

# NGDA Dataset Report

**Official NGDA Title:** ODIN: Observational Data Interactive Navigation, an interactive map of all CO-OPS active stations

**Metadata Record Title:** ODIN: Observational Data Interactive Navigation, An Interactive Map Of All CO-OPS Active Stations

**A-16 NGDA Theme:** Water - Oceans and Coasts

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## Metadata:

**Registration Status:** Complete

**Registered on** 12/5/2014

**GeoPlatform Link\*:** <http://www.geoplatform.gov/node/243/2ec7eabf-c2c1-4da4-8b6b-2253fa6578f0>

**Data.gov Metadata Link\*:** <http://catalog.data.gov/harvest/object/9cc5e034-ad7b-47b4-92eb-b0a77115242a/html>

\*If the metadata has been updated and reharvested after publication of this report, the link may no longer be valid. The dataset may be searched for manually in Data.gov or GeoPlatform.gov.

# NGDA Lifecycle Maturity Assessment (LMA) Report

## Time Frame:

Baseline assessment responses include dataset activities from 1998 to 2015.

## LMA Submission:

**Status:** Complete

**Date:** 11/5/2015

**Extension Requested:** No

## LMA Reviewer(s):

**Supervisor:** Andrea Hardy [andrea.hardy@noaa.gov](mailto:andrea.hardy@noaa.gov)

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**Executive Champion:** Did not review

**SAOGI\*:** Did not review

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## Attachments:

To get access to any attachments referenced in the report, email the LMA Help Desk at [NGDA\\_LMA\\_help@fgdc.gov](mailto:NGDA_LMA_help@fgdc.gov). Please use the subject "Dataset Report Attachment(s)" and indicate the associated official NGDA title.

\*Senior Agency Official for Geospatial Information (SAOGI)

## Lifecycle Maturity Assessment (LMA) Summary

### Overall Maturity:

**Mature; Consistent**

General Questions: 100%

**Optimized; Established**

Stage 4 - Access: 100%

**Optimized; Established**

Stage 1 - Define/Plan: 88%

**Mature; Consistent**

Stage 5 - Maintain: 100%

**Optimized; Established**

Stage 2 - Inventory/Evaluate: 100%

**Optimized; Established**

Stage 6 - Use/Evaluate: 78%

**Mature; Consistent**

Stage 3 - Obtain: 87%

**Mature; Consistent**

Stage 7 - Archive: 33%

**Transition; Transformation**

### NGDA Dataset Maturity Definitions:

How To Calculate Maturity: [https://www.geoplatform.gov/sites/default/files/How\\_to\\_Calculate\\_Maturity.pdf](https://www.geoplatform.gov/sites/default/files/How_to_Calculate_Maturity.pdf)

Maturity	Maturity Characteristics for All Lifecycle Stages
Optimized; Established Rank = 5	Dataset meets virtually all business needs of all users. The dataset is considered authoritative by owners and secondary users. It is curated across all stages of the approved lifecycle. Future needs are defined on a regular basis and resources for addressing both current and future business requirements are available.
Mature; Consistent Rank = 4	Dataset meets all the business needs of the primary owner and most of the secondary users. The dataset is curated and used as authoritative by the primary owner. Dataset is used widely by secondary users actively engaged in sustaining the dataset. Future needs are identified and steps are planned to address these. All stages are supported and reviewed on a recurring basis. The dataset is well managed in relation to the approved lifecycle.
Managed; Predictable Rank = 3	Dataset meets a significant number of the business needs of the primary owner and is widely used as an authoritative resource by secondary users. Benchmark activities are occurring in at least four of the approved lifecycle stages. Management practices in relation to the approved lifecycle is moderate but consistent. Dataset is integrating changing business requirements in lifecycle stages impacting overall maturity.
Transition; Transformation Rank = 2	Dataset meets business needs of the primary owner and has moderate use by secondary users. Benchmark activities are occurring in at least three stages. Efforts to integrate funding, include partners, and obtain data are not supported in a sustained manner. Management practices in relation to the stages of the approved lifecycle is limited.
Planned; Initial Development Rank = 1	Dataset limited in meeting business needs of the primary owner. Benchmark activities in the approved lifecycle are just starting to consider secondary uses, partnerships are forming to support additional dataset uses. Dataset development is in a very early stage. Minimal or limited management against the benchmarks in the approved lifecycle.
No Activity Rank = no activity	Dataset meets project or local business needs of the primary owner, secondary or additional uses or users were not considered, not recognized as an authoritative data or is part of a similar dataset. Not managed to any of the benchmarks in the approved lifecycle.

## General Questions for All Stages

1) Is there a recurring process to obtain funding for all lifecycle stages of this dataset?

**Answer:** Funding support is part of agency budget on a recurring basis, funding is consistent and tied to business processes, and supports all lifecycle stages.

**Justification Comment:**

**Attachment(s):** 0

Funding for all lifecycle stages of CO-OPS products, including PORTS® (Physical Oceanographic Real-Time System) and the National Water Level Observation Network (NWLON), is included in the agency's annual budget request submitted by the President to Congress. PORTS and NWLON are the primary programs to collect CO-OPS oceanographic data. All core operations are supported through CO-OPS annual appropriation from Congress. See Page 128 of the FY 2016 President's Budget Request (link below) for a description of NOAA's Tides and Currents Program. Page 121 includes a funding request for Navigation, Observations, and Positioning, which includes all COOPS core operations.

[http://www.corporateservices.noaa.gov/~nbo/fy16\\_bluebook/NOAA\\_FY16\\_CJ\\_508compliant\\_v2.pdf](http://www.corporateservices.noaa.gov/~nbo/fy16_bluebook/NOAA_FY16_CJ_508compliant_v2.pdf)

Operation and Maintenance of PORTS is funded through reimbursable agreements with partners. If a partner does not pay, then the PORTS shuts down. However, the functions of data ingestion, analysis, QA/QC, and product dissemination as they relate to PORTS are funded with appropriated money.

2) Is there a process in place to ensure that open government and transparency guidelines are followed in all lifecycle stages for this dataset?

**Answer:** Process is published as appropriate with respect to sensitivity requirements, process is transparent, published appropriately.

**Justification Comment:**

**Attachment(s):** 0

Management of this dataset follows all scientific data management per the NOAA Administrative Order "NAO 202-735D: Scientific Integrity." NAO 202-735D outlines how NOAA complies with Open Government and Transparency requirements for all scientific data ([http://www.corporateservices.noaa.gov/ames/administrative\\_orders/chapter\\_202/202-735-D.html](http://www.corporateservices.noaa.gov/ames/administrative_orders/chapter_202/202-735-D.html)). All of CO-OPS data are open to the public and, where appropriate, CO-OPS uses the Federal Register to notify the public. All of COOPS' technical reports and papers are peer reviewed, all scientist take the government ethics courses, and CO-OPS continually makes the public aware of applied research findings. CO-OPS does not conduct nor fund basic research, etc nor does CO-OPS set government policy.

In addition, CO-OPS is one of the early adopters of the Whitehouse Digital Government initiative via our Tides and Currents Website (<http://tidesandcurrents.noaa.gov/>). Using responsive web design, CO-OPS products and data are easily accessible in a variety of formats via a variety of platforms (desktop, tablet, and mobile). In addition, CO-OPS data sets are disseminated via public web services and APIs, such as our OpenDap web portal (<http://opendap.coops.nos.noaa.gov/>) and Data API (<http://tidesandcurrents.noaa.gov/api/>).

CO-OPS provides the public with the ability to provide input and requirements via multiple pathways. The Tides and Currents Website ForeSee survey allows for direct input by the public, and new requirements, such as requests for new stations and sensors, are solicited via the Program Management Team (PMT), who engage stakeholders at various meetings and are in touch with the local communities. See the responses to Questions 4 and 5 for additional information.

3) Are there processes and tools in place so that staff are sufficiently knowledgeable to ensure a continuity of the dataset for all stages of the lifecycle, especially during staffing transitions?

**Answer:** Processes and tools to ensure dataset continuity are in place and implemented for all lifecycle stages.

**Justification Comment:**

**Attachment(s):** 0

CO-OPS has a rigorous internal documentation repository (Reliable Operating System - ROS), which was developed to 1) Understand & Manage Capacity, 2) Ensure Accountability & Management Controls, 3) Maintain Core Expertise, 4) Document Processes & Procedures, 5) Ensure Reliable Program Planning & Execution, and 6) Ensure Quality Products & Services.

Currently (March. 2015), the repository contains almost 700 SOPs, user manuals, publications, and other documents used by the organization. The repository contains sufficient information to provide continuity of the dataset and operations and is used to provide employees with tools and, standards, guidelines and policies for managing the data. In addition, CO-OPS maintains a publicly accessible Field Library (<http://tidesandcurrents.noaa.gov/fieldlibrary/ViewLibrary>). The Field Library is a public document repository for manuals, standard operating procedures, publications and other documents and is accessible by partners and the general public.

Finally, CO-OPS has developed a "Knowledge and Expertise Enhancement Program (KEEP)". KEEP is a strategic tool that helps CO-OPS fulfill mission objectives by aligning training and development opportunities with individual career goals while maintaining corporate expertise. Built upon a comprehensive assessment of skills and a detailed CO-OPS-wide training program, KEEP strengthens CO-OPS' ability to 1) Ensure maintenance and improvement of core competencies, 2) Create a sustainable and dynamic training environment by infusing training into CO-OPS day-to-day operations, 3) Provide employees and management a tool to align operational requirements and strategic goals with plans for personal and corporate development, and 4) Build a more robust and resilient organization with a stronger relationship between programs goals and people.

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## STAGE 1 - Define/Plan

4) Are user and business requirements defined and formalized?

**Answer:** A recurring process exists for gathering partners/ stakeholders requirements is in place and is in the beginning stages of implementation.

**Justification Comment:**

**Attachment(s):** 0

CO-OPS has a process in place to solicit input from the user community regarding new products (new stations and data types). In general, the OCS Regional Navigation Managers attend the annual Harbor Safety Meetings and obtain user requirements from partners/stakeholders. These are communicated to the CO-OPS PORTS Manager. The PORTS Manager then conducts detailed requirements elicitation meetings, resulting in a formal requirements document. In addition, any requirements are formalized in a formal MOU.

CO-OPS also performs a formal gap analysis every 5 years or so for water level stations (formal document). The gap analysis process involves extensive outreach and engagement of partners/stakeholders in order to determine a prioritized list of new station locations. Finally, for currents data, a formal 5 year plan has been developed to prioritize new station locations. This plan is updated and revised annually based on various factors, including partner/stakeholder input.

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5) How are partners/stakeholders involved in the requirements collection process?

**Answer:** A recurring process exists for gathering partners/ stakeholders requirements is in place and

is in the beginning stages of implementation.

**Justification Comment:**

**Attachment(s):** 0

CO-OPS has a process in place to solicit input from the user community regarding new products (new stations and data types). In general, the OCS Regional Navigation Managers attend the annual Harbor Safety Meetings and obtain user requirements from partners/stakeholders. These are communicated to the CO-OPS PORTS Manager. The PORTS Manager then conducts detailed requirements elicitation meetings, resulting in a formal requirements document. In addition, any requirements are formalized in a formal MOU.

In addition, CO-OPS has various additional mechanisms to determine if our datasets and products meet the partner/stakeholder need. The Program Management Team (PMT) attends 10-12 national conferences every year in order to engage with the user community and determine new requirements. CO-OPS also performs a gap analysis every 5 years or so for water level stations. The gap analysis process involves extensive outreach and engagement of partners/stakeholders in order to determine a prioritized list of new station locations. For currents data, a formal 5 year plan has been developed to prioritize new station locations. This plan is updated and revised annually based on various factors, including partner/stakeholder input.

Finally, CO-OPS also has a survey on our <http://tidesandcurrents.noaa.gov/> website, allowing for the general public to provide input on our datasets and products.

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**6)** Is there a quality assurance process for the dataset?

**Answer:** Quality assurance published as appropriate with respect sensitivity requirements.

**Justification Comment:**

**Attachment(s):** 0

CO-OPS has a rigorous quality assurance process to identify if data meet QC standards and are ready for dissemination. Documented processes are in place for most data sets. As of March. 19, 2015, over 80 SOPs with some element of quality assurance are available in CO-OPS ROS Library (SOP repository). Sample relevant SOPs of interest include:

7.1.0.0\_Guide\_to\_Declaring\_a\_Newly\_Installed\_Water\_Level\_Station\_Operational.pdf

7.1.10.0\_CO\_OPS\_Guide\_to\_Declaring\_a\_Newly\_Installed\_Real\_Time\_Currents\_Station\_Operational.pdf

7.1.20.0\_Guide\_to\_Declaring\_New\_Meteorological\_and\_Physical\_Oceanographic\_Installations\_Operational.pdf

7.1.30.0\_CO-OPS\_Guide\_to\_Declaring\_a\_Newly\_Installed\_Air\_Gap\_Station\_Fully\_Operational.pdf

7.1.80.0\_Guide\_to\_Declaring\_a\_PORTS\_Operational\_Update\_05-2014.pdf

6.5.1.1.10\_CORMS\_Methods\_For\_Reviewing\_Real-Time\_Data.pdf

6.1\_Review\_O&M\_R&Rs/6.1.1.4\_CORMS\_RandR.pdf

In addition, met data is quality controlled by a partner office (NDBC), which applies QC based on <http://www.ndbc.noaa.gov/NDBCHandbookofAutomatedDataQualityControl2009.pdf>.

CO-OPS makes met data dissemination decisions based on a daily QC report generated by NDBC.

Additional relevant CO-OPS SOPs may be available in our public Field Library at <http://tidesandcurrents.noaa.gov/fieldlibrary/ViewLibrary>.

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**7)** Is there a process to evaluate the sensitivity, privacy, and confidentiality of this dataset?

**Answer:** Sensitivity, privacy, and confidentiality evaluations fully implemented, reviewed and updated on a recurring basis.

**Justification Comment:**

**Attachment(s):** 0

CO-OPS PORTS and NWLON IT systems are the primary systems to collect, process, quality-control, and disseminate CO-OPS oceanographic data. The system is classified as "Sensitive But Unclassified".

CO-OPS has performed a "Privacy Threshold Analysis" for CO-OPS' PORTS and NWLON IT Systems (6205) in 2013.

In addition, CO-OPS completed a "FIPS 199 Security Categorization" for our PORTS and NWLON IT Systems (NOAA6205) in 2012.

Each of these assessments are reviewed annually for any changes in security status.

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**8)** Are defined data standards used in collecting, processing, and/or rendering the data?

**Answer:** Standards fully implemented documented and published as appropriate.

**Justification Comment:**

**Attachment(s):** 0

CO-OPS maintains an internal repository of over 600 SOPs, manuals, and operating procedures in our internal Reliable Operating System (ROS) Library. These cover the full breadth of CO-OPS activities related to collecting, processing and rendering/disseminating our time series data and metadata. In addition, CO-OPS maintains a publicly accessible Field Library (<http://tidesandcurrents.noaa.gov/fieldlibrary/Welcome>), for use by partners and associated to describe standard operating procedures, manuals, and standards. Together with the Manuals and Standards available on our Tides and Currents Website (<http://tidesandcurrents.noaa.gov/pub.html#Manuals%20and%20Standards>), all documentation has been reviewed, verified and accepted and covers the full breadth of our collection, processing, and dissemination activities.

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## STAGE 2 - Inventory/Evaluate

**9)** Is there a process for determining if data necessary to meet requirements already exist from other sources (either within or outside the agency) before collecting or acquiring new data?

**Answer:** Process for determining appropriate data is being reused fully implemented, reviewed, and updated on a regular basis.

**Justification Comment:**

**Attachment(s):** 0

CO-OPS is the authoritative source for accurate, reliable, and timely water-level and current measurements that support safe and efficient maritime commerce, sound coastal management, and recreation and has been collecting oceanographic data for over 200 years.

Requirements for any new stations or data types collected follow the formal process as defined in responses to Questions 4 and 5. Customer requests are evaluated based on need and if the data already exist elsewhere. In addition, CO-OPS also performs a formal gap analysis every 5 years or so for water level stations (formal document). The gap analysis process involves extensive outreach and engagement of partners/stakeholders in order to determine a prioritized list of new station locations. The following technical reports are related to the water level gap analysis:

- NOAA Technical Report NOS CO-OPS 074 - Gap Analysis of the Great Lakes Component of the National Water Level Observation Network (NWLON)
- NOAA Technical Memorandum NOS CO-OPS 048 - A Network Gaps Analysis for the National Water Level Observation Network - Updated Edition (Sept 2014)

Finally, for currents data, a formal 5 year plan has been developed to prioritize new station locations. This plan is updated and revised annually based on various factors, including partner/stakeholder input.

### STAGE 3 - Obtain

**10)** Is there a process for obtaining data in relation to this dataset?

**Answer:** Process is fully implemented, reviewed and updated on a regular basis.

**Justification Comment:**

**Attachment(s):** 0

CO-OPS is the authoritative source for accurate, reliable, and timely water-level and current measurements that support safe and efficient maritime commerce, sound coastal management, and recreation and has been collecting oceanographic data for over 200 years.

Requirements for any new stations or data types collected follow the formal process as defined in responses to Questions 4 and 5. Customer requests are evaluated based on need and if the data already exist elsewhere. In addition, CO-OPS also performs a formal gap analysis every 5 years or so for water level stations (formal document). The gap analysis process involves extensive outreach and engagement of partners/stakeholders in order to determine a prioritized list of new station locations. Finally, for currents data, a formal 5 year plan has been developed to prioritize new station locations. This plan is updated and revised annually based on various factors, including partner/stakeholder input.

**11)** Is the metadata in a FGDC endorsed geospatial metadata standard?

**Answer:** Metadata is available in a format endorsed by the FGDC, it fully describes the dataset and provides all the information required to make the dataset discoverable, accessible, and usable.

**Justification Comment:**

**Attachment(s):** 0

Metadata are written to the FGDC Content Standard for Digital Geospatial Metadata (CSDGM) - version FGDC-STD-001-1998. In addition, these metadata records are provided in a basic ISO standard version via a CSDGM to ISO transform available at the NOAA Data Portal ([data.noaa.gov](http://data.noaa.gov)) and at the U.S. Government's open data portal ([www.data.gov](http://www.data.gov)). Keyword tags and associated information has been entered and to make it discoverable as an NGDA and usable.

**12)** How complete is the geographic coverage as defined in the requirements for the dataset?

**Part 1 Answer:** Business requirements for cyclic updates identified and a process is in place.

**Part 2 Answer:** Data set is roughly 50% of the geographic coverage is presently complete per current requirement.

**Justification Comment:**

**Attachment(s):** 0

The primary datasets included as part of the ODIN application are water levels, currents, water level (tide) predictions, and current predictions. Each of these have their own set of geographic requirements and assessments/update plans. The overall assessment metric is an average with respect to the full range of different data products. In some instances, such as currents, no geographic coverage requirement exists. In others, the percentage may change (increase or decrease) based on factors such as age of data set or changes in the local environment.

Water Levels: approx. ~ complete

CO-OPS performed a formal gap analysis of water level stations in September, 2014, published as

[http://tidesandcurrents.noaa.gov/publications/Technical\\_Memorandum\\_NOS\\_COOPS\\_0048\\_Updt.pdf](http://tidesandcurrents.noaa.gov/publications/Technical_Memorandum_NOS_COOPS_0048_Updt.pdf), which is updated every couple of years. Requirements are generally customer driven, with needs changing over the years.

Currents: n/a

No formal gap analysis exists. The PORTS program and associated expansion of current meter station is driven completely by customer requirements. In general, CO-OPS installs anywhere between 0-5 new current meter stations per year. A description of the PORTS program with an emphasis on value to the economy is available at

[http://tidesandcurrents.noaa.gov/publications/ASSESSMENT\\_OF\\_THE\\_VALUE\\_OF\\_PORTS\\_TO\\_THE\\_US\\_ECONOMY.pdf](http://tidesandcurrents.noaa.gov/publications/ASSESSMENT_OF_THE_VALUE_OF_PORTS_TO_THE_US_ECONOMY.pdf)

Water Level Predictions: ~ 75% complete

CO-OPS has obtained oceanographic data for over 200 years and produced water level predictions for over 3000 locations. At this time, approximately 75% of geographic areas for areas of customer interest have predictions. The remaining 25% cannot be surveyed at this time because of their geographic features (i.e. beachfront property). Areas with larger gaps in coverage include, for example, Florida, California, and Oregon. CO-OPS is investigating technical solutions, however, no firm timeline is in place at this time.

Current Predictions: ~ 50% complete

The National Current Observation Program (NCOP) recently completed a 5 year plan for new current prediction locations ("NCOP 5 Year Current Survey and Reconnaissance Plan"). This assessment is updated annually and ranks locations based on a variety of factors, such as Tonnage (commercial and fishing), number of accidents, age of predicted data, etc. and solicits input from various customers. There are a number of geographic regions, where CO-OPS is unlikely to obtain data for predictions due to the characteristics of the tidal currents (weak and variable currents or non-tidal currents). Some locations have predictions resulting from data collected over 40 years ago and likely need to be updated. Percent completion is computed as #regions surveyed recently vs total #tidal regions.

Datums: ~ 66.5% complete

CO-OPS has performed an assessment of the currently accepted datums as compared to the recommended additional installations as defined by the CO-OPS VDatum assessments (3.2.3.3.C16\_Guide\_for\_Supporting\_Regional\_VDatum\_Development.pdf). Efforts to densify the tidal datums along the US coast is an ongoing process which, on average, includes the installation of ~20 stations per year (VDatum installations, Hydro installations, coastal projects, USACE CEPD, etc. Possible complications: when datums are updated to the next National Tidal Datum EPOCH (NTDE), proposed for 2002-2020, not all stations may be updated due to the age of the data collected. In this case, percent complete may drop below 50%.

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## STAGE 4 - Access

**13)** Do you have a process for providing users access to the data in an open digital machine readable format?

**Answer:** User access process is fully implemented, data is available, process is reviewed and updated on a recurring basis.

**Justification Comment:**

**Attachment(s):** 0

CO-OPS uses a service oriented architecture (SOA) and maintains a suite of data APIs for retrieving all time series data of oceanographic data collected. The APIs include SOAP web services (<http://opendap.coops.nos.noaa.gov/axis/>), IOOS-DIF-SOS web services (<http://opendap.co-ops.nos.noaa.gov/ioos-dif-sos/>)

and REST based web services (<http://tidesandcurrents.noaa.gov/api/> for data and <http://tidesandcurrents.noaa.gov/mdapi/latest/> for metadata). Data are available in multiple formats, including XML, JSON, CSV, and tab-delimited. Data APIs are used by internal and external CO-OPS applications, and are utilized by government and commercial entities.

For questions regarding data access, users are referred to our User Services Team (UST), who provide users with additional information regarding data access. In addition, users can contact CO-OPS via <http://tidesandcurrents.noaa.gov/contact.html> for additional questions.

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## STAGE 5 - Maintain

**14)** Is there a maintenance process for updating and storing the dataset?

**Answer:** Dataset maintenance process is fully implemented and processes are reviewed and periodically updated.

**Justification Comment:**

**Attachment(s):** 0

CO-OPS maintains a repository of over 600 SOPs, manuals, and operating procedures in our internal Reliable Operating System (ROS) Library. Of these roughly 67 are related to IT systems and processes and 14 specifically for database activity, including one specifically for updating erroneous database records (7.3.A.3.3\_Removal\_of\_Erroneous\_Records\_from\_the\_Database.pdf). CO-OPS has a formal process for new or updated data requirements via our project lifecycle process (CO-OPS Requirements Request - CRR). CO-OPS has a formal lifecycle of refreshing IT hardware (1/3 of desktops are updated every year, and servers every 5 years on an annual basis). In addition, CO-OPS has formal processes in place for version control, systems lifecycles, backups, etc. and works closely with the NOS IT management teams, such as the IRMB.

**15)** Is there an error correction process as part of dataset maintenance?

**Answer:** Error correction process includes user notification, process reviewed on a recurring basis.

**Justification Comment:**

**Attachment(s):** 0

CO-OPS has a detailed set of instructions and SOPs in order to identify errors in data, data maintenance, and communicating any changes to the data to our users.

SOPs used to determine and correct errors include:

3.2.3.7.G2\_NOAA\_Technical\_Report\_NOS\_CO-OPS\_030\_NWLON\_DMS\_QC\_Requirements\_Doc.pdf

7.3.A.2.2\_DMS\_Tidal\_Data\_Processing.pdf

7.3.A.2.5.1\_Processing\_and\_Tabulation\_of\_Great\_Lakes\_Water\_Levels.pdf

7.3.A.3.2\_Determine\_and\_Apply\_Vertical\_Correctors\_to\_Water\_Level\_Data.pdf

7.3.A.3.3\_Removal\_of\_Erroneous\_Records\_from\_the\_Database.pdf

7.3.B.1.3\_Current\_Meter\_Data\_Processing\_Overview.pdf

In addition, CO-OPS has more than a dozen SOPs describing how to enter and update associated metadata.

Finally, in order to communicate any changes to our data to our users, personnel follow the SOP

## STAGE 6 - Use/Evaluate

**16)** Is there a process to determine if the dataset meets user needs?

**Answer:** Process is complete and being implemented on ad hoc basis.

**Justification Comment:**

**Attachment(s):** 0

Once a new product has been implemented, the PORTS Manager generally holds a kickoff meeting with the maritime community (Coast Guard, pilots, Army Corps of Engineers, industry, etc.) in order to provide training on the new dataset and product. Attendees are able to provide input if the product meets the user needs.

In addition, users are able to provide feedback to the OCS Regional Navigation Managers at the annual Harbor Safety Meetings. Other mechanisms to provide feedback include the use of the CO-OPS website

(<http://tidesandcurrents.noaa.gov/>). In addition, the user community can provide feedback via our contact page at <http://tidesandcurrents.noaa.gov/contact.html> or provide feedback to our User Services Team (UST).

**17)** Is there a process to provide users information on how to access and properly use the dataset?

**Answer:** Process implementation started for access and proper use.

**Justification Comment:**

**Attachment(s):** 0

CO-OPS has a fairly mature system for users to be able to access our data. Our data is available via a wide variety of

web services and web applications, with many custom data requests possible. However, detailed guides on how to properly use our data may not be available in all instances. Usage of our data often is very specific to the particular customer. In this case, we generally refer users to our User Services Team (UST), who is responsible for providing detailed and customized responses to user inquiries. Users may contact UST via phone, email or web (<http://tidesandcurrents.noaa.gov/contact.html>). The web contact form is broken down by product and areas of interest.

For some inquiries, UST has standard responses available (templates), which simplify responding to questions for some of our more common inquiries. In other instances, UST relies on various SOPs CO-OPS has created and made available via the internal Reliable Operating System (ROS) document repository.

In addition, many products also have general descriptions on usage and some even have specific help pages (dependent on the application in question). See for example, the help page (<http://tidesandcurrents.noaa.gov/PageHelp.html>) for tide predictions or the help page (<http://tidesandcurrents.noaa.gov/noaacurrents/Help>) for current predictions.

CO-OPS also has an extensive list of publications at <http://tidesandcurrents.noaa.gov/pub.html> which may be helpful in understanding the data available to the public, how it is collected and quality controlled, and how it is disseminated.

For any additional information, users are generally asked to get in touch with UST.

**18)** Are the business processes and management practices assessed to meet changing technology?

**Answer:** Assessment process is fully implemented for taking advantage of changing technology, process is reviewed on a recurring basis.

**Justification Comment:****Attachment(s):** 0

CO-OPS has a formal process for assessing and responding to changes in technology and customer needs. The COOPS Requirements Request (CRR) process is a formal project lifecycle which is initiated in an annual project planning process. CRRs may be submitted based on formal requests from customers (see responses in Questions 4 and 5), feedback via the ForeSee survey on CO-OPS Tides and Currents Website (<http://tidesandcurrents.noaa.gov/>) or via internal mechanisms. Projects are evaluated based on IT, strategic goals, and customer needs. To date (March, 2015), CO-OPS has completed or initiated over 190 formal CRRs using this process.

CO-OPS also has a formal Web Advisory Committee (WAC) that meets regularly to review technology, data dissemination mechanisms, products, and to make recommendations on new technologies and projects, in alignment with CO-OPS strategic goals. The Information Systems Division (ISD) within CO-OPS also has formal management/technical boards (Engineering Control Review Board-ECRB and Change Control Board-CCB) to assess changes in technology.

Recent changes in technology have resulted in CO-OPS developing and implementing formal public APIs and web services such as the services available at <http://opendap.co-ops.nos.noaa.gov/>, as well as the CO-OPS Data API (<http://tidesandcurrents.noaa.gov/api/>). In addition, based on requirements coming from both internal and external recommendations, CO-OPS has recently initiated a GIS architecture project to develop a formal GIS platform to disseminate CO-OPS GIS data in the form of formal GIS services (WMS, WFS, etc.) and to develop more formal analysis capabilities for internal use.

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**STAGE 7 - Archive****19)** Is there an archiving process for the dataset?**Answer:** Archival and/or disposition processes are in development.**Justification Comment:****Attachment(s):** 0

Presently (Feb. 2015), CO-OPS is archiving QCd met data and 1 minute water level data at NGDC. CO-OPS is formulating a data archiving policy that will identify NCEI (the consolidated data centers) as the archive data repository, and set up schedules for how long CO-OPS holds its various data sets. That policy should be finalized in FY15 with implementation in the future (TBD).

Although data are not all formally archived at a data center, CO-OPS has a formal maintenance and backup process in place. All databases are backed up on a regular schedule, with backup files ("database dump files") written to tape. Tape backups are moved offsite for archival purposes.