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USACE CADD Center Project 03.036

Records Inventory and Needs Survey Responses

Final Report
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INTRODUCTION	1
SUMMARY OF RESULTS	1
PART I - RESPONDENT INFORMATION (QUESTIONS 1-4)	2
PART II – FILE FORMATS__(QUESTIONS 16 – 19)	22
PART III – DESCRIBE YOUR FUTURE REQUIREMENTS (QUESTIONS 20-32)	27
PART IV – METADATA (QUESTIONS 33 – 40)	42

Introduction

The following document details the results of the on-line survey funded under the CADD/GIS Technology Center Project called "**Digital Map Collection & Scanning Methods Report and Scanning QC Software Development**" (Project 03.036). The project has objectives to produce standardized scanning specifications and references for scanning existing historic map products, engineering drawings, and other documents into acceptable digital quality and format.

As part of the project, the Civil Works Field Working Group conducted a records inventory and needs survey to measure the applicability to Corps' document collections and to assess both current and future scanned data storage & retrieval requirements. The results are presented on a per/question basis. Not all questions were answered by all respondents.

Summary of Results

The survey was designed to query respondents in three main areas:

- They were asked to describe their collections. This included specifying types of documents, conditions of documents, number of documents as well as the current practices for storing and using those documents.
- They were asked to describe how those same documents might be used or needed in the future
- They were asked specifics about metadata that would be needed to query those documents in an on-line system and whether there are plans in place to implement a digital collection

The results show a wide variation in responses among different district offices. While there were a few respondents with under 10,000 documents there were many more respondents who reported multiple cabinets/rooms full of hard copy documents. A majority reported historical documents that had some level of deterioration. Most are stored in a typical office environment. About 50% also reported some form of off-site storage. Although some reported no indexing system, most reported a card catalog type indexing system. A few had on-line access to an indexing system or were thinking about transitioning to an on-line indexing system. Time for retrieving documents ranged from a few minutes to 5-7 days.

A majority reported doing some scanning in-house. Many districts are moving to Projectwise for their automated indexing systems, some reported no automated indexing system and several had developed in-house systems. There were almost no planned/pending scanning contracts. This appeared to be primarily due to funding problems as most reported that building digital collections was desirable for both preservation and ease of use requirements. Metadata collection on scanned documents appears extremely limited or non-existent in almost all cases.

The results of this survey would indicate a need for each district office, if it has not already been done, to assess the feasibility of developing a digital collection. The initial documents in each collection should represent the documents that are in the most danger from deterioration, the most valuable for historical purposes, and the most commonly accessed. The dissemination to all of the Corps' districts of the quality control software tool (QCMBT), developed in conjunction with this report, should provide a methodology to be used as digital collections are developed. This tool supports a scanning and metadata collection process to be used during the first phase of building a digital collection. The second phase would be to provide a means to pull those scanned documents into a document management system (eg. Projectwise), and/or to provide web-based viewing or retrieval (eg. Portland's viewable on-line map system).

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PART I – Describe Your Holdings (questions 5 – 15)

5. What is the size of your map, aerial photo, engineering drawing holdings? (for each type of document include approximate number of documents, or number of rooms, boxes, file cabinets, etc.)

Galveston	Maps – 200, aerial photos - 5 000, engineering drawings - 500
Wilmington/Philpott Project	42 x 28 is the size of some our largest drawings, maps etc. We have aerial photos in 12 x 12 and 24 x 24
Norfolk District	Map size is E. Guess there are 1000 to 2000 maps district wide that could be scanned. Depends on the need and available funding.
Baltimore District	Two card file cabinets full of aperture cards approx 30,000 cards of Military Projects. Recently had our Civil Works projects aperture cards scanned to CALS files approx 20 000 cards. Disposed or archived to a holding area all hard copy holdings due to elimination of our map file room.
Portland District	Map Holdings - Most included in Engineering Drawings Database. Aerial Photo Holdings - ~200 000 Dating 1929 to present. Engineering Drawing Holdings - 49 642 Scanned drawings already in database tiff format. Scanned drawings have been archived in Seattle. Does not include John Day /The Dalles/Bonneville Projects that maintain a separate database with thousands more scanned drawings. The survey request has been forwarded. Microfiche - ~50,000.
Kansas City District	Maps
Baltimore	Maps-2 000 plus. Aerial photos-100. Engineering Drawings-NA for Real Estate Div.
Walla Walla	I have only dealt with historic maps. To date we have scanned approximately 1000 - only maps dating to 1950 nothing later. I have no idea how many aerial photos we have.
New Orleans	8 rooms full
New Orleans District	Sizes vary anywhere from 40 by 36 to 44 by 34 for full scale and 20 by 18 to 22 by 17 for half scales.
Seattle District	Aerial film - 915 cans (200 lft. per can) aerial prints without film - 33 boxes (33 cft.) in-house drawings = 3500 'D' size drawings off-site drawings = 362 boxes rolled drawings(mf aperture cards = 80 000 (30% scanned)
St Paul Dist.	165 000 engineer drawings in 18 flat files 20 000 maps (USGS & CE maps) 3515 survey books 4300 reports (design memos general design memos etc)
Memphis	140 000 9x9 Aerial Photos in file cabinets 20 000 F-size drawings in flat files In two rooms
St. Paul	Engineering drawings: Approximately 2 cabinets plus drawings stored on Engineers' desks.
Sacramento District	The sizes of drawings (maps) used over the years range from 8.5x11 (8x10.5) to larger than 30x42. with the majority of drawings in the 28x40 size range. My guesstimation of the numbers of each size would be hard to guess. Seventy percent of the Civil Works drawings have been scanned into Raster

(TIFF or CALs) format from 35mm aperture cards and originals and are on 74 CDs. I will try to give you a rough estimate as to how many of each size but understand this will be very rough. About 1/3 of the drawings that were storage at the Federal Records Center in San Bruno were removed from our control by the Federal Archives. 8.5x11 300 - 350 11x17 450 17x22 250 22x34 350 28x40 to 30x42 <5 000 Large than 30x42 ... >200 Design Analysis and Specifications 8x10.5 (8.5x11) <10 000
 Engr drawings - 30 drawers of e or d size drawings aerial photo - 5' x 10' wall of photos filed in

Wilmington District
 folders

USAED Wilmington District
Omaha District
Portland District

Approximately 30X40 approximately 2 file cabinets per FY.

I do not know

Our documents are stored in several various locations on project. This is the best description possible: Engineering Drawings: Flat file drawer cabinets: 55 est 40 000+ drawings total Hanging file cabinets: 40 est 15 000+ drawings total Stick file holders: 42 est 500+ drawings Half-size binder storage: 5 cabinets est 25 000 drawings Book-Photo Storage: File cabinets: 50 Book cases: 45 standard size Miscellaneous document boxes: estimated around 40 - these include contract information photos O&M manuals and other various data. Our main drawing storage area (for the official records) is kept within 3 rooms filled with the flat file cabinets - approx 20'x45' of floor space per room.

Philadelphia

1. Aerial photography stereo pairs approx. 5000 sheets B&W true Color false color infrared
2. USGS USFWS NWI Maps approximately 1000 sheets.
3. NJ tidelands maps 300 sheets;
4. DE tidal wetland maps 100 sheets
5. Misc aerial photography and mapping 2000 documents

Chicago District
Los Angeles

Maps -> 15 Cabinets Photos -> 10 Cabinets Drawings -> 30 Cabinets
 File Room of mostly civil but some military projects.
 10,000 + sepia and mylars, typically E-size.
 in drawers and rolls and now out of control.

Chesapeake and Delaware Canal
St. Louis Permits office

Maps: 30 Aerial Photos: 150 Engineering Drawings: 1200
 Approx. 100 binders of 9x9 aerial photos containing approx. 80 photos in 2/3 of them and 40 in 1/3 of them. approx. 5 boxes (100 count) of aerial photos unbound .Date from the 1960's to 1990's One file drawer cabinet of historic blueprints and River surveys going back to the 1930's
 Maps are 28x40 approximately 2000 in office and many more in records holding
 300 drawers holding about 50 000 drawings.

Kansas City
Jacksonville
HHC 29th Engr BN 5th Engr Det (P & C)
Huntington District

24x32 map size aerial photo 150 special map 120
 We have one room filled with aerial photos. The number I cannot determine. If I had to guess I'd say hundreds of Thousands if not millions. I think 7 filing cabinets. I scanned our topographic maps in this past year and I think there were about 6000. Engineering drawings are on both mylar and microfish.

The one on microfish are in a filing cabinet with nine drawers. I would say there are anywhere between 4 to 5 thousand per drawer. There are probably about 3000 on mylar. In addition to this we also have about 600 rolls of aerial photography film that would be nice to have scanned and probably 1000 aerial photography indexes that would be good to have digitally.

Omaha District

We have thousands of drawings and photography. A large number of the historic maps and real estate holdings are scanned and georeferenced.

**U.S. Air Force HQ Air Combat Command
Marine Corps
Avon Park Air Force Range FL
Louisville**

Approximately 100 maps E-size
D E & F size sheets 50 000 total sheets
Maps: one map drawer Aerials: three map drawers Engineering drawings: one map drawer
on site we have 1 room with 13 drawing cabinets packed to the max 4 hanging cabinets Survey has a lot of aerial photos and quad maps I do not know how much they have.

USMC

All of our paper drawings are scanned. Largest size was 30x42.
700GB in AutoCAD PDF and Multipage Compressed TIFF

Marine Corps Air Station Yuma Arizona

Approx. 20 000 engineering drawings in mylar paper or sepia format. They are stored in a fire vault in 5 E-size vertical bins. There is also a two drawer filing cabinet that store the 1/2 size drawings from past MILCON projects. Approximately 100 installation maps in mylar as well.

Fort Belvoir - GIS Center

The Fort Belvoir DPW has a dedicated building for the storage of flat files (binded documents and hard copy drawings) that must total in the thousands. Most of the drawings are engineering-based stored in flat-file cabinets (floor-to-ceiling).

6. What are your oldest holdings? (description, number of documents)

Jacksonville

**HHC 29th Engr BN 5th Engr Det (P & C)
Huntington District**

Data from 1916 on 35mm film
1942 topographic line maps (60) and strategic (60)
I'm not sure how far back the microfiche drawings go. The Topographic Maps date back to the 1940s and printed on vellum. I'm not sure how many we have.

Omaha District

**U.S. Air Force HQ Air Combat Command
Marine Corps
Avon Park Air Force Range FL**

We have some data from the 1800's but most is in the 1900's
Includes AF base maps from old C Tab collections dating to the 1970s about 25
1941

Louisville

USMC

Marine Corps Air Station Yuma Arizona

The oldest documents we have date to WWII and consist of the original base plan for Avon Park Army Air Field and Gunnery Range as well as aerials that date to 1943.
L&D drawings and residents 1888
1940's site maps approximately 50. Have been scanned and originals turned over to base historian.
1947 maps and building as-built drawings from the Army-Air Corps activity.

Fort Belvoir - GIS Center

I do not know the exact date of the oldest drawings but have seen documents dated from the early 1900's. Most of these type of drawings are planimetric in nature and probably number in the hundreds.

7. What holdings are the most fragile? (deteriorating drawings, negatives unusable, etc.)

Galveston

Aerial photos - film negatives film positives (b&w color CIR)

Wilmington/Philpott Project

Repeat of answer to question 6 above plus multiple historic aerial photos.

Norfolk District

Deteriorated drawing on sepia and paper.

Baltimore District

N/A

Portland District

Old Aerial Photo Contact prints.

Baltimore

Linen maps that are deteriorating

Walla Walla

The maps from the 19th century appear to be hand drawn on linen. They are currently held in our map files room in flat files but are not protected beyond that. Some have been written on and/or scotch taped.

New Orleans District

The old historical basemaps and original construction drawings on linen paper hand lettered in ink or pencil. Some are slightly torn already.

Seattle District

33 boxes (2'x2' or 66 ft.) fading aerial prints of which the film was burned in a fire in the 40's

Also 100's of historic drawings in offsite storage

St Paul Dist.

Headwater maps House & senate document reports (which are actually part of the library collection but contain many maps and drawings and are the authorizing legislation for 9 ft channel etc)

Memphis

Drawings that are associated with facilities we maintain.

St. Paul

Engineer Drawings are copies of originals. They can be replaced if necessary.

Sacramento District

A good 40 - 50 percent of the drawings were reproduced using material that over the years have become brittle or torn and have been taped together.

Wilmington District

old paper drawings - approx 200 sheets

USAED Wilmington District

Deteriorating drawings

Omaha District

I do not know

Portland District

At this point we have numerous drawings from when the project was built that have significantly deteriorated due to careless storage in the past. Currently the photos and a good portion of the original contract documentation is at risk since they are not within proper storage facilities. There is a plan in place to remedy this issue before it becomes a problem but we are short on man hours to accomplish the task.

Philadelphia

Diazo paper prints of DVRPC aerial photography and NJ tidelands mapping some deteriorating false color aerial prints due to reaction of emulsion with storage sleeves

Chicago District

Deteriorated Drawings

Chesapeake and Delaware Canal	Deteriorating blueprints but originals are in good shape in the national archives in Philadelphia. Aerial photos not scanned yet.
Kansas City	Paper maps done on onion paper
Jacksonville	Old linen drawings from the 1930's
HHC 29th Engr BN 5th Engr Det (P & C)	All holdings listed about are fragile
Huntington District	The maps printed on vellum and some aerial photography indexes with negatives taped to paper.
Omaha District	Historic photography and linens of as built from the dams are our most fragile.
U.S. Air Force Hq Air Combat Command	Old C Tab blue lines
Avon Park Air Force Range FL	The original base plan.
Louisville	Drawings are the most fragile especially those being recalled and handled numerous times. I have great concerns about their fragility There are boxes of slides that belongs to Jack Skinner section that something needs to be done to preserve these.
Marine Corps Air Station Yuma Arizona	Reversed image sepias.
Fort Belvoir - GIS Center	The older documents especially those that are paper-based are in various stages of deterioration. Most have not deteriorated to the point that they can not be scanned.

8. Describe the physical environment the drawings are stored in.

Galveston	Some photos in film canisters; some in boxes. Some are maintained in climate controlled rooms others in storage buildings with no climate control.
Wilmington/Philpott Project	Map cabinets in basement.
Norfolk District	Library flat files and legal size files in functional offices.
Baltimore District	Normal office room environment.
Portland District	All drawings that have been scanned are at the Federal Archives in Seattle. Other items such as aerial photos and microfiche are in our map files room (climate controlled for temperature but not humidity.)
Baltimore	Flat file drawers in typical office building
Walla Walla	The maps are stored in our map files room in flat file drawers. They are accessible to anyone in the building. Map files does have a security card reader on the door.
New Orleans	Inside of office building
New Orleans District	The drawings are stored in flat files stacked one on top of another in Engineering Division's file room. Room is air conditioned and heated.
Seattle District	Offsite storage is a temperature controlled files storage facility. The balance are in our District Office in 4'x4' hanging files.
St Paul Dist.	Flat files at room temp.
Memphis	Basic rooms with no special protection against damage.

St. Paul	Within the last year we have lost a lot of drawings due to a pipe bursting in the ceiling.
Sacramento District	Ordinary cabinet
	Most drawings are stored rolled together in boxes or cardboard tubes in mainly unhumidified controlled locations.
Wilmington District	In conditioned office space and some unheated warehouse space.
	Warehouse storage drawings are stored in tubes
USAED Wilmington District	The physical conditions are fine.
Portland District	All official drawings are kept within the 3 rooms mentioned above which are locked and allowed limited access. Each craft shop has a copy of the drawings relevant to their needs stored within cabinets and stick files out and around the work site.
Philadelphia	Map cases and file drawers, limited climate control overcrowding common in drawers and cabinets
Chicago District	Filing Cabinets
Los Angeles	Secured climate controlled room but normally unlocked.
Chesapeake and Delaware Canal	Originals in National Archives most of which I have already scanned into Tiff files. Aerial photos in file cabinet.
St. Louis Permits office	Office environment- daily use of photos
Kansas City	Office hanging file or flat map drawer
Jacksonville	Drawings are in a map file room in engineering file cabinets.
HHC 29th Engr BN 5th Engr Det (P & C)	Steel map flats these items are in a controlled climate
Huntington District	The aerial photographs and film are store in a climate controlled room in filing cabinets. The topographic maps (mylars) are store in large drawing type filing cabinets in another room. the microfiche are stored in a filing cabinet in a climate controlled room.
Omaha District	Cabinets, drawers in an old crusty building
U.S. Air Force Hq Air Combat Command	In mobile chart rack organized by installation
Marine Corps	HVAC controlled room
Avon Park Air Force Range FL	The drawings are stored in an environmentally controlled archive building located on Avon Park Air Force Range FL.
Louisville	Basement
USMC	Don't know. Base historian know about document protection.
Marine Corps Air Station Yuma Arizona	4 hour rated fire vault without any type of humidity controlled environment.
Fort Belvoir - GIS Center	The building as described above is climate controlled - AC in the summer, heat in the winter. There are very few windows and most are relatively small in size - just enough to let in some natural light in.

9. How are your holdings secured? (possible theft, fire protection, etc.)

Galveston All areas are locked; one area has a sprinkler system.

Wilmington/Philpott Project	Yes from theft no on fire protection.
Norfolk District	Locked library and offsite storage facility.
Baltimore District	Aperture cards are in locked card file cabinet. CALS files are on network drive and CD's. CD's stored off site.
Portland District	Map files room is manned at all times during business hours and locked after hours.
Baltimore	The room is locked with a self-locking system except when a section team member is working; the room has standard fire suppression system (water sprinkler).
Walla Walla	Security card reader on the door to monitor who enters but beyond that no other protection.
New Orleans	None
New Orleans District	I'm not too concerned with theft. There are fire sprinklers in Engineering file room however the old drawings contained in the drawers could be damaged by water if a fire occurred which set off the sprinkler system.
Seattle District	District covered by federal guards and ceiling fire sprinkler system. Offsite - alarm system with chemical fire suppression system.
St Paul Dist.	Door is locked after hours (on a timer) Room has sprinkler system.
Memphis	A check out system which is minimally successful.
St. Paul	No
Sacramento District	There is no special security system that I know of. I would think that the Federal Records Center has some building security and fire protection and that the alternate storage contractor the District uses has something too (this is not know by me). We have a District Documents Manager who I believe handles this aspect. The drawings I have in my possession are not under lock and key but the building is restricted to Corps employees and contractors. The building has a fire sprinkler system. Not secured other than normal office security
Wilmington District	They are stored offsite and with theft protection system. They have to be signed out and return within a certain time.
USAED Wilmington District	
Portland District	As mentioned above the official drawings are under lock and key with limited access. The drawings that available around the work site are available to the craftsmen the cabinets are not locked. Limited -if any- of the holding units are fire safe.
Philadelphia	theft by building security (open file cases); no fire protection beyond building sprinklers
Chicago District	Fire Sprinklers for Fire Locked Doors For theft
Los Angeles	not well except for those document set to the federal archives for permanent storage in Laguna Nigel.
Chesapeake and Delaware Canal	I have electronic tiff files stored on CDs in various geographical locations and on local server and a hard drive. Original mylars and linens in National Archives. Aerials not secured.
St. Louis Permits office	drawers and sliding shelf file system
Kansas City	Not
Jacksonville	File room is attended and locked when empty. Office space is secured.
HHC 29th Engr BN 5th Engr Det (P & C)	Yes for theft (vault type storage) no for fire

Huntington District	All the documents are stored behind locked doors except the microfiche. They however have better fire protection as they are stored in the room with all the plotters and servers. This room has it's own sprinkler system. The other two rooms have the same fire protection as the rest of the district office. There is very little if any security from any kind of disaster. Funding is not a priority.
Omaha District	Maintained in rooms that are locked at night.
U.S. Air Force Hq Air Combat Command	Locked door
Marine Corps	The building is locked at all times and is located within a fenced enclosure that is locked at all times outside of business hours and that is located on a military installation that is not open to the general public.
Avon Park Air Force Range FL	Lock door multiple keys for others to access Security not good
Louisville	Not applicable.
USMC	4 hour rated fire vault with a locked door.
Marine Corps Air Station Yuma Arizona	There is a combination lock. The combination is periodically changed.
Fort Belvoir - GIS Center	

10. Temperature and relative humidity are known to be active destructive factors. Regular changes in temperature and relative humidity (cycling) will weaken file materials. Preservation scientists recommend that damage can be minimized if changes in temperature and relative humidity can be held to less than +/- 10 degrees and +/-15% over the lifetime of the physical archive. Blueline prints are created by an ammonia process that is very sensitive to sunlight and heat (the blue lines fade to white.) These are high priority documents for scanning. Aerial photographs suffer deterioration to near-destruction due to sub optimal storage conditions and handling. NARA recommends that aerial photo film is stored at a constant temperature and humidity, between 60 and 70 degrees Fahrenheit and between 40 and 50 percent relative humidity. Do you believe that there may be adverse temperature or humidity conditions at your site that could affect document preservation?

Galveston	Yes some photos are not maintained as recommended. None of the photos are stored at the temperature and humidity recommended.
Wilmington/Philpott Project	Yes the storage facilities at Philpott are limited in regards to climate control. Although our HVAC system is present in the basement temperatures seem to fluctuate from the 50's to the 70's and with most basements humidity is higher.
Norfolk District	Yes in offsite storage facility.
Baltimore District	No special provisions were ever made for controlled environment storage. Air conditioning is routinely turned off on weekends. In pre-cadd years mylars and vellums were roughly handled by printing personnel. Early pre-1950's storage was not even air conditioned.
Portland District	Yes regarding humidity.
Baltimore	Yes. Humidity is uncontrolled. Temperatures have been outside of those limits.

Walla Walla	Possibly but the map files room was designed to provide some conditions that would protect
documents.	
New Orleans	Yes office closed on weekends
New Orleans District	There is no individual climate control system in Engineering Division file room as far as I know to protect our old historical maps which date back to the 1920's. To answer the question I would say yes. This goes back since at least 1971.
Seattle District	No
St Paul Dist.	No
Memphis	Most definitely and was illustrated due to the loss taken when an overhead pipe burst.
St. Paul	Yes but our documents are working paper versions and can be replaced if necessary.
Sacramento District	Yes at all sites.
Wilmington District	Yes in our warehouse which is un heated
USAED Wilmington District	No.
Portland District	2 of the rooms that the official drawings are stored have very low temperature changes actual humidity levels are unknown but is estimated to rarely -if ever- exceed 50%. The 3rd room is not temperature controlled humidity level is unknown.
Philadelphia	absolutely we are currently experiencing deterioration of aerial photographs and diazo prints
Chicago District	No
Los Angeles	Aerial Photo negs are held remotely in the district baseyard where climate control is non-existent.
Chesapeake and Delaware Canal	No.
St. Louis Permits office	No
Kansas City	No but I'm sure there are better ways to store our documents
Jacksonville	The office building the documents are stored in has good HVAC performance. This does not mean that adverse conditions have not existed during the lifetime of the documents.
HHC 29th Engr BN 5th Engr Det (P & C)	No
Huntington District	I think we have adequate protection for the documents that we store.
Omaha District	I would bet many paychecks on that one.
U.S. Air Force Hq Air Combat Command	No
Marine Corps	No
Avon Park Air Force Range FL	We have had some problems with the maintenance of the environmental controls of the building.
Louisville	Extremely cold and hot
Louisville	Yes
USMC	Yes
Marine Corps Air Station Yuma Arizona	Yes. The existing room is connected to the general building HVAC system. There are no humidity controls. While Yuma Arizona is general considered a dry arid environment the lack of a constant temperature/humidity environment is undesirable.
Fort Belvoir - GIS Center	Yes.

11. Is any offsite storage currently used?

Galveston	No.
Wilmington/Philpott Project and maps.	No. Although the Wilmington District Office may have duplicates of some of our original blueprints
Norfolk District	Yes.
Baltimore District offsite.	Some documents were archived to a government document holding area. Only digital files are stored
Portland District	Yes Federal Archives in Seattle for all items already scanned.
Baltimore	No.
Walla Walla	Yes. A warehouse in Moses Lake WA holds documents photos etc. I am unaware of the conditions at the warehouse but I suspect that they are not optimal.
New Orleans	No
Seattle District	YES - EXTENSIVE
St Paul Dist.	Yes - microfilm of some of the older collection
Memphis	Yes but is widely regarded as lost when shipped off site.
St. Paul	Yes
Sacramento District	Yes see answers to 5 and 9 above.
Wilmington District	Yes - to be addressed by another user in the office
USAED Wilmington District	Yes but in close proximity.
Omaha District	I do not know
Portland District on project.	The National Archive is used from time to time for contract information that is not mandatory to remain
Philadelphia	No
Chicago District	Yes Records Management Center
Los Angeles	Yes
Chesapeake and Delaware Canal	All originals at National Archives in Philadelphia
St. Louis Permits office	no
Kansas City	For most of the drawings that are record drawings and those that don't need to be looked at often.
Jacksonville	Yes
HHC 29th Engr BN 5th Engr Det (P & C)	no
Huntington District	Some of our documents have been shipped to National Archives in DC. Other than that we (CELRH-EC-DA) does not use offsite storage with respect to these types of documents.
Omaha District	Yes there is some offsite available due to a lack of storage space in our current facilities.
U.S. Air Force Hq Air Combat Command	No

Marine Corps	No
Avon Park Air Force Range FL	No.
Louisville	Yes. Warehouse is supposed to be climate controlled
Louisville	Yes
USMC	No
Marine Corps Air Station Yuma Arizona	No.
Fort Belvoir - GIS Center	Using a Xerox 8830 copier/ 7356 scanner which is located in this building a selected number of documents have been scanned and archived on a GIS data sever.

12. What type of searching/retrieval method is available currently? (managed card catalog, on-line index, no indexing system...)

Galveston	No search and retrieval system established.
Wilmington/Philpott Project	Index system for aerials and maps and drawings are arranged by subject.
Norfolk District	managed card catalog for drawings. Reports and documents to a lesser extent. In some cases they may not be cataloged.
Baltimore District	Managed card catalog for remaining aperture cards. Currently using access database for electronic file retrieval.
Portland District	All scanned drawings are managed with a searchable database. We also have an on-line card catalog. Aerial photo index maps are also on-line to assist users in locating aerial photos.
Baltimore	Maps are stored in labeled drawers. An MS-Access database is available over the LAN but needs to be updated and corrected and users need training on its operation.
Walla Walla	We have databased our historic maps as part of a cooperative project with local tribal cultural resources groups. The database can be queried by river date river mile etc.
New Orleans	computer locates drawing area
New Orleans District	Both card catalog and on-line data base of drawing file numbers.
Seattle District	Currently underway
St Paul Dist.	Managed card catalog for engineer drawings which is being transitioned to an automated system Reports (design memos etc) are being cataloged into the library online card catalog
Memphis	Managed card catalog on-line index
St. Paul	None
Sacramento District	Manual index card files and/or a database program. The existing (old) database program is in the process of being converted from a DOS based DataFlex program to Windows Access Database. The Database includes about 80 percent of the information needed toe locate and retrieve requested drawings. The main problem is keeping the information up-to-date.
Wilmington District	portions on electronic database other portions not indexed

USAED Wilmington District	Managed database and hard copy files.
Portland District	We currently have a paper based index system that is in the process of being reformed as well as an online system that is accessible to project employees. Security standards are maintained so that the general public may not access the drawings.
Philadelphia	limited indexing using index map sheets and institutional memory
Chicago District	ARIMS Database
Los Angeles	Un-QC'd Access database; for plans. A Dbase III single user application for aerials.
Chesapeake and Delaware Canal	I created a spread sheet and post available on the District network.
St. Louis Permits office	None
Kansas City	I am not sure
Jacksonville	No indexing system
HHC 29th Engr BN 5th Engr Det (P & C)	Indexing system
Huntington District	Mostly card catalog management. The scanned Topographic maps are stored in Projectwise and are attributed accordingly. The aerial photographs and index are stored alphabetically and chronologically. Some of that indexing lays in the heads of the people that run control the documents. A database had been set up but it is not completed.
Omaha District	There is some digital retrieval drawer listing photo index etc in a database of some sort.
U.S. Air Force Hq Air Combat Command	No indexing system. Maps are retrieved manually.
Marine Corps	Computer index by drawing number
Avon Park Air Force Range FL	At this point the collection is so small that the card catalog would probably consist of one card. Primarily searching and retrieval consists of reading the labels on the drawers.
Louisville	Access data base for in-house. RHA data base for local warehouse and FRC in GA for Tubes of drawings
Louisville	On line index
USMC	Don't know about the historian. After scanned we index the TIFF images into our Intranet based document system.
Marine Corps Air Station Yuma Arizona	a) Hardy copy index of the existing building drawings. b) 95% of the existing drawings have been scanned into *.tif images and are stored on a document management system capable of reading multiple raster images as well as AutoCAD file formats using Synergis-Adept document management software.
Fort Belvoir - GIS Center	A somewhat out-of-date hardcopy document has a listing of each document the file cabinet and drawer number. Scanned documents are referenced using an on-line database that describes the drawing name date description etc.

13. If offsite storage is used, do you have a search/retrieval method available to retrieve these materials? (managed card catalog, on-line index, no indexing system...)

Galveston	No.
Wilmington/Philpott Project	N/A
Norfolk District	Managed card catalog.
Baltimore District	N/A
Portland District	Archived maps are indexed and easily retrieved by drawing number project name project code etc.
Walla Walla	To retrieve anything from off-site storage we have to know exactly what we are looking for. To my knowledge there is no method for searching.
Seattle District	On-line index
St Paul Dist.	Automated system in Records Mgmt
Memphis	Not that I am aware of.
St. Paul	No
Sacramento District	See above and all requests are sent through the Districts Document Manager who is the P.O.C. with the off site storage contractors and the Federal Records Center.
Wilmington District	portions on electronic database
USAED Wilmington District	Yes managed card catalog database.
Omaha District	I do not know
Portland District	There is a form to fill out which is sent to the archive to request the documents. They locate the box/package and send it to the project. The only form of record maintenance at this time for these is filing the form with the contract documents. We rarely use this form of storage so there isn't much of a system at this time.
Philadelphia	N/A
Chicago District	ARIMS
Los Angeles	No.
Chesapeake and Delaware Canal	See number 12.
Kansas City	Yes
Jacksonville	Manual index search
HHC 29th Engr BN 5th Engr Det (P & C)	N/A
Huntington District	No.
Omaha District	Yes see above.
U.S. Air Force Hq Air Combat Command	N/A
Avon Park Air Force Range FL	N/A
Louisville	Offsite is used yes do have search methods
Louisville	Yes
USMC	N/A
ITL/CADD-GIS Center	0
Fort Belvoir - GIS Center	Yes. See #12 above.

14. What is the current procedure for a user to retrieve a document? (search time required, number of people involved in custody chain, limited checkout period, etc.)

**Galveston
Wilmington/Philpott Project
Norfolk District
Baltimore District**

Review a spreadsheet list of projects to identify which canister(s) to search.
15 minutes to 1 hour. No custody chain in small 12 person office.
For drawings maybe up to an hour for a person. Reports and documents could be much longer.
For aperture cards, cards are scanned to file on an as needed basics requested by email. One tech is responsible for the scanning. On-line archives are retrieved from network by each user. All retrievals are electronic files. The archive is read only.

Portland District

For archived hard copy drawings the search time is minimal retrieval time could take a week. Only one person in our office needs to be contacted. There is no limit to checkout period.

**Baltimore
Walla Walla**

Search time is typically 5-10 minutes. Unrestricted access.
The user must know exactly what they want put in a request through Information Management and then wait for the items to be sent.

**New Orleans
New Orleans District**

About a couple of hours
The user fills out a request form with Engineering Division Files. Form includes name of requestor office phone number. Requestor fills out the file number of the drawing(s) to be retrieved. The search time can be anywhere from 15 minutes to 4 hours. Custody chain is the requestor and the person retrieving the files. Checkout time is unlimited from my experience.

Seattle District

*on-line key word search - minimal search time *people involved – normally requestor and one person to retrieve *unlimited checkout at present

**St Paul Dist.
St. Paul**

One full time person to retrieve and refile. No limit to check out period.
People look through the cabinet until the correct drawings are located. Can take up to 1/2 hour or more if someone else miss-filed them. Otherwise it only takes a few minutes.

Sacramento District

All requests for contract and Engineering drawings come through my office. I locate where the drawings are stored and fill out a request form. This form is forwarded electronically to the Districts Document Manager who request the drawings (by box or tube) from the storage facility. The search can take from 2-3 min. to several hours/days depending on the information given by the requestor. Most requests only require copies being made of the drawings requested to the need to keep them for a month.

Wilmington District

warehouse: search non-central database go to warehouse and look for cardboard tube; avg 2 hour; at least 2 people involved. In-house: search non-central database see if drawings found in drawer - if yes 10 minutes of time if no 2 hours of searching non-indexed drawers. No checkout procedure.

USAED Wilmington District

The approximate retrieval time is about 1 to 1.5 hours.

Omaha District	I do not know
Portland District	Most users check the website that is available online first if the document is not available they then contact the Records Management Technician. The RMT then checks various file sources onsite and refers to the District CADD site in the case that it is not found onsite. Occasionally the document is not able to be retrieved at all due to a lack of records maintenance in the past years. If changes need to be made to the drawing the redlines are recorded on a copy of the drawing.
Philadelphia	Go look for it and ask for help from those who may remember where items are
Chicago District	On Site 2 hours Off site 2-7 Days
Los Angeles	customer has to physically visit. a file room tech will search database and retrieve plan set and make copies (limited number). Original plans are not removed from site. Aerial negs can be searched through photo index sheets and arrangements made to have prints through a commercial printer.
Chesapeake and Delaware Canal	Read only Tiff files available immediately on the network.
Kansas City	Getting in touch with the person here in our office that retrieves the documents
Jacksonville	Request the document from the records holding attendant.
HHC 29th Engr BN 5th Engr Det (P & C)	N/A
Huntington District	This depends on the document they are looking for. The topographic maps have little time and now there is no need to acquire a hardcopy and the search time in Projectwise is minimal. Aerial Photographs can take a few hours depending on what you are looking for. And due to the poor record keeping you have just never find what you're looking for.
Omaha District	Time and effort varies. Time to get the materials retrieved can last 1 to 5 days for offsite. Assuming you know who to ask and where to get the information.
U.S. Air Force Hq Air Combat Command	Open access to branch personnel; no check out procedures.
Marine Corps	search time is less then 10 minutes. No check out. Print machine in the room allow customer to copy original.
Avon Park Air Force Range FL	N/A up to this point.
Louisville	Send request to Martha if document is in house will be retrieved within 2 hours. If at the local warehouse can be retrieved in about two days and must be requested through IM. If retrieved from FRC will take about a week
Louisville	Two people have to act to request retrieval from eastpoint
USMC	Intranet document system searched by building number title contract number.
Marine Corps Air Station Yuma Arizona	Hard copy - user enters vault locates drawing either from the building archived drawing folder or by locating the drawing in the hard copy index. A member of the drafting department takes the drawing to the engineering copy machine and makes a copy. Time to retrieve copy and return to archive varies depending on the number of drawing sheets and the number of copies. Average time for a single sheet included copy machine warm-up time is 15 minutes. Use of Adept document management system allows the user to retrieve and research the archived drawings from their desktop and print out the drawing on an E-size plotter or desktop printer (to include any known mark-

up drawings) in approximately 5 minutes. No other individuals required to checkout or refile the drawing(s).

Fort Belvoir - GIS Center

To view or have copies of drawings made a government POC is issued a request via email or face-to-face. There is no procedure to check out a document that I am aware of. Copies should be made and the original put back in place. The time to process the request is subject to the availability of the government POC assigned to manage the document building.

15. Do any documents require restricted access?

Galveston	No.
Wilmington/Philpott Project	No
Norfolk District	possibly.
Baltimore District	Occasionally.
Portland District	No.
Baltimore	No
New Orleans	no
New Orleans District	Not as far as I know. At least not the documents used on a routine basis.
Seattle District	No
St Paul Dist.	Non restricted to CE employees. Freedom of Info request for outside requestors.
Memphis	Historical drawings and aerial photography are supposed to be checked out and have no limit on the amount of time. Only when someone else is looking for the data does anyone try to retrieve it.
St. Paul	No
Sacramento	Yes
Sacramento District	The needs to be determined under new Homeland Security requirements and regulations.
Wilmington District	not to my knowledge
USAED Wilmington District	No.
Portland District	All of our documents are restricted from the general public. Employees have access to the electronic form which may be printed off (a copy) or may have a copy made of the original. The original drawing/document remains in possession of the Engineering department at all times.
Philadelphia	No
Chicago District	No
Los Angeles	No
Chesapeake and Delaware Canal	No.
St. Louis Permits office	Not open to general public
Kansas City	Not that I am aware
Jacksonville	No

HHC 29th Engr BN 5th Engr Det (P & C) N/A
Huntington District No.
Omaha District No
U.S. Air Force Hq Air Combat Command No but cultural resources location maps are kept out of the main collection for now until such access is instituted.
Marine Corps No
Avon Park Air Force Range FL No.
Louisville Timekeeping records cannot be retrieved by anyone accept the timekeeper or supervisor of that particular group
Louisville No
USMC Yes. Our sensitive or SCIF buildings are password protected.
Marine Corps Air Station Yuma Arizona Not at this time. Anticipate increase interest in information security to change this.
Fort Belvoir - GIS Center None that I am aware of.

Part II – File Formats__(questions 16 – 19)

16. To what extent do engineering drawings still exist in a hard-copy format?

	Paper	Mylar	Aperture Cards	Microfiche	Maps	Aerial Photos	Magnetic Media	Converted (not usable)	Converted (usable)	Other
Galveston	20%	10%		30%	10%	50%	20%		30%	
Wilmington/Philpott	>50%	>50%			>50%	>50%		20%	10%	
Norfolk District	10%	>50%		20%		>50%				
Baltimore District	10%		50%			30%			>50%	
Portland District	10%			>50%	10%	>50%			>50%	
Baltimore					>50%	10%		30%	30%	>50%
Walla Walla	>50%			30%+/-	>50%	>50%				
New Orleans	10%	20%				20%				
New Orleans District	50%	50%			>50%	50%		50%	50%	
Seattle District	10%	>50%	40%		50%	>50%	10%		20%	
St Paul Dist.	10%	>50%		10%	20%	10%	20%		20%	

Memphis	50%	50%	50%	50%	50%	>50%				
St. Paul	>50%									>50%
Sacramento District	50%	40%	50%	10%	30%	40%		10%	30%	
Wilmington District	50%	50%	20%	20%		>50%	20%	20%	50%	
USAED Wilmington	>50%	50%		40%	30%	50%		10%		
Portland District	50%	>50%			>50%	>50%	30%	50%	>50%	
Philadelphia	>50%	10%			>50%	>50%				
Chicago District	>50%	10%		10%	10%	10%			>50%	
Los Angeles	10%	10%								
Chesapeake&Delaware Canal	10%	10%	>50%			>50%			>50%	
St. Louis Permits office	>50%				>50%	>50%				
Kansas City	50%	50%	50%		50%	>50%		10%	50%	
Jacksonville	20%	>50%	30%	10%						
Omaha District	50%	40%			50%	>50%				
USAF HQ Air Combat Command					40%				>50%	
Marine Corps AvonPark Air Force Range FL	10%	50%				10%				
Louisville	>50%				>50%					
Louisville	50%	10%	30%		40%	40%				
USMC	10%	20%	50%			20%	20%		20%	>50%
Marine Corps Air Station Yuma AZ	10%		10%	10%	10%	10%			>50%	
ITL/CADD-GIS Center	20%	>50%		10%	>50%	>50%	>50%	10%	>50%	>50%
Fort Belvoir - GIS Center	50%	30%			20%					

17. If other was checked in question 16, above, please explain.

**Baltimore
St. Paul**

Response above is related to Real Estate Segment and Tract mapping.
Older drawings not done in CADD are all paper versions in our Section.
Newer CADD drawings are also paper versions but we still can access the digital format.

Sacramento District Note there is an overlap with hard copies and aperture cards which are duplicated in each media. I am not the only office in the District who maintains drawings in storage. I will forward this to others.

Los Angeles Essentially zero of the pre-CADD drawings have been digitized as rasters or vectors. The same is true for aerials, ie. film only. Post ECS around 2000 90% of plans exist as cal files but many do not have their usable dgn or dwg's filed and organized with the cal's.

Louisville Pencil or ink on cloth

18. What disciplines do the drawings represent?

Key: P – Paper
 Y – Mylar
 C – Aperture Cards
 F – Microfiche
 M – Maps
 A – Aerial Photos
 G – Magnetic Media
 N – Converted (not usable)
 U – Converted (usable)

	Archi- tectural	Tele- commu- nications	Civil/Site	Electri-cal	Fire Protec- tion & Suppres- sion	General	Geo- technical	Interior Design
Galveston			PFA			A	P	
Wilmington/Philpott	PYM		PY					
Baltimore District	CU	CU	CAU	CU	CU	CU	CU	CU
Portland District	U	U	U	U	U	U	U	U
Baltimore						PYMAGN		
Walla Walla	PYMA		PYFMA			PYFMA		
New Orleans	PY	PYU	PY	PY	PY	PY	PY	
New Orleans District			PYMANU				Y	PY
Seattle District	YCU		YCAU	YCU	YC	YCAU	YCAU	YC
St Paul Dist.	YCU		YU	YCU	YCU	YCU	YCU	YCU
Memphis	Y		Y	Y			Y	

St. Paul			P			P	P	
Sacramento District	PYCNU	PYCNU	PYCNU	PYCNU	PYCNU	PYCNU	PYCNU	PYNU
Wilmington District			PYCAG				PY	
USAED Wilmington District	P					PY	PY	
Portland District	PYNU	PYMNU	PYMNU	PYNU	PYNU	PYMNU	PYMNU	
Chicago District			PYFMU	P		P	P	
Los Angeles	P		PA					
Chesapeake&Delaware	Y	Y	Y	Y		YC	Y	
Jacksonville	YCU	YC	YC	YC	YC	YC	YC	YC
USAF HQ Air Combat Command	M		M			M		
Marine Corps Avon Park Air Force Range FL	PY		PY	PY	PY			
Louisville			PA					
Louisville			PYCMAG					
Louisville	PYCAGU		PYCAGU	PYCGU	PYAGU	PYCFAGU	PYCAGU	YG
USMC	PFU	PFU	PFAU	PFU	PFU	PFAU	PFU	PFU
Marine Corps Air Station Yuma AZ								YU
ITL/CADD-GIS Center	YU	Y	YMAGNU	U	Y	Y	U	U
Fort Belvoir - GIS Center	U	U		U	U	U	U	U
	PYU	PYU	PYU	PY	PYU	PY	PY	PYU

	Landscaping	Mechanical	Plumbing	Equipment (Security)	Structural	Survey & Mapping	Utilities	Other
Wilmington/Philpott Project	PYN	PY	PY		PY	PY	PY	
Norfolk District						PYA		
Baltimore District	CU	CU	CU	CU	CU	CMAU	CMU	U
Portland District	U	U	U	U	U	U	U	
Baltimore						PYMAGN		
Walla Walla	PYM					PYFMA		
New Orleans	PY	PY	PY	PY	PY	PY		
New Orleans District						PYMAU		
Seattle District	YCMU	YCU	YCU	YCU	PYCU	YCMAGU	YCU	
St Paul Dist.	YCU	YCU	YCU	YCU	YCU	YCMAU	YCU	YCU

Memphis		Y	Y	YCU	Y	Y	Y	
St. Paul					P			
Sacramento District	PYCNU	PYCNU	PYCNU		PYCNU	YCNU	PYCMNU	
Wilmington District						PYCMA		
USAED Wilmington District	PY	PY	PY	PY	PY	PY	PY	
Portland District	PYMNU	PYNU	PYNU	PYMNU	PYMNU	PYMNU	PYMNU	
Philadelphia						P		
Chicago District		P			PYF			
Los Angeles						PA		
Chesapeake&Delaware Canal	Y	Y			Y	Y	Y	
St. Louis Permits office						PA		P
Kansas City								YU
Jacksonville	YC	YCU	YCU	YC	YCU	YC	YC	YC
Omaha District						PYMAGNU		
USAF HQ Air Combat Command						M		M
Marine Corps		PY	PY		PY		PY	
Louisville	PYCAGU	PYCAGU	PYCAGU	YCG	PYCAGU	PYCAGU	PYCAGU	
Omaha District								
Fort Belvoir								
Norfolk								
USMC	PFU	PFU	PFU	PFU	PFU	PFAU	FU	U
Marine Corps Air Station								
Yuma AZ	YU	YU	YU	YU	YU	YU	YU	
ITL/CADD-GIS Center	U	U	U	U	U	U		
Fort Belvoir - GIS Center	PY	PYU	PYU	P	PU	PMAU	PYU	

19. If other was checked in question 18, above, please explain.

Norfolk District	Responded to navigation survey and mapping only in above response.
St. Louis Permits office	Blueprints for sites permitted by our office

Kansas City

Real estate maps have been converted to shapefiles and are being used in GIS here in KC. We still have our mylar maps around but are trying to update the files when disposals occur in digital format.

**USAF HQ Air Combat Command
USMC**

Environmental layers
Real estate documents leases easements.

Part III – Describe Your Future Requirements (questions 20-32)

20. Have you completed any type of scanning project in the last 5 years? (please include details on volume scanned, type of documents, in-house or out-sourced, etc.)

Wilmington/Philpott Project

Scanned 11 x 17 tract maps into Tiff & PDF images. This was accomplished in house and they were scanned I believe at 400 dpi.

**Norfolk District
Baltimore District**

Yes 250 mylar as built drawings, engineering reports, real estate documents.
As part of eliminating our Engineering Division map file room a survey was made of our hard copy and aperture card holdings. With the exception of some mapping it was determined that our aperture card library of our projects were the most complete. Because of the large volume of cards (50 000+) a decision was made to scan to file only the Civil projects since we are required by ER to keep a copy of Civil Projects. The scanning was out-sourced to Ideal Scanning. For the military project holdings it was decided to keep the aperture cards purchase a card scanner and scan the cards as needed. All hard copy originals were either disposed of or sent to a government storage area.

**Portland District
Baltimore**

Yes see answers above.
Yes. 500+/- Real Estate Civil and Military segment maps have been scanned.

Walla Walla

Half were done in-house and half were out-sourced
We have been working on building a cultural resources database that would hold historic maps Photos, previous management documents etc.

**New Orleans
New Orleans District
Seattle District**

We have scanned approx. 1000 historic maps dating to 1950. All scanning was done in-house.
scanned blue prints to be used for emergency

No
We contracted out 30% of our microfilm aperture card scanning in 2001.
The contractor was out of state hard to work with and did not satisfy our requirements although they did according to the contract. We are currently scanning in-house with students as time allows. We have budgeted this year to complete our aperture card scanning but we need to investigate a better scope of work.

**St Paul Dist.
Memphis**

Not in Map Files or the library.
Original estimate was done around Jan 2000 I have completed an estimate on what it should take to scan the specs and borings. We have approximately 340 000 sheets to be scanned. This was determined by measuring the shelf and drawers that contain the documents and multiplying by 500shts per 2(a new bundle of paper). This estimate should be in excess of what we actually have. The work could be completed in about 53 working days but I used 120 days. It took Kim Wilson and myself 7 minutes to scan 200 shts. The estimate below used approximately 34 min. per 200 shts. We will need about 35 gigs of storage space or 53 CD's. 960 hrs at \$21.25 = \$21 000 Scanning 120 hrs at \$87.50 = \$10 500 Supervision Total = \$31 500 4/12/00: 2100 sheets were scanned in 4.5 hrs. This worked out to be about 2 of shelf space per hour. With this number it would take about 260 hrs to scan the specs in structures. Storage requirements are working out to 73k per page. It took about 4 mo. to scan 113 000 construction specifications sheets in 2300 bound books. This was all specs on hand back to the 30's Approximately 174000 small format (8.5x11) soil data sheets were scanned from about 1500 documents. 3500 additional large format sheets where also scanned during this project. This included all on hand data back to the 40's. We were able to scan about 4800 engineering drawings using a contractor but afterwards we felt the time spent getting drawings ready to send to a contractor was about the same as scanning. 4500 survey field books with approximately 300 000 pages using a contractor at a cost of about \$60 000

**St. Paul
Sacramento District**

No
We out-sourced scanning from aperture cards to raster on CD. Approximately 500+ were converted. Sense some of the aperture cards could not be scanned the hard copy drawings were retrieved and scanned (approx. 200). We have two Océ' machines (TDS400 and TDS600) which allow scanning of needed drawings into raster formats. These are walk-up machines and a count is unknown. I have had approximately 150 - 200 drawings scanned.

**Wilmington District
USAED Wilmington District
Omaha District**

various small projects mostly out-sourced. Not large format
No.

Portland District

Yes I have scanned close to a couple of thousand or more documents all in-house.
Maybe a little out from the library.
In the last 5 years we have worked intermittently to get the majority of our hard copy documents scanned into and electronic format. We have used both an in-house scanner for smaller portions district facilities and at times worked with contractors to scan large quantities. An estimate of the quantity of drawings would be around 17 000 have been completed - approximately 75% of our stock. Photos have been worked on being scanned when time allows. I'd estimate that no more than 2 000 have been completed which would be around 15% of what needs to be done. Contract documents design memos etc. are planned to be scanned in the future. So far we have had the district scan a small portion of design memos but no further action has been taken at this time.

Philadelphia

Regulatory files scanned including any map or aerial smaller than B size;

Chicago District	larger sized prints stored separately as hard copies
Los Angeles	Yes 2000+ Drawings and Maps In-House
Chesapeake and Delaware Canal	Only incidental project specific in-house scans.
St. Louis Permits office	I have personally scanned approximately 1000 E size civil engineering drawings into tiff format electronic files.
Kansas City	No
Huntington District	No
Omaha District	Over the last year we scanned our older topographic / planimetric and orthophotographic maps. There were approximately 6000 hardcopy sheets and we did it with in-house labor (students). Yes. Mostly large volumes of historic and real estate maps. several thousand of our real estate maps are scanned and georeferenced. They are then digitized attributed and linked to REMIS.
U.S. Air Force HQ Air Combat Command	Have scanned and OCR'd all existing NEPA natural resources and cultural resources reports into our Digital Library approximately 3000 entries.
Marine Corps	No
Avon Park Air Force Range FL	No.
Louisville	Yes KY River drawings (746)approx done in-house \$5 000
Louisville	old projects have been scanned as needed for o&m purposes
Marine Corps Air Station Yuma Arizona	Scanned 18 000 engineering as-built drawings of past projects to include buildings utility systems airfield runways/taxiways etc. Raster-vector conversion approx. 1800 floor plans to include general floor plan mechanical (HVAC) system layout and utility site plan for each building to identify the utility point of connection.
Fort Belvoir - GIS Center	Yes. We have developed a database for recording the information on the scanned documents. The scanner used (as described above) is owned by the Fort Belvoir DPW. A small number of documents have been scanned.

21. Do you currently have any type of automated indexing system? (please include name and description: ProjectWise or other commercial (COTS), government (GOTS), in-house developed, contract developed?)

Wilmington/Philpott Project	No
Norfolk District	Documentum for Real Estate documents. In-house system for drawings and engineering reports
Baltimore District	We have an in-house developed access database retrieval system. The projects are also stored on the network using a state\county\project_name system for Civil and a Post\project_name system for military.
Portland District	Aerial indexing is a In-house developed web site. Searchable databases are also in-house developed.

Baltimore	MS-Access Database (see question 12)
Walla Walla	Access database
New Orleans	Image server
New Orleans District	ProjectWise and in-house developed.
Seattle District	In-house developed and shared with other districts. Named RIMS and is undergoing a major change about to be put in place.
St Paul Dist.	Inmagic DB Textworks has been purchased for the drawings & maps. Winnebago Spectrum is the online library catalog used for the report type material.
Memphis	in-house developed. We found that having a simple database with a filename file description and date drastically increase access to files. The databases is web search able. As time permits we enhance the database.
St. Paul	No not yet. May go to ProjectWise in the future.
Sacramento District	No.
Wilmington District	No
Omaha District	Yes an Access database
Portland District	Currently there is no automated indexing system. The records manager has developed a manual system and other than that she is able to pull a list from the SQL tables the database is built on. There is no public way to access this form though and it is a very rough from of index at that. We are looking into ProjectWise at this time for better means for these purposes as well as others.
Philadelphia	CEERIS
Chicago District	Projectwise
Los Angeles	No
Chesapeake and Delaware Canal	Yes.
Kansas City	No
Huntington District	We have ProjectWise.
Omaha District	Others in the district do have COTS. We are using GIS and/or Oracle.
U.S. Air Force HQ Air Combat Command	Yes contract developed.
Marine Corps	Yes in house in the process of going to a COTs
Avon Park Air Force Range FL	No.
Louisville	We have an on line project database in spreadsheet form. Projectwise is just now coming on line
Marine Corps Air Station Yuma Arizona	COTS - Synergis-Adept. Allows user to read native AutoCAD files to include xref documents.
Fort Belvoir - GIS Center	As described above we have a low-cost in-house contract developed system.

22. If yes, what is the purpose of the automated system and who are its anticipated users?

Norfolk District	rapid and easy access. DA RCI Real Estate and operations folks.
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Baltimore District	The purpose of the automated system is to enable users to retrieve project holdings by any of the various project parameters (Project name drawing number location etc.)
Portland District Baltimore	Purpose is to locate scanned drawings. Potentially any employee is a user. System is intended to allow users to query and display project maps of Civil and Military projects. Users are expected to be Realty Specialists and any District staff member who needs to access RE maps.
Walla Walla	The database may be queried by river, rivermile etc. and is used primarily by cultural resources professionals sometimes by environmental compliance specialists. It is used primarily in planning branch.
New Orleans District Seattle District etc.	To allow electronic retrieval of drawings by end users i.e. designers. All district staff have access to and can use the system. It tracks individual files reports contracts
St Paul Dist.	Inmagic is an access-type program which will facilitate unlimited text searching maintain the integrity of the classification system and provide a checkout function. Until a substantial number of documents are input into the system it will be used by Map File staff but can be upgraded to a network version for searching by District staff.
St. Paul Memphis project.	User are typically engineers looking for data created by their respective office in support of a current project.
Omaha District Portland District	It is just for me to know what documents I have scanned so that way I do not scan them in again. The purpose would be to track and locate documents more efficiently. Anticipated users would include project employees. Currently the district employees (usually Contracting) also access our online site when needed so I'm pretty sure they would also be included in the list.
Philadelphia Chicago District Los Angeles	On-line availability of archived regulatory project files Project Management CADD Construction Operations N/A
Chesapeake and Delaware Canal Huntington District	Excel Spread Sheet. USACE employees Surveyor and construction contractors. It is intended as a document management system. It's anticipated users are the Engineering and Construction Division. It is accessed by other outside our division that have to work with EC such as planning and operations.
U.S. Air Force HQ Air Combat Command agency staff.	Provides access to ACC environmental documents for AF staff and authorized contractors and
Marine Corps Louisville	Index for search and retrieval. Public works and designers Project tracking and retrieval as well as archiving. anyone with a need for this information in regard to repair new work or litigation.
Marine Corps Air Station Yuma Arizona	Primary purpose is to reduce reliability on hardcopy data and allow for real-time mark-ups of existing building information by maintenance personnel.

Fort Belvoir - GIS Center

The Fort Belvoir GIS Center which is a contracted operation developed the system for internal purposes (for DPW users).

23. Do you currently have any planned/pending scanning contracts? (please include size, pricing, number of docs involved, starting/finishing dates)

Wilmington/Philpott Project	Nothing planned but would like to pursue having as built segment maps and site layout plans and maps.
Norfolk District	No
Baltimore District	No.
Portland District	No all scanning is done in-house.
Baltimore	No.
Walla Walla	No.
New Orleans	Yes
New Orleans District	Unknown.
Seattle District	Planned for this year for \$60 000. Do not have scope of work or numbers at this time.
St Paul Dist.	No not in library or Map files
Memphis	No.
St. Paul	No
Sacramento District	No.
Omaha District	No not really any contracts the thing is people just give their documents that they want me to scan and I scan them in. There really is no time line at all for the documents.
Portland District	Not at this time but they have been used in the past.
Philadelphia	No
Chicago District	No
Los Angeles	No
Chesapeake and Delaware Canal	In-house scanning of approximately 300 more engineering drawings mostly of bridges.
St. Louis Permits office	No
Kansas City	Don't know if there is any in the district
Huntington District	No.
U.S. Air Force HQ Air Combat Command	No
Marine Corps	No
Avon Park Air Force Range FL	No.
Louisville	None but I feel we have a need.
Louisville	Not in this district

Marine Corps Air Station Yuma Arizona	Yes. Approx. 300 additional as-built drawing sets. Price not yet researched. Past scanning cost information indicates approx. \$0.07 per sheet for 300 dpi *.tif image. (Contractor later indicated they lost money at an actual cost of \$1.57 per sheet.)
Fort Belvoir - GIS Center	An existing scanning contract has not been issued.

24. Do you have any Indefinite Delivery or Bulk Purchase Agreement (BPA) scanning contracts?

Wilmington/Philpott Project	No
Norfolk District	No
Baltimore District	No we used the GSA schedule from Ideal scanning.
Portland District	No
Baltimore	No.
Walla Walla	No.
New Orleans	Yes
New Orleans District	Unknown.
Seattle District	No
St Paul Dist.	No
Memphis	No
St. Paul	No not in our Section.
Sacramento District	No.
Wilmington District	no
Portland District	Not at this time. I believe the BPA has been used in the past but not sure.
Philadelphia	No
Chicago District	No
Los Angeles	No
Chesapeake and Delaware Canal	No.
St. Louis Permits office	No
Huntington District	No.
U.S. Air Force HQ Air Combat Command	No
Marine Corps	No
Avon Park Air Force Range FL	No.
Louisville	No
Louisville	Not in this district
Marine Corps Air Station Yuma Arizona	No. In the past we have used the GSA schedule for ADCS www.adcs.com .
Fort Belvoir - GIS Center	None to date.

25. Estimate number of un-indexed CDs, DVDs, etc. with scanned data. (Please include document types and whether there are any initiatives underway to provide search capabilities for these collections.)

Wilmington/Philpott Project	CD with tract maps on it. Arranged by tract # no index or search capabilities.
Norfolk District	Few.
Baltimore District	All data is live on the Engineering network.
Portland District	None
Baltimore	Unknown
Walla Walla	In planning probably 8-10.
New Orleans District	Unknown.
Seattle District	We're putting everything on a powervault piggybacked on another server
Memphis	No idea. We are a relatively small District and we typically keep most electronic data on line and somewhat indexed. 250 gigs for \$400 why not.
St. Paul	All CDs are un-indexed.
Sacramento District	I have 74 CDs which include the various sizes of drawings states so far (see all above answers). There are ideas being considered to make these drawings available on a network.
Wilmington District	5 cds of pdf boring logs no plans to index at this time
Omaha District	All of the documents that I have are on the computer and then the server. I put all the documents on a CD that I scanned for the customer and I already have a label and I put the label on the CD and then I give it to them.
Portland District	Currently I'd estimate there are less than 100 CD's and 0 DVD's with scanned data on them. Some of our scanned information is still located on Zip and floppy disks. There is currently no index system for these items. I am in the process at this time to move all information to CD/DVD form and create a file system for storage and an index for these items.
Philadelphia	Several hundred CD's with recent digital imagery (site photographs aerials site plans etc.) associated with projects initiated in the last two years
Chicago District	None currently but we have plans to archive most of our scanned material on CD/DVD's
Chesapeake and Delaware Canal	0
St. Louis Permits office	None
Kansas City	100's
Huntington District	None.
U.S. Air Force Hq Air Combat Command	10
Marine Corps	None
Louisville	All are indexed by project not by individual file
Marine Corps Air Station Yuma Arizona	20 CDs. These are project design data CDs that need to be loaded to the Adept document management server by the project managers.

Fort Belvoir - GIS Center

Probably in the hundred's. Most are AutoCAD .dwg or MicroStation .dgn format.

26. For the un-indexed CDs, DVDs, above, how many are:

	At your site?	In your office?	In your possession?
Wilmington/Philpott Project	1	1	
Walla Walla	all	all	most
St. Paul		Unknown individual CDs	30
Sacramento District	All	All	All
Wilmington District	about 30	5	5
Omaha District			Blank CDs over 100 ones with data maybe 10
Portland District	<100	90%	around 30
Philadelphia	half to two thirds	as above	20-30
Chicago District	0	0	0
Kansas City			60
U.S. Air Force HQ Air Combat Command	100%	100%	100%
Marine Corps Air Station Yuma Arizona	20		
ITL/CADD-GIS Center	0	0	0
Fort Belvoir - GIS Center	Hundred's	Hundred's	Dozen's

27. Estimate the number of unscanned documents that would be considered for conversion. How many of these will be needed for use in the next year? In the next 5 years? Not immediately for business reasons but conversion should be done for preservation reasons?

Wilmington/Philpott Project

The segment maps are most urgent and they are limited to 5 maps. Further we have hundreds of as built aerial photos and historical maps that would be beneficial to have scanned within the next 5 years.

Norfolk District

Depends on need in the future. There could be a couple hundred real estate files.

Baltimore District

0

Portland District

50 000 microfiche drawings. All need to be scanned to make them available for use in CADD/GIS and to add to a searchable database.

Baltimore

Unknown at this time.

Walla Walla	The goal in planning is to get our environmental compliance and our fish libraries scanned and databased for ease of management. I'm guessing we may have several thousand documents. However funding constraints (overhead) limit the amount of work we can accomplish.
New Orleans	20000
Memphis	100 000 Not immediately for business reasons but conversion should be done for preservation reasons
St. Paul	We are not considering scanning our documents within the Section. If the Branch or District does this then we will use them.
Sacramento District	All those drawings that are only available as hard copy originals are being considered for conversion. The number is not known at this time and a time frame has not been decided.
USAED Wilmington District	Not sure
Omaha District	I am working on scanning documents for a certain branch and they would like to have all of the documents at the lab completed before they move into their original building.
Portland District	Estimated unscanned documents: Drawings: 400 needed <1 year: <10% needed within 5 years: 60% Photos: several thousand needed <1 year: minimal needed within 5 years: 25% may be useful at some point Contract documents: 50+/- cabinets full needed <1 year: 30% needed within 5 years: 50% Design Memos O&M etc: 3000+ books needed <1 year: 20% - mainly O&M needed within 5 years: 45%
Philadelphia	unable to estimate needs at this time
Chicago District	Next Year Estimate 10% Next Five Years 15-20%
Los Angeles	All 10 000+ should be digitally preserved when we commit to cal's and CDRoms or whatever new format/media is open-sourced.
Chesapeake and Delaware Canal	300. 300. 300. 300.
St. Louis Permits office	all of our aerial photos - 100 binders full- we would utilize them immediately for our newly developing GIS as a data layer- historic photos are utilized to show preexisting conditions daily.
Kansas City	100 000 probably just needed for preservation
U.S. Air Force HQ Air Combat Command	60; 100%
Marine Corps	10% in a year all for preservation reasons
Avon Park Air Force Range FL	1 1 1
Louisville	Unknown would have to research
Louisville	Can't answer in numbers for need it happens regularly. All should be preserved
Marine Corps Air Station Yuma Arizona	None.
Fort Belvoir - GIS Center	This is a hard number to quantify but there are literally thousands of documents that should/could be scanned.

28. Are there any anticipated needs for access to documents and drawings outside of the local district?

Wilmington/Philpott Project	Yes surveyors within the region commonly request our tract maps.
Norfolk District	unknown
Baltimore District	Isn't the Corps setup as one domain? Access should be easy to setup for anyone authenticated in the domain. Do to 9/11 concerns I don't think public access would be allowed.
Portland District	No
Baltimore	Yes. This District provides Real Estate support to several other Districts and Federal Agencies. Also local sponsors may wish to access the documents.
Walla Walla	Yes. We currently handle requests for documents by providing CDs when possible.
Seattle District	There is always historical and other research requested by other agencies and the public
St Paul Dist.	Don't know.
Memphis	No but this would be a great long term service to provide to our outside customers since we typically have to keep up with data anyway.
St. Paul	Yes.
Sacramento District	There have already been requests from other government agencies and through FOIA requests.
USAED Wilmington District	No.
Omaha District	No not really All are pretty much in-house.
Portland District	If there is a need outside the district level for access to the drawings it is very minimal. Other documents may at times be useful to contractors but again- it would be minimal. Usually they receive their needed information from a Corps POC which would have local access and would be able to maintain control over who the information is given to.
Philadelphia	no
Chicago District	Not usually but at times congressional members request older plan sets
Los Angeles	We service request for as-builts continuously but as an other duty as assigned.
Chesapeake and Delaware Canal	Maybe.
St. Louis Permits office	no
Kansas City	no
U.S. Air Force HQ Air Combat Command	Yes by other AF offices
Marine Corps	no
Avon Park Air Force Range FL	No.
Louisville	Yes we are constantly recalling drawings from FRC
Louisville	no
Marine Corps Air Station Yuma Arizona	No.
ITL/CADD-GIS Center	0
Fort Belvoir - GIS Center	None that I am aware of.

29. List the file formats required for converted documents and drawings (include adherence to CAD standards, geo-referencing requirements, etc.)

Wilmington/Philpott Project

For segment tract and underwater topos it would be most useful if this were scanned at a high resolution and geo-referenced to the NAD 83 feet state plane coordinate system VA South. CAD GIS PDF.

Norfolk District

Baltimore District

Drawing Files are converted to CALS type 1 group 4 file format. Project documents (specs word files etc.) are converted to adobe .pdf files.

Portland District

Baltimore

We always scan to TIFF format. Specifics are unknown to me. GeoTIF

New Orleans District

Microstation is the only format for drawings we should be using. Microsoft Word is the only word processing program we should be using for documents.

Seattle District

St Paul Dist.

We're generally scanning everything into .tiff files Don't know.

Memphis

Large format TIF small format PDF. Digitize hardcopy drawings in my opinion is over sold particularly when associated with vertical construction. Back in the old days it was to time consuming to redraw an item when dimensions changed. So they just changed the text.

St. Paul

Sacramento District

.dgn .doc .xls

Omaha District

Our current requirements are for CALs and TIFF.

I just go to Adobe Acrobat and Photoshop and I scan them in and then the documents could become a .pdf file .tiff file or whatever and that is about it.

Portland District

Currently our system is set with the following preferred formats: Scanned images: TIFF Vector files: DGN Photos: JPG Most other documents: PDF

Philadelphia

no standards as of yet

Chicago District

.cal .dgn .tif

Los Angeles

Historic plans are only digitized as raster images unless a specific analyses needs to be performed.

Chesapeake and Delaware Canal

dwg tiff

St. Louis Permits office

tif images- high dip so as not to lose the detail of the aerial photo. Having the images

Geo-referenced would be nice.

Kansas City

Microstation and ArcView

Huntington District

We don't have a required file format. But we have been scanning our documents into Tiff files for the reason that they can be later Georeferenced and converted into GeoTiffs (or even Mr. Sids) for GIS purposes.

U.S. Air Force HQ Air Combat Command

Will use SDSFIE for domain and table standards but have our own hierarchical file naming system.

Louisville	digital files should be stored in the original format as well as calcs. Scanned documents can be in one or more of several standard formats
Marine Corps Air Station Yuma Arizona	AutoCAD. Floor plans are currently under conversion and validation for accuracy. These need to be geo-referenced for incorporation into the installation GIS system.
Fort Belvoir - GIS Center	TIFF or JPEG format would be fine for now with a limited number converted to CAD or GIS formats as required.

30. Do you have a map numbering scheme?

Wilmington/Philpott Project	No
Norfolk District	Yes.
Baltimore District	No.
Portland District	Yes
Baltimore	Yes but it needs work.
Walla Walla	I believe so but we don't have a map files manager to decipher it.
New Orleans District	We use a file number for our maps. In CEMVN-ED-LS its usually H-8-XXXXX. Where XXXXX is provided by Engineering Division's Design Services Branch Technical Support Section.
Seattle District	Yes
St Paul Dist.	Yes.
Memphis	Several depending on office and time period
St. Paul	No
Sacramento District	We have what we call a File numbering system for Civil and Military drawings. They consist of 11 alphanumeric characters in a xxxx-xx-xxxx pattern. The first four for project location the next three for file division and the last four are a sequence number for each location.
Wilmington District	No
USAED Wilmington District	Yes.
Omaha District	No
Portland District	Yes but limited. Most of our maps have drawing numbers issued from the district as part of the package they are referenced to. Any others which is a very limited amount have a number sequence attached as well as their original number issued (USGS Marine Board etc)
Philadelphia	No
Chicago District	No
Los Angeles	Yes but it is based on watershed and coastal region and has not been strictly enforced through history.
Chesapeake and Delaware Canal	File directories and names not numbers for maps.

St. Louis Permits office	No
Kansas City	Yes
Huntington District	We but a three character for the project along with the year it was flown for mapping a character to represent the scale and the sheet number.
U.S. Air Force HQ Air Combat Command	No
Marine Corps	Yes
Avon Park Air Force Range FL	No.
Louisville	Unknown
Louisville	Yes
Marine Corps Air Station Yuma Arizona	No.
ITL/CADD-GIS Center	0
Fort Belvoir - GIS Center	None that I am aware of.

31. What are the scanning accuracy requirements needed for converted documents and drawings?

Norfolk District	depends on use.
Baltimore District	300 dpi for text documents. 300 or 400 dpi for drawings.
Portland District	I am not sure what standard we have established. The man that can answer that is in Afghanistan.
Baltimore	Unknown
Walla Walla	We have been scanning at 600 dpi which has been adequate but not ideal. We don't have the equipment to scan at a higher resolution in-house.
New Orleans District	They should be equal to Microstation accuracy.
St Paul Dist.	Not sure- I know the USGS scanned 1:24 000 images are not accurate enough for either ED-H or wetlands designation for Regulatory staff.
Memphis	Readable. 200 DPI for an average line or text drawings.
St. Paul	Don't know.
Sacramento District	Not formalized locally.
Wilmington District	Good quality to effectively reproduce what you see now.
USAED Wilmington District	At least 90% because hard copies are kept in the warehouse.
Omaha District	Just to have Adobe Acrobat and Photoshop so that way you could make digital copies on your computer and still have the hard copy as well.
Portland District	Currently we require no less than 300dpi prefer 400dpi.
Chicago District	400 DPI with color if necessary for maps 300 DPI for Text
Los Angeles	depends on usage of final product.
Chesapeake and Delaware Canal	150 dpi ?????

Kansas City Huntington District	I don't know None really. We scan the documents at a 400 dpi resolution when feasible. Orthophotos are usually scanned at 200 dpi 8 bit black and white.
U.S. Air Force HQ Air Combat Command Marine Corps Avon Park Air Force Range FL Louisville Marine Corps Air Station Yuma Arizona	Not specified Not sure To scale. It varies depending on the original document quality and intended use Unsure of question. Scanned drawings of floor plans need to match the as-built drawing scale accuracy. Learned the hard way that the scanning accuracy requirement is directly related to the ability of a service provider to perform a raster-vector conversion. We ended up finding a service provider in New Mexico who could heads-up redraw any of our floor plans for \$100 a sheet far less than our scanning company could scan and electronically do a raster-vector conversion. TIFF uncompressed 300+ dpi.
Fort Belvoir - GIS Center	

32. After conversion to digital format will there be a requirement to maintain the hard copy documents to satisfy the requirements of your customers/contractors?

Wilmington/Philpott Project Norfolk District Baltimore District Portland District Baltimore Walla Walla New Orleans District St Paul Dist. Memphis Sacramento District Omaha District Portland District	Yes for ease of use yes. No. No we archive them. Possibly. It is unclear whether courts and county clerks will accept digital products for Real Estate transactions. Yes. We don't want to lose the primary sources. Yes. It's much faster to review a hard copy drawing then an electronic copy. And most of our customers and contractors do not have Microstation on their computers. Absolutely Not that I'm aware of. Our experience has been that once you have something on line the paper is almost forgotten about. Currently the hard copies are still being maintained for those drawings we maintain. I plan is not to maintain them in the future but guidelines have not been formalized. No I give the document back to the customer and the customer gets their hard copy with no problems at all. The only thing is that it is scanned Yes it is regulation for us to keep a hard copy form within our records on project.
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Philadelphia	Yes legal requirement for regulatory project documents all are archived off-site
Chicago District	Hard copies get sent to the Records Management Center and get categorized in the ARIMS system
Los Angeles	The Corps is supposed to keep construction plans and surveys indefinitely. We try to archive to the federal records center originals 5 years after completion of construction. But keep 1/2 size hardcopies in the District on file. Military Construction drawings are sent to the customer and we do not keep duplicates.
Chesapeake and Delaware Canal	Digital is enough for our small office. Hard copies are printed and stored on hanging racks.
St. Louis Permits office	No
Kansas City	Yes
U.S. Air Force HQ Air Combat Command	Yes
Marine Corps	Not sure
Avon Park Air Force Range FL	Yes
Louisville	???? about Signatures
Louisville	Nonsensically yes
Marine Corps Air Station Yuma Arizona	No. As a matter of accessibility however we would like to be able to keep the hard copies close at hand so we can go back and reference in them in the event the scanned image is not completely legible.
Fort Belvoir - GIS Center	The DPW will probably want to maintain the documents until they are used to using the automated system to access and print documents on-demand.

Part IV – Metadata (questions 33 – 40)

33. For non-digital documents, is there a paper record, computerized index or drawing management system containing the pertinent title block information which describes the contents of the drawings?

Wilmington/Philpott Project	Yes
Norfolk District	yes.
Baltimore District	No.
Portland District	Yes
Baltimore	No.
Walla Walla	The fish environmental compliance and cultural resources libraries have been reorganized in the last year.
Seattle District	Yes
St Paul Dist.	Yes

Memphis	Yes
St. Paul	No
Sacramento District	To some extent yes with improvement needed.
Wilmington District	Some
USAED Wilmington District	Yes
Omaha District	No
Portland District	Yes as described previously.
Philadelphia	No
Chicago District	Not really over the years the standard for storing hard copies hasn't been followed
Los Angeles	Only sheet title
Chesapeake and Delaware Canal	Excel spread sheet.
St. Louis Permits office	No
Huntington District	Not that I'm aware of.
U.S. Air Force HQ Air Combat Command	No
Marine Corps	Yes
Avon Park Air Force Range FL	N/A
Louisville	Yes
Louisville	Yes but it is not 100% accurate
Marine Corps Air Station Yuma Arizona	The paper record is separated between two sets of books.
ITL/CADD-GIS Center	No
Fort Belvoir - GIS Center	None that I am aware of.

34. Is there an effort under way now to record the title block information?

Wilmington/Philpott Project	No
Norfolk District	No
Baltimore District	No.
Baltimore	No.
Walla Walla	Yes.
Seattle District	Yes
St Paul Dist.	Yes
Memphis	Yes and no. The folks in maps office can't stay focused.
St. Paul	No
Sacramento District	No.
Wilmington District	No
USAED Wilmington District	Yes

Omaha District	An access database
Portland District	Yes the title block information is our source for indexing. Most all information from the title block is used.
Philadelphia	No
Chicago District	No
Los Angeles	Sorta
Chesapeake and Delaware Canal	No.
St. Louis Permits office	No
Huntington District	Not that I'm aware of.
U.S. Air Force HQ Air Combat Command	No
Avon Park Air Force Range FL	N/A
Louisville	Most of it is captured in the data base
Louisville	not at this time
Marine Corps Air Station Yuma Arizona	No. Synergis-Adept staff has indicated that they have a sub-routine able to automate and manage this process.
ITL/CADD-GIS Center	No
Fort Belvoir - GIS Center	Yes. See my answer to an earlier question above.

35. What metadata has been collected for documents that have already been converted?

Wilmington/Philpott Project	None
Baltimore District	Project name drawing number state\county sheet and plate number.
Portland District	None for scanned drawings since they are not georeferenced yet.
Baltimore	None
Walla Walla	I don't know.
St Paul Dist.	Complete MARC record for report-type materials.
Memphis	Varies but at a minimum file name and description.
St. Paul	N/A
Sacramento District	Unknown for sure.
Wilmington District	Title block info date
Omaha District	An access database
Portland District	From what I understand of the question: The way we record/store information in SQL gives us most of the information necessary about the drawing. This includes the drawing name description number date and the format of the drawing. Also included is information about any drawings that it supersedes or may supersede it. The creator/owner of the drawing and other such details are not collected together but are available within the information on the drawing itself.

Philadelphia	none
Chicago District	Project Name Date Main Feature Location
Los Angeles	Title block only
Chesapeake and Delaware Canal	None
St. Louis Permits office	None
Huntington District	None.
U.S. Air Force HQ Air Combat Command	Metadata collected on all converted maps...
Avon Park Air Force Range FL	N/A
Marine Corps Air Station Yuma Arizona	NAVFAC Number Project Number Project Title Project contract number Building number Drawing date
ITL/CADD-GIS Center	None
Fort Belvoir - GIS Center	See answer above.

36. What metadata is anticipated to be needed for searching and document/records management purposes?

Wilmington/Philpott Project	Resolution geo referencing info date scanned who scanned description and source of scanned material
Baltimore District	Same as above.
Portland District	None.
Baltimore	Most of the title block information; Scale; resolution; date of map; date of scan; size of original; project name; projection/datum is available;
Walla Walla	As much as we can put together about where the document came from and when it was submitted.
St Paul Dist.	Title project name date contractor and contract number if applicable Classification number (or drawing number) POC see also reference report type (such as field book-topographic or field book-computations or drawing-as built).
Memphis	Geographic Point and description would really be nice. Geographic location can get very time consuming and takes someone that knows the data.
St. Paul	None
Sacramento District	Unknown for sure.
Omaha District	An access database
Portland District	Our current system is set up to be able to search by drawing name (keyword) number and manufacturer's drawing number. In the future we may make it searchable by contract number.
Philadelphia	Unknown until system is designed
Chicago District	Keywords based on Discipline

Los Angeles
Chesapeake and Delaware Canal
St. Louis Permits office
Fort Belvoir - GIS Center

Location project contract no. invitation for bid no.
Minimal
In preparation for our emerging GIS we will collect metadata on Data that we create
See answer above.

37. What information will someone who is searching for a document in the future likely to have available to aid in locating the document? (eg Title Block, Job No., Drawing Number, etc.) If this differs depending on the type of document, include for each document type.

Wilmington/Philpott Project

For segments, segment letter. For tracts, tract # or original property owners name.
Aerials index # As built - park names or building location
Project name drawing number.

Norfolk District
Baltimore District
Portland District
Baltimore
Walla Walla
Memphis
St. Paul

Documents should be able to be located by any of the titleblock info.
Project location project code river name drawing number job drawing title etc.
Project name; sheet number (i.e. sheet 1 of x); plate number; date
Title Reservoir Date Project name Author
Project Location or a description such as a near by structure or place.
We have a paper version to find the general location and then the person needs to manually locate

the drawings.

Sacramento District
Wilmington District
USAED Wilmington District
Omaha District

Unknown for sure.
Title block job number geographical area
Title Block Drawing number and vessel used in survey.
They will be able to search the Title or search for the project name something that is different
then all other documents

Portland District

Typically most of our craftsmen search by keyword within the drawing name/description to find out the drawing number via the list that pulls up based on the keyword. Other times they may already have the drawing number in hand and go directly to the needed record. It has been noted in the past that they would like to be able to search based on the nomenclature within the drawing but accomplishing this is not foreseeable within the near future. In the future it is also planned to have drawings photos contract documents manuals etc all linked through the FEM (soon to be P2) system to their respective PR's TR's PM's etc.

Chicago District
Approver.

Through Projectwise all Title block information is recorded We have a keyword list Designer Drawer

Los Angeles

Location project name drainage basin/ river name

Chesapeake and Delaware Canal	Type of Drawing Section Stations Drawing Numbers Comments National Archive Reference
St. Louis Permits office	Numbers Number of Sheets by location (data layer in GIS)- For the Database: File number and all data fields in our data base- presently RAMS (Regulatory Analysis and Management System) and in late 2004 the new database ORM
Huntington District	No plan.
U.S. Air Force HQ Air Combat Command	TBD
Marine Corps	building number or contract number
Avon Park Air Force Range FL	N/A
Louisville	Location Project title Contract number drawing numbers aren't usually entered in the data base
Louisville	Project data is stored by project name and job name and number. within that data directory is a sheet index
ITL/CADD-GIS Center	None
Fort Belvoir - GIS Center	We are capturing all information in the title block.

38. Is your planned strategy to have multiple repositories for converted documents, or a single one? Why?

Wilmington/Philpott Project	Single for most documents but possibly a web based repository for real estate info. Most documents will be housed on the local server and available to any internal customer throughout the District. Real Estate documents and tract maps may be useful to outside customers thus I think it would be beneficial to offer these across the web possibly using ArcIMS.
Norfolk District	One for originals and one for digital files.
Baltimore District	All archived projects will be stored on the network archive server for access as well as on a backup project CD. A backup tape will be made after each quarter or after a large update and stored offsite. Unknown.
Portland District	Unknown at this time
Baltimore	Multiple would be most desirable for protection against fire or loss.
Walla Walla	Multiple repositories.
St Paul Dist.	Multiple repositories. Primarily due to the data types. Information such as benchmarks soil borings and aerial photography may be collected for one project. The data will more than likely be kept with the project and in a general location because it could be used on any number of projects through the years.
Memphis	
St. Paul	We are not planning to convert old drawings at this time. May do this in the future but have not started the planning process.

Sacramento District	Unknown for sure.
USAED Wilmington District	Not sure
Omaha District	I can only scan one document at a time. I can not do multiple documents at a time.
Portland District	Currently we use separate drives built on one server - one for vector drawings and one for raster. Within these drives there are hierarchy folder structures to break down the file maintenance based on the drawing numbers. In the future it has been determined that these will remain separate for document management sake. When the time comes that we have electronic forms of the contract documents manuals and such - they will probably be held as a combined structure in a 3rd repository.
Philadelphia	No funding therefore no plan to convert documents
Chicago District	Single
Los Angeles	We have no strategy
Chesapeake and Delaware Canal	A single main one on the district network and copies in various places for backup.
St. Louis Permits office	We will have a Sun Machine on the district network and DVD backup stored off site. No money for multiple machine backup.
Huntington District	A single one.
U.S. Air Force Hq Air Combat Command	Single; web access; cost and security
Marine Corps	Single
Avon Park Air Force Range FL	Single one mainly because no one else seems interested in our data.
Louisville	I personally would like to see it all go to digital including all files being scanned We have shelved of Civil historical data on shelved behind the Central files. These books should all be scanned. They are very fragile
Louisville	Duplication is critical
Marine Corps Air Station Yuma Arizona	Single. Limitation imposed by the Marine Corps IT organizations. Would prefer to have a back-up server to replicate all of the data.
ITL/CADD-GIS Center	None
Fort Belvoir - GIS Center	A single repository with daily backups. This is a cost saving measure.

39. What is driving your need to convert documents to electronic format?

Wilmington/Philpott Project	Age of documents deterioration of documents to facilitate accessibility and inadequate storage.
Norfolk District	Capture historical data so that it is not lost.
Baltimore District	The cost of storage space.
Portland District	Floorspace. Making the data useable in CADD and GIS. Document Preservation.
Baltimore	Old documents that are deteriorating need to be maintained. Also traditional hardcopy documents need to be updated.

Walla Walla Seattle District	Ease of retrieval Physical deterioration the historical aerial photo prints without film are fading and we need to capture the image before they get any worse. Space is dictating the need to scan hard copy drawings and the need for digitized historical drawings because they are used extensively by many Electronic formats are intended to increase access to users and at the same time preserve the original. It is never never to conserve space.
St Paul Dist.	Access. Once our geotech data was scanned some of the engineers said they found useful information for current projects that they had not found previously.
Memphis	If we do it it will be because of space needs and having an easier way to share that information with others.
St. Paul	
Sacramento District	Storage of hard copies and retrievability of electronic data currently used to create drawing files.
Wilmington District	Storage space and retrieval
USAED Wilmington District	To alleviate the need to store documents (hard copies)
Omaha District	My boss wants me too. And most people are getting things already in digital format so some people want their older documents converted because they are falling apart.
Portland District	Preservation Accuracy/Integrity of information Efficiency Access
Philadelphia	space
Chicago District	Lack of Storage Space Deterioration of Paper Copies Ease of Cataloging
Los Angeles	space. Reduce reproduction costs. Reduce labor effort in retrieval and searching.
Chesapeake and Delaware Canal	Most already converted so need is low now.
St. Louis Permits office	Utilize existing historic data in permit analysis protect brittle photos and for organization. It is very difficult to keep aerial photos organized with a big user base- and things disappear.
Huntington District	Storage space.
U.S. Air Force HQ Air Combat Command	Ease of use; cost
Marine Corps	Preservation and faster access to the information on the drawing.
Avon Park Air Force Range FL	Space issues.
Louisville	Deterioration due to handling and concerns fire theft natural disasters.
Louisville	I would suggest two electronic copies. One stored at an offsite location.
Marine Corps Air Station Yuma Arizona	operation and maintenance
	Limited manpower and the need to capitalize on technology to disseminate the data more quickly and accurately. Additionally we would like to see more as-built data updated by the maintenance activities on a real-time basis.
ITL/CADD-GIS Center	None
Fort Belvoir - GIS Center	Documents are lost mishandled not file correctly. No one really has the time to effectively manage this building and the contents that go in and leave it.

40. What is your time requirement for conversions and is the conversion funded?

Wilmington/Philpott Project	No definite timeline. Has not been funded yet
Norfolk District	conversions would be based on project need.
Baltimore District	Original conversion was funded as part of eliminating the Map file room. Future conversions are planned to be as needed.
Portland District	Time requirement is now. Conversion is funded through CADD budget. 2-3 fte's are allocated for this
task.	
Baltimore	Time requirement is not set and there is no funding.
Walla Walla	There is no time requirement because we have no funding.
Seattle District	The microfilm aperture cards should be done in 2004. The historical aerials should be done in 2004 also but we just don't have the funding so we'll use our students as time allows
St Paul Dist.	None planned as far as I know
Memphis	As time permits and is not directly funded. We do it because we know it save a bundle of time on current projects but you can't hardly quantify it.
St. Paul	None to date.
Sacramento District	Unknown for sure.
Wilmington District	Limited no funding
USAED Wilmington District	1 to 2 years. Not sure.
Omaha District	It all depends on the document and it's size and it's details. There is no PRC in having me convert documents to digital.
Portland District	Since 75% of our drawing stock has already been scanned into an electronic format we don't really have a time requirement set for the remainder. It would be nice to have them 100% scanned within the next 1-3 years but it isn't considered a requirement. I personally would like see the other documents (listed previously) be completed within the next 5 years since most are aging rapidly and in most cases they are the only copy in existence. I don't believe we have any formal funding set up for the tasks above. In the last couple years they have been taken care of on a case-by-case basis as time and general funding allows.
Chicago District	No Time has been set No Conversion fund has been created
Los Angeles	the conversion is not funded. The time requirement is unpredictable until a format storage and retrieval system is defined.
Chesapeake and Delaware Canal	Unlimited time funding in S&A.
St. Louis Permits office	Sooner is better- will scan and map images as time permits. No special funding- part of our support budget.
Huntington District	None.
U.S. Air Force HQ Air Combat Command	TBD

Marine Corps Avon Park Air Force Range FL Louisville Louisville Marine Corps Air Station Yuma Arizona ITL/CADD-GIS Center Fort Belvoir - GIS Center	partially funded.	No funding. time frame will be driven by funding N/A No time limit is set. Funds is the concern Conversion is done and funded as needed Within 1 year. It is not funded at this time. None We estimate it will take 6 months to 1 year to scan and build a document database. This effort is
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