**R9 VDC SDE FDS Migration Plan**

**Region 9 Data Governance Team**

**25 April 2023**

*This document is intended to provide guidance to Region 9 Forests and Grasslands for the migration of VDC corporate data to themed feature datasets. This is an interim action plan that will facilitate the upcoming migration to PostgreSQL. Portions of this document may become part of the R9 Data Governance Strategy as it is developed.*

Background

In 2018 Region 9 made the decision to move from feature datasets (FDS) in the VDC SDE. At that time this was a viable solution for organizing data. Since then, National guidance has become more structured and significant efforts are being made to improve data quality through the National GIS Data Dictionary. The National GIS Data Dictionary provides business themed based organization through FDSs which has become the recommended “best practices” for managing VDC SDE data.

Objective

Transition all unit VDC SDE data to business themed FDSs and implement the National GIS Data Dictionary standards where applicable.

Impacts

The transition to FDSs will have impacts and require significant effort to complete. The Data Governance Cadre sub region representatives will be available to assist as needed. The following are some anticipated impacts:

* Layerfiles - Reset
* GI data sources – Reset
* EDW - Reset
* National Data Assessment – Reset (If applicable: NDA points to FC name only.)

Implementation

Implementation should be completed in stages and will differ depending upon GIS data content. The following are high-level steps that will facilitate implementation:

1. Complete a VDC SDE inventory and categorize each feature class (FC) in a business theme
2. Create a business theme based FDS for each category (Local Projection if applicable)
3. Load categorized feature classes into the corresponding FDS (Rename without theme in FC name)
4. Update metadata (if applicable)
5. Reset data sources (GI, Layerfiles)
6. Update EDW ETLs with EDW
7. Verify Data Assessment tool connections
8. Organize Layer file directory themes to match FDS themes
9. Rollout the new FDS structure to your unit users (update project links if required)
10. Remove legacy file structure
11. Finalize unit GIS file catalog and data stewardship responsibilities

VDC SDE Inventory

A complete VDC SDE inventory should be completed by the unit SDE manager using the SDE manager toolbox. This tool will produce a spreadsheet that can be used to categorize data into business themes. This can also provide insights into data source options by highlighting if a FC can be discarded in favor of an existing EDW source. Using EDW data instead of maintaining a standalone FC in SDE reducing data stewardship responsibilities to the unit. The VDC SDE inventory output can also be used to build the unit GIS file catalog referenced later in this document. The following are the suggested inventory steps:

1. Run Inventory tool (*T:\FS\Reference\GeoTool\agency\Toolbox\CIOToolbox\SDE Manager Toolbox.pyt\Inventory\Inventory Geodatabase)*
2. Add a column named “Theme” to the spreadsheet and assign a theme to each FC
3. Review existing FCs to see if they exist in the EDW. If so, consider deleting FC and sourcing EDW layer in your layer file directory
4. Update the spreadsheet to reflect changes and retain for use with GIS file catalog

Convert VDC SDE to FDSs

Feature datasets should be created using core business themes provided by the Region. Existing data with matching themes will be migrated to the appropriate FDS. Additional FDSs may be added to accommodate individual unit needs. Core business themes are provided in Appendix 1. The following are suggested conversion steps:

1. Create core FDSs using National DD if one exists (use local projection where applicable)
2. Create optional core FDSs (use local projection where applicable)
3. Migrate feature classes to FDSs (remove theme prefix from FC name)
   1. Migrate to National DD FC where applicable
   2. Use National DD theme FDS for like themed FCs
   3. Remove National DD FCs if type of data is not maintained by unit
4. Assign SDE\_VIEW to FDSs when ready for users
5. Consider versioned editing for each FDS where applicable
6. Update EDW, GI, layer files, and project connections
7. Connect data assessment tool via EDW contact (Region will assist)
8. Remove legacy FCs from VDC SDE

Create/Update Layer File Directory

Layer files will need to be reconnected to the appropriate data source. Consideration to the upcoming ArcGIS Pro transition is advised. It is recommended that the ArcMap layer files be reconnected and used if ArcGIS Pro if possible. If Pro layers are required, they should be placed under the appropriate theme folder with “ArcGIS Pro” indicated in the layer file name. Layer files will have to be recreated eventually when the ArcGIS Pro transition is complete. Layer file themes should match FDS themes where applicable. If the unit decides to create layer files from EDW data then “\_EDW” should be placed after the layerfile name to indicate source. Suggested core layer file directory themes are illustrated in table 1.

**Table 1**. Layer file directory themes.

| **Layer File Theme** | | |
| --- | --- | --- |
| Aquatic | Minerals | Utility |
| Ecology | “Theme”\_NonFS | Vegetation |
| Elevation | Planning | Water |
| Facility | Range | Wildlife |
| Fire Management | Recreation | *Optional: EDW (Add \_EDW after name)* |
| Geology | Scenery |  |
| Heritage | Special Uses |  |
| Land | Transportation |  |

**Appendix 1**

Core FDS Business Themes

| **Generic Theme Name** | **Description** |
| --- | --- |
| Aquatic | Repository for locations and habitat of organisms living in the water. Fish, aquatic insects, amphibians. |
| Ecology | Repository for ecological-based corporate data. Land type association (LTA), soils, and ecological land type are examples in this theme. |
| Elevation | Repository for layers related to height above or below sea level (elevation). Topography, Aspect, Contour, Elevation, and Slope. |
| Facility | Repository for a variety of constructed features like Communication Sites, Dams, Bridges, Radio Dead Zones, Building locations, Driveway, Parking, and Water Facilities (Potable and Waste).  *Note: Infra (iWeb) is where much of this data in this theme should be located; however, the spatial data here supplements and support Infra where Infra has limitations.* **Not already in the EDW** |
| FireManagement | Repository for fire-related layers. Airport locations, Fire Consequences, Fire Management and Planning Units (FMU and FMP), Fire Management Zones (FMZ), Dispatch Blocks, Workload Areas, Fire Regime and Condition Class (FRCC), Fuel Model, Wildland Urban Interface (WUI), and Flight Hazard. *Fire occurrence and fire perimeters are now maintained at the Regional VDC SDE*. **Not already in the EDW** |
| Geology | Repository for Geology, Geologic Hazard, Geologic Feature, Geologic Resource, Geologic Unit, Landslide, or other related geological spatial data. |
| Heritage | Repository for heritage-related reference library layers that are out of scope of the Heritage NexGen NRM application. These layers may or may not require restricted access. |
| Lands | Repository for layers on land mapping status (formal designations), land boundaries, ownership, and PLSS. **Keep in mind the authoritative data is at the Enterprise Data Warehouse (EDW).** |
| Minerals | Repository for layers related to mineral deposits or mining. Locatables, materials (rock/sand/gravel), and mining. |
| “Theme”\_NonFS (Not USFS data) | Repository for Non-Forest Service data, not created, served, or maintained by the FS (e.g., county roads, congressional districts, privately owned lands, etc) **Not already in the EDW** |
| Planning | Repository for layers designated by the Forest Plan or an act of congress. Wild and Scenic layers, wilderness, and inventoried roadless areas. |
| RMU  **Use National DD FDS** | Repository for layers that support the management of rangeland needs and mapping and are not any of the layers required to be located at the NRM SDE. |
| Recreation  **Use National DD FDS** | Repository for layers related to recreation sites, activities, or inventories. Includes dispersed and developed recreation sites, Recreation Opportunity Spectrum (ROS) areas, and wilderness recreation management areas. |
| Scenery  **Use National DD FDS** | Repository for mapping layers associated with scenic inventories. Scenic classes, existing scenic integrity, and scenic integrity objectives. |
| Special Uses | Repository for layers representing areas under a special use permit like roads, trails, easements, and utility lines. |
| Transportation  **Use National DD FDS** | Repository for means for conveying people and goods. Railroad, Road, Scenic Byway, Trail, Travel Management Area, and Travel Route.  *Note: These are Forest Service managed features only; non-Forest Service features must be categorized in the Non-Forest Service (NonFS) theme.* |
| Utility | Repository for means of distributing services. Telephone lines, sewer lines, pipelines, and powerlines (and corridors). |
| Vegetation | Repository for mapped distributions of flora. Botany, Genetics, Hardwood, Historic, Inventory Plots, Project Opportunity, Size, Structure, Stand, Stand Exam and Timber Suitability. |
| Water | Repository for all things related to water (not fish—that’s Aquatic). Climate, Precipitation, Snowpack Telemetry (SNOTEL) sites, Water Quality, other local hydrologic data, NHD derivatives or supplemental data, and other related layers.  *Note:*   * *It’s recommended that you avoid duplicating NHD data on your unit’s VDC SDE instance; rather, it’s preferred that you reference the NHD data from the EDW.* * *Layers associated with aquatic organisms and their habitats belong to the Aquatic group.* |
| Wildlife | Mapped terrestrial species locations and habitat. Layers that may supplement corporate data in NRM SDE. |