STATE OF NEW JERSEY
RECORDS SYSTEM
FEASIBILITY STUDY GUIDELINE
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OVERVIEW
This Records System Feasibility Study Guideline provides a structured format for documenting current records system problems/opportunities, and for analyzing/choosing records system alternatives.

The Guideline consists of six interrelated sections:

- Current System Review
- Success Factors/Statement of Needs
- Preliminary Evaluation Matrix
- Alternate System Specification
- Alternate System Analysis
- Final Evaluation and Alternative System Choice

Collectively, the six sections address the technical, operational and economic dimensions of current and alternate records management system feasibility.

The Guideline does not emphasize a specific technology. Rather, it focuses upon objective analysis of current records systems, the development of a problem statement and general statement of needs, and analysis of various system alternatives. Subsequent to conducting feasibility studies, an agency may well find that automated alternatives are not feasible or are unnecessary.

Note on completing the self-study process:

- Agencies may use information from existing documents, such as documents produced pursuant to the Office of Information Technology’s Application Architecture Planning (APP) and Tactical Planning (TP) processes, to address a number of questions in this Guideline. If agencies wish to use information from existing documents, they may simply cross-reference their responses to questions in the Guideline to the appropriate section(s) of the corresponding documents, and ensure the review committee has access to those documents.
1.0 CURRENT SYSTEM REVIEW

1.1 General Overview

1.1.1 List the agency's name (Department, Division, Bureau, etc.).

1.1.2 Describe the agency's mission and objectives.

1.1.3 List the records series that are being targeted for conversion to an alternate format.

1.1.4 Describe the organizational function(s) that the records series supports.

1.1.5 Specify the deficiencies of the current records system. For example:
- Integrity problems
- Non-availability of records/inability to integrate and share information/records
- Inaccuracy
- Lack of space
- Lack of security
- Inadequate access speed
- Lack of integration with information architecture
- Processing delays
- Records deterioration
- High cost
- Insufficient capacity (disk storage, read/write drives, connected users, etc.)
- Poor customer service
- Lack of accountability
- Technical obsolescence

**Whenever possible, quantify records management problems.

1.1.6 Provide a brief summary of desired performance criteria and outcomes for an alternate records system approach. Describe, in general terms, what an alternate records management system must do to address identified deficiencies.

1.2 Current System Elements

1.2.1 Provide details on targeted records series:

1.2.2 List the formal retention schedule/records series number and retention periods for targeted records series and any certifications issued by the Division of Archives and Records Management (microfilm and/or image processing).

1.2.3 Describe the detailed physical elements of the records series. Address each document type involved (correspondence, maps, drawings, checks, etc.).
1.2.4 For paper records:\(^3\)
1.2.4.1 Document volume (in pages, cubic feet or linear feet)
1.2.4.2 Double/single sided pages
1.2.4.3 Color and/or color coding schemes
1.2.4.4 Weight
1.2.4.5 Recording characteristics -- e.g., hand written, typed or combinations
1.2.4.6 Physical condition

1.2.5 For microform records, if applicable:\(^4\)
1.2.5.1 Microform format
1.2.5.2 Film width -- 16mm, 35mm, 105mm, etc.
1.2.5.3 Reduction ratio
1.2.5.4 Background density
1.2.5.5 Resolution
1.2.5.6 Film base
1.2.5.7 Image orientation -- Cine or Comic
1.2.5.8 Blipping
1.2.5.9 Frame numbering
1.2.5.10 Film thickness
1.2.5.11 Packing density

1.2.6 For computer-based records, if applicable:\(^5\)
1.2.6.1 Storage medium
1.2.6.2 Format – e.g., text, image or structured data
1.2.6.3 Record/file layouts, if applicable
1.2.6.4 Record types, if applicable (fixed, variable, indexed, etc.)
1.2.6.5 Underlying software product, if applicable – e.g., DBMS package, word processing product, e-mail system, image processing system, etc.

1.2.7 In narrative and/or flow chart format, describe the procedures currently used in managing and processing transactions involving the records series. If applicable, describe in general terms any relationships with data processing/office automation systems and other support systems such as off-site storage, central file controls, etc. Include data/process flows that relate to the targeted records series if possible.

1.2.8 Provide a profile of the records series usage. At a minimum, include the following: \(^6\)
1.2.8.1 Number and locations of users
1.2.8.2 Annotation requirements (addition of notes, attachments and authorization signatures/ initials subsequent to creation or retrieval of records)
1.2.8.3 Access/retrieval rates and patterns
1.2.8.4 Printing/copying volumes
1.2.9 Specify the disposition policy and procedures for the targeted records series. \(^7\)
1.2.10 Specify how the record series and documents types within the record series, if applicable, are indexed

1.2.11 Describe any relevant data processing/office automation interfaces in detail:
1.2.11.1 Host computer make, operating system name/version
1.2.11.2 Application system names/versions
1.2.11.3 Database base system names/versions
1.2.11.4 Office system names/versions
1.2.11.5 Programming languages
1.2.11.6 Communication network environment -- e.g., teleprocessing equipment, local area networks, switches/routers, bandwidth, circuit type, etc.

1.3 Provide details on the costs (monthly or annual) associated with the current records system:
1.3.1 Staff costs
1.3.2 Supply and equipment costs. For example:
   File/microform related equipment
   Consumables -- various supplies including paper, guides, folders, etc.
   Office automation equipment (terminals, workstations, etc.)
   Furniture
1.3.3 Maintenance costs
1.3.4 Work/storage space costs
1.3.5 Overhead costs
1.3.6 Total cost based on all of the elements above

2.0 SUCCESS FACTORS/STATEMENT OF NEEDS

2.1 Specify in detail the critical success factors – desired outcomes and performance parameters, for an alternate records system. Whenever possible, quantify the parameters for the success factors. Based upon this listing, provide a narrative statement of needs.

3.0 PRELIMINARY EVALUATION MATRIX

3.1 List the mandatory criteria for alternative records systems based on the success factors identified in 2.0 above. Also include budgetary constraints and any mandatory longevity and legality requirements specified by the Division of Archives and Records Management.

3.2 Indicate the desirable criteria based on identified success factors and budgetary constraints.

3.3 Develop a weighting/scoring scheme.

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4.0 ALTERNATE SYSTEM SPECIFICATION
Specify alternative system solutions. Potential areas of emphasis are listed below.

4.1 Manual (paper-based) alternatives. For example:
   - Vertical filing
   - Lateral filing
   - Open shelf filing with color-coding and/or bar coding
   - Off-site storage
   - Indexing/procedural adjustments

4.2 Microfilm alternatives. For example:
   - Roll film, standard
   - Roll film, computer-assisted-retrieval
   - Unitized film, standard
   - Jackets
   - Aperture cards
   - Hybrid systems
   - Unitized film, computer-assisted-retrieval

4.3 Electronic imaging. For example:
   - Storage and retrieval or automated image-based workflow, or hybrids for:
     - Applications/case files
     - Engineering and oversized drawings
     - Customer contact/support transactions
     - System design and project management processes
   - Remittance processing (for payment transactions)
   - OCR/ICR for text/data capture, indexing and/or full text searching
   - Bar-coding (1D/2D)
   - Computer output microfilm/optical disk for report management

4.4 Data-oriented alternatives. For example:
   - Database development
   - Internet filing
   - E-Commerce (electronic payment vehicles such as credit cards, electronic checks, and electronic funds transfer)
   - Bulk electronic filing
   - Software based filing/payment systems
   - Integrated voice response
   - Customer relationship management
   - Hybrids
5.0 ANALYSIS OF ALTERNATIVES

5.1 Conduct a **functional/technical analysis** of each alternative. Seek to answer the following questions: Do the specified alternatives meet organizational requirements that are identified as success factors -- e.g., simultaneous access, security, integrity controls, storage compaction, permanent retention requirement, etc.?

5.2 Conduct an **operational analysis**. In light of existing and/or planned organizational capacities, seek to determine if identified alternatives can be successfully implemented. If an evaluation matrix is being used, generate weighted scores for operational features Factors may include:
   - Level of effort required for conversion to new system
   - Level of maintenance required
   - Inconveniences associated with conversion and new system implementation
   - Time required for backlog conversion
   - Extent of procedural/staffing changes
   - Required facility upgrades
   - Top management commitment to prolonged effort
   - Staff perspectives on need for changing current system
   - Staff skills

5.3 Conduct a **cost analysis**. Utilizing data from current contracts and recent system development efforts, detail projected costs for identified alternatives. Basic costs include:

5.3.1 One-time costs. For example:
   - Development/programming (consultants and/or OIT)
   - Packaged software
   - Training
   - Staff time or full time equivalents for conversion/indexing
   - Supplies
   - Supervision
   - Main configuration (equipment)
   - Maintenance (hardware and software)
   - Facility upgrades

5.3.2 Recurring costs (3-5 year horizon). For example:
   - Staff time or full time equivalents for conversion/indexing
   - Supplies
   - Supervision
   - Equipment, lease/rental
   - Depreciation
   - Maintenance (hardware/software)
   - Training
   - Facility upgrades
5.4 List and analyze the benefits of each identified alternative.

5.4.1 List the intangible and/or non-monetary benefits. For example, improved:
   - Accuracy
   - Integrity
   - Access speed
   - Security
   - Availability
   - Preservation
   - Customer service
   - Accountability/transparency

5.4.2 Quantify the tangible benefits -- e.g., dollar benefits from labor savings, increased revenue flow, space savings etc., or increases in transaction processing capacity
- e.g., x more transactions processed in a given time frame.

5.4.3 Conduct a cost/benefit analysis. Compare the costs of alternatives with those of the current system or adopt a standard methodology such as net present value, payback, or return on investment to assess the desirability of the alternatives. If an evaluation matrix is being used, generate weighted scores for overall cost/benefit performance. If an evaluation matrix is being used, generate weighted scores for overall cost/benefit performance. (It should be noted that in some cases, policy and/or operational exigencies may require investment in system alternatives that address critical intangible and/or non-monetary benefits. In such cases, traditional cost/benefit analyses may not apply.)

6.0 FINAL EVALUATION AND CHOICE

6.1 Eliminate alternatives that fail to meet mandatory criteria.
6.2 Rank the remaining alternatives. If an evaluation matrix is being used, complete the following steps:
   6.2.1 Sum the weighted scores
   6.2.2 Produce an overall ranking based upon aggregate weighted scores
   6.2.3 If applicable, for the highest ranked alternative, consider additional factors. Additional factors may include the following:
      - Availability of product
      - Support issues (maintenance and software)
      - Market and vendor stability
      - Lack of standardization (risk of technical obsolescence)

***If the analysis reveals previously unidentified weaknesses in the highest ranked alternative, reject that alternative, record the reason for rejection, and consider the next highest alternative in light of the additional factors. Continue until an acceptable alternative is found.

6.2.4 Based upon the analyses above, choose the most desirable alternative.
END NOTES

1 Record series are groups of identical or related records that are filed, maintained and evaluated in units. In accordance with NJSA 47:3-15 et seq., the State Records Committee establishes retention and disposition policy for public record series. The New Jersey Division of Archives and Records Management (DARM) acts as the administrative arm of the Records Committee and, as one of its mandated functions, works with public agencies to establish retention periods for public record series. The Records Committee must formally approve all retention periods and disposition actions.

Examples of public record series can be found in the State General Records Schedule. DARM publishes the State General Records Schedule and agency specific schedules. Go to http://www.nj.gov/state/darm/links/retention.html for more information.

2 For information on retention schedules, go to http://www.nj.gov/state/darm/links/retention.html. For information on image system certification, go to http://www.nj.gov/state/darm/links/imgcertification.html.

3 For more information on paper filing systems, go to http://www.njarchives.org/links/pdf/state-manual.pdf. See especially Chapters III and VI.


6 Document based systems have different usage patterns, which impact on conversion cycles and time frames. Key questions in this area are:
   - When does document access begin?
     Within one week of creation/receipt?
     Within two weeks of creation/receipt?
     Within one month of creation/receipt?
   - During their active stage, how often are the documents referenced — i.e., how many times are the documents accessed — ___ times daily, weekly, monthly, or yearly?

Another useful measurement is the document reference activity ratio. This ratio can be derived by dividing the total number of document accesses (daily, monthly, or annually) by the total number of documents in the document base. This ratio is useful for determining appropriate alternatives. For example, high activity ratios coupled with large document volumes point to the need for automated retrieval systems, while large volume-low activity systems point to the feasibility of inactive records center alternatives.

7 In order to dispose of records legally, state agencies must fill out a Request and Authorization for Records Disposal form. Copies of the Request and Authorization for Records Disposal form are available from the Division of Archives and Records Management. This form is used in conjunction with the agency’s records retention schedule. See Note 1 additional information at http://www.njarchives.org/links/disposal.html#instr.

Records can be disposed of in one of two ways:
- Physical destruction - through shredding, burning, discarding, or recycling; or
- Transfer of possession - through awarding custody to a proprietor other than the originating agency, -- e.g. an archives.

Following is a simple example of an evaluation matrix with a weighting and scoring scheme. It lists some basic features that might be used to assess the feasibility of records system alternatives. The listing is not intended to be inclusive. Also note that the matrix encompasses desirable features. Hence, it should be used after alternatives are analyzed for compliance with mandatory criteria. See Section 3.1 of the Guideline.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Weight (Ascending scale, 1-5; 1 signifies lowest weight and 5 the highest)</th>
<th>Score (Ascending scale 1-10; 1 signifies the lowest score and 10 the highest)</th>
<th>Weighted Score (Weight times score)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Access Speed</td>
<td>3</td>
<td></td>
<td></td>
<td>Seconds required to retrieve and display first page of a requested document</td>
</tr>
<tr>
<td>System Integrity</td>
<td>4</td>
<td></td>
<td></td>
<td>Safeguards against lost/misfiled documents</td>
</tr>
<tr>
<td>Longevity</td>
<td>4</td>
<td></td>
<td></td>
<td>Ability to retain reproducible images for a minimum of 10 years and allow for migration of images to upgraded or new storage platforms</td>
</tr>
<tr>
<td>Workflow Management Capability</td>
<td>5</td>
<td></td>
<td></td>
<td>Ability to construct and maintain rules-based transaction processing</td>
</tr>
<tr>
<td>Ability to Interface with the State of New Jersey’s Shared IT Architecture</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compatibility With Agency’s IT Architecture</td>
<td>5</td>
<td></td>
<td></td>
<td>Ability to interface with agency’s legacy transaction database, and e-mail and calendaring systems</td>
</tr>
<tr>
<td>Ease of Installation/Implementation</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ease of Operation/Administration</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9 The three approaches to cost/benefit analysis are based upon detailed specification and quantification of alternative system costs and benefits (also measured in monetary terms).

**Net Present Value**
Based upon the concept of the time value of money, NPV is a comparison of the present values of current and future cash inflows/outflows associated with identified alternatives. Present values are derived via the discounting of cash flows at a predetermined rate. NPV analyses consist of the following elements:
- Useful life of the system alternative
- Discount factor

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Discounted cash flows over the useful life of the system (annuities or single inflows/outflows; for State government purposes, cost savings/avoidance may also be considered as inflows in NPV analysis)
- Net Present Value (discounted cash inflows versus outflows); alternatives with the highest positive NPV are the most attractive

**Return on Investment**
In simplest terms, ROI is expressed as a ratio between benefits and costs:
\[
\frac{\text{Total Projected Benefits}}{\text{Total Projected Costs}} = \text{ROI}
\]

ROI is a good tool for ranking alternatives and could be used in conjunction with present value (discounted cash flow) calculations. As the ratio between benefits and costs (ROI) increases, the attractiveness of the alternative increases.

**Payback**
Payback measures the amount of time required to recoup original investment amounts through the accrual of benefits. The equation for payback is:
\[
\frac{\text{Total Projected Costs (Investments)}}{\text{Projected Benefits}} = \text{Payback Period}
\]

Alternatives with short (1 - 3 years) payback periods are most desirable.