CERP Guidance Memorandum
South Florida Water Management District – Jacksonville District, U.S. Army Corps Of Engineers

CGM NUMBER: 028.01
EFFECTIVE DATE: 10/08/2009
CATEGORY: General

SUBJECT: Technical Specifications for CERP Geographic Information System (GIS)

DESCRIPTION:

This memorandum establishes procedures, policy and guidance to the Jacksonville District, U.S. Army Corps of Engineers (USACE) and the South Florida Water Management District (SFWMD) staffs, as well as members of the Project Delivery Teams (PDTs) on the technical specifications for CERP GIS. This memorandum provides guidelines and recommendations covering all GIS datasets and applications that are being created or have been created for any Comprehensive Everglades Restoration Plan (CERP) project or program. The overall goal is to ensure that a high quality, well-documented CERP GIS is built and maintained. The primary objectives of these standards are to provide the technical specifications that GIS data must meet to be accepted into the CERP GIS Database and the requirements that GIS applications must meet to be incorporated into the CERPZone. The specifications are grouped into two categories:

1. Required Technical Specifications
2. Recommended Technical Guidelines.

Any Recommended Guideline that is not met must be fully documented. CERP GIS datasets are considered to be spatial data that has been created or altered by any individual, including SAJ or SFWMD Staff members and internal or external contractors, designed to fulfill a specific CERP need or task, including any data that is utilized in analysis. Spatial data, as defined by the CERP Data Management Project Management Plan (PMP), is defined as “information about the location and shape of, and relationships among, geographic features, usually stored as coordinates and topology.” CERP GIS applications are considered to be any commercial (off the shelf) or custom built application that involves the use of “spatial technology” and may require the use of ESRI licenses. The CERP GIS Applications Guidance must be followed in order for any developed application to be published within the CERPZone environment.
This document provides working level guidance to assist Project Delivery Teams in the implementation of the Comprehensive Everglades Restoration Plan (CERP) program executed between the South Florida Water Management District and the U.S. Army Corps of Engineers. The guidance does not constitute policy for either agency nor does it create authority beyond that granted to any agency member carrying out their duties. Guidance reflecting agency policy on subjects listed in the guidance memorandum section of the programmatic regulations for CERP will be issued when the final programmatic regulations are adopted, using the process stated in the regulations.
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Attributes:
GIS attribute standardization and documentation is an important aspect of CERP data management. We depend on it to enable piecewise assembly of project datasets into system-wide themes for regional analysis. On the other hand, given the variety of spatial data types, formats and uses, and the number of data producers, many of whom are following mandates from some level of government; it is not easy to make concise statements of wide generality about attribute schemas. Some quality guidelines are given below.

Attribute Guidelines

1. All datasets must be properly attributed.

2. The codes for attribute values, their domains, ranges and meanings must be thoroughly documented in the metadata.

3. The tests used to establish the accuracy of the attribution will be reported in the Entity_Attribute Section of the metadata.

Published Attribute Standards

The following are examples of published content standards, which have been adopted by CERP.

- Florida Land Use, Cover and Forms Classification System (FLUCCS), January 1999, FDOT Surveying and Mapping, Thematic Mapping Section for land use and land cover. [http://www.dot.state.fl.us/surveyingandmapping/Manuals/fluccmanual.pdf](http://www.dot.state.fl.us/surveyingandmapping/Manuals/fluccmanual.pdf)

- USACE is required to use the Spatial Data Standards for Facilities, Infrastructure and the Environment (SDSFIE) from the CADD/GIS Technical Center (CGTC) at the Engineering Research and Development Center (ERDC) [http://www.sdsfie.org/](http://www.sdsfie.org/). Unused attributes can be eliminated from the framework and locally necessary attributes (such as FIPS codes) and locally defined tables can be added within the SDS framework. Datasets which are stewarded by other agencies who have mandates and authorities to do so, such as DLG, NHD, EPA STORET, FDOT FLUCCS, Census and Tiger/Line, and those that are updated periodically in their native format, such as GDT and NavTech, should not be converted to SDS. SDSFIE
should be considered for new vector datasets. The CERP GIS Data Management Team needs to be made aware of any new data creation that is occurring for CERP Projects.

Attribute Basics

When not following a published standard, attributes must at least:

1. Begin all attribute item names with a letter.
2. Eliminate punctuation, i.e. hyphens, periods, and capitalization from item names and attribute codes. Underscores are permitted.
3. Allow for as many different foreseeable uses of the data as possible

GIS APPLICATION GUIDANCE:

Required Technical Specifications

GIS Application Development Process:

The GIS Application Development Process (https://www.cerpzone.org/Teams/GIS/Documents/Default.aspx) follows a Software Development Lifecycle (SDLC) approach (https://www.cerpzone.org/Teams/GIS/Documents/Default.aspx). Any CERP customers that outsource GIS development services will be required to follow this process and provide associated documentation and deliverables outlined in the process guidelines. The GIS Application Development Process document and SDLC templates will be provided at the project start.

GIS Application System Overview:

The GIS Application System Overview (https://www.cerpzone.org/Teams/GIS/Documents/Default.aspx) provides details on the current infrastructure, development platform and programming languages supported by CERP GIS application services. All applications developed for CERP Projects or Programs will comply with these specifications and will be built to operate within the existing environment. These guidelines may be changed or updated on a frequent basis depending
on hardware replacement, software upgrades, or other technology developments. The most current version of this document will be provided at the project start.

**GIS Application Development Best Practices:**

The GIS Application Development Best Practices document (https://www.cerpzone.org/Teams/GIS/Documents/Default.aspx) lists programming conventions that the contractor is expected to adhere to when developing application code. These conventions have been compiled based on knowledge gained from internal agency GIS application projects and will ensure that code runs efficiently, with minimal maintenance or overhead. It is expected that, over time, the Best Practices document will be expanded to accommodate conventions gleaned from additional project experience. The most current version of this document will be provided at the project start.

**APPLICATION:**

Effective the date of this memorandum, the above-mentioned standards will be adhered to for all CERP Project and CERP Program GIS data and applications. This information or a reference to this memorandum will be included in any Scope of Work or Contract that involves geospatial data.

**LIST OF ACRONYMS:**

- CADD: Computer Aided Design and Drafting
- CERP: Comprehensive Everglades Restoration Plan
- CSDGM: Content Standard for Digital Geospatial Metadata
- DLG: Digital Line Graph
- EDEN: Everglades Depth Estimation Network
- EPA: Environmental Protection Agency
- ERDC: Engineering Research and Development Center
- FAQ: Frequently Asked Questions
- FDEP: Florida Department of Environmental Protection
- FDOT: Florida Department of Transportation
- FGDC: Federal Geographic Data Committee
- FIPS: Federal Information Processing Standards
- FLUCCS: Florida Land Use, Cover and Forms Classification System
- GIS: Geographic Information System
- HARN: High Accuracy Reference Network
- NAVD88: North American Vertical Datum of 1988
- NAD83: North American Datum of 1983
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NHD National Hydrography Dataset
NSSDA National Standard for Spatial Data Accuracy
PMP Project Management Plan
SAJ Jacksonville District, US Army Corps of Engineers
SDS Spatial Data Standards
SDSFIE Spatial Data Standards for Facilities, Infrastructure and Environment
SFWMD South Florida Water Management District
STORET STOrage and RETrieval

APPROVALS:

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DATE: 10/18/09

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U.S. Army Corps of Engineers

DATE: 5/07/09

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