

# NGDA Dataset Report

**Official NGDA Title:** FWSInterest

**Metadata Record Title:** FWSInterest

**A-16 NGDA Theme:** Cadastre

## Executive NGDA Theme Champion(s):

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## Metadata:

**Registration Status:** Complete

**Registered on** 3/18/2013

**GeoPlatform Link\*:** <http://www.geoplatform.gov/node/243/537d65bd-ef76-4bd4-bad2-60e8ea493817>

**Data.gov Metadata Link\*:** <http://catalog.data.gov/harvest/object/bdcb1e4d-789f-4b97-ab69-601310b30b2a/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:

This is the first assessment of the FWSInterest data layer. The data represents the tracts added from the first National Wildlife Refuge at Pelican Island, Florida, founded March 14, 1903 through

## LMA Submission:

**Status:** Complete

**Date:** 11/2/2015

**Extension Requested:** Yes

## LMA Reviewer(s):

**Supervisor:** Janet Bruner, janet\_bruner@fws.gov

**Theme Lead:** Don Buhler, dbuhler@blm.gov

**Executive Champion:** Did not review

**SAOGI\*:** Did not review

**Other:** Cadastral Data Working Group CDWG@fws.gov

## LMA Verifier:

**Name:** Cadastral Data Working Group

**Email:** cdwg@fws.gov

## 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:

**Managed; Predictable**

General Questions: 57%

**Managed; Predictable**

Stage 4 - Access: 100%

**Optimized; Established**

Stage 1 - Define/Plan: 46%

**Transition; Transformation**

Stage 5 - Maintain: 66%

**Managed; Predictable**

Stage 2 - Inventory/Evaluate: 25%

**Managed; Predictable**

Stage 6 - Use/Evaluate: 44%

**Transition; Transformation**

Stage 3 - Obtain: 88%

**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

Publication of the USFWS FWSInterest data layer, the USFWS contribution to the cadastre theme, is a standard function of the National Wildlife Refuge System (NWRS) Division of Realty. The Division of Realty is primarily funded by the Land and Water Conservation Fund and the Migratory Bird Conservation Fund. Please see the Division of Realty web site for agency budget information (<http://www.fws.gov/Refuges/realty/about.html>). The publication of the FWSInterest data layer as a National Geospatial Data Asset in the A-16 cadastre theme (<https://www.fgdc.gov/initiatives/portfolio-management/themes>) only passed through draft to final process on September 4, 2015 (<http://catalog.data.gov/dataset/fws-interest>). The USFWS Cadastral Data Working Group, chaired by the Chief Cartographer, defines and manages the FWSInterest data layer. The data layer is mature, actively managed and represents the lands and waters managed by the USFWS (<http://www.fws.gov/refuges/land/landreport.html>) throughout the eight regions (<http://www.fws.gov/where/>). The realty cartographer in each USFWS region manages their geographies' cadastral geodatabase (<http://www.fws.gov/Refuges/realty/cartography.html>). All of the Lifecycle Stages (Define (Plan), Inventory/Evaluate, Obtain, Access, Maintain, Use/Evaluate, and Archive) are supported, with differing levels of formality. This lifecycle maturity assessment is being used to both evaluate the current state of the program, but more importantly, to embed the lifecycle stages into the FWSInterest data creation and publication workflow.

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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 under development.

**Justification Comment:**

**Attachment(s):** 0

Many technical steps have been taken to ensure that the FWSInterest data layer meets open government and transparency guidelines. These include publishing to meet the geospatial data exchange format ([http://www.fws.gov/stand/standards/pr\\_geoex\\_WWW.html](http://www.fws.gov/stand/standards/pr_geoex_WWW.html)), publication as a shapefile containing ISO and FGDC metadata (<http://catalog.data.gov/dataset/fws-interest>), as well as publishing a web service ([http://gis.fws.gov/ArcGIS/rest/services/FWSCadastral\\_Internet/MapServer](http://gis.fws.gov/ArcGIS/rest/services/FWSCadastral_Internet/MapServer)). A formal process is being developed and is documented in draft Cadastral Data Publication Work, distributed for internal review on July 9, 2015. Publication as an NGDA dataset is a recent activity and this maturity assessment is being used as a planning document to mesh the FWSInterest data layer production process and each of the lifecycle stages.

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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 under development.

**Justification Comment:**

**Attachment(s):** 0

Members of the Cadastral Data Working Group could and have ensured continuity of the national program during staff changes. The realty cartography program is mature, the FWSInterest data layer has been publically available for many years at [www.fws.gov/data](http://www.fws.gov/data), and the data model and data handbook exists. The Service mapping manual chapter (<http://www.fws.gov/policy/343fw5.html>) is being rewritten in FY 16. The data model is documented in the gis layer metadata, available at (<http://catalog.data.gov/dataset/fws-interest>). The data handbook is being revised and was an agenda item at the October 6-8, 2015 meeting of the CDWG. The draft Cadastral Data Publication Workflow

was distributed on July 9, 2015 for internal review. It is both a design document and “current state” review which gives the user a full roadmap of how to publish the completed FWSInterest gis layer as downloadable data and web services. These documents haven’t been publically available but should be as our publication process matures. All of the Lifecycle Stages (Define (Plan), Inventory/Evaluate, Obtain, Access, Maintain, Use/Evaluate, and Archive) are reflected in these documents. We address system and data architectures, business processes, training and outreach, and quality control. This maturity assessment is being used to evaluate the USFWS NGDA contribution and to start work on an FWSInterest lifecycle stage work plan as part of the overall publication process.

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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

The FWSInterest data layer was created to geospatially represent the lands and waters managed by the US Fish and Wildlife Service. The data standard was developed by analysis of the USFWS Service Manual for land acquisition, realty operations, and cadastral survey and maps (<http://www.fws.gov/policy/manuals/part.cfm?series=300&seriestitle=LOGISTICS>) , combined with knowledge of the business processes needed for GIS specialists and realty cartographers to map the parcel geography to create land status maps (<http://www.fws.gov/policy/343fw5.html>). Constant internal review takes place as the data layer is improved. New and old issues are discussed at monthly meetings of the Cadastral Data Working Group. Most major changes happen at the yearly 3 day planning session. Sometimes externally driven requests are received, such as data publication format suggestions, and those are evaluated and adopted, when appropriate.

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

**Answer:** Ad hoc process is used for involving Partners/stakeholders in identifying requirements.

**Justification Comment:**

**Attachment(s):** 0

Most requirements are driven by the USFWS NWRS Division of Realty manuals found at: <http://www.fws.gov/Refuges/realty/laws.html>. The Regional Realty Cartographers (<http://www.fws.gov/refuges/realty/cartography.html> ) suggest additions or modifications to the data standards, data layer and publication processes as needed. Other partner requirements are collected through participation in national organizations such as the Federal Lands Group and NAWPA, <http://nawpacommittee.org/>. Additional requests are sent to the topic email: [cdwg at fws dot gov](mailto:cdwg@fws.gov).

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

**Answer:** Process under development.

**Justification Comment:**

**Attachment(s):** 0

A formal quality assurance process does not exist, but an informal process has been in place for many years. Both a quality assurance plan and quality control mechanisms are the next step in the publication of the USFWS FWSInterest data layer. Question 15 discusses error correction, one aspect of quality control.

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

**Answer:** Process to define under development.

**Justification Comment:**

**Attachment(s):** 0

The FWSInterest data layer, because it addresses land tenure throughout the country, can be a sensitive topic to local communities. The data layer was created from realty manual requirements and the operational needs of the realty program. The data is available to the public and processes are in place to be sure no private information, if it exists, is released. A formal process to evaluate the

dataset has not yet been pursued.

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

**Answer:** Standards being implemented.

**Justification Comment:**

**Attachment(s):** 0

The USFWS FWSInterest data layer is developed following standards that are available on internal documents and in the data layer metadata. The metadata is found by going to [http://www.fws.gov/gis/data/CadastralDB/index\\_cadastral.html](http://www.fws.gov/gis/data/CadastralDB/index_cadastral.html) and then clicking on the USFWS Cadastral Data link. The data model is documented in the data layer metadata, available at (<http://catalog.data.gov/dataset/fws-interest>). The data handbook is being revised and was an agenda item at the October 6-8, 2015 meeting of the CDWG. The draft Cadastral Data Publication Workflow was distributed on July 9, 2015 for internal review. It is both a design document and “current state” review which gives the user a full roadmap of how to publish the completed FWSInterest data layer as downloadable data and web services. These documents haven’t been publically available but should be as the publication process matures. In addition, the FWSInterest data layer follows the “geospatial data exchange format,” ([http://www.fws.gov/stand/standards/pr\\_geoex\\_WWW.html](http://www.fws.gov/stand/standards/pr_geoex_WWW.html)). The FWSInterest data layer has not been established as an FWS data standard (<http://www.fws.gov/stand/>) but the issues has been raised and will be addressed.

## 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 is under development to identify datasets promoting reuse and reduce unnecessary duplication.

**Justification Comment:**

**Attachment(s):** 0

The FWSInterest data layer is developed to satisfy the national requirements of the USFWS realty program. Land surveys are required throughout the Service for land acquisition and management, construction of Service facilities, controlled mapping, and certain scientific investigations. See the FWS manual, Part 343 FW1, Cadastral Surveys and Maps (<http://www.fws.gov/policy/343fw1.html>) section 1.4.A. The land survey data is passed to the realty cartographer in developing the FWSInterest data layer. Other, external and nationally available data sets to meet the realty acquisition requirements don’t exist. Analysis of land adjacent to the FWSInterest data layer features can be done with PADUS, BLM’s SMA maps, etc., but none are survey quality. There is interest into paying for a national parcel database, but those conversations have just started and while helpful to other mapping purposes, would not supplant the need for survey during the land acquisition process.

## STAGE 3 - Obtain

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

**Answer:** Process is being implemented.

**Justification Comment:**

**Attachment(s):** 0

Data to populate the FWSInterest data layers is created during the land acquisition and/or disposal process as defined in the Service Manual on Land Acquisition, Realty Operations and Cadastral Surveys and Maps (<http://www.fws.gov/refuges/realty/laws.html>). While there may be minor differences in the way data is obtained (a dwg file vs. coordinate geometry) for the data layer, all FWS realty cartographers follow the cadastral data standard, the cadastral data handbook and the cadastral data publication workflow. This process is implemented, is successful and is being updated to reflect news needs and technologies. This maturity assessment will be used to clarify lifecycle stages within each of the current FWSInterest data layer processes.

**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

The USFWS FWSInterest data layer metadata is published online at (<http://catalog.data.gov/dataset/fws-interest>) in both ISO-19139 and Original FGDC Metadata format. The metadata is updated every time the data layer is published. The metadata documents the FWSInterest data standard developed by the chief cartographer, the Cadastral Data Working Group and the Branch of Information Technology. The Branch of Information Technology provides assistance to all programs to develop metadata <http://www.fws.gov/stand/Metadata/support.html>.

**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:** Dataset has presently attained the greatest geographic coverage as defined by the current requirements or roughly 100%.

**Justification Comment:**

**Attachment(s):** 0

**Geographic Extent –** The FWS Interest data layer covers the extent of the lands and waters managed by the US Fish & Wildlife Service. Updates are made on a quarterly basis. The lands and waters are published in the Annual Report of Lands (<http://www.fws.gov/refuges/land/landreport.html>).

**Resolution –** The data originates from the surveyors and is passed to the cartographer. The source data is transmitted in COGO, DXF, DWG, Shapefile formats. Source data meets the requirements described in the survey manual, <http://www.fws.gov/policy/343fw1.html>.

**Spatial Resolution –** The data is maintained in the geographic coordinate system, a non-projected global representation. It is stored in decimal degrees in the North American Datum of 1983 (NAD 83). Line topology eases the technical issues of discriminating between adjacent features by applying coincidence.

**Spectral resolution –** not applicable

The FWSInterest data layer is complete to the quarterly update published on the last Wednesday of October, January, April, and July as documented in the data layer metadata (<http://catalog.data.gov/dataset/fws-interest>).

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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

The FWSInterest data layer is available to all users in both shapefile format and as a rest service and is updated every quarter (<https://catalog.data.gov/dataset/fws-interest>). Clicking on the USFWS Cadastral Data link takes the customer to all published USFWS realty data sets ([http://www.fws.gov/gis/data/CadastralDB/index\\_cadastral.html](http://www.fws.gov/gis/data/CadastralDB/index_cadastral.html)). The draft Cadastral Data Publication Workflow was distributed on July 9, 2015 for internal review.

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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

The maintenance process for updating and storing the FWSInterest data layer has been in place and is being improved with the publication of the draft Cadastral Data Publication Workflow, distributed for internal review on July 9, 2015. The data layer is updated locally by each region (<http://www.fws.gov/where/>) as needed and is combined into a national data layer once a quarter. This is done through an ESRI ArcSDE replication technical process. There is not a process in place to explicitly track data layer maintenance in terms of lifecycle stages. The NGDA publication process is a very new process for FWSInterest data layer. This maturity assessment will be used to integrate the lifecycle stages into the FWSInterest data layer maintenance processes.

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

**Answer:** Error correction process under development.

**Justification Comment:**

**Attachment(s):** 0

The FWSInterest data layer error correction processes address both geometry and attribute information. Regional cartographers apply topology rules from the geodatabase to improve the locations of coincident features. Attribute integrity is attained by requiring standard field values based on the FWS Cadastral Data Model's 15 domain name definitions. A tool built by one regional cartographer compares the Land Records Database (linked in GIS) to the FWSInterest data layer, documenting mismatches or missing values. The data layer is reviewed during the publication process for "stuff that just looks wrong," and requests to correct errors are received from users via the [cdwg@fws.gov](mailto:cdwg@fws.gov) email address. Errors are corrected for the next quarterly data layer publication. Users are not informed of error corrections but are directed to the latest version of the data layer. A quality assurance plan that involves quality control mechanisms is under development.

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## **STAGE 6 - Use/Evaluate**

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

**Answer:** Process is being developed to determine if user needs are being addressed or met.

**Justification Comment:**

**Attachment(s):** 0

The Division Chief, Division of Realty has managerial authority over the DOI, USFWS, CNWR, Division of Realty. The Service's Chief Cartographer, Chief Surveyor, and the Realty staff make up the Division of Realty (<http://www.fws.gov/Refuges/realty/index.html>). The FWSInterest data layer meets the Division's parcel data mapping requirements, expressed through laws and policies (<http://www.fws.gov/Refuges/realty/laws.html>) and applicable manual chapters, exhibits and other guidance. The realty cartographers and GIS specialists define the system and data architectures required to meet the cadastral program business processes, documented in data standards, handbook and publication guidance. Feedback from users in just the last year resulted in data standard modifications, feature symbology adjustment, publication format expansion, and technical modifications to enable web feature data analysis. More formal user data need assessments will take place as new web accessible applications are developed, published for testing and deployed. All users can submit comments at [cdwg@fws.gov](mailto:cdwg@fws.gov).

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

**Answer:** Process is being developed for providing access and proper use.

**Justification Comment:**

**Attachment(s):** 0

The FWSInterest data layer is available to the Division of Realty, other FWS programs and external partners and the public. The USFWS GIS data page link to the FWSInterest data layer at ([http://www.fws.gov/gis/data/CadastralDB/index\\_cadastral.html](http://www.fws.gov/gis/data/CadastralDB/index_cadastral.html)), has links to both the published web service and to the USFWS Realty data sets via [data.gov](http://data.gov). The metadata is both FGDC and ISO

compliant and can be reviewed at <http://catalog.data.gov/dataset/fws-interest>. The cadastral mapping program and specifically the FWSInterest data layer were formally presented in 6 sessions in FY 15: Realty Academy, cartography training session, November, 2014; Cadastral Data Working Group, December 9, 2014; Realty Chiefs briefing, May 4, 2015; HQ All Hands Meeting, August 4, 2015; Federal Lands Working Group, September 3, 2015; and the FWS GIS Steering Committee, Sept 17, 2015. The data layer is also presented as a base layer in many National Conservation Training Center geospatial classes as a foundational GIS layer for the US Fish and Wildlife Service (<http://training.fws.gov/>).

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

**Answer:** Assessment process implementation started for taking advantage of changing technology.

**Justification Comment:**

**Attachment(s):** 0

The FWSInterest data layer is produced to support the mission of the Division of Realty and the interests of other organizations and individuals. The data layer is created based on the business processes of the Division of Realty. As processes change, so can the data layer. The FWSInterest data layer is created by the realty cartographers from all 8 geographic regions and headquarters in Falls Church, VA. They are joined by staff from the Branch of Information Technology Management to form the Cadastral Data Working Group (CDWG). The CDWG manages the FWSInterest data layer. CDWG members have an in depth knowledge of Division of Realty processes and requirements, as well a suite of complex digital cartography, GIS, and tech skills. This is evident in the quality of the FWSInterest data layer, documented throughout this data assessment. Policies and procedures are being re-written and are at the cusp of publication, all of which reflect an understanding of changing technologies. New web accessible applications and expanded web services are being developed and tested. The recent contribution of the FWSInterest data layer to the NGDA cadastre A-16 theme demonstrates the USFWS is creating business processes and management practices to meet changing technology.

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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

The formal archival process is under development and will be included in the Cadastral Data Publication Workflow, currently in internal review. The FWSInterest data layer for each publication cycle (quarterly as of March, 2015, biannual for earlier versions) is currently stored on (1) the Cadastral Data Working Group Internal FWS SharePoint site (internal reference), (2) in ServCat, the USFWS Service Catalog, where the data is uploaded and made available to data.gov (<http://ecos.fws.gov/ServCatContent/>), and (3) the Division of Information Resources and Technology Management (<http://www.fws.gov/irm/>) as part of their overall data backup procedures (no reference). Paper and scanned copies of land status maps were transferred to NARA in July 2014 as part of the USFWS Headquarters office move. There is no process in place to move digital files to NARA, but (1) a records disposition information was forwarded to Realty staff in September, 2015 and 36 CFR 1223 et al for OMB agency review (NARA proposed rule revising records management), was distributed for review on Oct 13, 2015. As stated earlier in this document, archiving is a major component in our geospatial data integration strategy for the FWSInterest data layer. This maturity assessment is being used to create a more mature lifecycle stage work plan, including the internal and external archiving strategy.