PY1 to PY2 Budgets, Scope of Work
AWP2 due Early April

Final annual Maintenance Cruise Requirements and Deployments are dependent on analyses of recovered infrastructure. Status changes commonly following AWP submission

- PY1: Proposed Budget - $10.77M; Request from PMO for 2.5% reduction to support CI efforts = $10.502M

  Changes in scope:

  To meet the $10.502M reduced budget, AWP1 had ship-ROV reduction from 31 to 28 days.

  Deep profiler installations reduced from 3 to 1

  However, all docks were working, so reallocated budget for 1 complete refurb/installation of Deep Profiler to refurb of 3 vehicles

  Hence, all three Deep Profiler Moorings were fully installed in 2018 and three vehicles are refurbished and tested for 2019 installation

PY2 Budgets, Scope of Work

- PY2: PMO requested continuation of 2.5% reduction to support CI efforts. Proposed PY2 Budget = $10.502M same as PY1. Increases from PY1 to PY2 included:
  - Ship and ROV: costs increased by $246,800: LOE increased $117,081
  - Shallow Profiler Mooring: During 2017 or 2018, Jason damaged the main connector to the Axial Base mooring. PY2 budget scope included complete recovery and refurb of the mooring to replace connector. **$122,557** allocated to refurb recovered mooring
- To meet $10.5 cap proposed
  - One Deep Profiler would be installed 2020 (same as AWP1) - site not yet chosen
  - Defer Mass Spectrometer (2); flow meters (2); HPIES (2); and Digital Cameras (6)
  - Remove all engagement budget
- Assumed scope/resource changes would occur following 2019 maintenance cruise and 2) final decisions would involve OOIFB discussions

PY1 to PY2 Budgets, Scope of Work
How reductions/deferrals chosen

- Engagement: Priority was to keep infrastructure in water; Kelley maintains engagement through UW support

- Assume only one Deep Profiler would be installed 2020 (same as AWP1, but could modify based on 2019-2020 vehicle history)

- Mass Spectrometers (complex instruments): During 2017-2018 refurb
  1) hardware of mass specs was modified-simplified internal plumbing system to minimize vacuum leaks and increase sensitivity
  2) redesigned in situ calibration system

  However, testing of recovered 2018 instruments showed abnormal behavior re vacuum and voltage drops and inconsistent behavior of instrument response to calibration solutions

- Decided to defer mass spectrometer installations in 2019, use refurbishment resources to trouble shoot and resolve issues with vendor

PY1 to PY2 Budgets, Scope of Work
How reductions/deferrals chosen

- Flow Meters: uncabled instruments, analytically intensive onshore, prioritized to keep real-time cabled instruments - are investigating moving analyses in-house to RCA to reduce costs?
- HPIES: Highly specialized instruments, long deployment times required (12 hrs) for each platform; data not yet in CI (parsers and algorithms)
- Cameras: Krongsberg informed RCA they would no longer support future refurbishment. RCA pursuing incremental refresh option. RFP Rayfin 4K (video+ stills) cameras - approved through ECR for 4 cameras using end of year OOI 1.0 funds. UW reviewing potential to refurb Krongsburg cameras in house. Initial cost saving decision to put cameras on mooring platforms without pan-tilt.