption

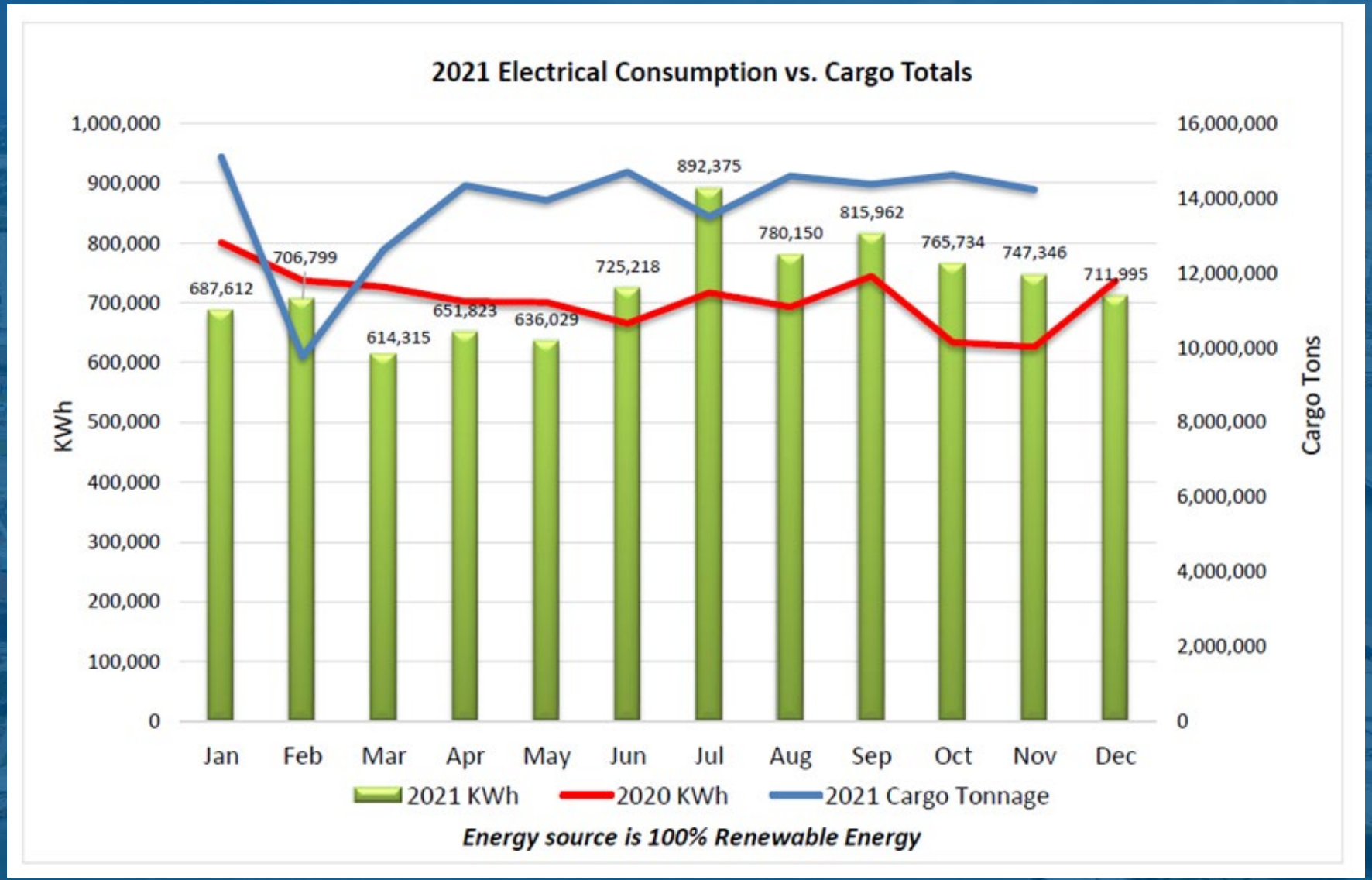

2021 Monthly Recycling for Port of Corpus Christi Activities
Units/ Gallons
Pounds
900
800
700
600
500
400
300
200
100
0
10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
5,729
512
1,807
2
434
6,587
6,309
4,666
8,224
31
500
2,085
2,624
450
342
2,597
2,502
833
4,644
20
Pounds
Single Units
Gallons
2020 Pounds

Green Marine Program Benchmarks

Precept	End of Year Level Achieved			
	2020	2021	2022	2023
Aquatic Invasive Species	1	1	1	1
GHG and Air Pollutants	4	5	5	5
Spill Prevention and Stormwater Management	4	5	5	5
Dry Bulk Handling and Storage	4	5	5	5
Community Impacts	2	2	4	5
Environmental Leadership	4	4	5	5
Waste Management	3	3	4	5
Underwater Noise	1	2	3	5
Community Relations	NA	1	3	5
Aquatic Ecosystems	NA	NA	NA	2


Recycling Program Totals
250000
200000
150000
100000
50000
0
Pounds
40000
35000
30000
25000
20000
15000
10000
5000
0
Units, Gallons
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021
Single Units
Gallons
Pounds
Totals for Reporting Period
Single Units 18,188
Gallons 65,319
Pounds 1,265,657


Clean Fleet Program Emission Reduction
Port Fleet Vehicle Type Composition
Ton of CO2 Emitted
Year
2019
2020
2021
2022
2023
2024
2025
78
8
5
660.04
69
8
5
702.62
60
6
8
8
669.57
53
11
8
10
588.10
20
40
7
15
236.72
14
40
1
26
165.70
10
41
31
118.36
Unleaded
Electric
Diesel
CNG
CO2 emitted Metric Tonnes


2021 Electrical Consumption vs. Cargo Totals
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
KWh
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
Cargo Tons
687,612
706,799
614,315
651,823
636,029
725,218
892,375
780,150
815,962
765,734
747,346
711,995
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2021 KWh
2020 KWh
2021 Cargo Tonnage
Energy source is 100% Renewable Energy