

Florida Water Resources Monitoring Council (FWRMC)
Public Meeting of Monitoring Catalog Workgroup – December 19, 2012

Attendees:

Agency	Name
Florida Department of Environmental Protection (DEP)	Kate Muldoon
DEP	Stephanie Sunderman
DEP	Shel McGuire
Florida Department of Health (DOH)	Charlie Donahue
St. Johns River Water Management District (SJRWMD)	Aiša Cerić
Southwest Florida Water Management District (SWFWMD)	Carol Kraft
South Florida Water Management District (SFWMD)	Brian Turcotte
University of South FL (USF)	Jim Griffin
USF	Jan Allyn
USF	Keith Bornhorst
USF	Jason Scolaro

Introduction

Kate Muldoon (KM) welcomed everyone to the Monitoring Catalog Workgroup (MCW) meeting and reviewed the agenda. The discussion will focus on continuing to develop and finalize a recommendation for the list of metadata elements to be included in the FL Catalog of Monitoring Programs.

KM clarified that the MCW is using the term “metadata” in a slightly different way than it is typically used in the GIS community. For the purpose of MCW meetings, metadata refers to the common elements or fields used to describe all critical information about a sampling program and its associated stations, but does not include the data (analytical results) themselves.

Discussion of Metadata Elements to be Included in FWRMC Catalog Effort

KM began by reviewed the metadata elements that were discussed at the 11/14/12 and 12/5/12 MWC meetings, and summarized any comments that have been received since the last MCW meeting.

At the 11/14/12 and 12/05/12 MCW meetings, recommendations were completed for the following twenty-four elements:

METADATA ELEMENT NAME	REQUIRED (Y/N)	DEFINITION	DATA TYPE	DOMAIN LIMITED (Y/N)	DATA SIZE	POPULATED BY	INFORMATION LEVEL
UNIQUE_STATION_ID	Y	Primary key identifier for stations within the Monitoring Catalog database. Automatically generated by Water Atlas staff – likely to be a combination of the ORGANIZATION_NAME and STATION_ID.	VARCHAR2	N	150	Water Atlas Staff	Station
ORGANIZATION_NAME	Y	Organization overseeing monitoring project collecting information at the station.	VARCHAR2	Y	100	Data Providers	Project
PROJECT_NAME	Y	Monitoring project collecting information at the station. A station can belong to many projects overseen by the same organization or other projects overseen by other organizations.	VARCHAR2	N	250	Data Providers	Project
PROJECT_URL	N	Address (URL) for a web page describing the project.	VARCHAR2	N	250	Data Providers	Project
PROJECT_DESIGN_METHODODOLOGY	N	Strategy to meet the goals and objectives of the project. Domain: <i>Deterministic; Probabilistic; Other; Unknown; Not Reported</i>	VARCHAR2	Y	25	Data Providers	Project

METADATA ELEMENT NAME	REQUIRED (Y/N)	DEFINITION	DATA TYPE	DOMAIN LIMITED (Y/N)	DATA SIZE	POPULATED BY	INFORMATION LEVEL
PROJECT_ABSTRACT	Y	Brief summary of the project.	VARCHAR2	N	4000	Data Providers	Project
PROJECT_PURPOSE	Y	Reason for information collection. Includes data quality objectives (DQOs).	VARCHAR2	N	4000	Data Providers	Project
PROJECT_DATA_QUALITY_OBJECTIVES	Y	Conveys whether documented data quality objectives (DQOs) are available. Domain: <i>Yes; No; Not Reported</i>	VARCHAR2	Y	12	Data Providers	Project
STATION_NAME	Y	Full name of the site or station.	VARCHAR2	N	50	Data Providers	Station
STATION_ID	Y	Code or identifier used as the station identifier within the data provider's internal database.	VARCHAR2	N	50	Data Providers	Station
STATION_DESCRIPTION	N	Description of the site or station. Information such as the address or parcel number associated with a station may be entered here.	VARCHAR2	N	250	Data Providers	Station
STATION_URL	N	Address (URL) for a web page describing the station.	VARCHAR2	N	250	Data Providers	Station
LATITUDE	Y	The decimal degree latitude.	FLOAT	N	14,8	Data Providers	Station
LONGITUDE	Y	The decimal degree longitude.	FLOAT	N	14,8	Data Providers	Station
PROXIMITY_TO_SAMPLING_ACTIVITY	Y	How close the LATITUDE and LONGITUDE are to the actual point where sampling activity occurred. Domain: <i>EXACT - Exact sampling location;</i> <i>APPRX - Approximate sampling location;</i> <i>VICIN - Vicinity of sampling location;</i> <i>OFFST - Offset to exact sampling location;</i> <i>START - Beginning vertex of a linear sampling location (e.g. transect);</i> <i>BNDRY - One of a set of points used to describe the boundary of a polygon sampling location</i> <i>CENTR - Center of polygon containing sampling location(s);</i> <i>ADMIN - Administrative center of site or facility containing sampling location;</i> <i>OTHER - Coordinates given represent a scenario not listed;</i> <i>UNKNO - Relationship between the coordinates given and the sampling location is unknown;</i> <i>NOREP - Information is not reported regarding the relationship between the coordinates given and the sampling location.</i>	VARCHAR2	Y	5	Data Providers	Station
XY_DATUM	Y	The horizontal reference for measuring locations on the Earth's surface. Domain: <i>CAC - Cape Canaveral;</i> <i>HARN - High Accuracy Reference Network;</i> <i>HPGN - High Precision GIS Network / High Precision Geodetic Reference;</i> <i>NAD27 - North American Datum of 1927;</i> <i>NAD83 - North American Datum of 1983;</i> <i>WGS84 - World Geodetic Survey of 1984</i>	VARCHAR2	Y	10	Data Providers	Station

METADATA ELEMENT NAME	REQUIRED (Y/N)	DEFINITION	DATA TYPE	DOMAIN LIMITED (Y/N)	DATA SIZE	POPULATED BY	INFORMATION LEVEL
LOCATION_ COLLECTION_ METHOD	Y	The method or mechanism used to derive the location measurements. Domain: <i>ADDM – Address Matching;</i> <i>AGPS – Autonomous GPS;</i> <i>CALC – Calculated by GIS Software;</i> <i>CSUR – Cadastral Survey;</i> <i>DGPS – Differentially Corrected GPS</i> <i>(USGS coordinate datum code “D”);</i> <i>DMAP – Digital Map Interpolation (USGS coordinate datum code “N”);</i> <i>DPHO – Digital Aerial Photography With Ground Control;</i> <i>GGPS – Geodetic Quality GPS;</i> <i>LORN – LORAN-C Navigational Device (USGS coordinate datum code “L”);</i> <i>MMA – Manual Map Interpolation (USGS coordinate datum code “M”);</i> <i>MPHO – Manual Aerial Photography With Ground Control;</i> <i>OTHR – A Method Not Listed;</i> <i>PARC – Parcel Matching;</i> <i>SATI – Satellite Imagery With Ground Control;</i> <i>T- Transit, theodolite, or other surveying method;</i> <i>TOWN – Township / Range Matching;</i> <i>WGPS – GPS with Wide-Area Augmentation Service Correction;</i> <i>UNKN – Unknown Method;</i> <i>ZIP2 – ZIP Code + 2 Segment Centroid;</i> <i>ZIP4 – ZIP Code + 4 Segment Centroid;</i> <i>ZIPC – Zip Code Centroid</i>	VARCHAR2	Y	4	Data Providers	Station
COUNTY	Y	The name of the FL county station is located in. Domain will include the names of all 67 counties and “Not Applicable”.	VARCHAR2	Y	50	Data Providers	Station
DRAINAGE_ BASIN	Y	The name of the 8-digit USGS HUC station is located in. Domain will include all 8-digit USGS HUCs in FL and “Not Applicable”.	VARCHAR2	Y	14	Water Atlas Staff	Station
WATER_ RESOURCE_ NAME	Y	The name of the waterbody that the station is located in. For groundwater wells, this should include the aquifer tapped. (Note: “Unknown” is permitted if aquifer tapped is not known.)	VARCHAR2	N	100	Data Providers	Station
STATION_ TYPE	Y	The type of station that data collection occurs at / in. Domain: <i>Atmosphere; Bay; Canal; Cave;</i> <i>Channelized Stream; Combined Sewer;</i> <i>Constructed Wetland; Estuary; Facility;</i> <i>Lake; Land; Land Runoff; Landfill;</i> <i>Mine / Mine Discharge; Ocean; Reservoir;</i> <i>River / Stream; Riverine Impoundment;</i> <i>Spring; Storm Sewer; Tidal Fresh; Tidal Brackish; Waste Pit; Waste Sewer;</i> <i>Well–Non-potable Well ;</i> <i>Well–Potable Well; Wetland; Other;</i> <i>Not Applicable</i>	VARCHAR2	Y	25	Data Providers	Station
START_DATE	Y	Date monitoring activity started at the station.	DATE	N		Data Providers	Station
END_DATE	N	Date the monitoring activity ended or is anticipated to end at the station (enter “active” for stations with ongoing monitoring with no anticipated end date).		N		Data Providers	Station

METADATA ELEMENT NAME	REQUIRED (Y/N)	DEFINITION	DATA TYPE	DOMAIN LIMITED (Y/N)	DATA SIZE	POPULATED BY	INFORMATION LEVEL
SAMPLING FREQUENCY	Y	The time interval between sampling events at the station. Domain: <i>Continuous (sampled more frequently than daily)</i> <i>Discrete - Sampled Daily</i> <i>Discrete - Sampled Weekly</i> <i>Discrete - Sampled Monthly</i> <i>Discrete - Sampled Quarterly</i> <i>Discrete - Sampled Semi-Annually</i> <i>Discrete - Sampled Annually</i> <i>Discrete - Triggered</i> <i>Discrete - Varied</i> <i>Discrete - Other</i>	VARCHAR2	Y	250	Data Providers	Station

At the 12/05/2012 meeting, it was requested that a new straw-man proposal be developed for the metadata element representing parameters.

METADATA ELEMENT NAME	REQUIRED (Y/N)	DEFINITION	DATA TYPE	DOMAIN LIMITED (Y/N)	DATA SIZE	POPULATED BY	INFORMATION LEVEL
PARAMETERS	Y	Parameters / variables / information collected at the station, including STORET/WQX names when possible.		?		Data Providers (Water Atlas Staff will assist with formatting)	Station

Comments received:

- Further clarification needed for definition of “parameters / variables / information collected at the station”?
- What is the target level of detail?
 1. Groups of analytes (e.g. “nutrients”)
 2. Individual analytes (e.g. “phosphorus”)
 3. Individual analytes with sample fraction (e.g. “phosphorus, dissolved”)

Discussion:

- KM summarized some additional considerations that were discussed while drafting the new straw-man proposal:
 - o If groups of analytes are the target level of detail, then the MCW will need to decide how they will be categorized.
 - o Regardless of which level of detail is chosen, the information supplied will need to be translated to a common list of values (domain), to allow users to search by parameter information.
 - o The Water Atlas staff may be able to help translate data providers' lists of analytes into individual analytes and groups of analytes based on the naming convention used by FL STORET, but complications may arise if analytes are present that are not included in FL STORET (e.g. biological, hydrological, meteorological).
 - o One possible solution for data entry would be to have a list of common values available to data providers as they are entering information, but also allow data providers to enter information for new parameters if the desired value isn't already in the list.
- Brian Turcotte (BT) indicated that each data provider will be able to supply a variety of details, so the Catalog will need to use the simplest common level of detail. As long as individual analyte information is available from all data providers, using individual analytes may provide enough information to allow users to perform meaningful searches. Users could then get additional detail (sample fractions, etc.) by contacting the data providers.
- Keith Bornhorst (KB) indicated that it will likely be easiest to use individual analytes, for data providers that upload to FL STORET, because that information can be derived from the data (analytical results)
- Carol Kraft (CK) indicated that using the coarsest level of detail possible (groups of analytes) would require less maintenance from data providers.
- Jim Griffin (JG) indicated that the current Water Atlas uses both groups of analytes and individual analytes. Using only groups of analytes may be less useful because it will provide fewer, broader options for users conducting searches. However, it is possible to use groups of analytes if data providers do not have more detailed information available.

- JG added that using groups of analytes (either alone, or in combination with individual analytes) poses some problems because some analytes do not easily fit into any of the commonly used groups.
- KM suggested using both groups of analytes and individual analytes, with the general disclaimer that some individual analytes may not be included in any of the categories. JG indicated that the system could be designed to allow additional analytes and groups of analytes to be added as needed. CK agreed that this idea seems acceptable.
- Charlie Donahue (CD) indicated that it would be desirable to upload a list of many analytes at once (e.g. the group of volatile organic compounds typically analyzed together includes at least 60 individual analytes), and be able to associate them with several stations.
- CD also suggested including the analyte groups as keywords instead of listing them as parameters.
- Jason Scolaro (JS) suggested that all types of parameters (either groups of analytes or individual analytes) that will be used in searches be included in the list of values.
- KM indicated that the MCW will also need to decide who will be responsible for categorizing the individual analytes into groups. JS indicated that the Water Atlas staff are able to translate data providers' lists of individual analytes into a standard list based on analytes in FL STORET. The Water Atlas staff are then able to categorize most of the analytes from that standard list of values into groups. CK indicated that JS's suggestion seems ideal because it does not require a lot of effort from the data providers to transform their own data to match the standard list.

Conclusion:

Catalog will include both groups of analytes and individual analytes. Data providers are encouraged to provide individual analyte level information, though information on groups of analytes will also be accepted if more detailed information is not available. Water Atlas staff will assist with translating the lists received into a standard list of values. The Water Atlas staff will also group analytes based on the standard list of values, but there will be a general caveat that some individual analytes may not be included in any groups.

As of the 12/05/2012 MCW meeting, no recommendations have been completed for the remaining elements.

Details associated with most of these elements had not been discussed at workgroup meetings prior to 12/19/12.

METADATA ELEMENT NAME	REQUIRED (Y/N)	DEFINITION	DATA TYPE	DOMAIN LIMITED (Y/N)	DATA SIZE	POPULATED BY	INFORMATION LEVEL
DATA_URL	N	Address (URL) for a web page or FTP site for obtaining data from the site or station	VARCHAR2	N	250	Data Providers	Station

Comments received:

- Increase data size to 500.
- Make this a required field.

Discussion:

- KM asked for suggestions for how this information will be maintained. KB indicated that the current Water Atlas has a quality assurance check that is run at least quarterly, to make sure that all URLs are valid. If any links in the database return errors, the Water Atlas staff contact the data providers to get the updated information.
- KM asked if it is desirable to make this a required field. KB suggested making this field not required because every data provider may not have data available online. JG suggested making this field required, but including an option to choose "not available" if the data is not available online. CK agreed with JG's suggestion.

Conclusion:

Change this to a required field, but allow data providers to enter "not available" if their data is not available online.

METADATA ELEMENT NAME	REQUIRED (Y/N)	DEFINITION	DATA TYPE	DOMAIN LIMITED (Y/N)	DATA SIZE	POPULATED BY	INFORMATION LEVEL
DATA_SOURCE_NAME	Y	Name of data source or providers of data to the Monitoring Catalog, whether within or outside the organization conducting monitoring at the station.	VARCHAR2	Y	100	Data Providers	Project

Comments received:

- Increase data size to 250.
- Does this field need to be required, especially if the data source is the same as the information listed in such columns as "Organization_Name"?
- Could this be generated by the Water Atlas folks?

Discussion:

- KM clarified that DATA_SOURCE_NAME is intended to capture the name of the entity responsible for providing the information to the Catalog. This is distinct from ORGANIZATION_NAME, which is intended to capture the entity overseeing the monitoring project collecting information at the station. For example, USGS may collect information at a station (ORGANIZATION_NAME = USGS), but that information may be provided to the catalog as part of a SWFWMD database (DATA_SOURCE_NAME = SWFWMD hydrological database).
- KM asked if the Water Atlas staff could generate this information. JG and JS indicated that this information is not currently retained at the station or project level, but is retained at the data provider level as part of the “data source code”.
- JG suggested also including information about the laboratory used.
- KM indicated that this is a required field per the DEP / FGDC guidelines.
- KM asked if there was a need to increase the data size. JG suggested keeping the data size at 100.

Conclusion:

Keep this element as described in the straw-man proposal.

METADATA ELEMENT NAME	REQUIRED (Y/N)	DEFINITION	DATA TYPE	DOMAIN LIMITED (Y/N)	DATA SIZE	POPULATED BY	INFORMATION LEVEL
DATA_SOURCE_DESCRIPTION	N	Description of data source.	VARCHAR2	N	250	Data Providers	Project

Comments received:

- Eliminate this field – this seems very similar to information contained in PROJECT_ABSTRACT.
- Increase data size to 500.
- Make this a required field.

Discussion:

- KM clarified that this field was originally intended to provide a brief narrative of the data source and its intended use. After further evaluation of the other metadata elements, this information seems duplicative with information contained in other fields, especially PROJECT_ABSTRACT. No objections were raised to eliminating this element.

Conclusion:

Do not include DATA_SOURCE_DESCRIPTION in the Catalog.

METADATA ELEMENT NAME	REQUIRED (Y/N)	DEFINITION	DATA TYPE	DOMAIN LIMITED (Y/N)	DATA SIZE	POPULATED BY	INFORMATION LEVEL
PUBLICATION_DATE	Y	Date station was first added to the Monitoring Catalog.	DATE	N		Water Atlas Staff	Station
DATE_LAST_UPDATED	Y	Date station information was last updated in Monitoring Catalog.	DATE	N		Water Atlas Staff	Station

Comments received:

- Are these things that could be automatically generated by the Water Atlas folks?

Discussion:

- KM indicated that these elements are required per the DEP / FGDC guidelines.
- These fields will not likely be used in searches, but it may be useful to display this information as part of the stations’ information available to users.
- JS indicated that the Water Atlas staff could provide and maintain this information.

Conclusion:

Keep elements as described in the straw-man proposal.

METADATA ELEMENT NAME	REQUIRED (Y/N)	DEFINITION	DATA TYPE	DOMAIN LIMITED (Y/N)	DATA SIZE	POPULATED BY	INFORMATION LEVEL
DATA_TRANSFER_METHOD	Y	Method of transferring information to the Monitoring Catalog	VARCHAR2	N	250	Water Atlas Staff	Station

Comments received:

- Increase data size to 4000.
- Low priority.

- Is it necessary for this to be a required field?
- Could this be generated by the Water Atlas folks?

Discussion:

- KM indicated that this element is required per the DEP / FGDC guidelines.
- JS indicated that the Water Atlas staff would be able to populate this information initially, but voiced concern that the data transfer method may change over time. For the current Water Atlas, this information is maintained at the data provider level.
- JS suggested that the data size does not likely need to be increased.

Conclusion:

Keep this element as described in the straw-man proposal.

METADATA ELEMENT NAME	REQUIRED (Y/N)	DEFINITION	DATA TYPE	DOMAIN LIMITED (Y/N)	DATA SIZE	POPULATED BY	INFORMATION LEVEL
CONTACT_NAME	Y	Name of contact person affiliated with data source.	VARCHAR2	N	100	Data Providers	Project
CONTACT_ADDRESS	Y	Mailing address of contact person affiliated with data source (including city, state, and zip code).	VARCHAR2	N	250	Data Providers	Project
CONTACT_PHONE	Y	Phone number of contact person affiliated with data source.	VARCHAR2	N	25	Data Providers	Project
CONTACT_EMAIL	Y	Email address of contact person affiliated with data source.	VARCHAR2	N	100	Data Providers	Project

Comments received:

- Increase data sizes: CONTACT_NAME (250), CONTACT_ADDRESS (500), CONTACT_EMAIL (100)
- Low priority.

Discussion:

- KM indicated that these elements are required per the DEP / FGDC guidelines.
- CK indicated that CONTACT_ADDRESS may need to be increased to accommodate the full mailing address.

Conclusion:

Increase data size of CONTACT_ADDRESS to 500. Keep all other elements as described in the straw-man proposal.

METADATA ELEMENT NAME	REQUIRED (Y/N)	DEFINITION	DATA TYPE	DOMAIN LIMITED (Y/N)	DATA SIZE	POPULATED BY	INFORMATION LEVEL
ACCESS_CONSTRAINTS	Y	Limitations for obtaining all or part of the data.	VARCHAR2	N	250	Data Providers	Project
USE_CONSTRAINTS	Y	Disclaimer or cautionary guidance to facilitate secondary use of the data.	VARCHAR2	N	250	Data Providers	Project

Comments received:

- Increase data size to 4000 (for both).
- Low priority.
- Is it necessary for this to be a required field?
- Clarification needed for ACCESS_CONSTRAINTS: Obtaining all or part of the data from where?

Discussion:

- KM clarified that ACCESS_CONSTRAINTS is intended to describe any limitations that may prohibit users from obtaining all or part of the data from the data provider, such as proprietary restrictions. USE_CONSTRAINTS is intended to describe any guidance or legal disclaimers associated with secondary use of the data.
- KM indicated that both elements are required per the DEP / FGDC guidelines.
- JS indicated that information about use constraints is currently collected as part of the current Water Atlas SOPs / data provider agreements. This information is not available to search by, but it is displayed as part of the data provider's information available to users.
- JS indicated that the data size could be increased as needed.

Conclusion:

Keep both elements as described in the straw-man proposal. Data sizes may need to be increased once the typical value size has been assessed.

METADATA ELEMENT NAME	REQUIRED (Y/N)	DEFINITION	DATA TYPE	DOMAIN LIMITED (Y/N)	DATA SIZE	POPULATED BY	INFORMATION LEVEL
KEYWORDS	Y	Set of keywords to help in free-text searches. Must include at least one International Standards Organization (ISO) Topic Category. Domain for ISO Categories: <i>Farming (001) - rearing of animals and/or cultivation of plants, irrigation</i> <i>Biota (002) - flora and/or fauna in natural environments, ecology</i> <i>Boundaries (003) - legal land descriptions, political & administrative boundaries</i> <i>ClimateMeteorologyAtmpsphere (004) - processes and phenomena of the atmosphere</i> <i>Economy (005) – economic activity, conditions, and employment, forestry, fisheries</i> <i>Environment (007) – environmental resources, protection, and conservation, impact assessment, monitoring, water quality</i> <i>GeoscientificInformation (008) – information pertaining to the earth sciences, geophysics, geology, hydrogeology</i> <i>Health (009) – health, health services, human ecology, and safety</i> <i>ImageryBaseMapsEarthCover (010) – base maps, land cover, topographic maps, imagery, annotations</i> <i>IntelligenceMilitary (011) – military bases, structures, activities</i> <i>InlandWaters (012) – inland water features, drainage systems and their characteristics, rivers, lakes, water use plans, dams, currents, floods, water quality, hydrographic charts</i> <i>Location (013) – positional information and services, geodetic networks</i> <i>Oceans (014) –features and characteristics of salt water bodies</i> <i>PlanningCadastre (015) – information used for appropriate actions for future use of the land</i> <i>Society (016) –characteristics of society and culture, archeology, religion, demographics, crime and justice, recreation</i> <i>Structure (017) – man-made construction</i> <i>Transportation (018) – means and aids for conveying persons and/or goods, roads, nautical charts, railways</i> <i>UtilitiesCommunication (019) – energy, water and waste systems, and communications infrastructure</i>	VARCHAR2	N	250	Data Providers	Project

Comments received:

- Increase data size to 4000.
- Low priority.
- This is a nice feature but just adds one more layer for data suppliers to populate. Is it necessary for this to be a required field?
- Set default value to “Environment (007)”.

Discussion:

- KM indicated that this element is required per the DEP / FGDC guidelines.
- KM suggested setting this field’s default value to “Environment (007)” because environmental monitoring activities are included in the definition of the “Environment (007)” category. Data providers could still have the option to replace “Environment (007)” with another ISO category, or include additional ISO categories and other

keywords. CK indicated that KM's suggestion seems acceptable because providing a default value will reduce the amount of effort required from data providers.

- JS suggested increasing the data size to 1000.

Conclusion:

Change data size to 1000.

Inclusion of Additional Elements for Groundwater wells

- KM indicated that comments had been received indicating that there may be an interest in including additional elements to aid in capturing attributes of groundwater stations. Suggestions include:
 - o Total depth of well
 - o Casing depth of well
 - o Case Diameter of well
 - o Hydrogeology of open interval
 - o Geology of open interval
 - o Aquifer Tapped (*currently included in WATER_RESOURCE_NAME*)
- CD indicated that the most critical pieces of information, location and aquifer tapped, have already been included in the Catalog. Total depth of well and casing depth of well are also important pieces of information, but may not be appropriate for the Catalog effort because that information could be obtained by contacting the data provider. KB agreed that this level of detail may be too fine for the Catalog, as the depth fields would be the only fields that are specific to a subset of stations.
- JS and JG indicated that the current Water Atlas includes total depth as an optional field.
- CK indicated that total depth and casing depth would be useful to include in the catalog (perhaps as optional fields) because many scientists and managers will likely want to search by this information. BT agreed and indicated that users would likely search for a wells within a range of depths. Depth information is important for groundwater stations because it provides information about the vertical location of the sampling activity, whereas LATITUDE and LONGITUDE only provide information about the horizontal location of the sampling activity.
- BT indicated that some data providers may not have this information easily available, and suggested making these fields optional or including values such as "not provided".
- KM suggested including the two additional elements in the initial Catalog design, and then revisiting them in 12-18 months to see if they are actually being used by data providers and users.

Conclusion:

Add the following elements:

METADATA ELEMENT NAME	REQUIRED (Y/N)	DEFINITION	DATA TYPE	DOMAIN LIMITED (Y/N)	DATA SIZE	POPULATED BY	INFORMATION LEVEL
TOTAL_DEPTH	N	To be completed only when STATION_TYPE = Well-Potable well or STATION_TYPE = Well-Non-potable well. The total depth (in feet) of the well.	FLOAT	N	10	Data Providers	Station
CASING_DEPTH	N	To be completed only when STATION_TYPE = Well-Potable well or STATION_TYPE = Well-Non-potable well. The total depth (in feet) of the well casing.	FLOAT	N	10	Data Providers	Station

Concluding Remarks

KB indicated that as the Catalog development progresses, some changes may need to be made to the list of metadata elements, especially with regard to data size and use of domains. The Water Atlas staff may request additional meetings with the MCW to discuss these issues as they arise.

KM suggested that the workgroup meet again via webinar in January to continue discussion of the Catalog development.