

IOOS Director Remarks

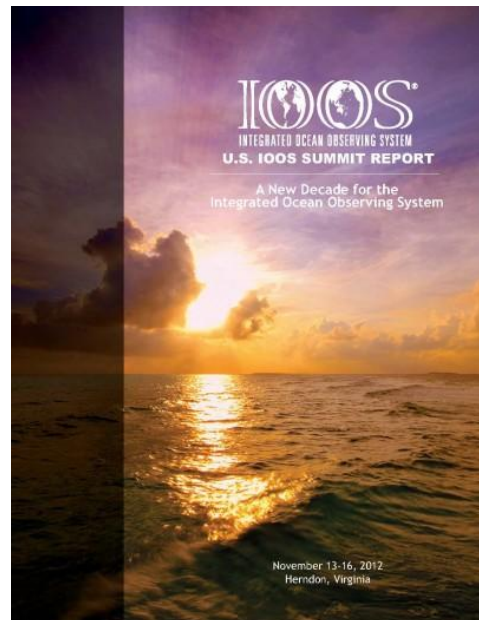
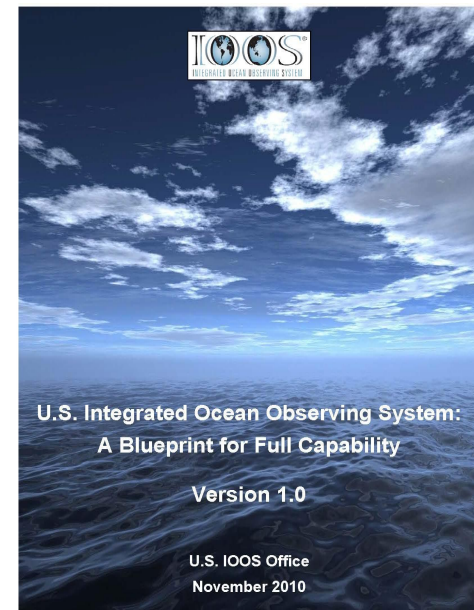
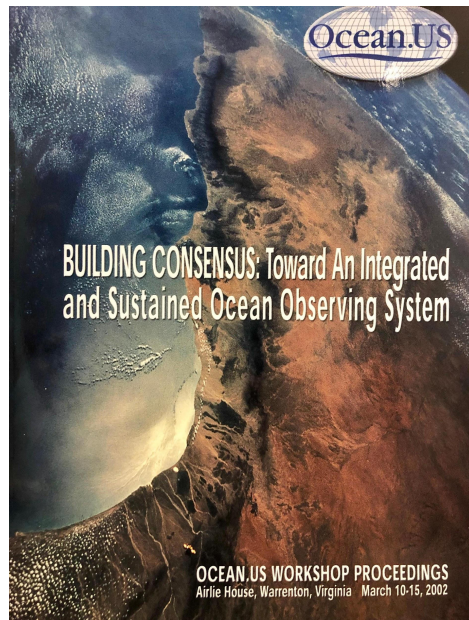
Carl Gouldman | February 11, 2020



U.S. IOOS Timeline

- 1990s** – US ocean observing community planning for IOOS & OceanObs'99
- 2000-2001** – Ocean.US - Navy, NASA, NSF, NOAA (4 “Ns) EPA, USCG, USACOE, et. al sign MOU to establish Ocean.US
- 2002** - IOOS planning Summit – “aka Airlie House Report”
- 2004** – Pew and US Commissions on Ocean Policy
- 2006** (January) – First U.S. Integrated Ocean Observing System (IOOS) Development Plan
- 2006** (December) – NOAA IOOS Office and program established
- 2009** – ICOOS Act passes PL 111-11 & OceanObs'09
- 2012** – US IOOS Summit & Report
- 2018** – US IOOS Enterprise Strategic Plan
- 2019** – Ocean Obs '19 global and coastal observing / Whitehouse Summit on Ocean S&T partnerships

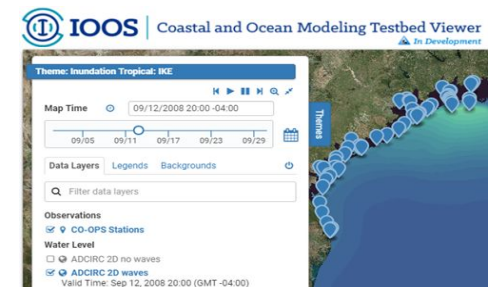
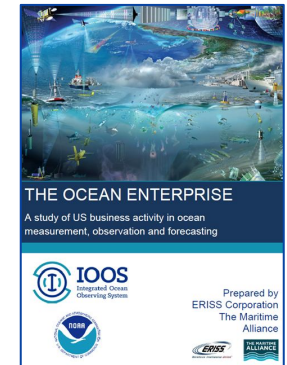
Foundational IOOS Documents



FY2020 IOOS Highlights

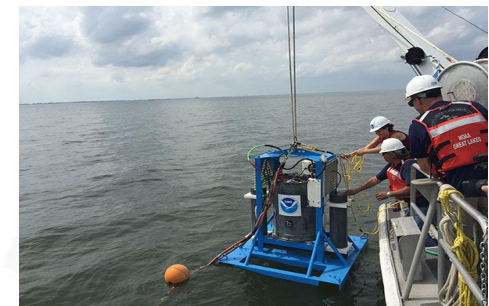
Implementing IOOS

- Weather Research and Forecasting Innovation Act 2017&19 – and EPIC implementation
- CENOTE Act 2018 (Commercial Engagement Through Ocean Technology Act)
- NOAA Water Initiative
- Blue Economy - Ocean Enterprise Study
- Supporting NOAAs 4 strategies – UxS, AI, Cloud, 'Omics



Research and Development

- Coastal and Ocean Modeling Testbed (COMT) - Water Modeling, Forecasting, and Prediction
- Ocean Technology Transition - New Project Awards- FY2020
- Technology, Research and Innovation Workshops - IOOS & OAR



IOOS at OceanObs'19



- 31 Community White Papers published in Frontiers in Marine Science
- Hosted 26 lightning talks in the IOOS Exhibit Booth
- Celebrated 20 Years of IOOS & look forward

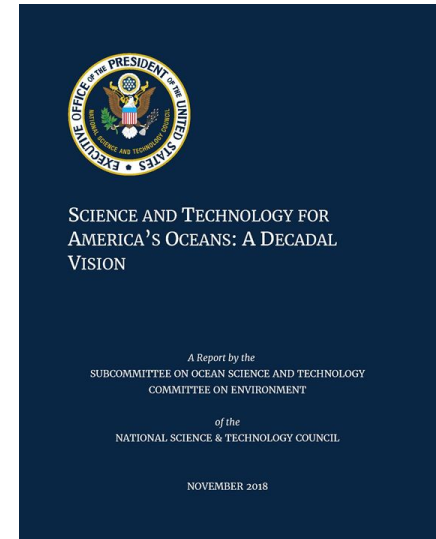


IOOS & Ocean Decades for the Future

- White House (OSTP) Science and Technology for America's Oceans: A Decadal Vision
- UN Decade of Ocean Science for Sustainable Development
- Supporting and implementing OceanObs'19 recommendations and preparing for OceanObs'29
- IOOS Grand Challenges & Actions including Essential Ocean Variables and Communities of Practice development



**2021
2030** United Nations Decade
of Ocean Science
for Sustainable Development



Back-up Slides

Setting the stage for IOOS Advisory Committee 2019

Carl Gouldman, U.S. IOOS Office Director
August 21, 2019



- Program overview
- Observing, Data Management, Modeling and Prediction
- Stakeholder Driven Approach
- Recent Successes
 - Certification of IOOS Regional Associations
 - 15 year Budget story
 - FY19 Highlights
- FY19 & FY20 Draft Topics for IOOS Advisory Committee

U.S. IOOS: Program Overview

Partnership effort that leverages dispersed national investments to deliver ocean, coastal and Great Lakes data relevant to decision-makers.

Global Component

US contribution to Global Ocean Observing System (GOOS)

1 of 15 Regional Alliances of GOOS



The Global Ocean Observing System



National Component

17 Federal agencies



Regional Component

11 Regional Associations

Stakeholder driven

Academia, state/local/tribal government, private industry



IOOS Observing Assets

Coastal Moorings



Shore Stations



HF Radar



Sub-surface gliders



Wave Buoys



Animal Telemetry,
Marine Biodiversity



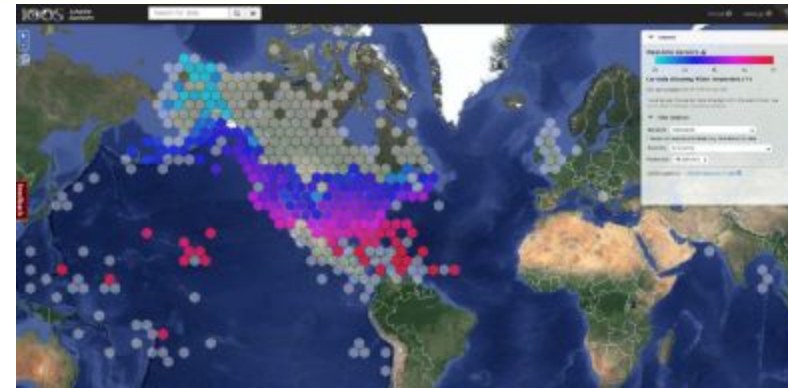
Integrated Open Data → Prediction & Forecasts



Regional Portals: 11 RA portals integrate data at a local level and provide tailored products for stakeholders



www.ioos.us
a central
portal of portals



Sensor Map: a 2 week cache of real-time observations from 108 providers



Blizzard 2016: CBOFS winds at 1/23 17:00 EST. Time-series of model output and buoy observations (1/20 - 1/23)

EDS: Visualize and access model hindcast/forecast information and compare to observations



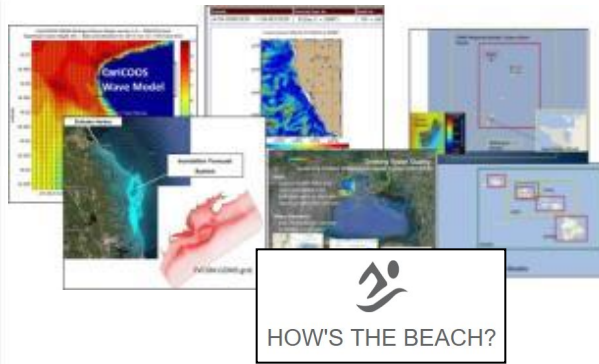
MBON: Marine Biodiversity portal – data supporting ecosystem monitoring

IOOS Regions meet societal needs

Stakeholder
outreach



Information products



Observations



Data Management



IOOS Strategic Plan

Vision - Improve lives and livelihoods with ocean, coastal, and Great Lakes information

Mission - To produce, integrate, and communicate high quality ocean, coastal and Great Lakes information that meets the **safety, economic, and stewardship needs** of the nation.

Five Strategic Goals:

Goal 1: Sustain long-term, high-quality observations of ocean, coastal, and Great Lakes environments to address local, regional and national needs.

Goal 2: Deliver standardized, reliable, and accessible data.

Goal 3: Support model predictions that address a wide range of user requirements.

Goal 4: Provide integrated, user-driven products and tools.

Goal 5: Increase the reach and effectiveness of IOOS through partnerships, stakeholder engagement, and Enterprise excellence.



Certification of all non-federal IOOS Regions

Integrated Coastal and Ocean Observation System Act of 2009 (ICOOS Act)

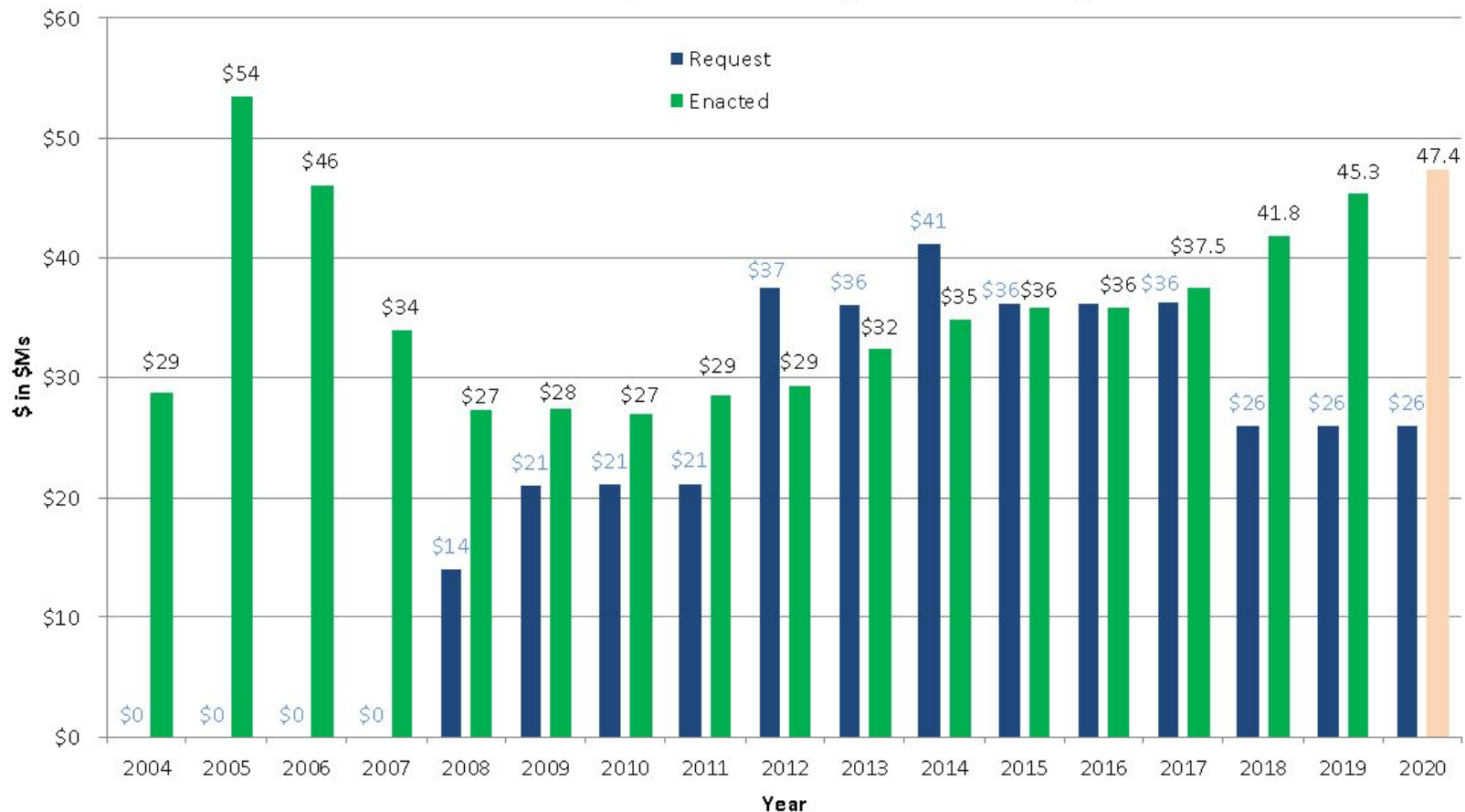
All 11 IOOS Regions are now certified! (2018)

1. IOOC defined high level criteria
2. Conveys formal recognition of IOOS Regional Associations
3. Extends **civil liability** coverage for data use
4. Establish minimum criteria for how a RICE operates
5. Adherence to data management best practices
6. Enhance delivery and quality of data and information
 - Re-certification of regions will begin in 2020
 - Program Office developing process for recertification



U.S. IOOS Enacted and President's Budgets FY04-20

NOS IOOS Request & Appropriation History
Part of the Story – not including 'backbone and global'



NOAA National Ocean Service IOOS

Navigation, Observations, and Positioning: 'National IOOS' component FY19 Omnibus \$6.8M & 'Regional IOOS Observations' \$38.5M [\$1.5M Reg. Ocean Partnerships]

Estimated Enacted levels are 'post rescission' totals for each year / 'Request' = the President's Budget Request

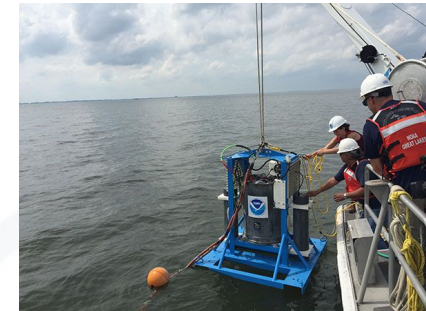
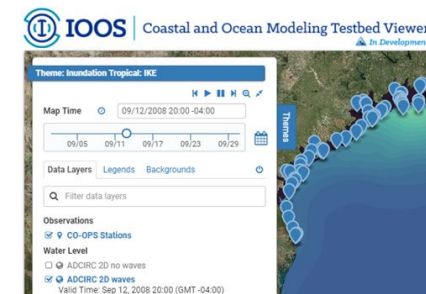
FY20 House Mark is first, next is Senate Mark, then Conference...

FY2019 IOOS Highlights

- **Blue Economy**
 - **Customer focus and stakeholder outreach**
 - **ICOOS Act reauthorization**
 - **NOAA Weather Act & NOAA Water Initiative**
 - **CENOTE Act 2018 (Commercial Engagement Through Ocean Technology Act of 2018)**
 - **IOOS Advisory Committee**
-
- **Filling gaps +\$7.5M:** Surface Currents, Gliders, Streamlined Access to observation information
 - **Biology and Harmful Algal Bloom Observing**
 - **Interagency - ATN, MBON, Sound, etc.**

Research and Development

- **Ocean Technology Transition** – new FFO ~Sept. 2019 for award in FY2020
- **Coastal and Ocean Modeling Testbed COMT** - Coastal / Ocean /Water Modeling, Forecasting, and Prediction
- **ACT** workshops for IOOS RAs and OAR Labs and Cooperative Institutes
- **Department of Energy** Ocean Observing prize competition



2019/2020 topics for IOOS Advisory Committee

- Consider issues, challenges, and opportunities in feedback from questionnaire
- Advise us on how to strengthen the federal partnerships between agencies, and foster deeper engagement across agencies
- We have a huge mandate and limited resources: What does the Committee see as biggest future priority or priorities for ocean observing?

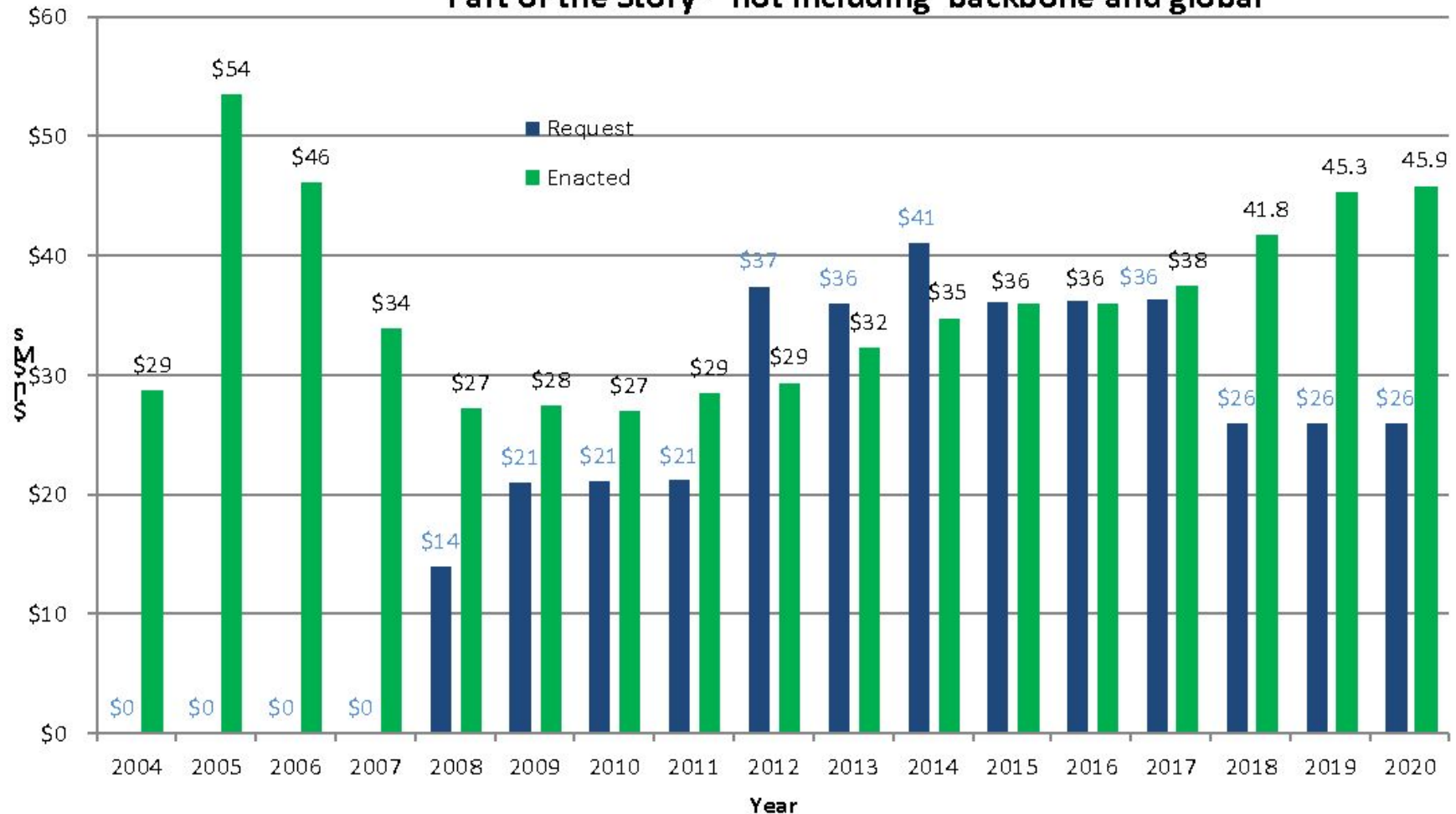
FY19 – FY20 Budget Overview

Carl Gouldman | February 12, 2020



U.S. IOOS Enacted and President's Budgets FY04-20

NOS IOOS Request & Appropriation History
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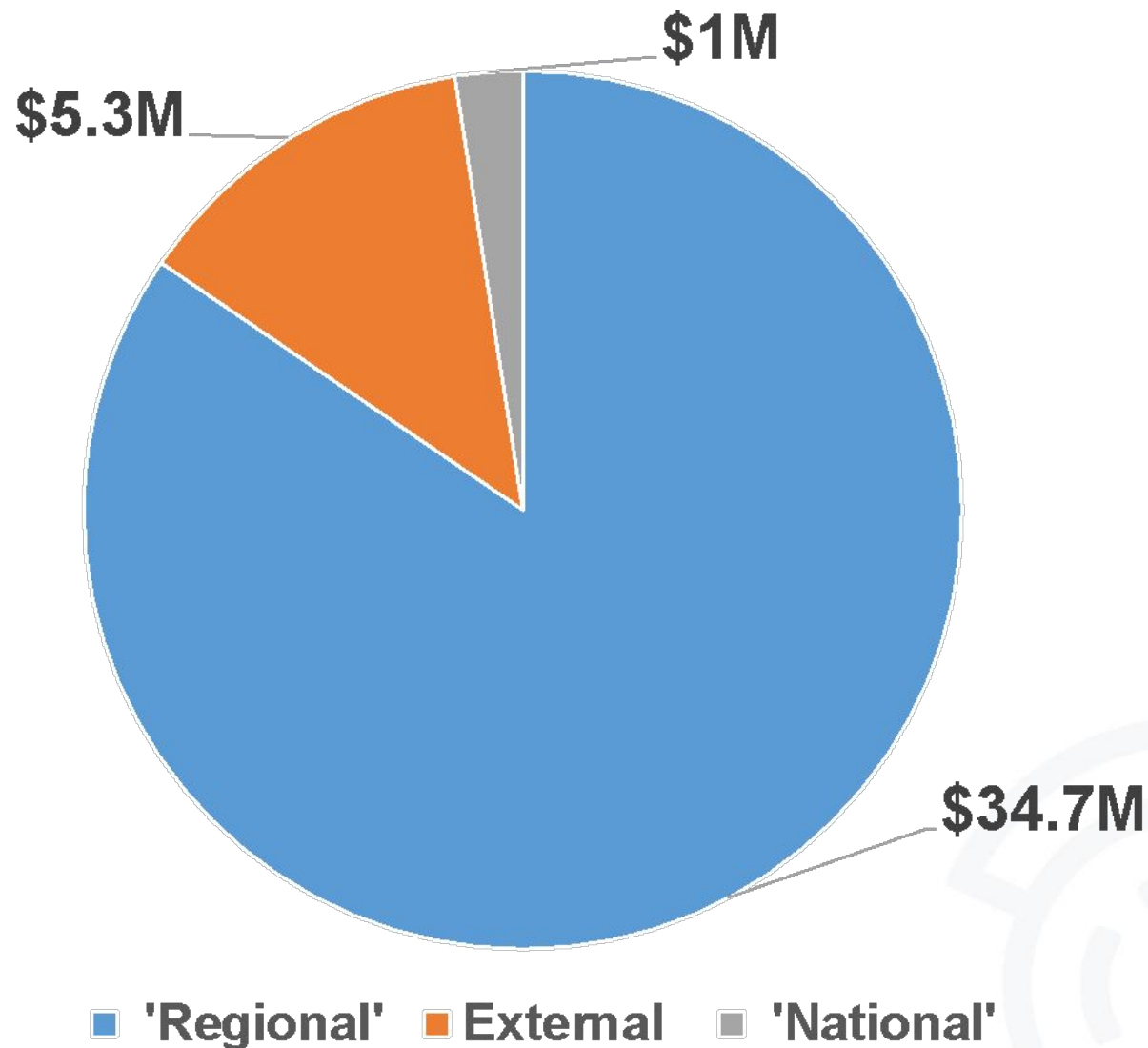


- NOAA National Ocean Service - Navigation, Observations, and Positioning: 'National IOOS' component FY20 Omnibus \$6.9M & 'Regional IOOS Observations' \$39M

- FY20 includes \$1M for HAB observing and \$1.5M increase to fill gaps (Regional Ocean Partnerships are funded in Office for Coastal Management at \$1.5M)

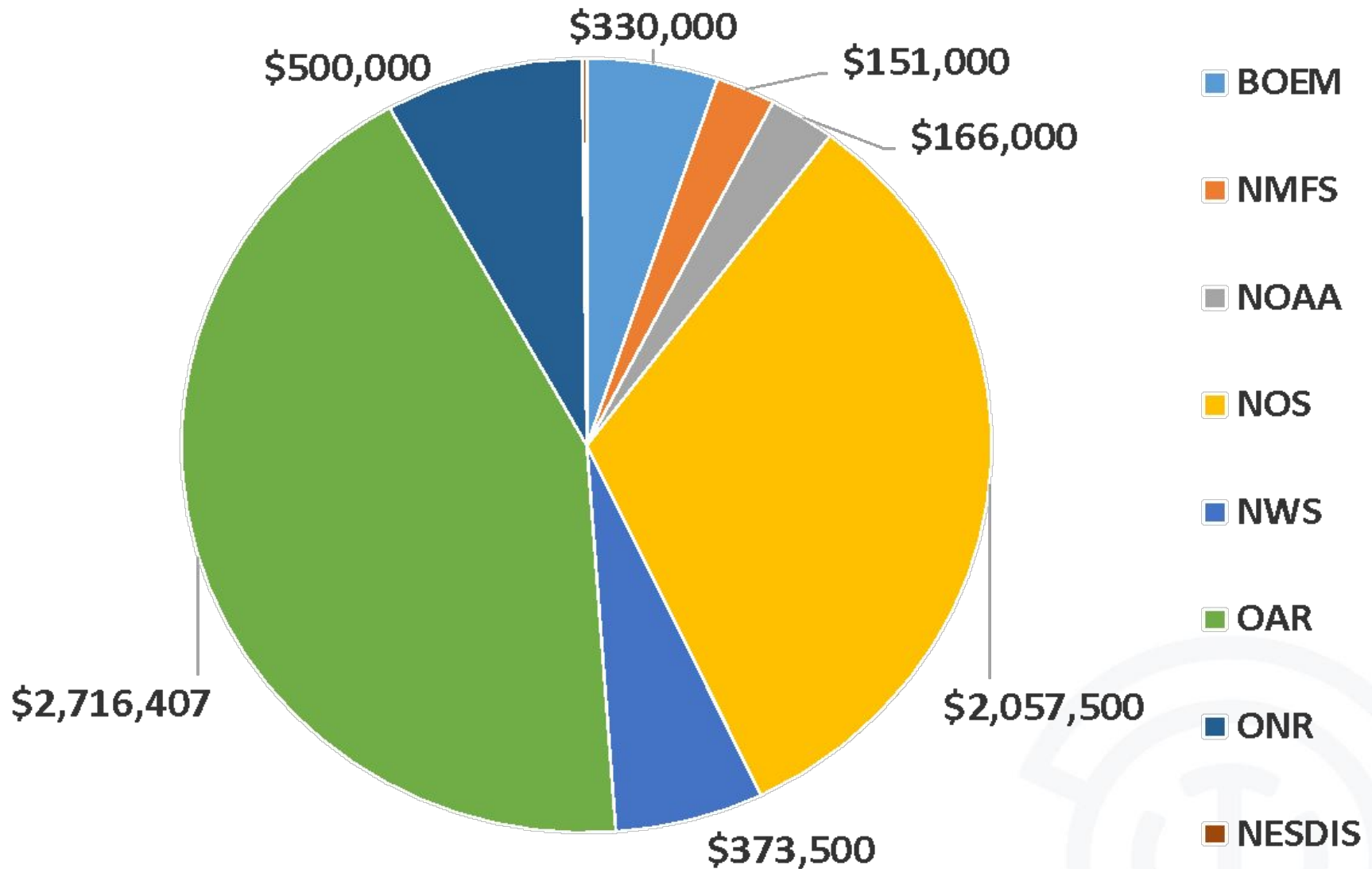
- 'Request' = the President's Budget Request – 'Enacted' levels are post rescission totals

FY 19 Sources of \$s to IOOS Regions = \$41M

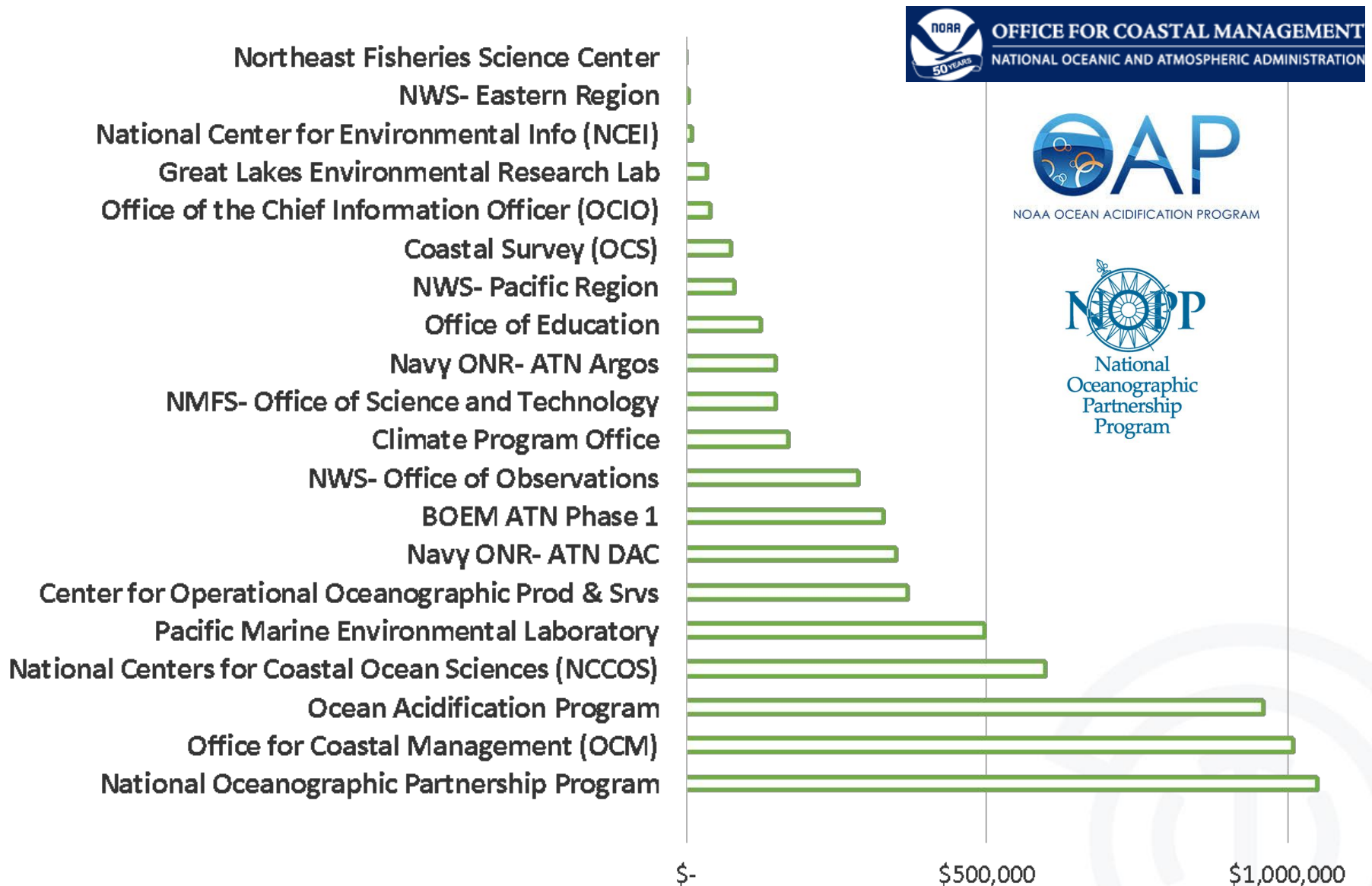


Only includes funds processed from IOOS Office within NOS/NOAA

FY 19 Line Office/Agency \$s into IOOS = \$6.3M

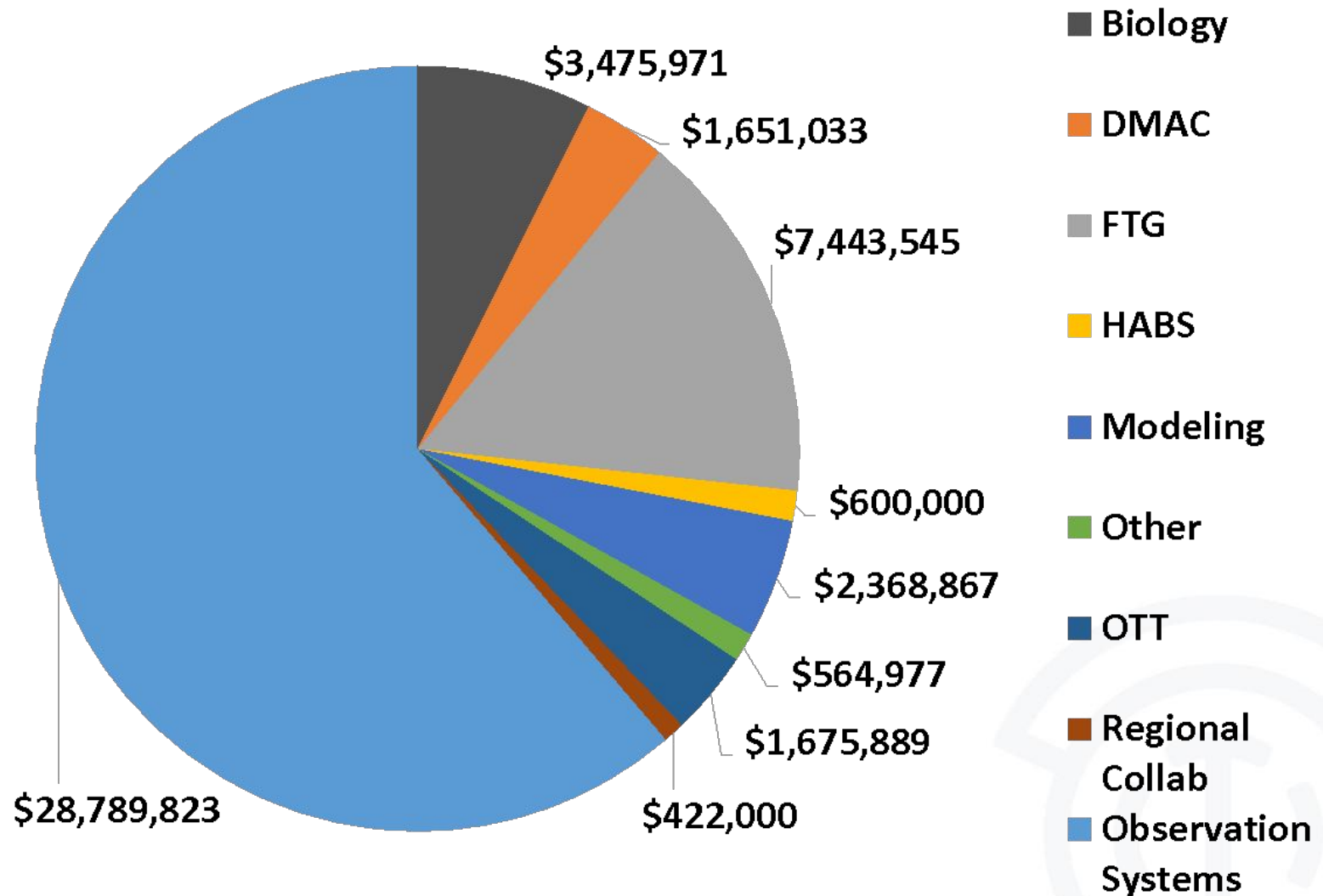


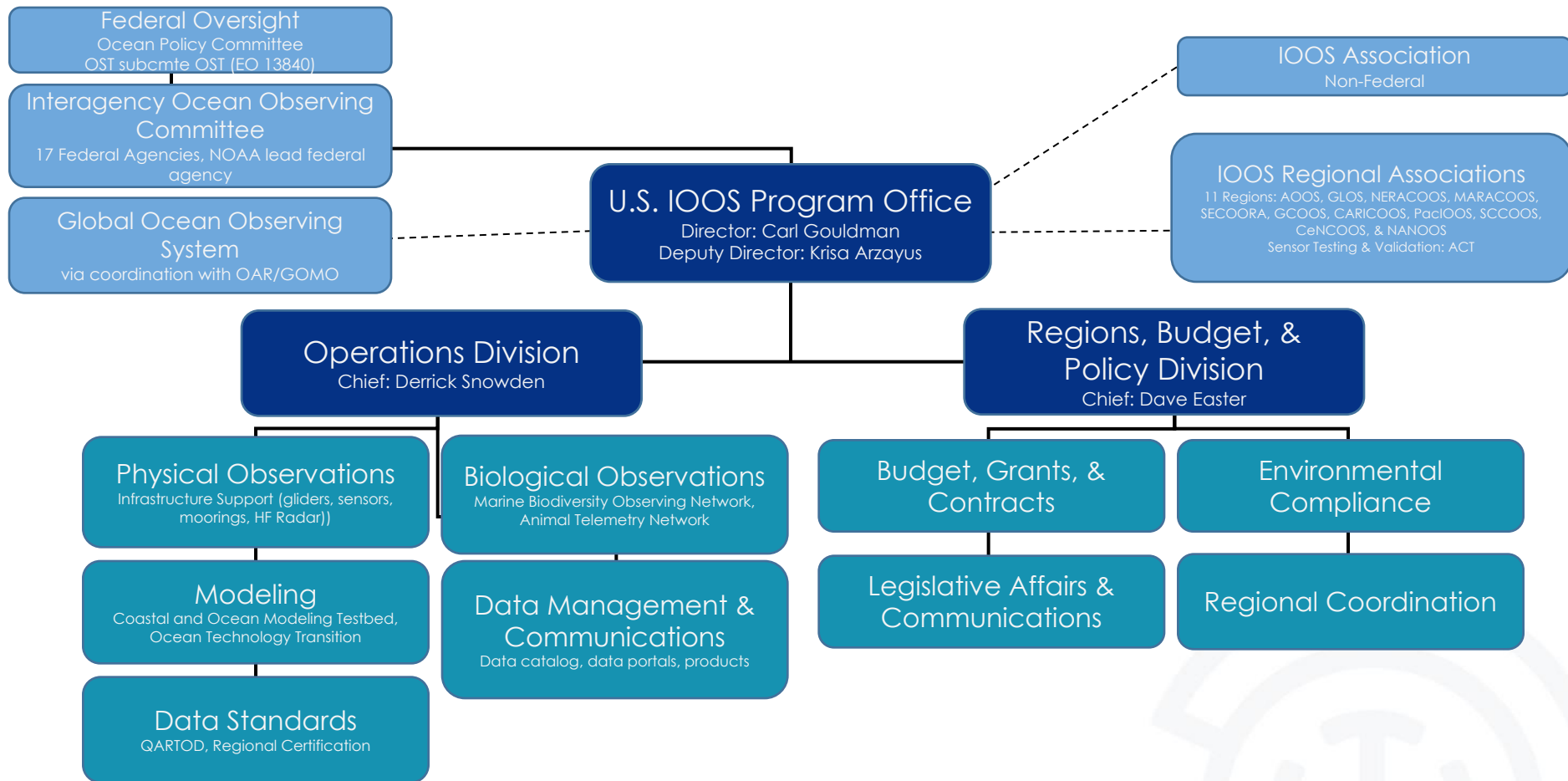
FY 19 \$6.3M Transferred In by Program



FY19 total 'outbound' funding = \$47M

Does not count FY19 \$1.4M additional biology (MBON via NASA and Navy/ONR)





US IOOS FY20 funding summary

FY20 \$6.9M - 'National IOOS'

- Part of NOS Navigation, Observations, and Positioning
 - Salaries and Benefits
 - Technical Service Contract
 - Office IT, operations, overhead
 - National Data Management Projects

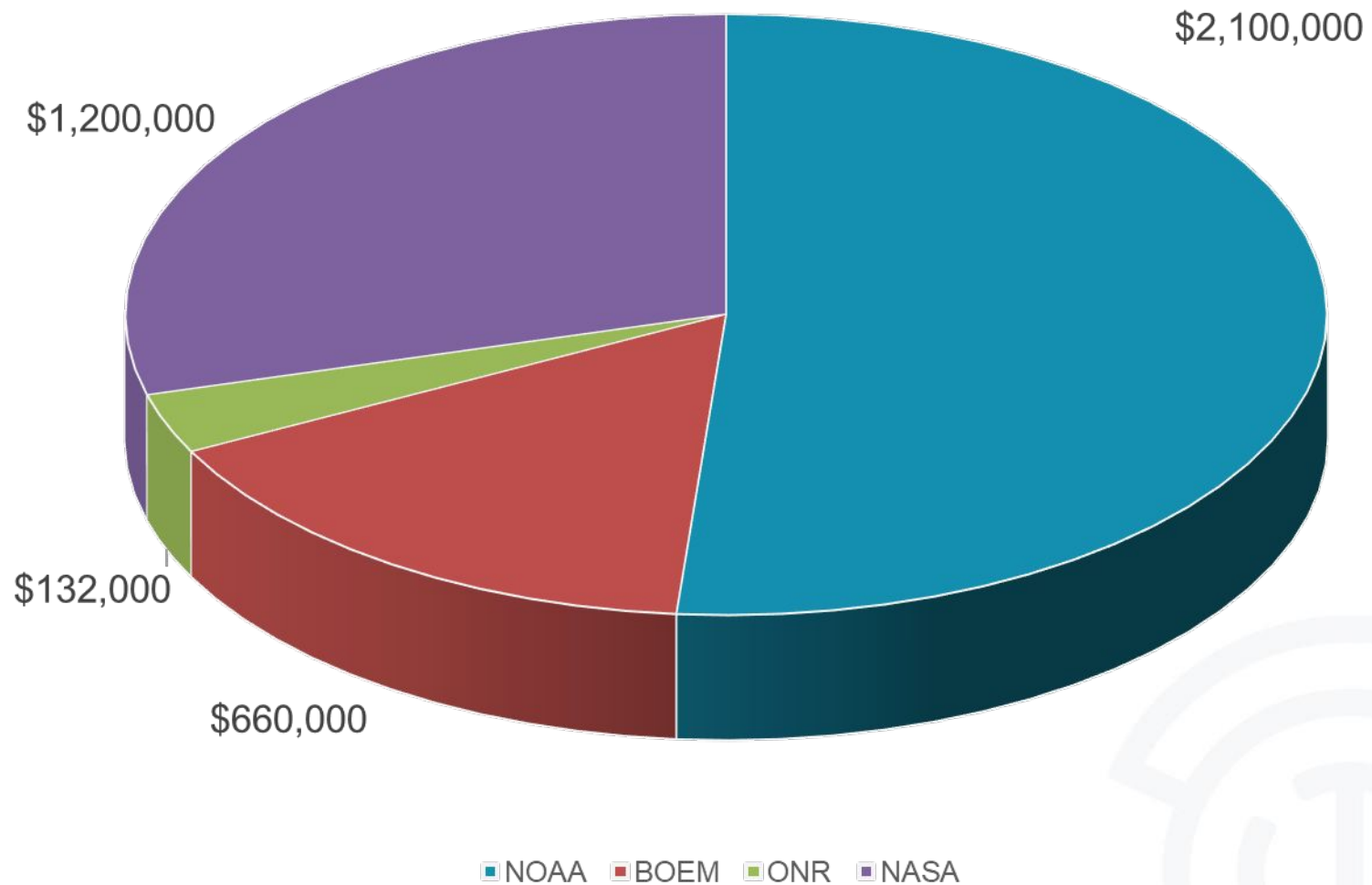
FY20 \$39M – NOS - IOOS Regional Observations

- Regional Associations Cooperative Agreements (~\$34M)
- Alliance for Coastal Technologies – Sensor Evaluation Program (~\$1M)
- Ocean Technology Transition Program ~\$2.7M
- Coastal Ocean Modeling Testbed Program ~\$1M (plus \$1M leveraged)

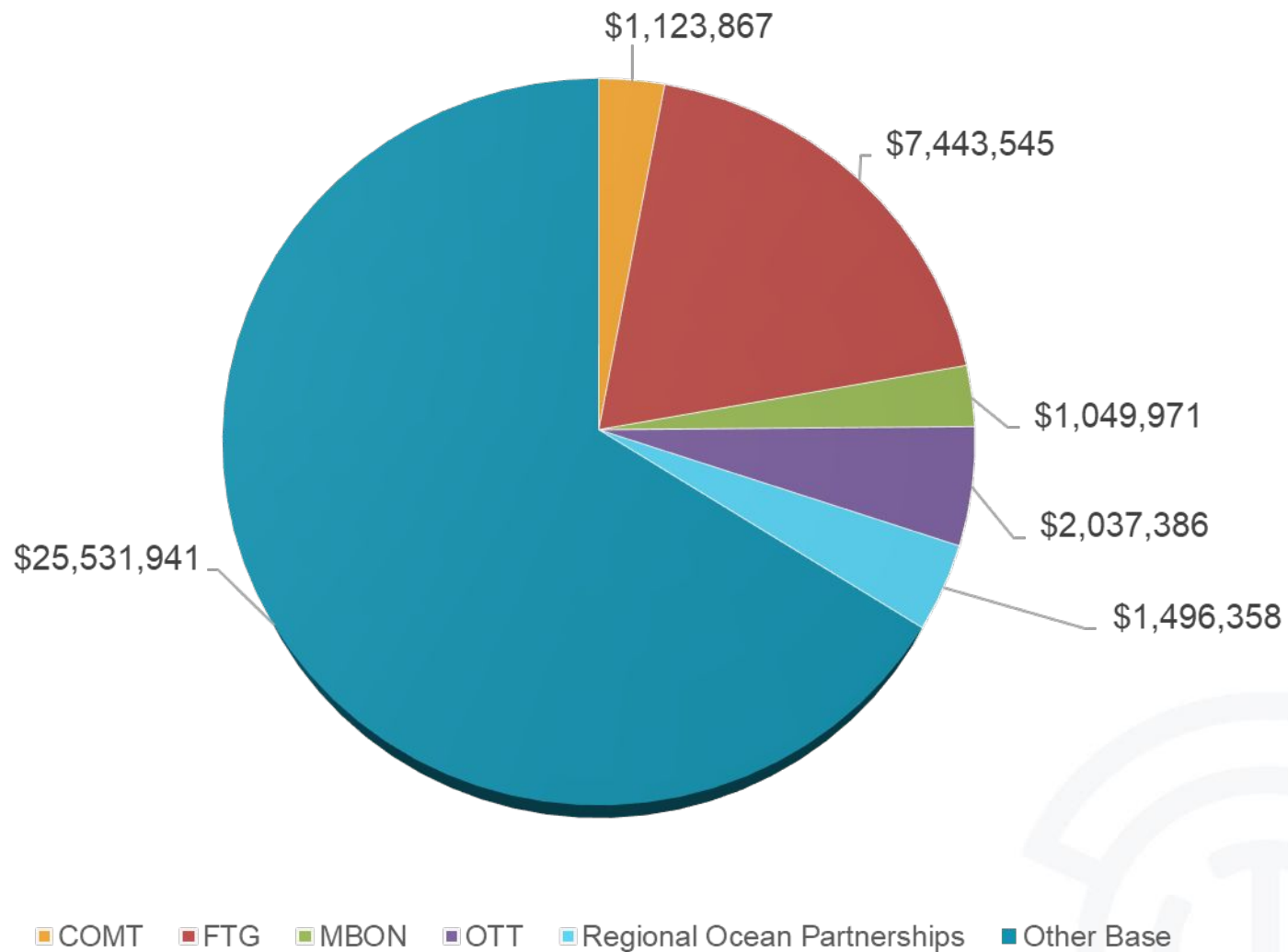
FY20 ~\$4-6M Other NOAA, BOEM, NASA, Navy/ONR, USGS etc.

Back-up Budget Slides

FY 19 MBON Project Totals = \$4.1M

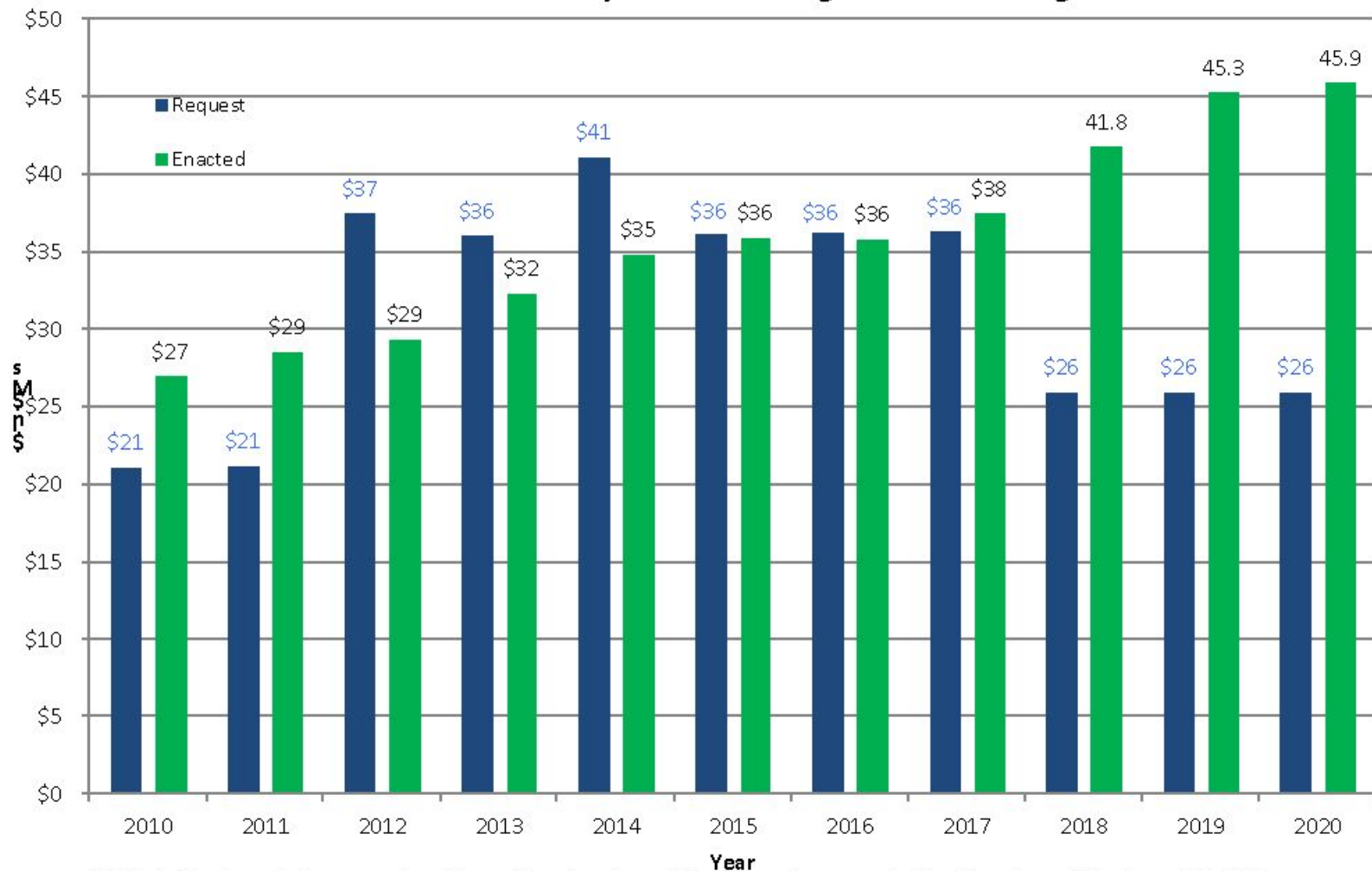


FY 19 IOOS Regional Observations = \$38.5M



U.S. IOOS Enacted and President's Budgets FY10-20

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Integrating IOOS with NOAA and other agencies

IOOS Director additional roles:

- Earth Prediction Innovation Center (EPIC) Executive Oversight Board: NOS representative
- NOS liaison to the Environmental Information Services Working Group (EISWG 'ice wig') (a WG of the Science Advisory Board FAC)
- NOS Senior lead for NOAA Water Initiative
- U.S. Representative to Global Ocean Observing System Regional Alliances
- NOAA lead for Department of Energy partnership - "Powering the blue economy: ocean observing prize competition" FY2020 4 phase process ~\$3M / 3 years
- Executive Oversight Board for Ocean Acidification
- Executive Board for Cooperative Institute for Great Lakes Research

Note: Other IOOS staff have many roles in other parts of NOAA and other agencies