Topic: Sustainability goals, measurements and potential actions for consideration for NOAA OCS, NGS and CO-OPS

We are seeing multiple Government Agencies and corporations in the USA, as well as globally, rapidly transitioning to aggressively measure their current status of sustainability related metrics. A small list of example topics include carbon output/footprint, Economic Inequality, Equal Opportunity, Fighting Climate Change, Carbon Offsetting, just to highlight a few. For the purposes of today's discussion, we want to focus on those metrics that are most impactful/relevant within the organizations represented here: NOAA OCS, NGS and COOPS.   For this discussion we will focus on those items that are most impactful to the maritime and coastal areas related to these three offices, Carbon Footprint/Output and Carbon Offsetting.

What to measure? Examples for discussion:

- Vessels, aircraft, automobiles
    - NOAA/Government owned/operated
    - Contractor owned/operated
    - Related to transits and other third party
- Operational efficiency
    - Local assets/personnel/suppliers
    - Equipment/sensor productivity
    - Alternative methodology?
    - Vessel vs Aircraft vs Satellite vs Archives vs ???

Recent examples of analysis and discussion:

- Example of improved operations through technology.
    - The right MBES for the right water depth, especially in deep water for efficient, minimal vessel transits and large swaths.
    - Aircraft vs Vessels?
    - Small efficient sensors in aircraft for longer deployment legs, longer flight time for a single lift
    - Autonomous platforms/vehicles vs crewed vessels/aircraft
    - Satellite derived data vs boots-on-the-ground
    - Shared data sets vs redundant measurements

What do we want to try to accomplish today:

- How to identify what we NOAA should initiate to measure across all three offices
- What are the requirement to NOAA from Commerce Department? Larger US Government?
- What can immediately be rolled up/demanded from contractors and other support operations?
- What are NOAA staff internally identifying? Proactively implementing?
- What is the goal of all of this and how to achieve it? Better define it?
- Can large data bases/Digital Twins help the cause?

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Additional items that have been shared/discussed

- Examples of current extensive focus on measuring and Carbon Offsetting
    - UKHO, CHS and other hydrographic offices rigorous requirements for their contractors
    - Windfarm industry (developers and State requirements)
    - Recent improvements via US Military (Navy and Air Force)
    - Marine survey and services companies in various energy related construction projects
    - Automobile industry via eVehicles and carbon reduction statistics per vehicle mile driven (multiplied by tens of thousands of vehicles)
    - Advanced automation improvements and Remote Ops Centers: allows fewer field staff, fewer airfares, fewer hotels (electricity, AC, etc), less garbage created etc. It all counts in the analysis
    - Maritime shipping industry:
        - The existing Regulatory framework (regional and international) sustainability in the maritime domain. (includes finance, commercial, insurance human element, training, etc..)
        - The economics and structure to technology based shipboard emissions and associated Emission fees
        - Impact of Shipboard operational emissions on finance and insurance