

**Comments on NOAA Draft Strategies
Ocean Exploration Advisory Board
16 December 2019**

At its last meeting, Assistant Secretary of Commerce for Oceans and Atmosphere Tim Gallaudet asked the Ocean Exploration Advisory Board (OEAB) to comment on the NOAA Science and Technology Strategies on Unmanned Systems, Artificial Intelligence, 'Omics, and the Cloud. The OEAB is pleased to offer general comments as follows.

The four strategies should tie directly to NOAA's Enterprise Goals and Objectives. In addition, understanding "Why" the strategies were selected and "What" is to be accomplished is paramount to success. Incorporating measurable intermediate goals will improve strategy implementation traction. (Industry establishes strategies in this approach. In addition to helping provide clarity to NOAA programs, adopting something close to the following outline will increase industry, academic, and other partner buy-in and support; a requirement for success). Therefore, the OEAB recommends modifying the strategies as indicated to increase the overall effectiveness of implementation.

Goals and Objectives

From the NOAA website, NOAA lists Enterprise Objectives for NOAA's Science & Technology Enterprise, NOAA's Engagement Enterprise, and NOAA's Organization and Administration Enterprise. For NOAA's S&T Enterprise, the objectives (with sub-objectives for each) are as follows:

- A holistic understanding of the Earth system through research
- Accurate and reliable data from sustained and integrated earth observing systems
- An integrated environmental modeling system
- Partnerships for climate adaptation and mitigation

NOAA has recently identified 4 S&T Focus Areas with an associated strategy for each. The OEAB believes Goals and Objectives of the S&T Focus Area (FA) Strategies should have two essential features:

1. They should demonstrate clear alignment with the overarching NOAA Enterprise Objectives. This alignment should be clarified in the beginning of each Strategy document so implementation teams and readers understand the reason the S&T FA Strategies are important.
2. They should be measurable and time-constrained in order to measure progress.

To illustrate intent, the following notional goals and objectives are examples. These are for example only and not specifically recommended.

Example Goals and Objectives

- Complete by 2030 EEZ & Continental shelf mapping to support US national requirements
- Achieve a 5% annual growth rate in ocean exploration days at sea
- Increase fisheries sampling by x%/yr to improve business success and fish population health
- Increase ocean chemistry sampling to improve weather forecasts and understanding of ocean health
- Achieve a 300% increase in actionable data from all raw NOAA data sources

- Achieve a 5% annual growth rate in data dissemination to other government agencies, educational institutions, and STEM outreach

S&T Focus Area Strategy Format

(1) Executive Summary (identical for each S&T FA Strategy)

NOAA established four Science and Technology strategies in support of achieving the NOAA Enterprise Objectives. The Executive Summary should explain why these four strategies were selected as Focus Areas. Potential reasons might include:

- Expected to achieve the greatest return on investment
- Effectiveness
- Efficiency
- Accessibility and usability
- Interoperability
- Safety
- Improved schedule
- Improved consistency
- Fill data gaps

(2) Focus Area Objectives and Alignment

List primary objectives for the particular Focus Area and provide mapping of the S&T Focus Area Objectives to the Enterprise Objectives. Mapping the FA objectives to the Enterprise Objectives will ensure alignment and that all new and existing efforts be fully leveraged. A potential format would be a matrix showing bullets where FA Objectives contribute to Enterprise Objectives.

(3) Introduction

Explain what the strategy is intended to accomplish and why. What is the primary purpose of the Focus Area? Why is this selected strategy better than alternatives? This section should provide any background necessary for understanding of purpose.

(4) Focus Area Objectives & Intermediate Goals

Explain the scope of each primary FA objective. For each objective, provide intermediate goals to ensure measurable progress on an annual basis:

- Intermediate goal 1 by date
- Intermediate goal N by date

(5) Roles

The S&T FA Strategy will be led by X (NOAA office/organization/individual). The Lead NOAA office/organization is responsible to:

- Further develop the FA Strategy
- Coordinate with other NOAA stakeholders and other government agencies
- Conduct make/buy decisions to achieve the strategy and objectives
- Establish other roles (others to be responsible to perform work, be consulted, be informed)

(6) Strategy

This section should start with a clear and concise strategy statement. Provide additional statements as necessary to ensure the intent of the strategy is understood. This should resonate with all departments within NOAA and each department should see their role within the strategy statement.

(7) Strategy to Action

This is where top level steps are defined in clear and simple terms to achieve the strategy. This section should also define what is needed in order to accomplish each action.

(8) Summary

The summary is basically a repeat of the introduction paragraph. At a minimum, reaffirm what the strategy does and why and the primary purpose of the Focus Areas.