# Data Interoperability and Use

# Session Overview

- Session focused on:
  - The approaches for accessing and consuming environmental data web services within a variety of client applications
  - Panel of application and data consumers providing insight into data use and successes, obstacles and opportunities when building products

# Session Objectives

1. Highlight current activities, projects, and approaches to accessing and consuming data via web services within client applications

2. Discuss opportunities, strengths, weaknesses, and limitations in delivering web services within NOAA

3. Summarize best practices and challenges for utilizing web services within client applications; discuss options for improvement

# Key Points of Discussion

- ***Obstacle*** *– what is the process or group for registering services such that offices can find and leverage these resources*
- ***Obstacle*** *- Diversity among the providers at the data-tier, lead to increased complexity at the client/application-side of the pipeline – what is the appropriate balance?*
- ***Obstacle*** *- Policy guidance coming down without implementation guidance (detailed) so offices can work it into their architectures*
- ***Obstacles*** *– tracking/coordination of notices of change to services to communities/teams that depend on the service (ex: changing projection URI definition in XML data packages)*

# Key Points of Discussion

- ***Challenge*** *- Communications among consumers of services to help identify requirements for providers*
- ***Challenge*** *- XML-based encodings 'bloat' data being transmitted – how to use minimal amount of extraneous XML data*
- ***Challenge*** *– internet access not always prudent for systems on the same network*
- ***Challenge*** *- Training and deployment of new techniques/architectures costs. How to absorb this?*
- ***Challenge*** *- What does the Target Architecture 'look like'*

# Key Points of Discussion

- ***Challenge*** *- Determine if the EDMC "Wants governance"*
- ***Challenge*** *- Not all information needed for a client-facing application is derivable from the existing standards, thus requires workarounds*
  - *Participation in standards development bodies (ie: OGC, etc) may help*
- ***Challenge*** *- Common Repository of Services and access points for consumers to use for discovery and application bindings*
- ***Challenge*** *– Can't solve everything all at once. How to break down the problems into easily implementable components*

# Key Points of Discussion

- ***Opportunity*** *– Encourage use and fertilization of successful architectures/designs vs. growing new ones.*
- ***Opportunity*** *– Enhance data staging to encourage high-performance of delivery and client applications providing services and products to users*
  - *For example: on web, 10 seconds is too long*
- ***Opportunity*** *– Develop a funding path to buy down the implementation costs of offices trying to move to the Target Architecture*
  - *What can be done without cash-funding, using policy/process (like NSF funding language)*

# Key Points of Discussion

- ***Opportunity*** *– Encourage small pilot projects and guide tasks to work on components that work towards the larger goals of the EDMC/EA*
- ***Opportunity*** *- Leverage EPA lessons learned on enterprise architecture to build a strategy for establishing the Enterprise Architecture targets and migration methods within NOAA*

# Next Steps

- *What actionable steps will the EDMC plan to conquer next?*
- *Examine other organizational patterns for EDM and bring the best-fit aspects into NOAA's planning (Layton – NOAA/EPA)*
- *Develop a strategy for common (federated?) registries of NOAA services – "what is out there"*
- *Establish a mechanism for communications among system design/developer communities to enable sharing tools, best practices and help NOAA identify requirements*
- *Harvest from this communications hat standards, practices and architectures are already being used within NOAA*
  - *then harness what's working and guide what is in need of support ("fertilize what's growing already")*

# Panel Members

- Daniel Martin (CSC)
  - Multipurpose Marine Cadastre (CSC/MMS)
- Roy Mendelssohn (NMFS)
  - Unified Data Access Framework
- Arthur Taylor (NWS)
  - IOOS – Enhancements to the SLOSH Display Program
- Parks Camp (NWS)
  - Collecting Field Data for Storm Damage Assessment
- Micah Wengren (NOS)
  - nowCoast