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# NGA RECORDS STORAGE STUDY (Final Results)

### **Prepared For:**

## **Records and Declassification Program Office**

30 September 2006

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#### Section 1 – Introduction

#### 1.1 Executive Summary

The National Geospatial-Intelligence Agency (NGA) contracted with Nortel Government Solutions (NGS) to perform a storage study of the NGA's current, permanent, and temporary record holdings. The objectives of the NGA Records Storage Study were threefold: identify and classify NGA record holdings in facilities across the United States, identify issues related to the storage of NGA's record holdings and identification of various options to address those issues, and present a recommended path forward for NGA's records management and storage capability.

In the course of the Study, the NGS Study Team and Government representatives visited over 25 locations within the continental US (CONUS) that create, process, and store NGA records and collected information pertaining to record holdings at an additional 7 locations.

The Study Team took a "best practices" approach to evaluating the status of NGA storage and record keeping activities. This approach quickly led to the determination that record storage issues could not be effectively addressed without also addressing procedural and structural issues pertaining to records management. In short, effective storage of records both relies upon and supports effective records management processes. As such, the issues impacting NGA's long-term storage of records are both procedural and physical in nature.

The Study Team noted three critical issues affecting NGA's ability to effectively store and manage permanent records:

- NGA lacks appropriate facilities for the long-term (10 to 50 year) storage of permanent film and electronic records. Although current film storage is sufficient in terms of volume, the study team is concerned with the environmental conditions of the storage not being appropriate to the long-term preservation of the film stock. There is currently no organized storage of archived electronic records. In both instances, the best solution is the procurement of additional "cold storage" space and the development of business processes to insure the preservation of the stored records.
- 2) NGA lags behind other agencies in the planning and implementation of electronic records management (ERM) business processes and supporting systems. This includes both the inclusion of electronic records keeping in mission systems as well as the acquisition of appropriate processes, technology, and personnel for the long-term management of digital records. The study team anticipates rapid growth in the requirement for appropriate "cold storage" spaces for the long term preservation of petabytes (1 million gigabytes) of data and records created annually by NGA. There are currently no cohesive plans for the management of this high volume of records.
- 3) The Records and Declassification Program Office has difficulty affecting policy and completing actions to implement or improve NGA Records Management (RM)

processes. These challenges are mostly organizational and structural in nature, and are indicative of a relatively low priority for Records Management requirements within NGA and the decentralized nature of the organization. As a result, NGA assumes a significant risk in terms of compliance with applicable RM laws and regulations, ability to respond to both external requests (Freedom of Information Act, Congressional and Executive inquiries), as well as reduced levels mission support (analysis) in providing timely information and intelligence to those who need it most.

The Study Team also has concerns with the upcoming move of NGA's National Capital Region (NCR) activities to Fort Belvoir as a result of the Base Realignment and Closure (BRAC) determinations. This move creates the potential for additional mishandling and destruction/loss of permanent records as offices seek to fit into 27% less space than is currently allocated. This issue has the potential for critical impact to NGA records holdings, if not directly addressed in concert with the movement of activities to the New Campus East (NCE) facility.

There are many root causes for the issues impacting NGA's ability to store and service permanent and temporary records. In many respects, these challenges are not unique to NGA, but rather artifacts of the historical views and perceptions of records management in both Government and industry.

- 1) Many organizations formed as a "composite" of other organizations (either through corporate mergers or Government consolidation efforts) struggle with the creation of an enterprise level Records Management strategy and processes in the face of legacy capabilities of the original subordinate organizations.
- 2) There is also a common issue with getting "top down" support for the development of As a support function, Records robust Records Management capabilities. Management (RM) often receives less executive support in favor of more "mission" oriented activities even though it is required and should be treated with the same degree of respect and awareness as security within an organization. Records Management tends to receive focus as the result of a crisis or an externally visible compliance issue. Recent "scandals" in the corporate world (ENRON, Tyco, etc.) led to the Sarbanes-Oxley Act of 2001 and new records management compliance requirements on publicly traded corporations and directed criminal and civil penalties for corporate officers in the event of non-compliance. There are presently no corollaries to the penalties of Sarbanes-Oxley in the Government environment. However, pending legislation, specifically the OPEN Government Act (S.394) proposes penalties for agencies and their leadership for failure to effectively implement provisions of the Freedom of Information Act.
- 3) In line with less management support for RM is a general lack of funding for Records Management activities. Recent Congressional testimony related to the effectiveness of the Freedom of Information Act (FOIA) highlighted a general lack of emphasis and funding the Records Management:

"...We do get a sense from many of the agency plans that, despite a Chief FOIA Officer having been appointed in response to the Executive Order, the FOIA programs (and I would add the records management programs) are often treated like the proverbial stepchild. Agencies tell in these plans of not having money for scanners or copiers..." Patrice McDermott, Director, OpenTheGovernment.org before the Subcommittee on Government Management, Finance, and Accountability of the House Committee on Government Reform, July 26, 2006

- 4) In the current age of information technology (IT), both industry and government struggle with the appropriate management of electronic records. The rapid expansion of automated business systems and automated "systems of record" in the 1980's and 1990's has led to the annual creation of petabytes (1 petabyte equals 1 million gigabytes) of records requiring preservation and storage.
- 5) Lack of appropriate environmentally-controlled infrastructure and space for the longterm preservation of records in storage is difficult to attain in environments where office space and associated funding is scarce. This situation is complicated in Government environments where there is increased pressure to reduce space requirements.

To address these conclusions, the Study Team recommends a "phased approach" of activities along four interrelated threads. The initial phases of the approach focus on activities designed to halt the expansion of records management and storage issues and the prevention of new issues.

- Proactive expansion and formalization of Records Management Policies, Procedures, and Awareness to reinforce the importance of Records Management as a critical operating business function of the organization and address the loss of records prior to accession.
- 2) Coordination with the NCE Program Management Office (PMO) to mitigate potential records management compliance issues resulting from the movement and consolidation of operational functions associated with the NCE move.
- Creation of an Electronic Records Management Program Function to expand efforts to bring NGA into compliance with compliance requirements and appropriately leverage technology to improve RM activities.
- 4) Remediation of Storage Facility Issues to improve near-term storage conditions and establish a path for the appropriate long-term storage of NGA's permanent records.

The Study Team believes these actions are necessary not only to achieve compliance with Record Management regulations, but also to protect the multi-billion dollar investment made by the Government in the production of these records; especially the imagery and intelligence products that may have continued application in NGA's mission of direct support to the Services.

#### 1.2 Introduction

This NGA Records Storage Study was conducted by NGS in support of the Records and Declassification Program Office (EDR) for the purpose of developing a common understanding of NGA's permanent and temporary records storage, issues, and recommendations to address those issues.

The Study was conducted over the course of the government fiscal year (GFY) 2006. Study activities focused on a survey of record holdings and RM practices at facilities and offices selected by EDR and determined to warrant either an onsite or offsite review. As the site surveys were completed the Study Team refocused efforts to the holistic review of the information gathered for the identification of overarching storage issues and the evaluation of options to address those issues.

It is important to note that many aspects of the storage study represent a "snapshot" of NGA's storage and services of permanent and temporary records due to the fact that records are in a state of constant flux in terms of handling, processing, transfer from one location to another, etc.

#### 1.3 Background and Business Drivers

In 1996, the National Imagery and Mapping Agency (NIMA) stood-up as an intelligence and combat support agency, made up of several legacy agencies in whole, or in part. The only records management functions at this time were from the Defense Mapping Agency (DMA) and the National Photographic Interpretation Center (NPIC) – each using it's own records storage facility (DMA having several and NPIC using a CIA facility), and having individual records retention schedules. In 1997, one of the primary DMA storage facilities (Riverdale, MD) was closed, and records were subsequently moved to the Records Holding Area (RHA) at the Washington Navy Yard (WNY).

In 2001, NGA acquired the Airborne Imagery Project from the Defense Intelligence Agency (DIA) as well as inherent records storage issues for film. NIMA (now NGA) Information Management Officers completed the NGA records retention schedule and submitted it to the National Archives and Records Administration (NARA) for approval (received 2004). NGA lost its records holding area in Arnold, MO (records holdings were moved to Gila Bend, AZ), and CIA determined that NGA could no longer utilize its facility for film storage beginning FY2005. Additionally, the 2005 BRAC Commission recommended the consolidation of NGA activities in the National Capital Region (NCR) into 27% less space located at Fort Belvoir. Among the spaces affected by the BRAC determinations are the records storage areas at the WNY and other NGA offices holding records within the NCR.

Another risk factor for the current storage of NGA records is the continued reliance upon spaces owned or funded by non-NGA entities. Having not assumed the full cost for storage of records, NGA may be faced with a sudden space and related cost requirements in the event of budget cuts or other changes in these hosting organizations.

These circumstances will inevitably lead to the culmination of a crisis in the storage of permanent and temporary records in NGA.

It is important to note that the long-term storage of records requires more than just "space." Storage facilities must maintain the proper environmental conditions and services to preserve records for their retention lifespan; ensuring that there is something to review once the record is scheduled for disposition. Many of the facilities currently used by NGA do not have the appropriate environmental conditions (humidity, temperature, fire and safety systems, etc.) to insure long-term preservation of records.

These pending problems with storage of records are intertwined with issues of compliance with executive orders and laws pertaining to records management. Many agencies are struggling with the implementation of DoD 5015.2 for the integration of record keeping functions into systems of record. Similarly, many agencies have had difficulty establishing their eFOIA programs as mandated by 1996 Amendments to the Freedom of Information Act.

Taken together, theses physical and regulatory circumstances necessitate that NGA begin to produce long and short-term solutions for records storage, and an automated means to maintain those records.

#### 1.4 Key Definitions

The following definitions pertain to Records Management processes and are often confused with similar definitions for IT and other business functions.

*Permanent Record* – Records appraised by NARA as having sufficient historical or other value to warrant continued preservation by the Federal Government beyond the time they are needed for administrative, legal, or fiscal purposes.

*Temporary Record* – Records approved by NARA for disposal, either immediately or after a specified retention period. Also called disposable records or non-permanent records.

*Archive* – The noncurrent records of an organization preserved because of their continuing, or enduring, value. One or more buildings, or portions thereof, where permanent records are located after being accessioned by the archival agency.

*Library* – An operational support office of NGA where copies of current records and reference materials are held, loaned out to users on a temporary basis, or where duplicate copies are provided to users (customers). Currently, NGA has numerous library-type offices where permanent records are held outside the control of the RM Program Office.

Accession – The transfer of the legal and fiscal custody of permanent records from an organization to the archive

*Preservation* – The basic responsibility to provide adequate facilities for the protection, care, and maintenance of records. Specific measures, individual or collective, undertaken for the repair, maintenance, restoration, or protection of documents in all media formats.

A listing of the key terms used in this report and their definitions may be found in Appendix C.

#### 1.5 Document Organization

This document is organized based on: 1) the high level description of the Records Storage Study efforts, approach, options, and conclusions; 2) the results and observations of the survey of storage facilities and practices; 3) options considered for the improvement or reconciliation issues pertaining to the storage of records; and, 4) a recommended path forward to systemically address records management and storage issues. Additional details and supporting information can be found in the document's appendices.

#### **1.6 Reference Documents**

The following documents were used or referenced in developing this document:

- 1. Peter Z. Adelstein, "IPI Storage Requirements for Film," Rochester Institute of Technology, 2004
- 2. Department of Defense, "Base Closure and Realignment Report, Volume 1, Part 2 of 2, Detailed Recommendations," May 2005
- 3. Department of Defense Directive 5015.2, "Design Criteria Standard for Electronic Records Management Software Applications," June 19, 2002
- 4. Executive Order 12958, "Classified National Security Information," as amended March 25, 2003
- 5. Federal Records Act, 44 USC, Chapter 31, "Records Management by Federal Agencies"
- 6. Gartner Research, "Records Management Best Practices Are Becoming Increasingly Important for Compliance," August 9, 2005
- 7. Gartner Research, "Sarbanes-Oxley Compliance Hits 15 Percent of 2006 IT Budget," December 9, 2005
- 8. Gregory S. Hunter, "Preserving Digital Information," Neal-Schuman Publishers, Incorporated, 2000
- 9. ISO 15489-2 Standard, "Information and Documentation Records Management Part 2: Guidelines," September 15, 2001
- 10. ITT Space Systems, "Imagery Operations Integration Study," November 8, 2005

- 11. Statement of Patrice McDermott, Director, OpenTheGovernment.org, before the Subcommittee on Government Management, Finance, and Accountability of the House Committee on Government Reform; "The Implementation of Executive Order 13392, Improving Agency Disclosure of Information," July 26, 2006.
- 12. Millican and Associates, "National Geospatial-Intelligence Agency Electronic Records Management Program Gap Analysis," April 19, 2004
- 13. NARA Regulations: 36 CFR, Chapter XII, Subchapter B, "Records Management"
- National Geospatial-Intelligence Agency, "Records Management Reference Guide," 2005

#### Section 2 – Survey Results and Observations

In the course of the NGA Records Storage Study, the Study Team visited 25 storage areas and captured information pertaining to an additional 7 facilities. This was far in excess of the original list of facilities in the Statement of Work and, in many cases, information gathered while reviewing one facility led to the "discovery" of additional records holding facilities relevant to the study effort. This observation highlights the management challenge of effectively tracking, coordinating, and managing activities into a consolidated enterprise-level records management program.

As stated earlier, it is important to note that the study presents a "snapshot" of NGA record holdings, as the data gathered represent a point in time perspective. In several cases, the detailed information of the holdings at a given site has changed in terms of record types, media, and volumes since the study team reviewed that site.

Another important note to reiterate is that storage, for the purpose of Records Management, includes not only the appropriate volume of space to keep records, but also the environment and services to manage and preserve the records in accordance with applicable laws, regulations, and policies. As described by the figure below, these activities are tied together through an appropriate management structure that provides consistency and efficiency in their operation.



Figure 2-1: Records Storage Paradigm

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For the purposes of brevity, the results of the survey will be progressively elaborated throughout this report. In this section, a summary of the survey by media type is presented with a brief description of each facility. Appendix A has more detailed reviews of each facility, including holdings by media type. Finally, the database adjunct to this report contains detailed listings of holdings at each facility by media type and file series.

#### 2.1 Survey Results

The survey conducted by the Study Team included site visits, email inquiries, and phone inquiries as directed and prioritized by the Government Records Management (RM) team between October, 2005 and August, 2006. The survey collected information pertaining to the NGA holdings at each facility by media type and file series. During visits, additional information was collected pertaining to the dimensions of the facility, services performed, and environmental conditions.

The following table presents an overall summary of the visited facilities. It is readily apparent that NGA owns only a portion of the locations holding its records. In fact, of the approximately 551,000 cubic feet of storage currently available to NGA, only 72,000 cubic feet is actually owned by the Agency. The remainder is a compilation of leased space, borrowed buildings on bases, and spaces in other agency or contractor facilities. Of the facilities owned by NGA, many are to be consolidated into the New Campus East (NCE) at Fort Belvoir. Another observation is that many of the facilities have environmental issues with the long term storage of records and only one (the National Reconnaissance Office's IMSC) has achieved NARA certification for the archival of records.

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| Office   | Location                             | Facility<br>Owner | Office Type        | Type of<br>Record(s)  | NGA Records<br>Volume (cu.<br>ft) | Total Records<br>Storage Capacity<br>(cu. ft) | Records<br>Preservation<br>Concerns | NARA<br>Certified | Impacted By<br>NCE | Facility<br>Security |
|--|--------------------------------------|-------------------|--------------------|-----------------------|-----------------------------------|---|-------------------------------------|-------------------|--------------------|----------------------|
| Records Holding Area                               | Washington Navy Yard, Washington, DC | NGA               | Office             | Hardcopy              | 1,198                             | 1,597   | Yes                                 | No                | Yes                | TS/SCI               |
| Ground Photography Office                          | Washington Navy Yard, Washington, DC | NGA               | Library            | Hardcopy              | 625                               | 832   | Yes                                 | No                | Yes                | TS/SCI               |
| Film Library (WNY)                                 | Washington Navy Yard, Washington, DC | NGA               | Library            | Film &<br>Hardcopy    | 6,339                             | 6,339   | Yes                                 | No                | Yes                | TS/SCI               |
| Map Library  | Washington Navy Yard, Washington, DC | NGA               | Library            | Hardcopy              | 2,618                             | 3,490   | Yes                                 | No                | Yes                | TS                   |
| Tape Library                                       | Reston 1- Reston ,VA                 | NGA               | Library            | Digital               | 21,969                            | 29,286  | Yes                                 | No                | Yes                | TS/SCI               |
| Source Acquisition System (SAS)                    | Reston 1- Reston, VA                 | NGA               | Operations         | Digital               | 1,665                             | 1,665   | Yes                                 | No                | Yes                | TS/SCI               |
| M3 Messaging System                                | Reston 2- Reston, VA                 | NGA               | Operations         | Digital               | 540                               | 540   | Yes                                 | No                | Yes                | TS/SCI               |
| Geospatial Services Library                        | Erskine Hall - Bethesda, MD          | NGA               | Library            | Hardcopy              | 1,968                             | 2,624   | Yes                                 | No                | Yes                | TS/SCI               |
| NGA Historian                                      | Ruth Building - Bethesda, MD         | NGA               | Office             | Digital &<br>Hardcopy | 36                                | 58  | Yes                                 | No                | Yes                | S                    |
| Remote Replication Site                            | Robedeau Hall - Bethesda, MD         | NGA               | Operations         | Digital               | 9                                 | 18  | Yes                                 | NO                | Yes                | TS/SCI               |
| Film Library (STL)                                 | 2nd Street - St. Louis, MO           | NGA               | Library            | Film &<br>Hardcopy    | 20,531                            | 26,011  | Yes                                 | No                | No                 | TS                   |
| Geodetic Survey Branch                             | 2nd Street - St. Louis, MO           | NGA               | Office             | Digital &<br>Hardcopy | 15                                | 20  | Yes                                 | No                | No                 | TS/SCI               |
| Geospatial Intelligence Advancement Testbed (GIAT) | 2nd Street - St. Louis, MO           | NGA               | Office             | Digital &<br>Hardcopy | 40                                | 80  | Yes                                 | No                | No                 | TS/SCI               |
| Imagery Production Branch (IPB)                    | DIA - Washington, DC                 | DIA               | Operations         | Film                  | 15,280                            | 50,440  | No                                  | No                | No                 | TS/SCI               |
| Commercial Satellite Imagery Library (CSIL)        | DIA - Washington, DC                 | DIA               | Library            | Digital               | 1,440                             | 2,898   | Yes                                 | No                | No                 | Unclassified         |
| Information Management Services Center (IMSC)      | NRO - Chantilly, VA                  | NRO               | Office/<br>Archive | Hardcopy              | 3,360                             | 5,040   | No                                  | Yes               | No                 | TS/SCI               |
| Film Library (RNY)                                 | (classified)                         | NRÔ               | Archive            | Film                  | 1,700                             | 1,900   | Yes                                 | No                | No                 | TS/SCI               |
| Agency Archives and Records Center (AARC)          | (classified)                         | (classified)      | Archive            | Film & Hardcopy       | 142,340                           | 142,340                                       | Some                                | Partial           | Maybe              | TS/SCI               |
| Washington National Records Center (WNRC)          | NARA - Suitland, MD                  | NARA              | Archive            | Film & Hardcopy       | 66,677                            | 66,677  | Yes                                 | No                | Maybe              | TS/SCI               |
| National Personnel Records Center (NPRC)           | NARA - St. Louis, MO                 | NARA              | Archive            | Hardcopy              | 2,400                             | 2,400   | Yét                                 | NO                | No                 | TS                   |
| Secure Storage Facilities                          | Air Force Auxiliary - Gila Bend , AZ | AF                | Archive            | Film &<br>Hardcopy    | 132,374                           | 194,023                                       | Yes                                 | No                | Maybe              | TS/SCI               |
| (classified)                                       | White Sands, NM                      | AF                | Operations         | Digital & Hardcopy    | 40                                | 60  | Yes                                 | No                | No                 | TS/SCI               |
| New Mexico Survey Office                           | White Sands, NM                      | AF                | Office             | Digital               | 36                                | 100   | Yes                                 | NO                | No                 | TS/SCI               |
| New Mexico Survey Office                           | Halloman AFB, NM                     | AF                | Office             | Digital               | 50                                | 100   | Yes                                 | No                | No                 | Unclassified         |
| California Survey Office                           | Vandenburg AFB, CA                   | AF                | Office             | Digital               | 5                                 | 5   | Yes                                 | NO                | No                 | S                    |
| California Survey Office                           | Edwards AFB, CA                      | AF                | Office             | Digital               | 5                                 | 5   | Yes                                 | NO                | No                 | S                    |
| Florida Survey Office                              | Patrick AFB, FL                      | AF                | Office             | Digital               | 5                                 | 5   | Yes                                 | No                | No                 | TS/SCI               |
| Media Lab  | Denver, CO                           | AF                | Operations         | Digital               | 13,000                            | 13,000  | Yes                                 | No                | No                 | TS/SCI               |
| Data Bank  | Denver CO                            | AF                | Operations         | Hardcopy              | 20                                | 20  | Yes                                 | No                | No                 | TS/SCI               |

Figure 2.1-1: Summary of Data Collection Effort

In general, the Study Team believes that they have captured approximately 90% of film records, 75% of hardcopy records (maps and documents), and a small fraction of electronic records (data tapes, documents, emails, etc.) held by NGA. Additional film records may be held in smaller NGA offices not visited or discovered through the survey or at other unvisited classified facilities. Additional hardcopy records are known to exist in various spaces (small offices and personal file holdings) not included in the survey. It is believed that the findings pertaining to digital data only cover raw data tapes that are currently stored in conjunction with other media. Few significant holdings of digital analytic products, documents, emails or other electronic media records were discovered by the Study Team during the course of the effort.

Projection of the volumes of records requiring future storage presented a significant challenge to the Study Team. The Team found that many facilities had ad-hoc processes with few, if any, measured metrics pertaining to the volumes of records coming into or out of their operations. This is an artifact of the history of NGA as an organization comprised of several different "legacy" organizations, each with its own records management facilities and practices. Additionally, the approach taken in many facilities is more akin to "library" functions, with a focus on search and retrieval, as opposed to "record-keeping" functions for the planned management of the records' lifecycle. Coupled with the decentralized nature of records management at NGA, this has led to an environment where the systemic accession and disposition of records happens on a mostly ad-hoc basis. As "new holdings" are "found" or "dropped off" at the Records and Declassification Program Office.

#### 2.1.1 Film Storage

A major portion of NGA's mission involves the analysis of imagery from a variety of assets. NGA currently owns nearly 300,000 film canisters of original negatives and half as many duplicates. These holdings are scattered among NGA facilities, usually based on the mission or source of the imagery. This represents a major investment in reconnaissance that needs to be stored and preserved.

Other than the small Film Library at the Washington Navy Yard, which is set to be closed as part of the BRAC/NEW Campus East move, and another small library in St. Louis, NGA does not own any film storage facilities. Of the facilities used by NGA for the storage of film, only the CIA-owned AARC and the DIA-owned DIAC facility meet requirements for long-term "cold storage" (but not the active preservation) of permanent film records. The study team noted on several occasions that original film negatives were being lost due to improper handling and environmental conditions. This is a potentially critical issue for the long-term preservation of film and protection of the raw intelligence it represents.

The following chart indicates the major film holdings of the NGA. Note the environmental concerns that could lead to loss of records at almost every facility.

| Office                                    | Location                             | Number of<br>Records (film<br>canisters) | Type Of<br>Records<br>(ON, DN, DP) | NGA Records<br>Volume<br>(cu. ft) | Total Records Storage<br>Capacity (cu. ft) | Growth  | Services  | Records<br>Preservation<br>Concerns | NARA<br>Certified |
|---|--------------------------------------|--|------------------------------------|-----------------------------------|--|---|---|-------------------------------------|-------------------|
| Film Library (WNY)                        | Washington Navy Yard, Washington, DC | 17,329                                   | ON, DP                             | 6,300                             | 6,300                                      | No more film entering<br>into library (older film<br>destroyed) | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                |
| Film Library (STL)                        | 2nd Street - St. Louis, MO           | 45,580                                   | DP                                 | 20,511                            | 25,911                                     | 200 canisters per<br>month                                      | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                |
| Imagery Production Branch (IPB)           | DIA - Washington, DC                 | 22,000                                   | ON, DN                             | 15,280                            | 50,440                                     | 750 canisters per<br>month, or 25 per day                       | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                |
| Film Library (RNY)                        | (classified)                         | ~ 32,500                                 | ON                                 | 1,700                             | 1,900                                      | Unknown   | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                |
| Agency Archives and Records Center (AARC) | (classified)                         | 44,000                                   | ON                                 | 38,340                            | 38,340                                     | Negligible  | Storage<br>Retrieval<br>Duplication<br>Preservation | Some                                | Partial           |
| Washington National Records Center (WNRC) | NARA - Suitland, MD                  | ~ 150,000                                | ON                                 | 60,000                            | 60,000                                     | Negligible  | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                |
| Secure Storage Facilities                 | Air Force Auxiliary - Gila Bend , AZ | 19,300                                   | DN                                 | 16,160                            | 25,620                                     | Varies, numerous<br>locations shipping<br>boxes to Gila Bend    | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                |

Figure 2.1.1-1: Current Film Storage



The chart below indicates the relative holdings of film storage related to the total capacity.

Figure 2.1.1-2: Current Film Storage Against Capacity

The chart below indicates the relative volumes of original negatives, duplicate positives and duplicate negatives held by NGA.



Figure 2.1.1-3: Volume of Film Canisters by Type of Record

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With the transition to digital imagery, the volume of new canisters of film being generated every year will steadily decline through 2010 but may not approach zero until all legacy assets are retired. The chart below highlights a misconception held by many at NGA that the issues of long-term storage of film will go away once new systems come online for the production of digital imagery. While this is generally true, the timeframe for when the film storage requirement reduces to a negligible value is actually far longer, due to the policy for retention of film for 25 years and a pending records retention schedule update request to hold film for 50 years. As such, the need to maintain film storage and servicing facilities may not end until at least 2050. The implication of this observation is that NGA must not only maintain storage facilities with the proper environmental conditions, but also maintain the equipment and expertise to access, recall, digitize, and preserve film stock.



Figure 2.1.1-4: Projection of Film Storage Requirement

Another misconception regarding the storage of film with respect to digital imagery is that the original film stock can be converted to digital and then disposed of. There are several problems with this idea. First, it is a mission requirement of NGA to maintain the film archive for the Intelligence Community. Second, NARA requirements and the Law do not allow the destruction of original records in favor of duplicate records. Third, digitization technology is not presently to the level of maturity to allow for the full resolution of the original image to be captured. Fourth, conversion of the entire volume of film stock to digital imagery is cost prohibitive in terms of both technology and personnel.

As stated earlier, NGA is facing significant issues with the proper long-term storage of film in terms of both the appropriate storage environment as well as the necessary services to maintain film through its records management lifecycle (retention period).

#### 2.1.2 Hardcopy (Paper) Storage

The study team noted over 200 thousand cubic feet of documents and maps in storage. The following table summarizes the major archival locations for hardcopy records.

| Office   | Location                             | Type Of Records                           | NGA<br>Records<br>(cu. ft) | Total Records<br>Storage Capacity<br>(cu. ft) | Growth   | Services  | Records<br>Preservation<br>Concerns | NARA<br>Certified | Impacted By<br>NCE |
|--|--------------------------------------|---|----------------------------|---|--|---|-------------------------------------|-------------------|--------------------|
| Records Holding Area                               | Washington Navy Yard, Washington, DC | CU FT Boxes,<br>Flat Maps,<br>Rolled Maps | 1,198                      | 1,597   | 76 cubic foot boxes in 2006  | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                | Yes                |
| Ground Photography Office                          | Washington Navy Yard, Washington, DC | CDs, Photos                               | 625                        | 832   | 100-300 new photos per<br>month  | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                | Yes                |
| Film Library (WNY)                                 | Washington Navy Yard, Washington, DC | Microfiche                                | 39                         | 39  | None   | Storage   | Yes                                 | No                | Yes                |
| Map Library  | Washington Navy Yard, Washington, DC | Flat Maps, Rolled<br>Maps                 | 2,618                      | 3,490   | 240 new maps per month   | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                | Yes                |
| Geospatial Services Library                        | Erskine Hall - Bethesda, MD          | Flat Maps, Rolled<br>Maps                 | 1,968                      | 2,624   | 800-1000 maps per month  | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                | Yes                |
| NGA Historian                                      | Ruth Building- Bethesda, MD          | CU FT Boxes                               | 32                         | 38  | 3 cubic feet of growth per month   | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                | Yes                |
| Film Library (STL)                                 | 2nd Street - St. Louis, MO           | Flat Maps, Rolled<br>Maps                 | 20                         | 100   | Negligible   | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                | No                 |
| Geodetic Survey Branch                             | 2nd Street - St. Louis, MO           | Folders                                   | 5                          | 5   | Negligible   | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                | No                 |
| Geospatial Intelligence Advancement Testbed (GIAT) | 2nd Street - St. Louis, MO           | Folders                                   | 10                         | 15  | Negligible   | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                | No                 |
| Information Management Services Center (IMSC)      | NRO - Chantilly, VA                  | CU FT Boxes                               | 3,360                      | 5,040   | 100 cubic feet per year as of<br>2005, 0 cubic feet in 2006                                  | Storage<br>Retrieval<br>Duplication<br>Preservation | No                                  | Yes               | No                 |
| Agency Archives and Records Center (AARC)          | (classified)                         | CU FT Boxes,<br>Flat Maps,<br>Rolled Maps | 104,000                    | 104,000                                       | Negligible   | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                | No                 |
| Washington National Records Center (WNRC)          | NARA - Suitland, MD                  | CU FT Boxes,<br>Flat Maps,<br>Rolled Maps | 6,667                      | 6,667   | 2,000 cubic feet<br>reaccessioned  | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                | No                 |
| National Personnel Records Center (NPRC)           | NARA - St. Louis, MO                 | CU FT Boxes                               | 2,400                      | 2,400   | 1,277 cubic feet of classified<br>accessions, 1,111 cubic feet<br>of unclassified accessions | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                | No                 |
| Secure Storage Facilities                          | Air Force Auxiliary - Gila Bend , AZ | CU FT Boxes,<br>Flat Maps,<br>Rolled Maps | 116,214                    | 168,403                                       | Approx. 1.2 million records<br>coming in from Bethesda                                       | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                | Indirectly         |
| (classified)                                       | White Sands, NM                      | Folders                                   | 20                         | 35  | Negligible   | Storage<br>Retrieval<br>Duplication                 | Yes                                 | No                | No                 |
| Data Bank  | Denver, CO                           | Folders                                   | 20                         | 20  | Negligible   | Storage<br>Retrieval                                | Yes                                 | No                | No                 |

Figure 2.1.2-1: Current Hardcopy Records Storage



The following chart indicates the known volume of hardcopy holdings and the current capacity of those facilities.

Figure 2.1.2-2: Current Hardcopy Storage Against Capacity

Note that the Washington National Records Center (WNRC) and National Personnel Records Center (NPRC) are "fee for storage" facilities; meaning that NGA can acquire more storage space as necessary (given certain limitations explained later in the facility summaries). The costs associated with the use of WNRC and NPRC currently exceed \$500 thousand annually, plus additional fees for the servicing of records in response to analyst requests. Unfortunately, other than Gila Bend, WNRC and NPRC constitute the majority of NGA's available hardcopy storage (WNRC also has a major film record holding, discussed later). It will be difficult to reduce or eliminate the costs associated with these facilities without the procurement of additional storage space or making maximum use of Gila Bend as a records storage facility (with the development of related services for preservation, search and retrieval, etc.).

Additional permanent records, which should be under records management, are believed to exist in small offices scattered across the organization. Accession of these records will increase the requirement for available hardcopy storage and the perpetuation of the use of WNRC and NPRC.

As indicated in the table below, the Study Team believes the future volumes of hardcopy records to be stored will remain steady in the near term and then decline. This is due to a decline in the generation of records in hardcopy format in favor of digital formats.

However, delays in the implementation of electronic records archiving capabilities may result in an increased volume of hardcopy records to be stored, due to the requirement of having to place a physical version in the archive (regardless of media). The Study Team does not believe that the requirement to archive hardcopy records will reduce to zero; due to the likelihood that many classified records may be kept beyond their initial schedule.



Figure 2.1.2-3: Projection of Hardcopy Records Storage Requirement

The study team believes it will take many years for the creation of hardcopy records to decline to near zero. This is based on a belief in the perpetuation of users' desire to "handle" the records that has heretofore prevented the inception of a paperless office. Delays in implementation of an electronic records archive will continue to add to the volume of hardcopy records.

In the future, it may be possible and cost effective to perform a large-scale conversion of hardcopy records into digital format and thus reduce the storage requirement for those records. However, the transition from hardcopy to digital records carries with it significant additional concerns regarding the management and preservation of those records.

#### 2.1.3 Electronic (Digital) Storage

As mentioned earlier, the Study Team believes they have captured only a portion of the digital records stored by NGA. This was due to the fact that the study focused on the location of records as opposed to the assets generating records. A review of over 200 record producing systems was infeasible within the level of effort and schedule of this survey. The Study Team believes that at most 20% of the volumes of digital records were captured through the survey. As such, the summary findings in the table below represent only those digital records (mostly raw data stored on a variety of magnetic tape-based media) being specifically stored in the facilities visited by the Study Team. Where the Study Team encountered systems producing or maintaining records, data was captured for the purposes of the study.

| Office   | Location                     | Number of<br>Records | Type Of Records                               | NGA Records<br>Volume<br>(cu. ft) | Total Records<br>Storage Capacity (cu.<br>ft) | Growth   | Services                            | Records<br>Preservation<br>Concerns | NARA<br>Certified |
|--|------------------------------|----------------------|---|-----------------------------------|---|--|-------------------------------------|-------------------------------------|-------------------|
| Tape Library                                       | Reston 1- Reston ,VA         | ~ 50,000             | D2C tapes<br>(3,254 TB)                       | 21,969                            | 29,286  | ~5,000 tapes<br>(corning from MD)              | Storage<br>Retrieval<br>Duplication | Yes                                 | No                |
| Source Acquisition System (SAS)                    | Reston 1- Reston, VA         | ~ 30,000             | 380 GB tapes<br>(10,000 TB)                   | 1,665                             | 1,665   | Minimal  | Storage<br>Retrieval                | Yes                                 | No                |
| M3 Messaging System                                | Reston 2- Reston, VA         | 144                  | hard drives<br>(~ 16 TB)                      | 540                               | 540   | 2 GB per month                                 | Storage<br>Retrieval<br>Duplication | Yes                                 | No                |
| NGA Historian                                      | Ruth Building - Bethesda, MD | ~ 10                 | VHS, Beta                                     | 4                                 | 20  | Negligible                                     | Storage<br>Retrieval                | Yes                                 | No                |
| Remote Replication Site                            | Robedeau Hall - Bethesda, MD | 9                    | hard drives<br>(~ 1 TB)                       | 9                                 | 18  | 300-400 images per<br>month                    | Storage<br>Retrieval<br>Duplication | Yes                                 | No                |
| Geodetic Survey Branch                             | 2nd Street - St. Louis, MO   | ~ 1,500              | hard drives<br>(~ 230 GB)<br>CDs<br>(~ 1 TB)  | 10                                | 15  | 100-200 MB per year                            | Storage<br>Retrieval<br>Duplication | Yes                                 | No                |
| Geospatial Intelligence Advancement Testbed (GIAT) | 2nd Street - St. Louis, MO   | ~ 400                | hard drives<br>(~ 1 TB)                       | 30                                | 65  | 50-100 MB per year                             | Storage<br>Retrieval<br>Duplication | Yes                                 | No                |
| Commercial Satellite Imagery Library (CSIL)        | DIA - Washington, DC         | 2,040 CDs            | hard drives<br>(~ 160 TB)<br>CDs<br>(~ 1 TB)  | 1,440                             | 2,898   | 10-50 GB per month                             | Storage<br>Retrieval<br>Duplication | Yes                                 | No                |
| (classified)                                       | White Sands, NM              | ~ 1,000              | hard drives<br>(~ 11 TB)                      | 20                                | 25  | 20-40 GB per year                              | Storage<br>Retrieval                | Yes                                 | No                |
| New Mexico Survey Office                           | White Sands, NM              | ~ 250                | hard drives<br>(~ 4 TB)<br>CDs<br>(~ 0.25 TB) | 36                                | 100   | 30-40 MB per year                              | Storage<br>Retrieval<br>Duplication | Yes                                 | No                |
| New Mexico Survey Office                           | Halloman AFB, NM             | ~ 250                | hard drives<br>(~ 4 TB)<br>CDs<br>(~ 0.25 TB) | 50                                | 100   | 30-40 MB per year                              | Storage<br>Retrieval<br>Duplication | Yes                                 | No                |
| California Survey Office                           | Vandenburg AFB, CA           | ~ 500                | CDs<br>(~ 0.5 TB)                             | 5                                 | 5   | 30-40 MB per year                              | Storage<br>Retrieval<br>Duplication | Yes                                 | No                |
| California Survey Office                           | Edwards AFB, CA              | ~ 250                | CDs<br>(~ 0.25 TB)                            | 5                                 | 5   | 30-40 MB per year                              | Storage<br>Retrieval<br>Duplication | Yes                                 | No                |
| Florida Survey Office                              | Patrick AFB, FL              | ~ 500                | CDs<br>(~ 0.5 TB)                             | 5                                 | 5   | 30-40 MB per year                              | Storage<br>Retrieval<br>Duplication | Yes                                 | No                |
| Media Lab  | Denver, CO                   | ~ 400                | 380 GB tapes<br>(130 TB)                      | 13,000                            | 13,000  | Negligible<br>(tapes overwritten ~<br>30 days) | Storage<br>Retrieval<br>Duplication | Yes                                 | No                |

Figure 2.1.3-1: Current Electronic Records Storage

NGA does not presently have storage requirements for digital records from an RM compliance perspective. Unfortunately, this circumstance appears to be due to a lack of policy, procedures, and supporting technology to capture and preserve the records in compliance with the Federal Records Act. An implication of this observation is that NGA may already be producing in excess of 200 terabytes (TB) of digital records every year, most of which is discarded outside of relevant policies and regulations.

The table below indicates the relative allocation of digital records among the facilities visited. Note that the records may be in different formats: CD/DVD's, magnetic tapes, of hard disk storage media. Again, the Study Team believes this represents only a small fraction of the actual digital records produced by NGA.



Figure 2.1.3-2: Distribution of Observed Digital Records

Projection of volume growth of digital records is also difficult as, for the most part, the study team observed that records are not being kept within the records schedule. In some circumstances, a significant volume of digital records were found to be systemically overwritten in as little as 30 days as cost and space constraints necessitated rotation of the media holding the records. In these instances, the immediate concerns associated with the preservation and management of the origination system and storage media have taken precedence of the value of the records generated by the system and housed on that media

The table presented below indicates an exponential growth in the volume of records that should be maintained by NGA. This curve mirrors the projection of NARA in the growth of electronic records over the next half century, with an empirically-based estimate that the volume of records generated by the organization will increase by 25% every year as the reliance upon and use of digital information systems continues to replace paper. This assumption is supported by the Study Team's observation at a facility where the implementation of one new collection asset in the near future will generate as much as 8 petabytes (PB) of raw data and intelligence products per year.



Figure 2.1.3-3: Projection of Electronic Records Storage Requirement

The Study Team believes that the growth of NGA's digital records will increase exponentially in the next few years. The belief is supported by the knowledge of new assets planned to generate large volumes of data and an increasing reliance upon information systems to perform and support the mission activities of the enterprise. This growth will significantly outpace the ability of both Moore's Law (that the performance of digital processing capability doubles for a constant price every 18 months) and Shugart's Law (that the price of a constant volume of magnetic storage halves every 18 months) to lessen the requirement for additional storage space as time progresses. Additionally, it is unlikely that NGA will leverage the gains of Shugart's Law for anything other than the archival of records at the time of accession; meaning that previously archived records will be maintained on older, less dense media for a significantly longer period of time.

#### 2.1.4 Facility Details

NGA has operations and offices across the Continental United States (CONUS) and in key overseas facilities (OCONUS). This wide distribution of storage is another artifact of the origins of NGA as a merger of many geospatial intelligence activities.

The facilities fell into three main categories: offices where permanent records were held, libraries and operations centers holding permanent and temporary records, and dedicated long-term storage facilities. Brief descriptions of the facilities covered by the study team are presented below. Contact information, more detailed holdings, and drawings of the storage spaces in visited facilities may be found in Appendix A. Additional information

pertaining to specific holdings (media type, file series, etc.) of the visited facilities may be found in the database adjunct to this Study.



Figure 2.1.4-1: Location of NGA Records in the Continental United States

1. Washington Navy Yard, Washington DC

Activities at the Washington Navy Yard include the Records Holding Area, Ground Photo Lab, Map Library, and Film Library. These NGA storage spaces are planned to be relocated to Fort Belvoir as part of the New Campus East move.

The Records Holding Area (RHA) is a storage area for records that have been brought to the Washington Navy Yard for declassification review or for transition to permanent storage or future destruction. Most of the permanent and temporary records are paper records stored in cubic foot boxes. In addition, there are some flat maps and rolled maps stored in the RHA.

The Ground Photo Lab migrated from CIA to NGA about 9 years ago. It provides an archive of photographs (in a variety of formats) of foreign ground equipment and installations for reference by members of the Intelligence Community. Users can gain access to a database of these holdings through IntelLink and NGAnet.

The Map Library also serves the entire IC with hardcopies of area and city maps. This includes some LIMDIS data. Upon request, map copies (duplicates) are ordered from DLA and sent to members of the IC.

The Film Library holds original negatives and some duplicate positives of the past 3 years of aerial imagery. The library receives film for NGA requests and has limited

(frame) duplication capabilities. Existing film stock is periodically shipped to other facilities or destroyed. No new film is expected to be received by the facility after 2006.

2. Defense Intelligence Analysis Center (DIAC), Washington DC

NGA's Imagery Production Branch (IPB) is housed at this DIA-owned facility. The IPB holds a large volume of NGA's film stock from airborne and NTM assets and is charged with supporting the entire IC for imagery requests and the long-term storage of film. IC community users can review the IPB's holdings online through the Voyager system.

The DIAC is one of two NGA storage facilities capable of film roll duplication.

Although the IPB is not a planned part of the New Campus East consolidation, the DIAC is a receiving facility for other non-NGA activities under the 2005 BRAC determination. Thus, it is worth noting that the addition of other activities to the DIAC may stress the DIAC's ability to continue supporting the IPB.

3. Washington National Records Center, Suitland, MD

The Washington National Records Center (WNRC) is a NARA-owned facility that leases records storage space to Federal agencies. NGA currently holds a large volume (approximately 67,000 cubic feet) of hardcopy and film records at the WNRC for a cost of approximately \$520k/year (this total includes the annual costs for NPRC, below) plus additional fees for servicing requests. The actual number of records and film canisters is difficult to calculate, as the boxes vary in size and condition and the film is stored in boxes, with an estimate of 2 to 5 canisters per box.

The majority of the film holdings are aerial imagery from the 1940's through 1960's (approximately 60,000 cubic feet), flat maps, geodetic surveys, and other former DMA records. The facility has the ability to store records up to the SI/TK level, but the majority of NGA holdings are at the collateral level or below.

The Study Team noted that, although WNRC, had less than optimal storage conditions, the facility presented a significant servicing advantage of other hardcopy holding facilities due to it's proximity to NGA activities in the National Capital Region.

4. NGA Historian, Bethesda, MD

The NGA historian holds a selection of key records and other artifacts pertinent to the history of NGA and its preceding organizations. Most of the records are unclassified and none are scheduled for destruction. The library receives approximately 2-3 cubic feet of new records monthly. Currently holdings are comprised of videotapes and hard copy documents. The facility is approximately at 60% storage capacity and is planned to be moved to the New Campus East.

5. Gila Bend Air Force Auxiliary Field, Gila Bend, AZ

These storage spaces (in Buildings 22 and 326) at Gila Bend are owned and operated by the Air Force and provided to NGA through a Memorandum of Agreement (MOA). NGA has invested in refurbishing another space (in Building 18) for storage at Gila Bend, but the Study Team noted some uncertainty as to whether that building would be ultimately available for NGA storage.

Gila Bend currently maintains a large volume of flat maps and is in the process of scanning 1 million gold copy litho maps into digital format and saving them as permanent records. While this is an admirable endeavor, the Study Team notes that it may not eliminate the need to keep the lotho maps as permanent records (based on NARA requirements).

The Study Team noted that Gila Bend has significant excess capacity for the storage of hardcopy records, but due to the distance (and resulting courier costs) from major NGA activities; the facility would best be utilized for the storage of "dormant" and duplicate records. Gila Bend may also be suitable as a continuity of operations (COOP) facility for some permanent records and/or RM systems.

6. NGA Geospatial Services Library, Bethesda, MD

The Geospatial Services Library holds bathymetric, hydrographic, and topographic flat maps up to the collateral level with some LIMDIS information. This facility is part of the planned New Campus East consolidation and some records are planned to be shipped to Gila Bend (assuming the availability of space in Building 18) with older temporary records being sent to the Library of Congress. Intelligence Community users can review the holdings of the library on the Voyager system. Upon request, copies are produced at DLA.

7. NGA, Reston, VA

The NGA offices in Reston house the Tape Library, Source Acquisition System, and M3 Messaging System. These NGA storage spaces are also planned to be relocated to Fort Belvoir as part of the New Campus East move.

The Tape Library holds a large volume of D2C tapes with imagery of the globe. The search capability allows customers to find rectangles of places on the world within the tape collection and the library makes copies of the tapes upon customer request.

The Source Acquisition System holds approximately 30,000 tapes. It was not clear to the Study Team how much additional growth is expected with the SAS system.

The M3 system provides storage and archival of NGA emails and file system folder for as many as 20 years. The system currently uses about 16TB of space out of an available 50 TB, with approximately 2GB per month of new records. A mirror of the system is held in St. Louis. 8. Agency Archives and Records Center (AARC), classified location

The AARC has a recently renovated Agency building designed specifically for the servicing and storage of records. This facility is also available to NGA through a MOA for the storage of records generated prior to 2006. The facility also maintains Agency and other non-NGA holdings. The NGA holdings include hardcopy and film records, as well as NGA models of facilities and equipment. The AARC has the ability to hold electronic records, but will only accept them if the equipment required to read the media is also provided.

NGA maintains approximately 52,000 cubic feet of permanent records and another 52,000 cubic feet of temporary records at the AARC.

The Study Team noticed that the AARC was the only facility actively engaged in the preservation of records, but only for Agency records. This included transferring older, carbon copy, documents onto new paper and subsequent scanning. It also includes periodic media pulls to sample the condition of Agency film and segregate contaminated stock.

The current building at the AARC is near its capacity of 152,000 cubic feet of storage. Plans are in place to renovate an additional building at the AARC and consolidate all media holdings in the new, 3900 square foot facility. The new building will provide an additional 20,000 cubic feet of media cold storage beyond the 19,000 cubic feet currently held by the AARC. This would allow the current building to maintain only hardcopy records. However, it is unclear how much of this new storage will be available to NGA, as the current agreement is only to accept records originating before 2006.

It is important to note that the management of the AARC is working closely with NARA in the management of existing processes and development of the new facility to insure maximum compliance with regulations.

9. Information Management Services Center (IMSC), Chantilly, VA

The Information Management Services Center is an NRO facility holding certain special access program (SAP) records for NGA, mostly in hardcopy format. The IMSC has the distinction of being the only DoD Records Center that is pending certification by NARA to meet long-term storage requirements. This includes the use of acid-free boxes and acid-free folders/sleeves to hold paper documents for long periods without contamination.

The IMSC has about 41,000 cubic feet of records storage space and is approximately 1/3 full with 4000 boxes. NGA is storing slightly less than 2000 boxes at the IMSC.

10. NGA Film Library, St. Louis, MO

NGA Film Library maintains approximately 46,000 canisters of film, mostly overhead imagery duplicates of holdings at the RNY Film Library. The St. Louis library also holds approximately 30,000 maps as duplicates from the Navy Yard Map Library.

11. National Personnel Records Center (NPRC), St. Louis, MO

The NPRC is a NARA-owned facility that leases storage space to federal agencies. The facility is nearing capacity of 2 million cubic feet of storage. NGA cannot send any additional records other than old DMA holdings until new NGA file series are approved by NARA.

12. Geodetic Survey Branch, St. Louis, MO

The Geodetic Survey Branch receives permanent records from the remote geodetic survey teams and stores those records on their stand-alone OSIS system. Most of these permanent records (other than LIMDIS) are copied and uploaded into GIMS (Geodetic information Management System) where they are available to the Intelligence Community. The current OSIS system holds about 230 GB of surveys and an additional 26 GB of publications.

13. Geospatial Intelligence Advancement Testbed (GIAT), St. Louis

The primary GIAT for NGA is located in St. Louis and leads research and development activities pertaining to the creation of improved visualization and analysis capabilities for NGA. This GIAT office produces about 20 reports per year and additional documents pertaining to technical evaluations, user manuals, training modules, plans and recommendations. These reports are generally kept in softcopy form by their producers (GIAT staff, scientists and engineers) with the only record keeping system being a spreadsheet of tasking and personnel assignments. The Study Team found a similar situation at the GIAT office at White Sands Missile Range and believes the other GIAT offices operate similarly in a very decentralized fashion.

It is worth noting that the GIAT personnel were totally unfamiliar with the actual RM policy requirements of NGA and what constitutes a "record." As with many NGA offices, none of the personnel had taken the mandatory RM training.

14. Remote Replication Site, Bethesda, MD

The Remote Replication Site (RRS) provides duplication services to members of the Intelligence Community for various maps and geographic imagery. The office holds only a small amount of digital records.

15. NGA, White Sands Missile Range, New Mexico

This classified activity maintains electronic imagery, raw data sets, annotated imagery, and analysis and production work primarily in digital formats. The facility currently stores about 10GB of records and projects an increase to 30-50 GB by the end of 2006. There are plans to implement a 3.5 TB storage area network.

The New Mexico Geodetic Survey Office at Holloman Air Force Base produces geodetic and geophysical surveys for the North Range. The group maintains about 1TB in digital GIS data and produces between 100-150 two-page reports per year. The same is true for the survey team supporting the South Range.

16. Commercial Satellite Imagery Library (CSIL), Washington DC

Located at the DIAC, the CSIL serves as the primary repository and distribution center for commercial imagery to all Federal agencies including the Intelligence Community. Customers may search for images online through the CSIL website.

17. California Geodetic Survey Office, Air Force Flight Test Center (AFFTC), Edwards AFB, CA

The California Survey Office at Edwards AFB provides survey services to the AFFTC. This office maintains about 400 hardcopy maps, and an additional 500 survey reports in a variety of media. Digital copies of new reports (about 30/year) are sent to St. Louis for upload into GIMS.

18. California Geodetic Survey Office, Western Space Missile Center (WSMC), Vandenberg AFB, CA

The California Survey Office at Vandenberg AFB provides survey services to the WSMC. The office keeps copy of full reports (about 30/year) and the entire history is kept on DVD back to 1971. Collected point data is sent to St. Louis.

19. Florida Geodetic Survey Office, Patrick AFB, FL (not visited)

The Florida Survey Office at Patrick Air Force Base was not visited by the Study Team. However, phone and email correspondence indicated that the activities were very similar to that at the WSMR, AFFTC, and WSMC. The Study team learned that the office held approximately 2000 hardcopy maps and 1100 CD's and DVD's.

20. NGA Map Library, Pentagon, Arlington, VA (not visited)

The study team did not visit NGA's Pentagon Map Library. However, correspondence indicated that the holdings of the map library were all duplicates of records held elsewhere in both hardcopy and digital formats.

21. Classified Offices, Denver, CO

The offices in Denver have a dedicated "Media Lab" for the storage of raw data tapes, and a "Databank" for the storage of hardcopy documents. The Media Lab, with over

13000 cubic feet dedicated to the storage of VHS, DTR, 8 mm, and 19mm tapes was at capacity and required the rotation of media to address the influx of new data. The Databank appeared to be at approximately 70% of its 4600 cubic foot capacity.

The Study Team noted that this facility did not have an NGA RIMRep to assist in the implementation of records management and declassification policy and capabilities.

22. Film Archive (RNY), NY (not visited)

This contractor-owned facility funded by NRO, maintains a film library from various overhead missions. Service activities at this facility include response to user requests and duplication. In fact, this is the second of two facilities to which NGA has access for the duplication of film rolls.

23. California Geodetic Survey Office, US Army Kwajalein Atoll, Reagan Test Site, US Marshall Islands (not visited)

Part of the California Survey Office, this facility was determined to be very close in nature of activities and holding of the other GEOINT offices (WSMR, Holloman, Vandenberg, Edwards, Patrick). Given the anticipated small volume of records, a visit was not warranted during the course of the study.

#### 24. NGA Offices, Mineral Wells, TX (not visited)

This facility, located with the Texas National Guard, stores of digital data tapes and repromat (negative film duplicates). The building has approximately 7000 square feet of storage. Current holding include 9000 digital data tapes, 32000 sets of geospatial repromat and 8000 sets of hydrographic repromat.

25. US Geological Survey Office (USGS), Reston, VA (not visited)

The library in Reston is one of four USGS libraries charged with the organization of a collection of scientific materials in the earth sciences. Materials include USGS publications as well as those produced by state and foreign geological surveys, scientific societies, museums, academic institutions, and government scientific agencies. This library was not visited as it was believed to have no NGA record holdings.

26. NARA Archives II, College Park, MD (not visited)

The National Archives in College Park, Maryland, opened for research on January 3, 1994. Records held there include the cartographic and architectural holdings; the Nixon Presidential Materials; electronic records; motion picture, sound, and video records; the John F. Kennedy Assassination Records Collection; still pictures; the Berlin Documents Center microfilm; and textual records from most civilian agencies and military records dating from World War II.

27. National Air and Space Intelligence Center (NASIC), Wright-Patterson AFB, Ohio (Not visited)

The National Air and Space Intelligence Center is the primary DoD producer of foreign aerospace intelligence. NASIC develops its products by analyzing all available data on foreign aerospace forces and weapons systems to determine performance characteristics, capabilities, vulnerabilities, and intentions. This facility is believed to have some NGA holdings, but not a significant amount in terms of volume.

28. National Geodetic Survey, Silver Spring, MD (not visited)

The National Geodetic Survey defines and manages a national coordinate system. This network, the National Spatial Reference System (NSRS), provides the foundation for transportation and communication; mapping and charting; and a multitude of scientific and engineering applications. This facility was not visited as the record holdings were determined to provide little additional relevance to the study.

#### 2.2 Key Observations Regarding Current RM Services and Preservation

The chart below indicates weaknesses in storage, environment, and related services the Study Team observed during the course of the survey. With respect to storage spaces, the Study Team noted that volume was adequate but had concerns with the cost-effectiveness of such widely distributed storage and reliance upon non-NGA facilities. Additionally, the environment for long-term storage at the facilities was found to be lacking as high temperature and humidity were observed to be degrading film and paper records.

| Storage Status   | Hardcopy | Film | Digital |
|------------------|----------|------|---------|
| Storage Space    |          |      |         |
| Volume           | Good     | Good | None    |
| Cost Effective   | Poor     | Fair | None    |
| Environment      |          |      |         |
| Facility         | Fair     | Poor | None    |
| Preservation     | Poor     | None | None    |
| RM Services      |          |      |         |
| Accession        | Fair     | Fair | Poor    |
| Preservation     | Poor     | None | None    |
| Declassification | Fair     | Fair | None    |
| Destruction      | Fair     | Fair | None    |
| Duplication      | Fair     | Poor | None    |
| Recall           | Fair     | Poor | None    |

Figure 2.2-1: NGA Records Storage Status Snapshot

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The Study Team also noted that services associated with records management appeared understaffed and inconsistently applied, with a lack of any observed preservation activities to insure the future availability of records. For digital records, the team noted a complete lack of policy, procedures, storage spaces, and systems dedicated to their long-term storage and preservation.

The Study Team identified issues leading to the loss of records throughout their lifecycle, with many, especially digital, records being lost prior to coming under RM control. As noted in the following diagram, many NGA records are being lost early in their lifecycle through inadvertent destruction as a result of a lack of appropriate RM policy, procedure, and enforcement at the office level. Once the remaining volume of records makes it into storage, the Study Team then observed their continuing loss due to the environmental and procedural factors noted above.



Figure 2.2-2: Loss of Records throughout RM Lifecycle

During the course of the survey, it became apparent to the Study Team that the solution of issues with storage of records required addressing other "higher level" issues with the practice of records management at NGA. As a predecessor to the development of options to address records management storage issues, the Study Team conducted a brief survey of records management case studies, standards, procedures, and the RM Programs of agencies similar to NGA to establish a baseline of "Best Practices" against which to evaluate NGA activities.

Several relevant regulations can be applied to NGA's Records Management and Storage activities. The Federal Records Act established the concept of records management for the preservation of official documents of the Federal Government. The provisions of the Freedom of Information Act, although not specifically a Records Management law, can best be met through a rigorous and effective Records Management program. NARA has published regulations for the design and construction of record holding facilities and has regulatory oversight of storage and preservation activities of federal agencies.

In several government organizations, the business function of records management is viewed as solely declassification, archival at best. There is little understanding that effective RM begins with the origination of the record and carries on through the entire

lifecycle concluding with disposition. As a result, important records are often lost prior to any archival activities taking place.

Furthermore, effective records management policy and procedures can actually support near-term mission requirements and reduce costs. A comprehensive records management system can make historic products readily available to analysts in their continuing analysis of events. Effective identification of records early in their lifecycle, especially electronic records, can limit the amount of storage space required to maintain those records.

A summary of Best Practices in Records Management is presented in Appendix B. The following sections present observations and issues that the Study Team believes present the most critical challenges to NGA.

NGA can also look to other organizations for insight and experiences to improve it records management and storage operations. NARA is leading the effort to tackle the problems of electronic records management through their Electronic Records Archive (ERA) program. Both the CIA and NRO have developed new, state of the art facilities and processes for the ongoing management and preservation of records. Both the Army and Navy have integrated records management capabilities into their core systems to enable personnel to quickly and efficiently find and retrieve pertinent records.

#### 2.2.1 Facility Suitability for Storage and Preservation of Records

NARA has published requirements (under 36 CFR, Chapter XII, Subchapter B) for the construction, security, safety, and environmental conditions of facilities maintaining permanent and temporary records. These requirements specify the optimal storage conditions for the long-term protection of records from flooding, fire, degradation from biological/chemical contaminates, pests, and other natural disasters.

The Study Team noted that many facilities (particularly, the individual offices and operational centers holding permanent records) used by NGA for storage were not originally designed or managed for the long-term storage of records. This lack of a "passive preservation" capability is leading to significant numbers of permanent records being lost every year due to environmental factors such as mold, chemical decomposition, or pest infestation. The study team has concerns about the quality of storage processes, particularly in the "active preservation" of records. There appear to be little or no processes in place to monitor the condition of records to insure against their inadvertent destruction, the separation of contaminated records, or the rotation of media to newer stock. In addition, the limited RM awareness and responsibilities of government and contractor personnel interviewed at the offices and facilities have led to the destruction of permanent records as a result of "freeing up space" or "moving offices."

Earlier in this section, it was noted that only two facilities (the AARC and DIAC, both non-NGA) had the appropriate environmental conditions for the long-term storage of permanent film records in a "Cold Storage" environment of 40 degrees and low humidity. NARA prescribes similar conditions for the long-term storage of permanent digital records,
| Film      | Room   | Cool   | Cold  | Frozen                          |
|-----------|--|--|---|---------------------------------|
| Material  | (68 F)   | (54 F)   | (40 F)  | (32 F)                          |
| Nitrate   | Likely to cause  | Likely to cause  | Meets ISO   | Provides Extended               |
|           | significant damage                                     | significant damage   | Recommendation  | Life                            |
| Acetate   | Likely to cause  | Likely to cause  | Meets ISO   | Provides Extended               |
|           | significant damage                                     | significant damage   | Recommendation  | Life                            |
| Polyester | B&B: may be OK;<br>Color: causes<br>significant damage | B&W: Meets ISO<br>Recommendation;<br>Color: Causes<br>Significant Damage | B&W: Provides<br>extended life;<br>Color: Meets ISO<br>Recommendation | Provides Extended<br>Life       |
| Magnetic  | May Cause  | Meets ISO  | May be OK   | May Cause                       |
| Tape      | Significant Damage                                     | Recommendation   |   | Significant Damage              |
| CD/DVD    | May be OK  | Meets ISO<br>Recommendation  | Meets ISO<br>Recommendation   | May Cause<br>Significant Damage |

particularly those held on magnetic media (tapes, hard drives, etc.). The following chart describes the level of degradation to be expected in various environmental conditions.

Source: IPI Media Storage Quick Reference, 2004

#### Figure 2.2.1-1: Environmental Effects on Media

The chart below indicates NGA's current capacity for cold storage (required for both film and electronic records) is insufficient for current and future storage requirements of the organization. It is interesting to note that the cold storage available is at the AARC, with no guarantee of full access to NGA. Not addressing the climatic conditions for the longterm storage of records will inevitably lead to their loss and the subsequent loss of the multi-billion dollar investment made by the Government in their production.



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The improper storage conditions of most facilities also presents a significant compliance issue with NARA Regulations and would certainly be noted in any future NARA audit of records storage.

Additionally, the Study Team noted E Directorate's desire to extend ISO 9000 certification across the organization. Although it is difficult to quantify the number of records lost annually due to improper storage conditions, the Study Team believes that this loss is well outside the bounds of achieving "six-sigma" status, an important quality control mechanism for processes seeking ISO 9000 certification. To achieve quality assurance in records storage processes, NGA would have to develop activities for the ongoing preservation of records. These activities would include the planned migration of media from older to newer technologies, periodic sampling of records for contamination and segregation of contaminated materials, the exercising of media to insure its continued viability, and the development of traceable and auditable metrics on records management lifecycle actions. None of these activities were apparent to the Study Team during the course of the survey.

The planned transition from film-based to digital imagery does not eliminate the need for long term film storage and servicing until the middle (assuming 25 year retention) or end (assuming 50 year retention) of the 21st century as NARA requirements specify the retention of original records over duplicates. The implication of this requirement is that issues pertaining to the appropriate storage of film will not reduce in the foreseeable future and need to be addressed to bring NGA into compliance with the governing regulations.

## 2.2.2 Electronic Records Management

Electronic Records Management includes topics for both the systemic management of records (usually referred to as Electronic Records Management, or ERM) and the archival and preservation of digital records. In the area of the systemic management of records, the Records Management Program Office is making progress with the volume of records under its supervision; the lessons learned of which could be extended to the larger NGA enterprise. However, activities for the storage and preservation of digital records are severely lacking and present significant compliance concerns.

The business processes of Records Management can be greatly enhanced through the appropriate technological support in terms of record keeping and library systems. The pending implementation of a Documentum-based system for the tracking of film and paper records under direct supervision of the Records and Declassification Program Office will provide a streamlined capability for the office that will begin to address some of the process tracking and management issues previously mention. This system also has the potential to provide insight into requirements for automated RM processes and holdings that can be leveraged to a larger NGA effort. However, the Study Team was concerned about the transition to the new system, particularly, how the initial population of the system will be affected, as well as the "buy-in" of other offices for a Records and Declassification PO-led effort. However, by not pursuing an enterprise-level electronic records

management capability, NGA will continue to rely upon the paper-based capabilities, their required support personnel and space, and their inherent process and compliance weakness.

Even with the development of the Documentum system, NGA lacks a consolidated capability for analysts and other personnel to research and browse the many records of the organization. There are some instances of stove-piped systems providing access to imagery or analytic products from a given set of missions, but these are not NGA-wide in scope and focus on library functions (search and retrieve) as opposed to document management (search, retrieve, catalog, and manage). NGA's FOIA response section on the public web site only provides basic, non-interactive information. This lags behind other agencies, which have placed interactive FOIA capabilities online in compliance with the eFOIA regulations of 1996. The Study Team noted the Navy's implementation of the Total Records and Information Management Software (TRIMS) on the Navy-Marine Corps Intranet as an objective capability for NGA to review as a technology and supporting set of business processes to store and provide information to personnel across the organization. Another capability of note is the Army Records Information Management System (ARIMS) established by the Army's Records Management and Declassification Agency as a portal for all Army personnel to access both hardcopy and digital records. The ARIMS capability also has an internet portal to allow the general public to access portions of the Army's FOIA response process.

The requirements for Electronic Records Management as prescribed by DoD 5015.2 seem to be missing in NGA's "systems of record." This presents another major compliance issue and increased risk of loss/mishandling of permanent records for NGA. The Study Team believes that incorporation of appropriate records management functions into systems is just as important (and required) as "Section 508" compliance for disabled individuals.

The short-term storage of digital information, particularly raw data tapes, is inappropriate in terms of space, and is lacking cohesion in terms of retention policy adherence. The Study Team noted on several instances where the digital records were being overwritten in an attempt to save either disk space (for the storage of files) or floor space (for the storage of data tapes). In these instances, the managing organizations were not aware of the requirements for the maintenance of records and lacked the funding to develop appropriate records management capabilities.

NGA currently has no space allocated or supporting services planned for the long-term storage and preservation of electronic records. Preservation of electronic records is a far more complex endeavor than that for film or hardcopy records and requires additional space, activities, and costs. The implementation of data centers, storage networks, or server farms cannot, by themselves, address the requirements of digital records management. This is because rapid changes in the technology originating the records and the original storage media mean that organizations must maintain either an archive of equipment and software capable of reading digital records or have a robust program to migrate older records to new media before severe end-of-life (EOL) support for the equipment and/or software occur. NARA has chosen the later approach to implement a system to progressively migrate records to newer media as part of their Electronic Records Archive (ERA) program. This

has cost advantages in terms of space (by not having to keep legacy equipment) and support (by not having to maintain legacy equipment); but requires, an ongoing program (and associated costs) to actively manage and migrate records.

Also, a common solution to the challenge of capturing electronic records is to save all documents, regardless as to whether they actually meet the definition of a record. The Study Team received information anecdotally that NGA was planning to address records management requirements for some large volume records in this manner. Unfortunately, a "save everything" approach to the management of digital records is critically short-sighted for several reasons. First, there are significant cost implications associated with the exponential increases in the production of digital records and the correlated increase in storage space and support operations. Second, a large percentage of the information being stored does not constitute records requiring management, meaning that storage space is being wasted on non-pertinent information. Finally, this approach creates a huge volume of records that increases the costs of records management and archival activities beyond what is necessary.

Effective management of digital records requires tagging at the point of origination, much the same as security classifications. There are two methods available for the tagging of records: manual and automated. Manual tagging requires the document originator to specify the type of document (permanent, temporary, or non-record) and file series in much the same way a document is marked with its classification level. This approach is time consuming for the originator, but, as with security classification, enables every records management action later in its lifecycle. Automated tagging allows for a system to recognize the type and series of the document. Unfortunately, this technology is immature as it still produces unreliable results requiring "man-in-the-loop" review. Early in the development of its electronic records management program, NGA will have to make a determination as to which approach to take in the tagging of records.

## 2.2.3 RM Policy and Procedures

Like security, records management is a business function that permeates the organization. Also like security, most individuals within an organization have some level of records management responsibility, as producers of records. Again, like security, effective records management requires leadership-supported training and enforcement activities to insure the proper implementation of policies and procedures. Such activities include a comprehensive training program, periodic inspections of RM practices and facilities, and clearly defined accountability for RM responsibilities.

The Records and Declassification Program Office's position in the NGA organization limits its ability to directly impact policy and direct activities in such as way as to insure compliance with Federal records management regulations and governmental policies. As mentioned previously, Records Management starts with the origination of the record and requires robust business processes prior to the implementation of technology. These processes, once developed, can then be built into the IT infrastructure in much the same way as security-related requirements. The staffing of Records Management business functions is minimal at NGA. The traditional role of record officers in offices as shepherds of RM processes have been replaced by Records and Information Management Representatives (RIMReps), who have little ability to affect or implement local office practices and server in name only. The Study Team noted that several major operations did not have RIMReps. Where a RIMRep was present, the role consisted of little more than coordination of policy documentation, not actual responsibility and authority for ensuring robust RM management and storage compliance. Of course, the responsibilities of the RIMRep are in addition to his or her organizational responsibilities, presenting a constant source of conflict in priorities.

As noted in the survey results, it was difficult for the Survey Team to project future volumes of records to be stored due to the lack of information pertaining to records management processes being collected. The disjointed nature of NGA's record storage and management make it difficult, if not impossible, to assemble and track a set of business metrics for such key processes as accession, re-accession, declassification, destruction, and disposition. Additionally, the transfer of records among facilities is often conducted without the knowledge of the Records and Declassification Program Office, further complicating the ability to manage archival processes.

Although the Records and Declassification Program Office has online training and "help desk" style assistance available to all of NGA, the Study Team noted that knowledge of records identification and preservation policy is very limited among the majority of NGA personnel. Additionally, many facility managers and records originators are not aware of the requirements for the storage and preservation of records or the NGA records retention schedule. The Study Team believes that the root cause of this lack of awareness is two-fold: a lack of top-down emphasis on records management policy and the disjointed nature of records management and storage activities that is an artifact of NGA's nature as a consolidated organization.

The Study Team noted in several facilities that records were being destroyed out of convenience (usually space requirements) instead of as prescribed by the NGA Records Schedule. Again, there is little knowledge of the records schedule and little enforcement in the disjointed records management process primarily due to a lack of top-down emphasis on records management.

The application of records management policy and higher level Executive or Legislative requirements are sparse in NGA's mission system development. The Study Team noted that when records management was addressed, it was primarily from a data storage perspective, as opposed to the development of processes for the identification, tagging, and lifecycle management of records through their eventual disposition in accordance with the records schedule.

The Study Team noted that the NGA is "reactive" when responding to FOIA and other top down requests, with no clearly defined record retrieval processes in place. This observation was supported by anecdotal comments by Government personnel referring to the difficulties in tracking down emails and other records in response to a Congressional inquiry into NGA's role in Hurricane Katrina relief efforts. The implementation of robust records management capabilities and storage could significantly streamline response time and cost while limiting the possibility of previously unknown records being discovered outside of an "official" response. Similarly, consolidated records management processes could prevent the accidental destruction of records which may the subject to external inquiry, and the subsequent appearance of impropriety should that inadvertent destruction become known.

Without the development of enterprise level records management policies and supporting personnel, training, and enforcement, NGA will continue to assume the risk of the loss, misallocation, or destruction of records. This will result in continuing compliance issues with various laws and regulations; as well as a decrease in the ability to support mission-level activities with older information.

#### 2.2.4 New Campus East Move

Consolidation of National Capital Region assets to Fort Belvoir presents a litany of challenges to NGA. One of the challenges to overcome will be maintaining (or initially achieving) compliance with records management policy and regulations as offices and activities attempt to compress operations into 73% of their current footprint.



Figure 2.2.4-1: Estimated Records Storage Requirements for NCE Move

Given the relatively low funding priority given to Records Management, the Study Team is concerned with the space allotments in the NCE having the appropriate environmental controls to maintain digital and film records (Film Library and Tape Library) in relatively expensive low temperature, low humidity spaces. The move itself also presents concerns. The Study Team recognizes a potential for loss, misallocation, or inadvertent destruction of agency records as a result of efforts to minimize the spaces required by consolidated offices. This stems from the general lack of awareness of Records Management policy and procedures within NGA. The concern not only applies to the visited and identified facilities, but also to holdings of smaller offices of which the Records and Declassification Program Office is not aware.

Of those offices that do have additional holdings which could be under supervision, the Study Team is concerned about the potential for a rapid, unplanned influx of new records to be accessed as offices "dump" local holdings in an effort to free space at the NCE. This has the potential to create a rapid increase in costs as the Records and Declassification Program Office would be forced to store these records in leased facilities.

The Study Team is concerned about a loss of available storage space during the transition to the NCE in favor of making room for personnel. This would lead to an increase in storage costs and decrease in service capabilities as records will have to be relocated in non-NGA spaces.

It is important to note that these issues have yet to materialize, and can be prevented with a proactive records management approach in coordination with the NCE PMO.

#### 2.2.5 Reliance upon Other Organizations to Provide Facilities and Space

A potential issue for the long-term storage of records is the reliance upon non-NGA facilities for storage. In many cases, NGA is receiving "free" storage from other organizations under a memorandum of agreement. The implication of this observation is that NGA is assuming a risk, that upon short notice, records may no longer be stored at a non-NGA facility<sup>1</sup> or NGA may be assessed a "tax" by the facility owner to cover operations and maintenance cost of the facility or hosting organization. This will result in unplanned costs for the movement of records in the hundreds of thousands of dollars as well as disruption of services to NGA analysts and other users requiring access to the affected records.

A secondary concern lies with the ability of NGA to establish and enforce effective records management policies at the non-NGA facilities. By not providing funding, NGA is effectively removed from the ability to enact policy for these facilities. The implication of this observation is that, while NGA maintains responsibility for the management and preservation of the records at these facilities, the organization lacks the authority to bring local processes into compliance with applicable regulations.

A third issue with the reliance upon non-NGA facilities is the potential for competition for space with other agencies using the facility. The implication of this observation is that

<sup>&</sup>lt;sup>1</sup> This recently occurred at Gila Bend when the Air Force did not approve the planned expansion of NGA storage space in another building at the facility.

NGA may not be able to leverage additional space in the pro-bono facilities to store additional records. As such, NGA may not actually have access to the total volume of space that appears to be available.

Major facilities upon which NGA relies for "pro bono" support include Gila Bend, the AARC, the DIAC, and the RNY Film Library. The inability to continue storing records, or expand holdings, at any of one these facilities would present NGA with a major cost and service challenges.

# Section 3 – Options

The Study Team developed and evaluated a variety of activities to address the critical issues identified in Section 2; specifically, RM policies and procedures, facilities and storage, electronic records management, and New Campus East move coordination. This section describes these potential activities in term of impact, approach, timeframe, collaborators, dependencies, arguments for and against, and estimated level of effort and costs. Recommended options for NGA to pursue are presented along each of these threads, with discussion of a "null option" and non-recommended options at the conclusion of each subsection.

Due to the volume and complicated nature of many of the options, the Study Team decided to estimate the total costs and levels of effort in broad categories:

- Very Low (performed with existing staff/resources)
- Low (less than \$500K total or \$100K/year)
- Medium (\$500K-\$1M total or \$100-\$500K/year)
- High (\$1-5M total or \$500K-\$1M/year)
- Very High (greater than \$5M total or \$1M/year)

The Study Team considered business impacts of each option in terms of regulatory compliance, cost reduction or avoidance, and improvement of the ability to support NGA's missions. Because of the criticality of compliance issues and need for continued mission support, these impacts were favored over cost reduction.

#### 3.1 Records Management Processes and Procedures

The following options represent actions to address procedural and communications weakness in current NGA records management and storage efforts. As noted earlier, the Study Team believes that NGA's records storage cannot realize it potential effectiveness without first improving programmatic issues associated with records management. Additionally, the dissociated nature of records management activities and storage can be improved with the top-down or at least independent, review and application of policy, procedures, and best practices. Not addressing the organizational challenges of awareness, policy, procedures, and compliance prior to or in concert with improvement of storage capabilities will decrease the effectiveness of storage and possibly create additional issues and costs.

#### 3.1.1 Establish NARA Certification Requirements for Records Storage as the Standard for NGA

| Time Frame | Cost | Impact             | Partners        | Predecessors |
|------------|------|--------------------|-----------------|--------------|
| Immediate  | Low  | Compliance/Mission | E/P Directorate | None         |

During the course of the effort, the Study Team noted numerous deficiencies in the physical storage of records across facilities, usually related to environmental conditions and handling of the records. There is also concern with a potential audit of storage capabilities by NARA, who has regulatory oversight of NGA in this field. An external audit of NGA Storage could prove embarrassing to the agency when many storage facilities are clearly out of compliance.

This mostly administrative activity provides a common goal for all NGA storage efforts (regardless of Directorate) for the appropriate storage of records. It creates top-down support for a common approach to evaluating storage environments and a framework for the determination and remediation of issues that affect compliance and mission support activities. Although low cost, affecting this change may be difficult, as it requires buy-in and support from the executive levels of NGA. The deliverable of this action will be a Memorandum for Record (signed at the appropriate level) establishing NARA requirements as the objective for NGA.

| 3.1.2 | Develop and Apply | y Common RM Metrics across | <b>NGA Community</b> |
|-------|-------------------|----------------------------|----------------------|
|-------|-------------------|----------------------------|----------------------|

| Time Frame | Cost   | Impact             | Partners         | Predecessors |
|------------|--------|--------------------|------------------|--------------|
| 1-3 Years  | Medium | Compliance/Mission | E/P Directorates | None         |

The lack of a common set of metrics for the various RM activities across NGA complicates the ability to effectively lead and manage these activities in the best interest of the organization. This effort creates a common vernacular for the planning and measurement of RM activities (record identification, accession, storage, duplication, disposition, declassification, etc.) that will enable later activities to improve RM operations.

The approach to this effort requires the assembly of key RM stakeholders (record producers, library managers, archive managers, etc.) to identify the key activities to track and develop a procedural framework for the communication of the resulting information to interested parties. It is anticipated that this effort will require the definition and documentation of the processes being measured, which is an important step in developing a common framework for records management across NGA. The tracking and analysis of the resulting information by the Records and Declassification Program Office will support planning for future RM initiatives and highlight procedural and compliance issues to be addressed through those follow-on efforts. The establishment of defined processes and common metrics also aids E Directorate in its goal of achieving ISO 9000 certification, as the definition of processes and management of metrics provides a key process quality improvement mechanism.

## 3.1.3 Build RM Certification into Standard NGA Business Processes

| Time Frame | Cost        | Impact             | Partners                               | Predecessors |
|------------|-------------|--------------------|--|--------------|
| Immediate  | Very<br>Low | Compliance/Mission | A/E Directorates,<br>Customer Services | None         |

Although RM training and certification is available on the NGA web site with a module that can be completed in as little as 20 minutes, the Study Team noted that use of this capability is actually very low (less than 100 participants in 2006). Current polices require all NGA personnel to complete RM certification on an annual basis in accordance with requirements of the Federal Records Act. This is disconcerting, given that, much like Security awareness, everyone in NGA has some level of Records Management responsibility. This lack of awareness contributes to many of the compliance issues and the ultimate decrease in the ability to support NGA's mission in providing older information to analysts, policy makers, and warfighters.

These activities proactively address RM awareness through mandated training of personnel by including RM certification requirements in NGA contracts (requires coordination with the Acquisitions Directorate), including an RM policy overview brief as part of orientation activities for new personnel (requires coordination with Customer Services), and inserting RM refresher training as part of periodic password updates on NGA's core network (requires coordination with the Enterprise Directorate). Unfortunately, this may be difficult to enact consistently across all of NGA, due to the decentralized nature of the organization and its activities. However, any increase in awareness as a result of this low-cost initiative will be an improvement.

## 3.1.4 Periodic Review of RM Practices at NGA Records Facilities

| <u>Time Frame</u> | Cost   | Impact             | Partners         | Predecessors                                  |
|-------------------|--------|--------------------|------------------|---|
| 1-3 Years         | Medium | Compliance/Mission | E/P Directorates | RM Metrics (3.1.2),<br>Storage Policy (3.1.1) |

The study team noted inconsistent knowledge and application of RM practices for the management of records across facilities. The team also discovered significant volumes of permanent records being held in "libraries" without proper controls to insure the preservation of those records.

This effort provides a standing team of RM professionals to periodically review facilities holding NGA records for the purpose of insuring consistent policy application, assistance in the remediation of issues, oversight of bulk RM (accession, movement/transfer, declassification, duplication, destruction, etc.) activities, and the informal training of personnel in RM policy and practices.

This proactive approach enables several improvements in records management processes: improved awareness of record holdings, removal of permanent records from libraries and replacement with duplicates, consistent policy application, procedural quality assurance, and increased RM awareness. Through this effort, the Records and Declassification Program Office will be able to work with individual libraries and operations centers to identify and preserve permanent records, move them into long-term storage, and replace as necessary with duplicates. An additional benefit of this activity is the development of corporate knowledge of the origination and location of records which can be used to support FOIA and other external information requests as well as provide insight and planning into requirements for future storage.

The Study Team estimates that this effort will cost approximately \$400k/year over three years. Depending upon the success of the initial effort, NGA may chose to formalize the function to provide continued independent oversight and support of key compliance processes.

An alternative to this "traveling team" approach would be the expansion of responsibilities and staff at individual facilities to address the issues associated with records management procedures and operations. The Study Team believes that this will produce significantly reduced results due to the inconsistent application of policy, inability to leverage lessons learned and skills across the disparate storage locations, and the lack of an appropriate organizational structure to coordinate and manage the decentralized activities.

#### 3.1.5 RM "Tiger Team" for Periodic Accession of Records by Each NGA Office

| Time Frame | Cost   | Impact             | Partners | Predecessors |
|------------|--------|--------------------|----------|--------------|
| 1-3 years  | Medium | Compliance/Mission | All NGA  | None         |

The Study Team noted that the RIMReps at the individual offices of NGA were ill-prepared and ill-positioned to perform the RM duties previously performed by office administrators. As noted earlier, the appropriate tagging and management of records early in their lifecycle (prior to long-term storage) is critical to the effectiveness of RM compliance and mission support later in the record's lifecycle.

This initiative provides a team of RM professionals to periodically visit NGA's record producing facilities to assist in the bulk identification, tagging, and accession of records. This reduces the burden (and related costs) on individual offices and their RIMReps to properly perform these activities and provides consistency across offices. This also produces an "economy of scale" by investing in a small, dedicated staff that supports all NGA offices as opposed to the development and support of individual efforts at each office.

In many respects, this approach mirrors that of the declassification teams that have specifically trained resources to review documents at the end of the RM lifecycle. As with declassification, the time and cost burdens of review are taken from the original offices and centralized for economies of scale and consistent application of policy. This effort provides a similar set of experts and approach to initiate the processes for management of the records that can be leveraged across the organization.

As with the team working with the libraries and operations centers, this effort will identify and preserve permanent records, move them into long-term storage, and replace as necessary with duplicates. An additional benefit of this activity is the development of corporate knowledge of the origination and location of records which can be used to support FOIA and other external information requests as well as provide insight and planning into requirements for future storage. The Study Team believes that costs associated with this effort can range between \$500K/year to \$2M/year depending upon the frequency of "visits" and number of offices included in scope of the effort. At the lower cost point, the effort may take as many as 8 years to cycle through the holdings of the NGA. At the higher cost point, the review of holdings at each NGA office may take as few as 3 years.

## 3.1.6 Null Option

This option continues the status quo for Records Management policy and procedures. The pursuit of this option means that NGA assumes a compliance risk that will result in the continued loss, mishandling, and unplanned destruction of records in the name of convenience or lack of policy awareness. While this approach translates to continued low-cost storage and management for the archival of records, it presents the risk of a rapid and unbudgeted, but mandated cost increase should compliance issues become externally visible due to external audit or mission support failure. Responding to the externally mandated compliance requirement will invariably lead to unplanned reductions in funding for other mission activities.

## 3.1.7 Non-Recommended Options

1. Formalize and expand role of RIMReps

The Study Team considered the expansion and formalization of the role of the RIMReps as a potential solution to address early lifecycle issues with the tagging and management of records. This option was deemed to be unattractive for several reasons: it continues the decentralized application of policy and procedures, removes resources from their currently assigned responsibilities within their offices (requiring backfill), and produces a difficult to manage personnel reporting and development relationship with RM Program Office management.

2. Consolidate Library Functions under Records Management

Given the number of "libraries" in NGA that are holding permanent records, the Study Team considered the option of consolidating their functions under Records Management as an opportunity to consolidate storage functions and reduce total costs. This approach would provide Records Management functions to bring the libraries into compliance with policy. However, this transition would cause significant organizational disruptions in terms of decentralized management and decreased service levels to library users. The Study Team believes the issues of permanent records being held at libraries or other process weaknesses could be effectively addressed through the Tiger Team options presented above with a minimal impact on existing operations.

## 3.2 Records Management Facilities and Appropriate Storage

While the Study Team found that the amount of space available to NGA was currently sufficient for the storage of the volume of hardcopy and film records of the organization, there are serious concerns with the suitability and cost effectiveness of the space for long-

term storage of records and the activities service and preserve those records. The following options present initiatives to address these storage concerns.

## 3.2.1 Establish Storage Facility Remediation Plan

| Time Frame | Cost   | Impact     | Partners         | Predecessors                           |
|------------|--------|------------|------------------|--|
| 1-3 years  | Medium | Compliance | E/P Directorates | NARA Requirements as<br>Policy (3.1.1) |

The Study Team learned anecdotally that NARA is considering audits of archival facilities across Government entities. In such an audit, the Study Team believes NGA would be poorly represented due to the inappropriate environmental conditions for the long-term preservation and management of records at most storage facilities (including those leased from NARA).

NGA can mitigate the risks associated with an external audit through an internal review of storage spaces and services against the stated compliance requirements. This review effort would systemically evaluate all NGA storage spaces for suitability to NARA requirements (construction, environment, security, and record preservation) and create a remediation plan for each facility. The effort will provide expert-based judgments of the physical and environmental conditions of current storage facilities from which a detailed roadmap can be produced for the remediation of these issues or justify the design and procurement of new storage and servicing spaces.

The Study Team estimates this effort's duration at one year with a cost of approximately \$600K. These costs could be significantly reduced if the scope of the audit were coordinated with NARA ahead of time to reduce the number of facilities to be reviewed.

| 3.2.2 | Centralize | and | <b>Consolidate</b> | Records | Manage | ment Service | 5 |
|-------|------------|-----|--------------------|---------|--------|--------------|---|
|-------|------------|-----|--------------------|---------|--------|--------------|---|

| Time Frame | Cost | Impact                               | Partners         | Predecessors  |
|------------|------|--------------------------------------|------------------|---|
| 6-10 years | High | Compliance, Cost,<br>Mission Support | E/P Directorates | Facility Remediation Plan (3.2.1)<br>NGA Storage Facility (3.2.2) |

This consolidation effort will remove accession, retrieval, declassification, and destruction duties from individual storage facilities and centralize to a single operation to realize "economies of scale" and procedural consistency for these critical business processes. As many of these services are not currently performed, the primary driver for costs in the effort is for resources (people and technology) to provide many of these services.

The challenge of this effort is in the procurement of dedicated spaces to house the team. As such, the effort may begin as a "virtual team" under a single management structure. The full benefits of the consolidation may not be realized until spaces become available to jointly house the teams performing the different services.

| Tim | e Frame | Cost | Impact                       | Partners                          | Predecessors                         |
|-----|---------|------|------------------------------|-----------------------------------|--------------------------------------|
| 6-1 | 0 years | High | Compliance, Mission,<br>Cost | NGA Executive<br>Management, NARA | Facility Remediation Plan<br>(3.2.1) |

## 3.2.3 Consolidate NCR/Eastern Holdings into a Dedicated NGA Records Center

One of the potential outcomes of the Facility Remediation Plan would be the development of a consolidated storage and service facility. This effort would physically consolidate archived hardcopy, film, and digital records in the National Capital Region and other East Coast holdings into a single repository. Holdings to be included in this consolidation include: the WNY Film Library, WNY Records Holding Area, WNRC, AARC, Bethesda, and RNY Film Library. This consolidation would bring a large portion of NGA's holdings under direct control, providing economies of scale in their management, consistent application of policy, and reduced risk of loss of access to borrowed spaces (AARC, RNY Film Library). The movement of Records Management storage spaces (WNY Film Library, Records Holding Area) from the NCE will also free space for the growth of other mission functions within that facility.

Due to real estate prices and current consolidation plans for the NCE, it is unlikely that a new facility will be funded within the National Capital Region. Ideally, this new facility would be located within same day courier distance of the New Campus East Facility, to provide an acceptable level of service.

One key cost factor in the development of a new facility is physical security. Obviously, placement of a facility on the grounds of a base with appropriate force protection and security to support work at the highest classification levels can significantly reduce development and maintenance costs. Options for the location of the facility may include: Aberdeen Proving Ground, Andrews Air Force Base, Fort Meade, Quantico, Richmond, Martinsburg, WV, and additional spaces at Ft. Belvoir or other locations.

Another cost reduction factor would be the refurbishment of an existing structure as opposed to the building of a new structure. This approach was chosen in the development of the new AARC facilities at an estimated saving of approximately \$6M over the construction of a new building.

In the design of the new facility, NGA will need to work closely with NARA to insure compliance with applicable regulations for storage and servicing of records.

The Study Team estimates the costs to procure and refurbish an existing building and then transition holdings would range from \$8-\$12 million. This cost would be offset by the decrease in annual costs at WNRC of in excess of \$500K/year.

## 3.2.4 Null Option

Not addressing the issues with the appropriate storage and servicing of records will lead to the inevitable loss of many records. This is an ongoing compliance risk but also compromises NGA's ability to provide historic information in the support of future mission-oriented efforts in support of policy makers and the warfighter.

Aside from continuing compliance risks, the Null Option perpetuates the issue of reliance on "borrowed" spaces for long-term storage. The risk assumed by not addressing this issue is one of rapidly increasing costs (possibly within a fiscal year) as facility and base owners decide to reallocate space currently dedicated to NGA or pass on operation and maintenance costs for that space to NGA.

#### 3.2.5 Non-Recommended Options

The Study Team reviewed several other options to address facilities issues.

1. Convert hardcopy documents to digital formats, reducing space requirements

This option would reduce the volume requirement for the storage of paper-based records by scanning the media to digital formats. The advantages of this approach are reduced space requirement and migration of the documents into an environment where their information may be electronically readable (through optical character recognition) and searchable. The Study Team estimates the cost of such a conversion process to be high, in excess of \$3 million. Additionally, there are currently no processes in place to manage or facilities to store the newly created electronic documents. As such, large scale conversion of hardcopy records to digital, while having great potential to provide enhanced mission support, would actually increase compliance issues associated with those records until issues with electronic records management are addressed.

2. Develop dedicated film storage and servicing facility

One of the major risks NGA faces is the continuing requirement for the long-term storage and preservation of film. This requires both appropriate environmental conditions as well as services to insure the preservation of the film. Neither the AARC nor the DIAC have the ability to provide the total space required for NGA Film Storage and Preservation. The effort would consolidate film storage and servicing activities in RNY Film Library, WNRC, AARC, St. Louis Film Library, and the WNY Film Library into a new facility designed and built specifically for NGA. The Study Team estimated the costs associated with developing this facilities (assuming the same advantages of existing force protection and infrastructure identified in Section 3.2.2) would be \$5-\$10M.

3. Move WNRC and NPRC holdings to Gila Bend

The Study Team is sensitive to the annual costs for storage of records at the WNRC and NPRC. Although WNRC provides good service to NGA for the retrieval of files, there are concerns with environmental conditions and the \$500,000 annual costs of using the facilities. This option moves the holdings at WNRC and NPRC to Gila Bend at a cost of approximately \$300K. While attractive on the surface, the Study team was concerned with the time delays and courier costs making this option only tenable for

"dormant" records. Additionally, there may not be enough space at Gila Bend to store the volume of film (60,000 cubic feet) and hardcopy (20,000 cubic feet) holdings in WNRC and NPRC. Environmental conditions at Gila Bend for long-term film storage are no better than WNRC. There was also the lingering concern of continued access to the spaces at Gila Bend. As such, the Study Team favors the development of an NGA facility within close proximity to NCE. Finally, movement of permanent records to Gila Bend would compromise the use of that facility as a repository for duplicate records and its role for continuity of operations in storage. No option, other than the development of new spaces, is presently available to eliminate the costs associated with storage at WNRC and NPRC.

4. Expand Use of Contractor Facilities for Film Servicing and Storage

With the perpetuation of the use of the RNY Film Library for the long-term storage and servicing of film records, NGA may consider the expansion of capabilities at this facility to consolidate and service all film stock west of the Mississippi. Based on the recent ITT Space Sciences Study, It is estimated that improvement to the facility to improve environmental capabilities to accommodate long term film storage as well as a general increase in storage would cost in excess of \$1.5M. It would also leverage existing knowledge and skills of the contractor personnel in the RNY Film Library facility. However, the location is outside of same day courier distance from the NCE and presents concerns with timely servicing of analyst requests. The Study Team was also concerned with creating a situation where the Government was reliant on a single contractor to provide a mission service and high costs associated with the transfer of that function to another contractor creating a non-competitive environment for the procurement of the services.

5. Identify and Dispose of Unnecessary Duplicates

There may be as many as 150,000 canisters of duplicate film between Bethesda, St. Louis, and Gila Bend. This effort would identify and destroy those unneeded canisters with the benefit of freeing space for additional film storage. While attractive on the surface, this medium-cost effort would only free space in facilities which were unsuitable for the long-term storage of film. As such, it does not address the more important issues of environmentally appropriate storage and was not recommended. This option does become interesting if the space made available can be used for hardcopy storage, thereby lessening the dependence upon WNRC and NPRC.

6. Procure Contractor Spaces within same day Courier Distance from NCE for longterm storage and servicing of Eastern Holdings

This option would outsource local storage and servicing to contractor spaces. However, in conversations with AARC personnel about the decision processes leading to their development of refurbished facilities for storage and servicing, the Study Team learned that this approach had been investigated extensively and found not to meet requirements. First, few contractor storage facilities were cleared to hold the highest classification of records. Second, available facilities lacked services to handle anything but dormant records. Third, there was little support for appropriate courier services to affect the appropriate movement of records. Finally, the Study Team noted that the lease of SCIF spaces in the National Capital Region and surrounding areas can easily run in excess of \$25/square foot/year. Taken together, these observations made the procurement of contractor facilities unattractive as a long term storage option.

## 3.3 Electronic Records Management

As noted earlier, NGA's efforts for the electronic management of records and the archival of digital holdings lags behind those of the Services and other agencies. This lack of a cohesive Electronic Records Management strategy and plan presents a compliance issue for NGA that is growing exponentially every year. There is currently no long-term storage set aside for the management of digitally-based records. However, the procurement of appropriate storage space for the archival of digital records only addresses part of the larger problem. Appropriate procedures for the management of digital records must be implemented prior to or in concert with the procurement of advanced technology and dedicated storage spaces.

| Time Frame | Cost   | Impact    | Partners           | Predecessors |
|------------|--------|-----------|--------------------|--------------|
| Immediate  | Medium | Very High | E/A/P Directorates | None         |

3.3.1 Develop Electronic Records Management Plan and Office

NGA's current electronic records management effort consists of the work of a few Records Management professionals attempting to implement recommendations of the Millican ERM study, oversee the development of the Documentum system for the Records Management Program Office, and perform other duties. This option provides top-down support and increases staff to provide additional personnel with the appropriate technical skills to address growing electronic records management requirements. This formalized and expanded team will develop and staff a long term strategy for the appropriate handling of electronic records to include accession, storage, retrieval, preservation, and declassification/destruction of electronic records based on the electronic records study. The team will also serve as NGA's lead for a strategy to develop an electronic records management capability.

This effort gets dedicated personnel in place to make significant progress in NGA policy and activities for electronic records management and provides a common, top-down, approach to the issue. Costs associated with the effort primarily focus on those resources. It is estimated that these costs will be low in the first year (1-2 FTE) of the organization but increase as more resources are needed in later years (up to 5-8 FTE by year 4) to manage and direct activities pertaining to follow-on ERM tasks. However, this level of effort is necessary to coordinate and support a coherent approach to ERM across all NGA activities; insuring the appropriate use of funds to meet stated requirements in the efforts noted below.

| Time Fram | e Cost | Impact              | Partners | Predecessors               |
|-----------|--------|---------------------|----------|----------------------------|
| 1-3 years | High   | Compliance, Mission | All NGA  | ERM Program Office (3.3.1) |

| 3.3.2 Digital Records Sys | stem Remediation |
|---------------------------|------------------|
|---------------------------|------------------|

NGA has in place dozens, if not hundreds, of systems producing records of the organization. All of these systems are subject to record keeping requirements under DoD 5015.2 and the Federal Records Act. The status and ability of these systems to perform required recordkeeping functions is unknown and assumed to be minimal. Similar to compliance of storage facilities to environmental requirements, this unquantified compliance gap presents an open risk to NGA of continued loss of mission-supporting records.

An initial step to close this compliance gap is a survey of existing systems, development and implementation of individual remediation plans, and the creation of policies to prevent compliance issues in new systems.

This effort begins with the creation of a consolidated set of compliance requirements and list of relevant "systems of record" at NGA to review individually for compliance with DoD 5015.2, FRA, and existing NGA policies (2 FTE/12 Months). The results of this study will be used to create individual remediation plans to bring existing systems into compliance. (2FTE/12 Months plus development costs associated with the modification of each system). Centralization of remediation plan development can reduce the total costs of systems remediation by allowing lessons learned and approaches to be shared across disparate development efforts. This includes the evaluation of off the shelf and custom solutions to systemically extract and archive records from systems such as e-mail and shared-drives. The implementation of such a solution may actually decrease costs to NGA in terms of physical storage by only selecting documents for preservation that qualify as agency records without directly interacting with those systems.

This effort also includes coordination with IT management and Acquisitions to build electronic records management requirements (DoD 5015.2, FRA, NGA Records Schedule, etc.) into procurement of all new IT systems. It is the view of the Study Team the records management policy compliance is every bit as important (and required) as the accessibility requirements of Section 508 that are written into most development contracts. (1/4 FTE, perpetual)

The ERM PMO will coordinate with IT management and Acquisitions to implement remediation plans to modify existing systems (1/2 FTE, perpetual). The Study Team estimates that the costs to perform the legacy system remediation will be very high; in excess of \$10 million for software development and hardware. A brief review of activities in the corporate world to implement provisions of the Sarbanes-Oxley Act (with similar requirements to the FRA) indicated that as much as 15% of IT development budgets were allocated to the remediation of records management requirements in existing systems. The costs associated with the incorporation of RM requirements into new systems may be as high as 10% of the total system budget.

Remediation of legacy systems will be an expensive and time consuming process for NGA. Like Year 200 remediation, it will take precedence over many user-driven enhancements in the near term, making it unpopular with the community. However, it is a necessary step to insuring that the organization maintains all of the records required by law and protects information that may be of importance to future policy makers and warfighters. Developing IT policy to have appropriate record keeping processes built into planned systems insures that this disruption of planned enhancements is not repeated.

It is also expected that the remediation of existing systems for appropriate record keeping will create an influx of new records to be stored and managed by the Records and Declassification Program Office.

Time FrameCostImpactPartnersPredecessors3-6 yearsHighCompliance, cost,<br/>missionAll NGA, enterprise-<br/>wideRM Metrics (3.1.2)<br/>ERM Systems<br/>Remediation (3.3.2),<br/>Documentum Integration

3.3.3 Electronic Records Management System

An electronic records management system enables high levels of automation in the management of archived hardcopy, film and digital records. While the Records Management Program Office is in the process of creating an ERM capability using Documentum software, this capability is only intended to serve PMO users to manage current hardcopy and film holdings under their direct supervision. It is not an NGA-wide solution. Given the anticipated growth of digital records produced by NGA, and the prevention of the destruction of existing records, it is reasonable to believe that the only way to effectively manage the increased volume is through significant automation support. There is another concern with the management of digital records; it cannot be performed effectively with paper-based processes. This fact alone necessitates the development of an ERM software solution.

This effort develops a detailed set of business processes and supporting system requirements for an Electronic Records Management System for all NGA Records Management and storage activities. This will include an evaluation of current records management capabilities to determine whether a confederated (pull information from individual, independent systems) or consolidated (single system used by all stakeholders) system is the most appropriate for NGA. The advantage of a confederated system is that it allows existing capabilities to continue at the expense of functionality to direct the entire records management process. A consolidated system directs the entire process but can become expensive and cumbersome with the incorporation of specific requirements from each legacy activity. This requirements effort also includes an evaluation of available off-the-shelf software, system in use by other agencies, and the newly implemented Documentum system for suitability to known requirements. The product of the study will be an RFP for the development and integration of an ERM solution for NGA.

It is expected that the cost of the development of requirements and technology study will be medium, approximately between \$500 thousand and \$1 million and take one to two years. It is recommended that this requirements study be conducted prior to, and independent of, the contracted implementation effort as an approach to control total costs on that subsequent effort. The anticipated costs associated with the development of the ERM system will be very high, in excess of \$5 million, and take several years to implement.

Implementation of the system will also require significant business process reengineering and training as capabilities migrate from the individual practices of legacy organizations to the new consolidated NGA approach. However, these costs will be offset by efficiencies to be gained in the consolidated management of records management processes and related improvements in the quality and timeliness of responses to internal and external records inquiries.

As with the implementation of record keeping for compliance purposes, this will not be an easy or inexpensive transition for NGA. However, given the anticipated increase in digital records, these costs are necessary to alleviate compliance issues while insuring records are available to policy makers and warfighters in the future.

| Time Frame | Cost         | Impact              | Partners         | Predecessors   |
|------------|--------------|---------------------|------------------|--|
| 6-10 years | Very<br>High | Compliance, Mission | E/P Directorates | ERM PMO (3.3.1)<br>Systems Remediation (3.3.2)<br>ERM System (3.3.3) |

3.3.4 NGA Electronic Records Archive

With the increase in generation and maintenance of digital records, it will become necessary to acquire space for the appropriate storage of those records. Additionally, as mentioned in Section 2.2.2, the preservation of digital records cannot be effectively handled in a server-farm environment as the archive is focused on the preservation and management of records as opposed to real time availability. These two circumstances will lead to a requirement for a dedicated facility to store and maintain digital records within their records management lifecycle.

This ERM PMO effort defines facility requirements for the long term storage and preservation of electronic/digital records in partnership with NARA to insure future compliance and NARA ERA compatibility. This initial requirements effort to define the specifics of space, environment, equipment and processes will require 2 FTE and take approximately 1-2 years.

The more difficult and much more expensive task will be the procurement of environmentally appropriate storage space, servicing personnel, and technology for the long term management of electronic/digital records. The Study Team believes this will represent a \$5-\$8 million initial investment and upwards of \$1 million per year for operations and maintenance of the facility. However, given that the appropriate storage environment for digital records is very similar to that for film, it is feasible that the

investment made in a consolidated Records Management Center could be leveraged to support the electronic archive. As the volume of film decreases with disposition, the newly available space can be allocated as new space for the storage of digital records.

#### 3.3.5 Null Option

The alternative to the activities described above is to continue with the current ad hoc, understaffed efforts to manage electronic records and achieve compliance with relevant laws and regulations. This continues the current, low cost approach with maximum flexibility for individual system owners to implement requirements as currently prioritized.

In choosing this approach, NGA assumes continued risk of compliance failure and loss of mission-supporting records. Additionally, the costs to remediate systems for record keeping compliance will continue to increase. Finally, the "keep it all" approach will result in an expensive to maintain and progressively expanding data center not suited for the preservation of records.

#### 3.3.6 Non-Recommended Options

1. Migrate existing digital files to optical media

This option would call for the transfer of digital files to optical media (CD and DVD ROM) to free space on live media (servers) without the requirement for cold storage. As a short term solution to address the compliance issue associated with the overwriting and loss of files this appears attractive and relatively low cost. The Study Team has concerns with not having appropriate processes in place for the management of the resulting disk set and the creation of a larger than necessary repository of media given the lack of capabilities to systemically discern records and non-records.

2. Convert digital records to hardcopy

This option would convert digital records to a hardcopy format, making them easier to maintain by leveraging current management practices and storage space. While this is currently performed with some records, the Study Team believes this approach to be fundamentally flawed when applied on a larger scale. First, there are significant cost concerns associated with the printing and packaging of a new, large volume of hardcopy records. Second, this is only applicable to "document" records, and cannot be applied to the majority of raw intelligence and imagery gathered and maintained by NGA. Third, this would create a dramatic increase in storage requirements for hardcopy, effectively replacing one problem with another.

3. Modify records schedule to reduce requirements for preservation of digital records

The Study Team noted that a literal interpretation of the records schedule called for the retention of all collected intelligence data. The implication of this interpretation is that new sources have the ability to produce thousands of terabytes of data annually. An adjustment to the records schedule to allow the preservation of only of "interesting"

data would alleviate a significant percentage of the storage requirement. While this may be appropriate (and justifiable with NARA) for a specific data set, the Study Team doubts that the requirements of digital records archival can be significantly reduced through policy.

4. Incorporate digital records management into NGA data centers

This option includes the space and processes necessary for the preservation and storage of digital records into NGA plans for consolidated data centers. The approach has several advantages: appropriate environment, 24/7 technical support, and continued access to records by NGA personnel. However, the Study Team believes that the focus of a data center, to provide continuous access to information, is fundamentally different from a digital records archive focused on the preservation of mostly dormant records. The Study Team believes that the business function of electronic records management is fundamentally different from IT infrastructure management and, as such, consolidation would serve neither function's operational requirement beyond the provision of environmentally controlled spaces. An appropriate paradigm would affect the transfer of digital records to RM supervision through an accession process that insures the future preservation and accessibility of the media. While this could be done within the data center environment, the Study Team believes that greater efficiencies for the long-term management of the records will be through the consolidation of all records management functions.

5. Increase emphasis on ERM/record keeping at the individual system level

This option recognizes the need for ERM and record keeping requirements in NGA's systems but allow individual programs to implement their own solutions. This approach allows for minimal impact to existing systems in the integration of record keeping requirements. However, the resulting solutions from these independent efforts will produce remarkably different results and degrees of compliance; which, in turn, will lead to increased long-term costs for the accession and management of the records produced by those systems. Another potential consequence of independent remediation efforts is another enterprise-wide remediation effort (and associated costs) at a later date.

## 3.4 New Campus East Move Coordination and Support

The transition of NGA business activities to the New Campus East presents significant challenges to the appropriate management of records. The Study Team is concerned with the potential for new Records Management compliance issues associated with the upcoming consolidation of NGA's National Capital Region activities to Fort Belvoir in the 2009-2011 timeframe. Given that NGA is slated to occupy as little as 73% of it's current footprint at Fort Belvoir, there is a greater potential for the mishandling or inadvertent destruction of records as organizations struggle to fit into new spaces.

| Time Frame | Cost | Impact     | Partners                | Predecessors |
|------------|------|------------|-------------------------|--------------|
| Immediate  | Low  | Compliance | NCE PMO,<br>NCE Offices | None         |

3.4.1 Define Detailed NCE-Related Consolidation Requirements

Given the potential for additional compliance issues and loss or mishandling of records to arise through the transition to New Campus East, there is an opportunity to proactively address these issues through coordination with the NCE program office and the individual offices affected by the move.

This option focuses on facilities/offices to be affected by NCE move to get a full listing of people, processes, and records to be moved through coordination with the NCE Program Office. This activity will facilitate the management of the transition of offices from one space to another while maintaining Records Management effectiveness and compliance.

This will help build the business case for additional storage space and establish a move plan for RM functions that is in the best interest of RM

3.4.2 RM Tiger Team for NCE New Records Consolidation Prior to NCE Move

| Time Frame | Cost   | Impact     | Partners    | Predecessors                     |
|------------|--------|------------|-------------|----------------------------------|
| 1-3 years  | Medium | Compliance | NCE Offices | NCE Move Requirements<br>(3.4.1) |

This option assembles a team of RM professionals to assist NGA offices in the review and accession of records prior to NCE-related moves. This will help refine future storage requirements, increase RM awareness, and prevent the inadvertent destruction or loss of records. Upon conclusion of a review, offices will have definitive knowledge of the records released for storage, those that can be destroyed, and those to be moved. An effective RM sweep will also lighten the load on organizations for moving records to smaller spaces, thereby helping them make the adjustment and free space for their mission activities. The consequence of this activity is an increase in the number of records under management, causing a subsequent increase in storage requirements. This 1 year/5 FTE (approximately \$1 million) effort would also serve as a demonstration of the potential for an RM Tiger Team to periodically visit all NGA offices as proposed in Section 3.1.5.

| 3.4.3 | Acquire a | dditional | spaces f | or the storage | e of NCE mov | ve-related rec | ords |
|-------|-----------|-----------|----------|----------------|--------------|----------------|------|
|       |           |           |          |                |              |                |      |

| Time Frame | Cost   | Impact     | Partners    | Predecessors           |
|------------|--------|------------|-------------|------------------------|
| 1-3 years  | Medium | Compliance | NCE Offices | NCE Tiger Team (3.4.2) |

It is likely that the volume of records acquired through the activities described above will require more space than readily available in the WNY and NCE. This effort will acquire appropriate spaces in the NCR to temporarily store records associated with Tiger Team/NCE activities and as emergency storage in case of additional unplanned volumes of

records. It is likely that the WNRC may be the most readily available and accommodating facility at an estimated increase in cost of up to \$100K/year in fees. The records sent to WNRC would ultimately be transferred to a new consolidated storage facility, as described in section 3.2.2. Another option for temporary storage is Gila Bend; although, as mentioned earlier, this may be best for dormant records, given the distance from the owners.

## 3.4.4 Null Option

The Null Option for NCE related activities has no specific activities to assure the appropriate handling of records during the move from one office space to another. In choosing this approach, NGA accepts the compliance risks associated with the loss of records as they are discarded to simplify moves and reduce footprint in new spaces. Inversely, there is also the potential for an unplanned "dump" of previously unknown records into records management processes; stressing both the processes and the ability to store the record in existing and planned spaces.

#### 3.4.5 Non-Recommended Options

1. Consolidate NCR RM and Library spaces to reduce overall space requirements in NCE.

This option would physically consolidate library and records management activities to reduce space required by the combined organizations. As noted earlier, the Study Team believes that a consolidation of spaces and management would solve fewer problems than it creates. While this approach holds the promise of saving space at NCE; it is likely that gain will be off set in a decreased ability of Records management Program Office and the libraries to meet their individual mission requirements.

2. Develop Objective RM Storage and Servicing Capabilities at NCE

This option would create an objective RM storage and management space as part of the NCE. Although a good in concept, the Study Team believed this effort to be untenable for a variety of reasons. First, NGA will be moving into less space than currently occupied in the National Capital Region and the development of this facility would present an increase in space requirements. Second, funds provided for BRAC activities only cover the movement of those functions and offices in situ, not with improvements. Finally, the Study Team learned anecdotally that there is already a projected shortfall of funds required to cover the move of existing operations.

# **Section 4 – Recommendations**

The Study Team recommends that NGA address the procedural and other records loss issues prior to the development of procurement of long-term or consolidated storage capabilities. This "process first" approach limits the amount of funding that NGA needs to commit to records management improvements in the early years while correcting compliance issues that are resulting in the continued loss of records. The expertise gained in the thorough review of activities, proactive management of accession processes, establishment and tracking of metrics, and definition of electronic records management processes and requirements will reduce the inherent cost risks associated with the design and development of a new facility and expanded business function. This allows for specific requirements for space and processes to be developed and formalized, particularly in electronic records management, prior to an estimated \$8-\$15 million investment in a new facility.

Unfortunately, the activities outlined below represent an overall cost increase to NGA relative to RM functions. However, most of these costs (cold storage, accession management, records preservation, electronic records management) are associated with required functions that are not currently or adequately performed at NGA. The Study Team believes that it's not a matter of controlling costs for records management and storage, but rather achieving compliance and service objectives in the most cost effective manner.

#### 4.1 The Path Forward to a Records Management Center

The Records Management Center would remove NGA hardcopy and film record holdings from expensive leased space and records service centers such as the WNRC and NPRC while consolidating permanent records holdings of the NCE and other locations in one environmentally appropriate facility under direct NGA management. The storage spaces will also include new provisions for the long-term management of digital records in a cold storage environment. By including both film and digital cold storage in a single facility, NGA can realize an economy of scale in total cold storage space procured. As the volume of film decreases, the excess cold storage space can be reallocated to the long-term storage of digital records on magnetic or other media.

The NGA Records Management Center would also be outfitted with the equipment and staff necessary to consolidate activities for the accessions, preservation, duplication, declassification, destruction, and transfer of records. Centralizing these functions provides an opportunity for continuous process improvement (reducing compliance issues) and economies of scale (reducing costs) while achieving a higher degree of quality that would be required for ISO 9000 certification.

In operation, the Records Management Center would continue to collect records from NGA components and provide copies to libraries and individual requestors (insuring the original permanent records remain under records management control, another compliance improvement). This provides for the continued access to the organization's permanent

records while ensuring preservation. In addition, copies of permanent records could be produced and provided to offices upon request. Not only will this system protect the records and the information contained within those records, it will reduce unnecessary cost associated with external records centers and will allow NGA to maintain better control over their records.

The figure presented below captures the storage and services capabilities of the Records Management Center.



Figure 4.1-1: NGA Records Management Center Concept

The development of this RM facility must be preceded by improvements in NGA's policies and procedures for records management and the development of a top-down electronic records management program. These process improvements are necessary to develop NGA's corporate RM knowledge, skills, and abilities. This newly developed expertise can then be leveraged to effectively design, build, transition, and manage a robust, compliance records management business function.

The "threads" outlined in the following sections present discrete activities or groups of activities designed to achieve specific goals and insight toward the Records Management Center while providing incremental value-added RM capabilities to the organization.

#### 4.1.1 Thread 1 - New Campus East (NCE) Support

These proactive Records Management activities to support the movement of offices to NGA's New Campus East provide several benefits. First, Records Management has the opportunity to assist the NCE PMO in reducing the physical footprint of offices by taking

permanent records off of their hands and identifying records that could be destroyed, thereby making it easier for each office to fit into 27% less space. Second, these activities reduce the potential of permanent records being lost or destroyed during the transition, mitigating further compliance issues for the organization. Third, the NCE move provides the opportunity to "Do RM Right," by elevating the visibility of the function, focusing on a value-added service provided to the organization, and proactively working with offices to achieve compliance. It is anticipated that these activities will generate a new volume of records for management that will require the procurement of additional near-term storage spaces.

Phase 1: Requirements Analysis and PMO Coordination (Section 3.4.1)

Phase 1 creates focus and priority for records management compliance activities as part of the movement of offices to the New Campus East. This provides increased awareness of potential issues and coordinates a plan to review offices prior to their movement. An overall review of the estimated holdings will lead to a requirement for temporary storage spaces. Among the options available for near term storage are: procurement of additional space at WNRC, shipment to Gila Bend (with an understanding that this location may result in delays for the retrieval of these records), and movement to the AARC (with the understanding that the full volume of the facility may not be available to NGA).

Phase 2: Office Review and Accession (Section 3.4.2)

Phase 2 executes the plan developed in Phase 1 to perform reviews of holdings of individual offices prior to their move to New Campus East. This will result in a volume of newly accessioned permanent records as well as temporary, duplicate, and non-records cleared for destruction.

Phase 3: Near-Term Storage (3.4.3)

This phase provides a readily available "space" for the temporary storage of records, ideally within easy accessibility of the NCE. Environmental issues are not necessarily a major concern, as it is temporary storage. Use of the space is terminated once new storage facilities become available.

The following figure presents a notional schedule of NCE support activities and their interrelationships.



Figure 4.1.1-1: New Campus East Path Forward

This thread focuses on mitigating some near term risks associated with the movement of offices to NCE. However, the activities also support the development of the concept for the Records Management Center through the insights gained into the record holdings and activities of the offices participating in the move. This insight will be invaluable in the development of record-keeping systems and long-term storage plans.

#### 4.1.2 Thread 2 - Records Management Process Improvement

This thread focuses on developing executive level support for RM improvements and the standardization of an NGA-level policy and set of processes for the management of records. This effort is critical to the success of any following storage-oriented efforts and achievement of regulatory compliance within current capabilities. These efforts also transition the current Records Management approach to more of a proactive, service-oriented philosophy.

Phase 1: Top-Down Policy Support (Sections 3.1.1, 3.1.3)

Phase 1 generates the executive level support for "beefing up" NGA's compliance with RM laws and regulations. This includes mandated training requirements through contractual obligations, new personnel indoctrination, and other activities. It also officially establishes compliance with the NARA storage requirements as the objective for the organization. This level of support and visibility also provides the mandate for cross-functional activities to improve and track processes in the later phases.

Phase 2: Establish and Track Records Management Metrics (Section 3.1.2)

This phase assembles RM personnel from various offices that create/hold permanent records with a mandate to define common practices and metrics to track their record holdings and communicate them to the RM office on a periodic basis. The activity of defining common processes and a "language" for communicating activities will dramatically improve the organization's ability to plan and budget for storage and service activities. Another benefit of this activity will be the ability to define a list of record

originators and holders that can assist in tracking down information in support of FOIA or other external requests.

Phase 3: Facility and Office "Tiger Team" Reviews (Sections 3.1.4, 3.1.5)

This phase creates a proactive effort to go to offices, operations centers, and libraries to assist in achieving compliance with RM policy. Much like the office reviews in the NCE Support Thread, this approach starts "at the bottom," assisting one office at a time, if necessary, in the identification of records and getting them into a records management life cycle. This approach also allows for the identification and remediation of issues, early in the lifecycle of records. The traveling team approach consistently applies processes to allow metrics to be generated and tracked, once again enabling better compliance and planning. Finally, a thorough review of the record generation activities of the organization will enable a forecast of future record volumes and storage costs that can support the requirement to procure a long-term archival solution for NGA.

Phase 4: Ongoing Operations

If successful, and there's an ongoing need or justification, continue with the "Tiger Team" efforts to assist offices, operations centers, and libraries in maintaining compliance with policy.

The following figure presents a notional schedule of NCE support activities and their interrelationships.



Figure 4.1.2-1: Records Management Process Improvement Path Forward

#### 4.1.3 Thread 3 - Electronic Records Management

A major component of the Records Management Center will be storage and services for the management of digital records. NGA's current processes and holdings are weak, at best, and present major compliance and mission challenges that need to be addressed. Business

processes and supporting capabilities must first be developed for the management and archival of digital records prior to achieving any economies of scale with their consolidation into the Records Management Center.

Phase 1: ERM Program Plan and Coordination (Section 3.3.1)

Phase 1 formalizes and expands the program function and begins coordination with stakeholders in Production, Enterprise, and other stakeholders in the organization. This is not a discrete project, but rather a continuing function to oversee and contribute to ERM policy and activities at the NGA level. The expansion allows NGA to keep in touch with NARA Electronic Record Archive, understand how other organizations are implementing ERM, and make sure lessons learned/approaches are included in NGA efforts. This will help insure future compatibility and compliance.

Phase 2: Systems Remediation Analysis, Planning, Development, Implementation (Section 3.3.2)

Phase 2 looks at the systems generating and holding records at NGA to identify compliance gaps and their remediation. The effort will generate a single list of Federal Records Act, DoD 5015.2 ERM criteria, and other relevant requirements for records generating systems. It will identify the systems of record within the scope of the requirements, review those systems against criteria, work with Enterprise management to define "common approach," and coordinate with individual system owners to define appropriate mitigation plans and timelines. Tracking of the individual remediation efforts will assist in the definition of volume forecasts for new records that will into archival requirements.

Phase 3: Electronic Records Management System Requirements (Section 3.3.3)

Phase 3 pulls lessons learned from Documentum, Navy, Army and other ERM integration efforts, adds the Tiger Teams' knowledge of records holdings at NGA offices and facilities gained to provide a "real world" set of requirements for an NGA-wide capability to systemically manage archives and related support services. The processes developed and proven through metrics definition and tracking effort will also provide insight for the identification, evaluation, and selection of the most effective technological solution.

Phase 4: Electronic Records Management System Development and Implementation (Section 3.3.3)

Simply put, Phase 4 procures, develops, tests, implements, and populates the new ERM system. This is a non-trivial task as it requires the development and oversight of a major new mission system for NGA. Similarly, there will be a large integration and population effort that will carry significant business process and system user training requirements.

Phase 5: Electronic Records Archive Facility Design and Funding (Section 3.3.4)

The improvements to legacy systems to capture and preserve records as well as the continuing growth of digital data and records that were previously captured on film and

paper will drive the need for and Electronic Records Archive. However, based on knowledge gained from tracking RM metrics, systems remediation, ERM system design, real-world input from the tiger teams, and lessons learned from other agencies, NGA will have a thorough understanding of the requirements of digital records keeping and knowledge of issues encountered by others in their archive efforts. This effort defines the detailed requirements for an appropriate electronic archive facility in terms of storage space, environment, and services. It is suggested that NGA coordinate closely with NARA in the design of this facility, as NARA will have already implemented its Electronic Records Archive program. Coordination of plans and designs with NARA will insure both compliance and compatibility with the post-disposition repository of the much of the information.

As noted earlier, the environmental conditions required for the long-term storage of digital records are very similar to those required for film. It is anticipated that the digital archive may also be used for the long-term storage of film. As such, the storage space requirements for film can be included in those for the digital archive. In operation, as film is removed from the archive through disposition, space will become available for the storage of additional digital records.

Phase 6: Electronic Records Archive Facility Development (Section 3.3.4)

The final phase develops the facility to serve as NGA's archive of digital records. As noted earlier, the archive is best combined with a consolidated records management center for economy of scale in RM operations. However, NGA may elect to develop an independent facility and assume the additional costs associated with force protection, operations, and maintenance.

The following figure presents a notional schedule of NCE support activities and their interrelationships.



Figure 4.1.3-1: Electronic Records Management Path Forward

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## 4.1.4 Thread 4 - Storage Facility Remediation

Correction of storage-related issues will require significant planning and intermediate improvement efforts prior to the creation of the Records Management Center. A detailed set of requirements and related budget for the center will only be possible once effective processes have been established, record volumes confirmed, and an objective location identified.

Phase 1: Facility Suitability Review and Remediation Planning (Section 3.2.1)

This initial effort performs a detailed review of major archives and storage facilities for long-term storage suitability against NARA and other relevant regulations. The review will include analysis of the environment (temperature, humidity), structure (firewalls, water, electrical), pest control (insects, rodents, mold), and natural disaster protection (flood, fire, etc.). This review should also seek out records that are currently degraded or in the process of degradation, for immediate separation and recovery (if possible). The establishment of remediation plans for each facility will provide some degree of protection in the event of an external facility audit. However, it is quite likely that the costs associated with remediation, or even the ability to renovate facilities owned by another agency, will make the development of a new, consolidated, NGA-owned facility more attractive.

Phase 2: Mid-Term Facility Improvements (optional)

With the understanding that it may take several years to secure funding for the NGA Records Management Center, it may be appropriate to perform improvements to existing NGA facilities to prevent or stop the degradation of existing records. Additionally, more appropriate spaces (contractor or Government) may become available for the temporary storage of NGA records removed from the most environmentally inappropriate facilities.

Phase 3: Records Management Center Design and Funding (Section 3.2.3)

Based on knowledge gained from tracking RM metrics, development of ERM capabilities, real-world input from the tiger teams, and lessons learned from other agencies, NGA will have a thorough understanding of the storage and service requirements for the Records Management Center. Again, close coordination with NARA in the planning and the design of the center will insure compliance and compatibility of efforts.

A key component of this planning effort will be a study for the identification and evaluation of the appropriate site for the Records Management Center. Significant savings can be had if the selected site has appropriate force protection measures in place. It may also be advantageous to refurbish an existing building (assuming the core structure meets NARA requirements) as opposed to creation of a new facility "from the ground up."

The funding justification for the new facility will include the anticipated increase in required storage space to appropriately preserve digital records, as well as the general increase in space requirements due to RM process improvements resulting in more records under management. Transition of RM activities to the new center will also generate an

operational economy of scale while freeing office space in the NCE and other facilities. However, it is anticipated that there will be a delay between the selection of a final site and the availability of funds to develop the Records Management Center. Due to the amount of funds required and immaturity of the requirements, it is recommended that funding required for the Records Management Center be considered in NGA's out-year budgeting processes.

Phase 4: Records Management Center Development and Transition. (Sections 3.2.2, 3.2.3)

The final phase develops the NGA Records Management Center. This includes the transition of records and personnel from the various storage facilities and supporting functions to the new facility.

The following figure presents a notional schedule of storage facility development activities and their interrelationships.



Figure 4.1.4-1: Storage Facility Development Path Forward

#### 4.2 Conclusion

The Study Team believes that preserving NGA records from loss or destruction is every bit as important as protecting them from the Nation's enemies; making the mission of RM very similar to that of Security. NGA's records holdings represent a multi-billion dollar investment in raw intelligence and products in need of preservation; not just because it is required by Law, but also due to their enduring value to future policy makers, analysts, and warfighters.

While surveying the records storage spaces of NGA, the Study Team discovered serious compliance and support gaps in NGA's records storage and preservation capabilities. These issues are not so much a factor of the amount of storage space, but rather the suitability of those spaces for preservation of records and related activities to insure records are identified, kept, and preserved in accordance with the NGA Records Schedule and overarching laws and regulations. This situation is complicated by the fact that NGA

incurs the full costs associated with less than 15% of the storage utilized by the agency, making it nearly impossible to directly address storage issues.

The options and recommendations presented in this study address the environmental and procedural issues affecting the volume and quality of NGA records storage. Issues with the lack of an appropriate electronic records management program, and the resulting volume of records not presently identified and preserved are also addressed. Finally, the Study Team presented recommendations to forestall additional issues that may arise in association with the move the New Campus East.

A key to the sequencing of the Study Team recommendations is that the issues with NGAwide policies and procedures need to be addressed before significant investments in development of a dedicated NGA archive facility. If NGA chooses to do the absolute minimum, it should be the Tiger Teams to coordinate with offices and operations centers to identify and accession all permanent records on a regular basis. This will address key compliance gaps early in the lifecycle of records, ensuring that they will be available for long-term preservation. Related activities for the definition of common RM procedures and metrics across all NGA entities will provide consistency and repeatability of RM activities, enabling both cost-effective operations and definitive planning for future systems and storage.

The next priority is an increased focus on ERM from a business function (as opposed to IT) perspective. The Study Team believes that the development of technical capabilities for electronic records management or creation of an electronic records archive in the absence of robust business processes and procedures will result in costly delays as planned or existing systems are modified for "newly discovered" requirements. The more proactive approach and centralized approach proposed by the Study Team will provide significant reductions in cost risks for systems and facilities, by defining requirements prior to making large investments.

The improvements resulting from these activities will dramatically increase the volume of records requiring long-term storage and preservation; and, thus directly impact future requirements for storage. These improvements will also develop insight and expertise required for the management and operation of a future NGA-owned records management and preservation capability.

# Appendix A – Facility Details

| Washington Navy Yard – Records Holding Area 72                         |
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| Washington Navy Yard – Film Library                                    |
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| NARA College Park128   |
| RNY Film Library   |
| NGA Pentagon Library   |
| California Geodetic Survey Branch – USAKA 131                          |
|  |
# **Records Holding Area, Washington Navy** Yard

| Date of Visit: | 10/27/2005                         |
|----------------|------------------------------------|
| Address:       | Washington Navy Yard               |
|                | 11 <sup>th</sup> and M Street S.E. |
|                | Building 213, Ground Floor         |
|                | Washington DC 20003                |

Contact(s): Julie Saunders Information Management Officer (202) 284-3025

| Approx. NGA<br>Holdings: | Current<br>Capacity | Total NGA<br>Capacity | Film | Paper    | Electronic |
|--------------------------|---------------------|-----------------------|------|----------|------------|
| Cubic Feet of<br>Storage | 1,198.47            | 1597.25               | 0    | 1,198.47 | 0          |

# **Description:**

The RHA is a storage area for records that have been brought to the Washington Navy Yard (WNY) for declassification review or for transition to permanent storage or future destruction. The RHA is located at the Washington Navy Yard (WNY) facility, Building 213, 1st Floor (ground floor), and it is managed by the NGA's Program Management office (PMO) for Records Management. Most of the permanent and temporary records are paper records stored in cu. ft. boxes. In addition, there are some flat maps and rolled maps stored in the RHA. The RHA area consists of records storage and a work area.

# **Environment/Facility:**

Environment suitable for paper records.

# Services:

30-Sep-06



Figure Appendix A-1: Records Holding Area, Washington Navy Yard

# **Ground Photography Office, Washington Navy Yard**

Date of Visit: 10/27/2005

Address: Washington Navy Yard 11<sup>th</sup> and M Street S.E. Building 213, 6th Floor Washington DC 20003

Contact(s): John Lucero (202) 284-3025

| Approx. NGA<br>Holdings: | Current<br>Capacity | Total<br>NGA<br>Capacity | Film | Hardcopy | Digital |
|--------------------------|---------------------|--------------------------|------|----------|---------|
| Cubic Feet of Storage    | 624.74              | 832                      | 0    | 624.74   | 0       |

# **Description:**

The Ground Photo Lab migrated from CIA to NGA about 9 years ago. It provides an archive of photographs (in a variety of formats) of foreign ground equipment and installations for reference by members of the Intelligence Community. Users can gain access to a database of these holdings through IntelLink and NGAnet.

# **Environment/Facility:**

Environment suitable for paper records and photos.

# Services:



Figure Appendix A -2: Ground Photography Office, Washington Navy Yard



Figure Appendix A -3: Mini-Lab Scanning Room, Washington Navy Yard

# Film Library, Washington Navy Yard

Date of Visit: 11/01/2005

- Address: Washington Navy Yard 11<sup>th</sup> and M Street S.E. Building 213, Ground Floor Washington DC 20003
- Contact(s): Ron Pearson 202-231-1109

| Approx. NGA<br>Holdings: | Current<br>Capacity | Total<br>NGA<br>Capacity | Film  | Hardcopy | Digital |
|--------------------------|---------------------|--------------------------|-------|----------|---------|
| Cubic Feet of Storage    | 6,300               | 6,300                    | 6,300 | 0        | 0       |

# **Description:**

The Film Library holds original negatives and some duplicate positives of the past 3 years of aerial imagery. The library receives film for NGA requests and has limited (frame) duplication capabilities. Existing film stock is periodically shipped to other facilities or destroyed in accordance with policy. No new film is expected to be received by the facility after 2006.

# **Environment/Facility:**

Not suitable for long-term storage of film.

Services:

30-Sep-06



Figure Appendix A-4: Film Library, Washington Navy Yard

# **Imagery Production Branch**

# Date of Visit: 11/01/2005

Address: Defense Intelligence Analysis Center (DIAC) Bolling AFB Washington DC 20332

Contact(s): Lenny Hart Chief of Imagery Production Branch 202 –231-1109

| Approx.<br>Holding | s:   | NGA | Current<br>Capacity | Total NGA<br>Capacity | Film   | Hardcopy | Digital |
|--------------------|------|-----|---------------------|-----------------------|--------|----------|---------|
| Cubic<br>Storage   | Feet | of  | 15,280              | 50,400                | 15,280 | 0        | 0       |

# **Description:**

NGA's Imagery Production Branch is housed at this DIA-owned facility. The IPB holds a large volume of NGA's film stock from airborne and NTM assets and is charged with supporting the entire IC for imagery requests and the long term storage of film. IC community users can review the IPB's holdings online through the Voyager system.

The DIAC is one of two NGA storage facilities capable of film roll duplication.

Although the IPB is not part of the New Campus East consolidation, the DIAC is a receiving facility for other non-NGA activities under the 2005 BRAC determination. It is worth noting that the addition of other activities to the DIAC may stress the DIAC's ability to continue supporting the IPB.

# **Environment/Facility:**

No environmental issues.

### Services:



Figure Appendix A -5a: Imagery Production Branch, DIAC



Figure Appendix A -5b: Imagery Production Branch, DIAC



Figure Appendix A -5c: Imagery Production Branch, DIAC

# Washington National Records Center

Date of Visit: 11/08/2005

- Address: WNRC 4205 Suitland Rd Suitland, MD 20746
- Contact(s): Judy Barnes Chief of Transfer and Disposition 301-778-1650

| Approx.<br>Holding | s:   | NGA | Current<br>Capacity | Total NGA<br>Capacity | Film  | Hardcopy | Digital |
|--------------------|------|-----|---------------------|-----------------------|-------|----------|---------|
| Cubic              | Feet | of  | 66,667              | 66,667                | 60000 | 6667     | 0       |
| Storage            |      |     |                     |                       |       |          |         |

# **Description:**

The Washington National Records Center (WNRC) is a NARA-owned facility that leases records storage space to Federal agencies. NGA currently holds a large volume (approximately 60,000 cubic feet) of hardcopy and film records at the WNRC for a cost of approximately \$520k/year (including costs for NPRC, below) plus additional fees for servicing requests.

The majority of the holdings are aerial film from the 1940's through 1960's, flat maps, geodetic surveys, and other former DMA records. The facility has the ability to store records up to the SI/TK level, but the majority of NGA holdings are at the collateral level or below.

The Study Team noted that, although WNRC, had less than optimal storage conditions, the facility presented a significant servicing advantage of other hardcopy holding facilities due to it's proximity to NGA activities in the National Capital Region.

# **Environment/Facility:**

Concerns with the appropriate environmental conditions for both the storage of film and paper records. Many records observed to be improperly packaged for storage. Contaminated/damaged records observed.

# Services: Storage, Retrieval, Duplication



30-Sep-06



Figure Appendix A -6: Washington National Records Center

# Map Library, Washington Navy Yard

Date of Visit: 11/15/2005

- Address: Washington Navy Yard 11<sup>th</sup> and M Street S.E. Building 213, 6<sup>th</sup> Floor Washington, DC 20003
- Contact(s): A. Debose Map Librarian 202-284-4242

| Approx.<br>Holdings: | NGA   | Current<br>Capacity | Total NGA<br>Capacity | Film | Hardcopy | Digital |
|----------------------|-------|---------------------|-----------------------|------|----------|---------|
| Cubic Fee<br>Storage | et of | 2,618.28            | 3,490                 | 0    | 2,618    | 0       |

### **Description:**

The Map Library at the Navy Yard contains many thousands of maps in various sizes such as 1:100 and 1:50. There are some 60 new additions of maps introduced to the Map Library. These maps range from Joint Operations Graphics to several Limited Distribution maps.

### **Environment/Facility:**

Suitable for the storage of paper records. No preservation activities noted.

### Services:

30-Sep-06



Figure Appendix A -7: Map Library, Washington Navy Yard

# **NGA Historian**

Date of Visit: 11/21/2005

- Address: Ruth Building 4600 Sangamore Rd Bethesda, MD 20816
- Contact(s): Lisa Wagner 301-227-7300

| Approx.<br>Holdings: | NGA  | Current<br>Capacity | Total NGA<br>Capacity | Film | Hardcopy | Digital |
|----------------------|------|---------------------|-----------------------|------|----------|---------|
| Cubic Fee<br>Storage | t of | 36                  | 58                    | 0    | 32       | 4       |

### **Description:**

The NGA historian holds a selection of key records and other artifacts pertinent to the history of NGA and its preceding organizations. Most of the records are unclassified and none are scheduled for destruction. The library receives approximately 2-3 cubic feet of new records monthly. Currently holdings are comprised of video tapes and documents, with no electronic records. The facility is approximately at 60% storage capacity and is set to be moved to the New Campus East.

### **Environment/Facility:**

Suitable for storage of paper records. No preservation activities noted.

### Services:





Figure Appendix A -8a: NGA Historian, Bethesda



# Figure Appendix A -8b: NGA Historian, Bethesda

# Secure Storage Facilities, Gila Bend

Date of Visit: 12/06/2005

Address: Gila Bend Gila Bend Air Force Auxiliary Field Gila Bend, AZ 85337

Contact(s): Mick McKelvey Cory Schaan 928-683-6249

| Approx.<br>Holding | s:   | NGA | Current<br>Capacity | Total NGA<br>Capacity | Film   | Hardcopy | Digital |
|--------------------|------|-----|---------------------|-----------------------|--------|----------|---------|
| Cubic<br>Storage   | Feet | of  | 132,374             | 194,023               | 16,160 | 116,234  | 0       |

# **Description:**

These storage space (Building 22) at Gila Bend are owned and operated by the Air Force and provided to NGA through MOA. NGA has invested in refurbishing another space (Building 18) for storage at Gila Bend, but the Study Team noted some uncertainty as to whether that building would be ultimately available for NGA storage.

Gila Bend currently maintains a large volume of flat maps and is in the process of scanning l million gold copy litho maps in digital format and saving them as permanent records.

The Study Team noted that Gila Bend has significant excess capacity for the storage of hardcopy records, but due to the distance (and resulting courier costs) from major NGA activities; the facility would best be utilized for the storage of "dormant" and duplicate records.

### **Environment/Facility:**

Suitable for the storage of paper records. No preservation activities noted. Contaminated/damaged records observed.

### Services:



Figure Appendix A -9a: Weight Room, Building 22, Gila Bend



Figure Appendix A -9b: Storage Room, Building 22, Gila Bend



Figure Appendix A -9c: Racquet Ball Courts, Building 22, Gila Bend



Figure Appendix A -9d: Building 326 Storage Area, Gila Bend

# **Geospatial Services Library**

Date of Visit: 12/13/2005

- Address: Erskine Hall 4600 Langamore Rd Bethesda, MD 20816
- Contact(s): Sandi Kenner 202-284-3212

| Approx.<br>Holdings: | I    | NGA | Current<br>Capacity | Total NGA<br>Capacity | Film | Hardcopy | Digital |
|----------------------|------|-----|---------------------|-----------------------|------|----------|---------|
| Cubic F<br>Storage   | Feet | of  | 1,968               | 2,624                 | 0    | 1,968    | 0       |

# Description:

The Geospatial Services Library holds bathymetric, hydrographic, and topographic flat maps up to the collateral level with some LIMDIS information. This facility is part of the planned New Campus East consolidation and records are currently planned to be shipped to Gila Bend (assuming the availability of space in Building 18) with older temporary records being sent to the Library of Congress. Intelligence Community users can review the holdings of the library on the Voyager system. Upon request, copies are produced at DLA.

# **Environment/Facility:**

Suitable for the storage of paper records. No preservation activities noted.

# Services:

30-Sep-06



# Figure Appendix A -10: Geospatial Services Library, Bethesda

# NGA Tape Library, Reston

Date of Visit: 12/14/2005

- Address: NGA 12300 Sunrise Valley Dr. 1<sup>st</sup> Floor Reston 1 Building Reston, VA 20191
- Contact(s): Russ Anderson 703-264-2127 Ed Hane, 703-264-3046

| Approx.<br>Holdings: | NGA    | Current<br>Capacity | Total NGA<br>Capacity | Film  | Hardcopy | Digital |
|----------------------|--------|---------------------|-----------------------|-------|----------|---------|
| Cubic F<br>Storage   | eet of | 21,989              | 29,286                | 1,225 | 0        | 21,989  |

# Description:

The NGA offices in Reston house the Tape Library, Source Acquisition System, and M3 Messaging System. These NGA storage spaces are planned to be relocated to Fort Belvoir as part of the New Campus East move.

The Tape Library holds a large volume of D2C tapes with imagery of the globe. The search capability allows customers to find rectangles of places on the world within the tape collection and the library makes copies of tapes on customer request.

# **Environment/Facility:**

Server room environment is suitable for the short-term storage of digital records. No preservation activities noted.

# Services:



# Figure Appendix A -11: NGA Tape Library, Reston

# **Source Acquisition System, Reston**

Date of Visit: 12/14/2005

- Address: NGA 12300 Sunrise Valley Dr. 1<sup>st</sup> Floor Reston 1 Building Reston, VA 20191
- Contact(s): Russ Anderson 703-264-2127 Ed Hane, 703-264-3046

| Approx.<br>Holdings: | NGA   | Current<br>Capacity | Total NGA<br>Capacity | Film | Hardcopy | Digital |
|----------------------|-------|---------------------|-----------------------|------|----------|---------|
| Cubic Fe<br>Storage  | et of | 1665                | 1665                  | 0    | 0        | 1665    |

# **Description:**

The Source Acquisition System holds approximately 30,000 tapes.

# **Environment/Facility:**

Server room environment is suitable for the short-term storage of digital records. No preservation activities noted.

# Services:

# **M3 Messaging System**

Date of Visit: 12/14/2005

- Address: NGA 12300 Sunrise Valley Dr. 1<sup>st</sup> Floor Reston 1 Building Reston, VA 20191
- Contact(s): Russ Anderson 703-264-2127 Ed Hane, 703-264-3046

| Approx. NGA<br>Holdings: |      | Current<br>Capacity | Total NGA<br>Capacity | Film | Hardcopy | Digital |     |
|--------------------------|------|---------------------|-----------------------|------|----------|---------|-----|
| Cubic<br>Storage         | Feet | of                  | 540                   | 540  | 0        | 0       | 540 |

# **Description:**

The M3 system provides storage and archival of NGA emails and file system folder for as many as 20 years. The system currently uses about 16TB of space out of an available 50 TB, with approximately 2GB per month of new records. A mirror of the system is held in St. Louis.

# **Environment/Facility:**

Server room environment is suitable for the short-term storage of digital records. No preservation activities noted.

# Services:

# **Agency Archive and Records Center (AARC)**

Date of Visit: 01/03/2006

Address: Classified

**Contact(s):** Ersaline Anderson

| Approx. NGA<br>Holdings: | Current<br>Capacity | Total NGA<br>Capacity | Film   | Hardcopy | Digital |
|--------------------------|---------------------|-----------------------|--------|----------|---------|
| Cubic Feet of<br>Storage | 124,000             | 134,000               | 20,000 | 104,000  | 0       |

# **Description:**

The AARC has a recently renovated Agency building designed specifically for the servicing and storage of records. This facility is available to NGA through memorandum of agreement for the storage of records generated prior to 2006. The facility also maintains Agency and other non-NGA holdings. These holdings include hardcopy and film records, as well as models of facilities and equipment. The AARC has the ability to hold electronic records, but will only accept them if the equipment required to read the media is also provided.

NGA maintains approximately 52,000 cubic feet of permanent records and another 52,000 cubic feet of temporary records at the AARC.

The Study Team noticed that the AARC was the only facility actively engaged in the preservation of records. This included transferring older, carbon copy, documents onto new paper and subsequent scanning. It also includes periodic media pulls to sample condition of film and segregate contaminated stock.

The current building at the AARC is nearing capacity of 152,000 cubic feet of storage. Plans are in place to renovate an additional building at the AARC and consolidate all media holdings in the new, 3900 square foot facility. The new building will provide an additional 20,000 cubic feet of media cold storage beyond the 19,000 cubic feet currently held by the AARC. This would allow the current facility to maintain only hardcopy records.

The management of the AARC is working closely with NARA in the management of existing processes and development of the new facility to insure maximum compliance with regulations.

# **Environment/Facility:**

No environmental problems. No preservation activities for NGA records noted.

Services:

Storage, Retrieval, Duplication, Preservation



Figure Appendix A -12: Agency Acquisition and Records Center (AARC)

# **Information Management Services Center**

Date of Visit: 01/19/2006

- Address: NRO Building 14675 Lee Road Chantilly, VA 20151
- Contact(s): Joseph Lambert 703-853-6091

| Approx. NGA<br>Holdings: | Current<br>Capacity | Total NGA<br>Capacity | Film | Paper | Electronic |
|--------------------------|---------------------|-----------------------|------|-------|------------|
| Cubic Feet of<br>Storage | 3,360               | 5,040                 | 0    | 3,360 | 0          |

# **Description:**

The Information Management Services Center is an NRO facility holding certain special access NGA records, mostly in hardcopy format. The IMSC has the distinction of being the only DoD Records Center certified by NARA to meet long term storage requirements. This includes the use of acid free boxes and folders to hold documents for long periods without contamination. The IMSC has about 41,000 cubic feet of records storage space and is approximately 1/3 full with 4000 boxes. NGA is storing slightly less than 2000 boxes at the IMSC.

# **Environment/Facility:**

No environmental problems. No preservation activities noted.

# Services:

.



Figure Appendix A -13: Information Management Services Center, Chantilly

# Film Library, St. Louis

Date of Visit: 02/08/2006

- Address: NARA 2<sup>nd</sup> Street L-Warehouse St. Louis, MO 63118
- Contact(s): Cindi Haegele Faye White 314-801-9250

| Approx.<br>Holding | s:   | NGA | Current<br>Capacity | Total NGA<br>Capacity | Film   | Hardcopy | Digital |
|--------------------|------|-----|---------------------|-----------------------|--------|----------|---------|
| Cubic<br>Storage   | Feet | of  | 20,511              | 25,911                | 20,511 | 0        | 0       |

# **Description:**

NGA Film Library maintains approximately 46,000 canisters of film, mostly overhead imagery duplicates of holdings at RNY Film Library. The library also holds approximately 30,000 maps as duplicates from the Navy Yard Map Library.

# **Environment/Facility:**

Not suitable for the long term storage of film. No preservation activities noted.

# Services:



Figure Appendix A -14: NGA Film Library, St. Louis

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# **National Personnel Records Center**

Date of Visit: 02/08/2006

Address: NARA 2<sup>nd</sup> Street L-Warehouse St. Louis, MO 63118

Contact(s): Cindi Haegele Faye White 314-801-9250

| Approx.<br>Holdings: | NGA   | Current<br>Capacity | Total NGA<br>Capacity | Film | Hardcopy | Digital |
|----------------------|-------|---------------------|-----------------------|------|----------|---------|
| Cubic Fee<br>Storage | et of | 2,400               | 14,400                | 0    | 2,400    | 0       |

### **Description:**

The NPRC is a NARA-owned facility that leases storage space to federal agencies. The facility is nearing capacity of 2 million cubic feet of storage. NGA cannot send any additional records other than old DMA holdings until new NGA file series are approved by NARA.

### **Environment/Facility:**

Suitable for the storage of paper records. No preservation activities noted.

### Services:
### White Sands Missile Range

Date of Visit: 02//2006

Address: US Army WSMR White Sands, NM 88002

Contact(s): Helen Martinez 505-528-7665

| Approx. NGA<br>Holdings: | Current<br>Capacity | Total NGA<br>Capacity | Film | Hardcopy | Digital |
|--------------------------|---------------------|-----------------------|------|----------|---------|
| Cubic Feet of<br>Storage | 86                  | 200                   | 0    | 0        | 86      |

#### **Description:**

Classified activity maintains electronic imagery, raw data sets, annotated imagery, and analysis and production work primarily in digital formats. The facility currently stores about 10GB of records and projects an increase to 30-50 GB by the end of 2006. There are plans to implement a 3.5 TB storage area network.

The New Mexico Geodetic Survey Office at Holloman Air Force Base produces geodetic and geophysical surveys for the North Range. The group maintains about 1TB in digital GIS data and produces between 100-150 two-page reports per year. The same is true for the survey team supporting the South Range.

#### **Environment/Facility:**

Limited temperature and humidity controls in office environment; not proper for long term storage especially for film.

#### Services:



Figure Appendix A -15: White Sands Missile Range

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# Commercial Satellite and Imagery Library (CSIL)

**Date of Visit:** 05/24/2006

| Address: | CSIL              |
|----------|-------------------|
|          | DIAC              |
|          | Washington,DC     |
|          | Bolling AFB 20332 |

Contact(s): Larry Kauffman 202-231-2004

| Approx.<br>Holding | s:   | NGA | Current<br>Capacity | Total NGA<br>Capacity | Film | Hardcopy | Digital |
|--------------------|------|-----|---------------------|-----------------------|------|----------|---------|
| Cubic<br>Storage   | Feet | of  | 1,449               | 2,998                 | 0    | 0        | 1,449   |

#### **Description:**

The CSIL serves as the primary repository and distribution center for all NGA/IC purchased commercial imagery to all Federal agencies including DoD and Intelligence communities. Primary collections consist of hardcopy CD's, DVD's Skymedia, and GBS. Included on these media typese are ALI, Hyperspectral, multispectral, panchromatic, thermatic, and radar.

#### **Environment/Facility:**

Server room environment is suitable for the short-term storage of digital records. No preservation activities noted.

Services:

.



Figure Appendix A -16: CSIL, DIAC

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### **Geodetic Survey Branch, St. Louis**

Date of Visit: 6/2006

Address: Arnold AFB St. Louis, MO 63118

#### Contact(s):

| Approx.<br>Holdings: | NGA   | Current<br>Capacity | Total NGA<br>Capacity | Film | Hardcopy | Digital |
|----------------------|-------|---------------------|-----------------------|------|----------|---------|
| Cubic Fe<br>Storage  | et of | 15                  | 20                    | 0    | 15       | 0       |

#### **Description:**

The Geodetic Survey Branch receives permanent records from the remote geodetic survey teams and stores those records on their stand-alone OSIS system. Most of these permanent records (other than LIMDIS) are copied and uploaded into GIMS (Geodetic information Management System) where they are available to the Intelligence Community. The current OSIS system holds about 230 GB of surveys and an additional 26 GB of publications.

#### **Environment/Facility:**

Limited temperature and humidity controls in office environment; not suitable for long-term storage.

#### Services:

### California Geodetic Survey Office, Edwards AFB

Date of Visit: 7/10/2006

Address: Air Force Flight Test Center (AFFTC) Buildings 4221 and 4234 Edwards AFB Edwards, California 93524

Contact(s): Neil Thompson

661-277-5050

| Approx.<br>Holding | s:   | NGA | Current<br>Capacity | Total NGA<br>Capacity | Film | Hardcopy | Digital |
|--------------------|------|-----|---------------------|-----------------------|------|----------|---------|
| Cubic<br>Storage   | Feet | of  | 4.5                 | 4.5                   | 0    | 0        | 4.5     |

#### Description:

The California Survey Office at Edwards AFB provides survey services to the AFFTC. This office maintains about 400 hardcopy maps, and an additional 500 survey reports in a variety of media. Digital copies of new reports (about 30/year) are sent to St. Louis for upload into GIMS

#### **Environment/Facility:**

Electronic storage on hard drives and disks. Other records kept in safes and map drawers. Limited temperature and humidity controls in office environment; not suitable for long-term storage.

#### Services:



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Figure Appendix A -17: California Geodetic Survey, Building 4221, Edwards AFB

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Figure Appendix A -18: California Geodetic Survey, Building 4234, Edwards AFB

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# California Geodetic Survey Office, Vandenberg AFB

Date of Visit: 7/10/2006

- Address: Western Space Missile Center Vandenberg, California 93437
- Contact(s): Mark Belrose 805 736 7951

| Approx.<br>Holdings | 5:   | NGA | Current<br>Capacity | Total NGA<br>Capacity | Film | Hardcopy | Digital |
|---------------------|------|-----|---------------------|-----------------------|------|----------|---------|
| Cubic<br>Storage    | Feet | of  | 5                   | 5                     | 0    | 0        | 5       |

#### Description:

The California Survey Office at Vandenberg AFB provides survey services to the WSMC. The office keeps copy of full reports (about 30/year) and the entire history is kept on DVD back to 1971. Collected point data is sent to the St. Louis branch office for upload.

#### **Environment/Facility:**

Electronic storage on discs. Some file cabinets contain hard copies of reports. Limited temperature and humidity controls in office environment; not suitable for long-term storage.

#### Services:

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Figure Appendix A -19: California Geodetic Survey, Vandenberg AFB

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### Media Lab, Denver

Date of Visit: 08/14/2006

Address: Denver, CO

classified

Contact(s): Doug Graves

303-677-7205

| Approx.<br>Holdings: | NGA     | Current<br>Capacity | Total NGA<br>Capacity | Film | Hardcopy | Digital |
|----------------------|---------|---------------------|-----------------------|------|----------|---------|
| Cubic F<br>Storage   | Feet of | 13,000              | 13,000                | 0    | 0        | 13,000  |

#### Description:

The offices in Denver have a dedicated "Media Lab" for the storage of raw data tapes from a variety of sources. The Media Lab contains approximately 13000 cubic feet dedicated to the storage of VHS, DTR, 8 mm, and 19mm tapes was at capacity at the time of the visit. Media was in the process of being overwritten to address the influx of new data and limited number of new tapes and space concerns. Some tapes with data of interest were pulled from rotation at the request of analysts or other stakeholders.

#### **Environment/Facility:**

Dedicated air conditioning at server room temperatures is suitable for short-term storage of digital records.

#### Services:

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Figure Appendix A -20: Denver Media Lab

### Data Bank, Denver

Date of Visit: 08/14/2006

| Address: | Denver, CO |
|----------|------------|
|          | classified |
|          |            |

Contact(s): Doug Graves 303-677-7205

| Approx.<br>Holdings: | NGA  | Current<br>Capacity | Total NGA<br>Capacity | Film | Hardcopy | Digital |
|----------------------|------|---------------------|-----------------------|------|----------|---------|
| Cubic Fee<br>Storage | t of | 20                  | 3000                  | 0    | 20       | 0       |

#### **Description:**

The Databanks appeared to be at approximately 70% of its 4600 cubic foot capacity, but with only minor NGA holdings.

#### **Environment/Facility:**

Office environment suitable for storage of paper records.

Services: Retrieval, duplication

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Figure Appendix A -21: Denver Databank

### **Remote Replication Site**

Date of Visit: 02/23/2006

- Address: Erskine Hall Room 223 Bethesda, MD 20816
- Contact(s): Dennis Osborne 301-227-5516

| Approx.<br>Holdings: | NGA  | Current<br>Capacity | Total<br>NGA<br>Capacity | Film | Hardcopy | Digital |
|----------------------|------|---------------------|--------------------------|------|----------|---------|
| Cubic Fee<br>Storage | t of | 18                  | 18                       | 0    | 0        | 18      |

#### Description:

The Remote Replication Site at Erskine Hall in Bethesda contains printing and simulation equipment for use for customers who wish to have various copies of maps and other geographical pictures. The name will be changed to Demand Based Geospatial replication. The office itself contained 6 printers and the server used for the archived footage contains some 300-400 jobs per month or approximately 1-12 sheets depending on size.

There are 13 RRS sites connected through the SIPRnet and each site backs each other up. Each file is usually a jpeg or tif image. Most images are kept only for a couple of days. After that they are deleted because many of these are copies. Customers usually contact the library directly for certain maps and then the RRS will copy them but the RRS is known from time to time to assist the libraries if busy. Newer computer equipment has a cost range of around \$18,000 compared to the older mapping machines which were closer to \$1 million.

#### Environment/Facility:

Electronic storage of map printouts. Limited temperature and humidity controls in office environment; not suitable for long-term storage.

#### Services:

Distribution, duplication.



Figure Appendix A -22: Remote Replication Site, Bethesda

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### Florida Geodetic Survey Office, Patrick AFB

Date of Visit: Not visited

- Address: NGA Eastern Range NGA Support Team 698 O'Malley Road Patrick AFB, FL 32925-3329
- Contact(s): Randy Staker 321-494-7346

| Approx.<br>Holdings: | NGA    | Current<br>Capacity | Total NGA<br>Capacity | Film | Paper | Electronic |
|----------------------|--------|---------------------|-----------------------|------|-------|------------|
| Cubic F<br>Storage   | eet of | 4.5                 | 4.5                   | 0    | 0     | 4.5        |

#### **Description:**

Storage room is used for deployed equipment and is (115) sq. ft. in size. There are 5 standard 5 draw storage cabinets in this room, total storage sq. ft. (87.5). The administration area supports various copiers, fax machines, printers, etc. and is (1850) sq. ft. in size. There are 3 upright map storage units, with approximately 2000 stored maps, total storage sq. ft. (14.7). There are 8 administrative filing cabinets, total storage sq. ft. (36). There are 6 large shelve storage units, total storage sq. ft. (186). The total storage for the combined administrative area is 236.7. There are 9 individual offices. Each office is approximately 130 sq. ft. in size. Each has a variety of storage space of about (22.5) sq. ft., total storage sq. ft., all offices (202.5). The approximate number of CD's and DVD's the estimate is around 1100 combined total.

#### **Environment/Facility:**

Limited temperature and humidity controls in office environment; not suitable for long-term storage.

#### Services:

Storage, electronic, distribution, duplication

### National Air and Space Intelligence Center, Ohio

Date of Visit: Not visited

Address: NASIC Wright-Patterson AFB, Ohio 25433

Contact(s): TBD

| Approx. NGA<br>Holdings: | Current | Total Capacity | Film | Hardcopy | Digital |
|--------------------------|---------|----------------|------|----------|---------|
| Cubic Feet of Storage    | TBD     |                |      |          |         |

#### **Description:**

The National Air and Space Intelligence Center is the primary DoD producer of foreign aerospace intelligence. NASIC develops its products by analyzing all available data on foreign aerospace forces and weapons systems to determine performance characteristics, capabilities, vulnerabilities, and intentions.

**Environment/Facility:** 

Unknown

Services: Unknown

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### **US Geological Survey Office**

Date of Visit: Not visited

Address: USGS 12201 Sunrise Valley Drive Reston, VA 20192

Contact(s): TBD

| Approx. NGA<br>Holdings: | Current | Total Capacity | Film | Hardcopy | Digital |
|--------------------------|---------|----------------|------|----------|---------|
| Cubic Feet of Storage    | TBD     |                |      |          |         |

#### **Description:**

The library in Reston is one of four USGS libraries charged with the organization of a collection of scientific materials in the earth sciences, the U.S. Geological Survey Library is now the largest library for earth sciences in the world. Materials include USGS publications as well as those produced by state and foreign geological surveys, scientific societies, museums, academic institutions, and government scientific agencies. This library was not visited as the holdings do not belong to NGA.

#### **Environment/Facility:**

Unknown

Services: Unknown

### **NGA-Mineral Wells**

Date of Visit: Not visited

Address: NGA Storage Facility Fort Wolters Military Reservation Mineral Wells, TX

#### Contact(s): TBD

| Approx. NGA<br>Holdings: | Current | Total Capacity | Film | Hardcopy | Digital |
|--------------------------|---------|----------------|------|----------|---------|
| Cubic Feet of Storage    | TBD     |                |      |          |         |

#### **Description:**

This facility is responsible for storage of digital data tapes and repromat (negative film). The land is owned by the Texas National Guard but NGA owns the facility. The building has approximately 7,000 square feet of storage capacity and employs 4 contractors and one Government Site Manager. There are currently 9,000 digital data tapes, 32,000 sets of geospatial repromat and 8,000 sets of hydrographic repromat. A set of repromat can contain up to 56 individual film layers, as well as an original paper chart for reference.

NGA determined a site visit was not necessary at this time.

#### **Environment/Facility:**

Unknown

Services:

### NARA College Park

Date of Visit: Not visited

Address: 8601 Adelphi RD College Park, MD 20740

Contact(s): TBD

| Approx. NGA<br>Holdings: | Current | Total Capacity | Film | Hardcopy | Digital |
|--------------------------|---------|----------------|------|----------|---------|
| Cubic Feet of Storage    | TBD     |                |      |          |         |

#### **Description:**

Records NARA include still pictures, electronic record, cartographic and architectural holdings Nixon Presidential Materials, motion picture, sound, and video records, John F. Kennedy Assassination Records Collection, Berlin Documents Center, microfilm textual records from most civilian agencies and military records dating from World War II. The Records Management staff provides assistance to Federal Government agencies. NGA has records stored here and has referral documents for review and declassification.

**Environment/Facility:** 

Unknown.

Services: Storage, Retrieval, Duplication

### **RNY Film Library**

Date of Visit: Not visited

Address: New York

Contact(s): TBD

| Approx.<br>Holdings: |      | NGA | Current<br>Capacity | Total NGA<br>Capacity | Film  | Hardcopy | Digital |
|----------------------|------|-----|---------------------|-----------------------|-------|----------|---------|
| Cubic I<br>Storage   | Feet | of  | 1,700               | 1,900                 | 1,700 | 0        | 0       |

#### **Description:**

This contractor-owned facility, funded by NRO, maintains a film library from various overhead missions. Service activities at this facility include response to user requests and duplication. In fact, this is the second of two facilities to which NGA has access for the duplication of film rolls. This facility was not visited during the study because it was believed that the contract would be terminated.

#### **Environment/Facility:**

Unknown

Services:

### **NGA Library Pentagon**

Date of Visit: Not visited

- Address: The Pentagon Library 6605 Army Pentagon Washington, DC 20310-6605
- Contact(s): James Monroe 703-695-7907

| Approx. NGA<br>Holdings: | Current | Total Capacity | Film | Hardcopy | Digital |
|--------------------------|---------|----------------|------|----------|---------|
| Cubic Feet of Storage    | TBD     |                |      |          |         |

#### **Description:**

The study team did not visit NGA's Pentagon Map Library. However, correspondence indicated that the holdings of the map library were all duplicates of records held elsewhere in both hardcopy and digital formats.

#### **Environment/Facility:**

Unknown

#### Services:

### **California Geodetic Survey Office, USAKA**

Date of Visit: Not visited

Address: US Army Kwajalein Atoll Reagan Test Site US Marshall Islands 96970

Contact(s): TBD

| Approx. NGA<br>Holdings: | Current | Total Capacity | Film | Hardcopy | Digital |
|--------------------------|---------|----------------|------|----------|---------|
| Cubic Feet of Storage    | TBD     |                |      |          |         |

#### **Description:**

Part of the California Survey Office, this facility was determined to be very close in nature of activities and holding of the other GEOINT offices (WSMR, Holloman, Vandenberg, Edwards, Patrick). Given the anticipated small volume of records, a visit was not warranted during the course of the study.

#### **Environment/Facility:**

Unknown

Services:

TBD

### **Appendix B – RM Best Practices**

The bullet items presented below indicate Records Management in "a perfect world." In actuality, RM organizations rarely, if ever, achieve these goals due to a variety of factors (budget, organizational priorities, etc.). However, the thoughtful pursuit of these objects can lead to continuous improvement of RM practices while assisting in the determination of priorities in resource, time, or cost-constrained environments.

#### In General

- Effective RM takes a lifecycle approach, starting with the record originator, not when the record is to be archived
- RM is best when performed proactively. Don't wait for the records to arrive, go out and get them.
- RM provides a valuable service to the organization, and should be approached as such
- RM is often justified by consequences (compliance requirements), but there are also benefits to effective RM (more responsive mission support, lower costs for storage and retrieval)

## RM Process and Controls (how are things supposed to happen and how are NGA RM activities monitored/measured?)

Best practices in RM processes and controls cover topics such as an effective, living retention schedule (which NGA has), defined and tracked metrics for key RM activities (which NGA lacks), and the appropriate organizational support in terms of policy and funding (also lacking).

- Proactively maintain awareness of compliance and operational requirements for records retention
- Define a consolidated policy for collections and incorporation of new records, duplication, movement, recall, declassification, and destruction (Records Retention Schedule). This is a living document that must have a real time adjudication authority to handle potential conflicts.
- Periodically review Records Schedule and adjust for business and regulatory driven changes
- Establish RM metrics for incorporation of new records, duplication, movement, recall, declassification, and destruction. These metrics tie activities to costs and benefits and provide the basis for the quantitative management of RM.
- Establish RM policy and procedure for the systemic recall of records in support of an investigative/legal/FOIA response
- Appropriate levels of staffing and funding to meet requirements of RM policy and procedures
- Position RM appropriately within the organizational hierarchy. Many corporations have RM reporting to either a Chief Compliance Officer or a Chief Information Officer

#### **RM Process Compliance (are people following policy?)**

Policies are more than written documents of how things should be done in an organization. Effective records management requires activities to monitor and enforce policies and procedures. Such activities include periodic inspections of RM practices and facilities as well as clearly defined accountability for RM responsibilities.

- Periodic audit of records management program elements at the facility (storage) and operational (collection, recall, declassification, and destruction) levels
- Inclusion of RM requirements into periodic business unit (record producer) audits
- Systemic and periodic "purges" of records to identify and collect records to be archived or destroyed
- Direct employee/contractor accountability to RM policy with personnel performance review or contract performance implications
- Designate a records manager to "own" RM at the business unit level

# RM Training/Process Awareness (do people know the policy, does the policy work for them?)

Records management is a business function that permeates the organization. Most individuals within an organization have some level of records management responsibility, as producers of permanent records. An effective training and awareness program is necessary to insure personnel are aware of and support their RM responsibilities. Additionally, many of the issues with process compliance noted above can be addressed through effective training and communication

- Proactive approach to RM. Go to the originators, don't wait for the documents to come to RM.
- Business-centric training program focus training on how RM supports the organization and mission as opposed to compliance requirements (make the carrot more appealing than the stick)
- Get to every employee
- Documented and accessible policies and procedures
- RM Help Desk to assist record originators
- Continuous communication of RM policy, requirements, activities, and benefits
- Personal follow-up of training activities

#### Facility Suitability (is the physical infrastructure, location, suitable for RM?)

The National Archives has published requirements for the construction, security, safety, and environmental conditions of storage facilities. These requirements specify the optimal storage conditions for the long term protection of records from flooding, fire, degradation from biological or chemical contaminates, and other natural disasters

- Appropriate facilities to support the long term storage or records in accordance with Retention Schedule and other policies
  - Controlled environment (temperature, humidity, etc.)
  - Core infrastructure (fire/water damage prevention and mitigation)
  - Appropriate protection from earthquake, flood, hurricane, pests infestation
  - Physical security to protect access to records at the appropriate classification level
- Activities to monitor the condition of records and separate/preserve contaminated records
- Ability to efficiently recall records (both within the facility and transfer to requesting office)
- Cost effective in terms of location, services, and ease of use.

#### Technological Support (are the systems up to the task or even available?)

The business processes of Records Management can be greatly enhanced through the appropriate technological support in terms of record keeping and library systems. For large volumes of records, effective technical support can actually decrease management/servicing costs, increase RM process quality, and speed response times to recall requests.

- Apply a single indexing scheme across all systems
- Consolidated RM system to link all records to retention schedule (Inventory management) for collection, recall, declassification, and destruction
- Creates a "receipt" or similar data element for RM-related activities
- Easy to use, globally accessible
- Covers the full scope of organizational records... if records not specifically listed, then provide information on where to obtain

## Customer Support/Responsiveness (is the customer being taken care of? How well does RM handling analysts, FOIA requests, etc.)

Records under RM supervision do not just sit in a storage room. NGA Analysts, Executive and Congressional inquires, and FOIA requests all present challenges for the recall of permanent records. This best practice area prescribes the development of specific workflows and metrics for the management and execution of customer requests in an effective and repeatable manner

- Keep RM organization focused on Mission Support
- Establish a steering or advisory committee of senior business unit leaders to address and advise upon RM issues
- Provide clearly defined mechanisms for "users" to access RM procedures for collection, recall, and destruction
- Track and manage metrics for the response to mission requirements

## Continuity of Operations/Redundancy (how does the business adjust/recover in the event of loss of a facility?)

RM is a mission component of the organization, charged with the preservation of vital, enduring records. As such business continuity plans should include contingencies for the continuity of both RM functions and holdings. This implies not only the ability to re-host operations but also the maintenance of redundant facilities storing duplicate records.

- Identify risks and consequences
- Establish business continuity and recovery procedures for the transfer of records and operations
- Align systems back-up policies with Records schedule for the protection of permanent (but not yet collected) records in the event of a system failure

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### Appendix C – Glossary of Terms

| Term                  | Acronym | Definition  |
|-----------------------|---------|---|
|                       | ·       | The transfer of the legal and fiscal custody of             |
| Accession             |         | permanent records from an organization to the archive       |
|                       |         | The noncurrent records of an organization preserved         |
|                       |         | because of their continuing, or enduring, value. One or     |
|                       |         | more buildings, or portions thereof, where permanent        |
| Archivo               |         | records are located after being accessioned by archival     |
| Alomive               |         | agency.<br>Electronic Pecords management System used by the |
| Army Records          |         | US Army for the management of records fulfillment           |
| Information           |         | of FOIA requests, and retrieval of records by               |
| Management System     | ARIMS   | authorized users  |
| 0 j                   |         | Storage conditions associated with low temperature          |
|                       |         | and humidity, generally 40 degree F and less than 35%       |
| Cold Storage          |         | relative humidity   |
|                       |         | Images captured in a digital (as opposed to film-based)     |
| Digital Imagery       |         | media   |
|                       |         | The actions taken regarding records no longer needed        |
|                       |         | for current Government business. These actions              |
|                       |         | include transfer to agency storage facilities or Federal    |
|                       |         | Records Centers, transfer from one Federal agency to        |
| Disessition           |         | another, transfer of permanent records to the National      |
| Disposition           |         | Archives, and disposal of temporary records.                |
|                       |         | commercial off-the-shell document management                |
|                       |         | Management Program Office functions for the                 |
| Documentum            |         | management of film and hardcony records                     |
| Documentum            |         | "Design Criteria Standard for Electronic Records            |
|                       |         | Management Software Applications" is the DoD                |
|                       |         | standard for the incorporation of records management        |
| DoD 5015.2            |         | requirements into software packages                         |
| Duplicate Negatives   |         | Copies of film records (usually original negatives)         |
| Duplicate Positives   |         | Copies of film records (usually original negatives)         |
|                       |         | 1996 Amendments to the Freedom of Information Act           |
| Electronic Freedom of |         | requiring Government agencies to make FOIA                  |
| Information Act       | eFOIA   | processes available online                                  |
|                       |         | Records stored in a form that only a computer can           |
| Electronic Records    |         | process   |
| Electronic Records    |         | Storage facility and supporting services for the long       |
| Archive               | ERA     | term preservation and support of digital records            |

| Term                   | Acronym | Definition  |
|------------------------|---------|---|
|                        |         | An electronic system in which records are collected,      |
| Electronic Records     |         | organized, and categorized to facilitate their            |
| Management System      | ERM     | preservation, retrieval, use, and disposition.            |
|                        |         | The Federal Records Act of 1950 establishes the           |
|                        |         | framework for records management programs in              |
|                        |         | Federal Agencies. As the primary agency for records       |
|                        |         | management oversight, the National Archives and           |
|                        |         | Records Administration (NARA) is responsible for          |
|                        |         | assisting Federal agencies in maintaining adequate and    |
|                        |         | proper documentation of policies and transactions of      |
| Federal Records Act    | FRA     | the Federal Government.                                   |
|                        |         | Records produced on film-based media: nitrate,            |
| Film Records           |         | acetate, polyester, etc.                                  |
|                        |         | FOIA provides that any person has the right to request    |
| Freedom of Information |         | access to federal agency records or information that is   |
| Act                    | FOIA    | not subject to a pre-determined exemption                 |
|                        |         | The time and costs associated with a single person        |
|                        |         | performing a task, often used to estimate the level of    |
| Full Time Equivalent   | FTE     | effort for a given work package                           |
|                        |         | Records produced on paper: documents, maps, prints,       |
| Hardcopy Records       |         | etc.  |
|                        |         | Family of certification standards for quality             |
|                        |         | management systems. ISO 9000 focuses on insuring          |
|                        |         | that constant business processes are being applied to     |
| ISO 9000               |         | the creation of products or provision of services.        |
|                        |         | Systems or processes continuing from and earlier time     |
| Legacy                 |         | or organization   |
|                        |         | Moore's Law states that the processing power, or          |
|                        |         | speed, of digital circuitry doubles every 18 months for   |
| Moore's law            |         | a constant price point of that circuitry                  |
|                        |         | Pending legislation, the Openness Promotes                |
|                        |         | Effectiveness in our National Government Act of 2005      |
|                        |         | (OPEN Government Act) is aimed at substantially           |
|                        |         | enhancing and expanding the accessibility,                |
|                        |         | accountability, and openness of the federal               |
|                        |         | government. Part of this proposed legislation includes    |
|                        |         | penalties for organizations not complying with FOIA       |
| OPEN Government Act    |         | requests in a timely and accurate manner.                 |
| Original Negatives     |         | Film records held on the media of their origination       |
|                        |         | Records appraised by NARA as having sufficient            |
|                        |         | historical or other value to warrant continued            |
|                        |         | preservation by the Federal Government beyond the         |
|                        |         | time they are needed for administrative, legal, or fiscal |
| Permanent Record       |         | purposes.   |

| Term               | Acronym | Definition   |
|--------------------|---------|--|
| Petabyte           | ·       | 1000 terabytes or 1 million gigabytes                    |
| -                  |         | The basic responsibility to provide adequate facilities  |
|                    |         | for the protection, care, and maintenance of records.    |
|                    |         | Specific measures, individual or collective, undertaken  |
|                    |         | for the repair, maintenance, restoration, or protection  |
|                    |         | of documents in all media formats. Preservation can      |
|                    |         | be passive (as in appropriate environmental conditions   |
|                    |         | for storage), or active (as in specific step taken to    |
| Preservation       |         | prevent the degration of records)                        |
| Records and        |         |  |
| Information        |         | Personnel charged with the enactment of records          |
| Management         |         | management policy and procedures in individual NGA       |
| Representative     | RIMRep  | offices  |
|                    | •       | A facility for the low-cost storage and servicing of     |
|                    |         | records pending their disposal, or transfer to the       |
| Records Center     |         | National Archives.                                       |
|                    |         | The planning, controlling, directing, organizing,        |
|                    |         | training, promoting, and other managerial activities     |
|                    |         | related to the creation, maintenance and use, and        |
|                    |         | disposition of records to achieve adequate and proper    |
|                    |         | documentation fo Federal policies and transactions and   |
| Records Management | RM      | effective economic managment of agency operations        |
|                    |         | A policy document providing mandatory instructions       |
|                    |         | for what to do with records 9and non-record materials)   |
|                    |         | no longer needed for current Government business,        |
|                    |         | with provision of authority for the final disposition of |
| records schedule   |         | recurring or non-recurring records.                      |
|                    |         | Material, generally in the form of positive or negative  |
|                    |         | copies on film or glass for each color plate, from       |
|                    |         | which a map or chart may be reproduced without           |
| repromat           |         | redrafting   |
| Retention Period   |         | The period of time that records are to be kept           |
|                    |         | Regulation pertaining to the mandatory inclusion of      |
|                    |         | capabilities into infomration systems to allow persons   |
| a                  |         | with disbilities to effectively access and use those     |
| Section 508        |         | systems  |
|                    |         | Shugart's Law states that the density of information     |
|                    |         | stored in a given digital medium double every 18         |
| Shugart's law      |         | months for a constant size and cost of that media.       |

| Term                | Acronym | Definition  |
|---------------------|---------|---|
|                     | ·       | Often associated with ISO 9000 quality certification,   |
|                     |         | Six Sigma is a methodology to measure process           |
|                     |         | variations that cause defects, defined as unacceptable  |
|                     |         | deviation from the mean or target. The objective of     |
|                     |         | Six Sigma is to deliver highly reliable process results |
|                     |         | with defect levels less than 3.4 per one million        |
| Six Sigma           |         | opportunities.  |
|                     |         | Information storage system which is the original        |
| System of Record    |         | source for piece of information of record               |
|                     |         | Records approved by NARA for disposal, either           |
|                     |         | immediately or after a specified retention period. Also |
| Temporary Record    |         | called disposable records or non-permanent records.     |
| Total Records and   |         | Commercial off-the-shelf electronic records             |
| Information         |         | management software package being integrated by the     |
| Management Software | TRIMS   | Navy into the Navy-Marine Corps Intranet                |
|                     |         |   |

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### Appendix D – Abbreviations and Acronyms

| AARC   | Agency Archives and Records Center           |
|--------|--|
| AFB    | Air Force Base                               |
| AFFTC  | Air Force Flight Test Center                 |
| ARIMS  | Army Records Information Management System   |
| BRAC   | Base Realignment and Closure                 |
| CIA    | Central Intelligence Agency                  |
| CONUS  | Continental US                               |
| COOP   | Continuity of Operations                     |
| CSIL   | Commercial Satellite Imagery Library         |
| D2C    | Digital Data Cassette                        |
| DIA    | Defense intelligence Agency                  |
| DIAC   | Defense intelligence Analysis Center         |
| DLA    | Defense Logistics Agency                     |
| DMA    | Defense Mapping Agency                       |
| DoD    | Department of Defense                        |
| DTR    | Digital Tape Recorder                        |
| EDR    | Records and Declassification Program Office  |
| eFOIA  | Electronic Freedom of Information Act        |
| EOL    | End of Life                                  |
| ERA    | Electronic Records Archive                   |
| FOIA   | Freedom of Information Act                   |
| FRA    | Federal Records Act                          |
| FRA    | Federal Records Act                          |
| FTE    | Full Time Equivalent                         |
| GEOINT | Geospatial Intelligence                      |
| GFY    | Government Fiscal Year                       |
| GIAT   | Geospatial Intelligence Advancement Testbed  |
| GIMS   | Geodetic Information Management System       |
| GIS    | Geographic Information System                |
| IC     | Intelligence Community                       |
| IMSC   | Information Management Services Center       |
| IPB    | Imagery Production Branch                    |
| ISO    | International Standards Organization         |
| IT     | Information Technology                       |
| LIMDIS | Limited Distribution                         |
| MOA    | Memorandum of Agreement                      |
| NARA   | National Archives and Records Administration |
| NASIC  | National Air and Space Intelligence Center   |
| NCE    | New Campus East                              |
| NCR    | National Capital Region                      |
| NGA    | National Geospatial-Intelligence Agency      |
| NGS    | Nortel Government Solutions                  |

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| National Imagery and Mapping Agency               |
|---|
| National Photographic Interpretation Center       |
| National Personnel Records Center                 |
| Naval Research Observatory                        |
| National Spatial Reference System                 |
| National Technical Means                          |
| Outside Continental United States                 |
| Open-Source Information System                    |
| Petabyte (1000 terabytes or 1,000,000 gigabytes)  |
| Program Management Office                         |
| Request for Proposal                              |
| Records Holding Area                              |
| Records and Information Management Representative |
| Records Management                                |
| Remote Replication Site                           |
| Special Access Program                            |
| Sensitive Compartmented Information               |
| Sensitive Compartmented Information Facility      |
| Secure IP Router Network                          |
| Statement of Work                                 |
| Terabyte (1000 gigabytes)                         |
| Total Records and Information Management Software |
| US Army Kwajalein Atoll                           |
| US Geological Survey                              |
| Washington National Records Center                |
| Washington Navy Yard                              |
| Western Space Missile Center                      |
| White Sands Missile Range                         |
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