Nebraska Information Technology Commission

Project Proposal Form

Funding Requests
for Information Technology Projects

2015-2017 Biennial Budget

IMPORTANT NOTE: Project proposals should only be submitted by entering the information into the Nebraska Budget Request and Reporting System (NBRRS). The information requested in this Microsoft Word version of the form should be entered in the NBRRS in the "IT Project Proposal" section. The tabs in the "IT Project Proposal" section coincide with sections contained in this Microsoft Word version of the form. Information may be cut-and-pasted from this form or directly entered into the NBRRS. ALSO NOTE that for each IT Project Proposal created in the NBRRS, the submitting agency must prepare an "IT Issue" in the NBRRS to request funding for the project.

Project Title	**Mainframe Migration**
Agency/Entity	**Department of Roads**

Notes about this form:

1. **USE.** The Nebraska Information Technology Commission ("NITC") is required by statute to "make recommendations on technology investments to the Governor and the Legislature, including a prioritized list of projects, reviewed by the technical panel..." Neb. Rev. Stat. § 86-516(8). "Governmental entities, state agencies, and noneducation political subdivisions shall submit all projects which use any combination of general funds, federal funds, or cash funds for information technology purposes to the process established by sections 86-512 to 86-524. The commission may adopt policies that establish the format and minimum requirements for project submissions." Neb. Rev. Stat. § 86-516(5). In order to perform this review, the NITC and DAS Budget Division require agencies/entities to complete this form when requesting funding for technology projects.
2. **WHICH TECHNOLOGY BUDGET REQUESTS REQUIRE A PROJECT PROPOSAL FORM?** See NITC 1-202 available at http://nitc.ne.gov/standards/. Attachment A to that document establishes the minimum requirements for project submission.
3. **COMPLETING THE FORM IN THE NEBRASKA BUDGET REQUEST AND REPORTING SYSTEM (NBRRS).** Project proposals should only be submitted by entering the information into the NBRRS. The information requested in this Microsoft Word version of the form should be entered in the NBRRS in the "IT Project Proposal" section. The tabs in the "IT Project Proposal" section coincide with sections contained in this Microsoft Word version of the form. Information may be cut-and-pasted from this form or directly entered into the NBRRS. ALSO NOTE that for each "IT Project Proposal" created in the NBRRS, the submitting agency must prepare an "IT Issue" in the NBRRS to request funding for the project.
4. **QUESTIONS.** Contact the Office of the CIO/NITC at (402) 471-7984 or ocio.nitc@nebraska.gov

General Information

Project Title	Mainframe Migration
Agency (or entity)	Department of Roads

Contact Information for this Project:

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Executive Summary

The mainframe has been a valuable tool for the NDOR over the last 40 years. But as with all technologies, things change over time and organizations should evaluate the state of their applications; are we providing our users the functionality they need, are we doing it in a cost-effective manner and are we able to support these needs not just over the next few years but in the next 10 years or possibly longer.

That is what the NDOR is doing. We talked with our users about their current systems and their future needs and then looked at our current workforce and the ability to support this environment in the future as we face retirements and the ability to find the skills necessary to support the environment. We determined that the best course of action for the NDOR is to migrate our applications off of the mainframe to a platform we believe provides the functionality our users are looking for and also something that we are able to support in the future. Our plan is to create an RFP to hire an outside source either re-host or convert our mainframe applications to a technology centered on Microsoft and hosted by the Office of the CIO. An RFI has been completed that received two responses, which helped us in determining what we should budget for this project.

Goals, Objectives, and Projected Outcomes (15 Points)

1. **Describe the project, including:**
   - The goal of this project is to award an RFP to a vendor who will migrate applications from the mainframe to technology centered on Microsoft operating system, application servers and development tools. The specific objectives are;
     - Elimination of all IBM ZOS COBOL programs
     - Elimination of all IBM ZOS COBOL Batch and Report programs
     - Elimination of all IBM CICS systems
     - Elimination of all IBM DB2 and RACF
     - Elimination of dependency on IBM TSO

     There are currently multiple mainframe systems / applications consisting of approximately 1500 CICS programs with 1500 BMS maps, 1500 COBOL batch programs with 1500 procs and related 1500 JCL. There are 1300 DB2 tables which will be migrated to SQL Server 2012. We use MicroFocus tools including AppMaster Builder to generate the COBOL and BMS Maps.

- The beneficiaries of this project are the users at the NDOR who will gain additional functionality that is not available on a mainframe system and also the development team at the NDOR who will have one less development platform that they must support and maintain their skill set.
- The expected outcome of this project is all mainframe applications to be moved off the mainframe and to a Microsoft environment that will be hosted by the Office of the CIO (OCIO). We have not determined if this will be a re-host or conversion of the mainframe applications. We have not decided if we prefer to re-host the applications, convert them to Microsoft .NET framework or utilize a Commercial off the Shelf (COTS) system for a portion of the applications.

2. **Describe the measurement and assessment methods that will verify that the project outcomes have been achieved.**
   Business Technology Support Division (BTSD) development staff and database staff will work with the vendor who is awarded the RFP to determine testing strategies and implementation schedules. Testing will need to be done not only by BTSD staff but also by users on the business side to compare output from various reports and if transactions are processed correctly. Comparisons will be done to the existing mainframe systems and once all parties are satisfied with the results we will work with the OCIO to eliminate the mainframe applications.

3. **Describe the project's relationship to your agency comprehensive information technology plan.**
   This was included in our Agency IT plan which was submitted to the OCIO. It was included in previous versions as well but discussed as a future project. Within the past year we were able to complete and RFI to obtain more information on possible solutions. Our goal has been to reduce the number of tools our development, network and database staff must support to simplify their jobs and reduce their workload as well as reduce the time required to keep staff up-to-date on all the technologies that we currently support.

Project Justification / Business Case (25 Points)

4. **Provide the project justification in terms of tangible benefits (i.e. economic return on investment) and/or intangible benefits (e.g. additional services for customers).**
   Intangible benefits will depend on the direction we want to go with the movement of the applications off the mainframe. Utilizing a COTS system would provide functionality that users currently do not have but may be a more expensive option. Re-hosting the applications would meet our goal of moving off the mainframe, but the current functionality would still exist until we were able to rewrite the applications. Converting the applications to the Microsoft .NET framework would have the applications in a language we want to support, but we would still have to rewrite the applications to provide new or additional functionality. This would give us a leg up on a re-hosting option but still require us to rewrite applications, just not as much time should be required. Either way it will move us off the mainframe and allow our IT staff to lessen the number of tools they are required to support and keep current in their skill set.

   Data will be converted to SQL server tables instead of maintaining DB2 on the LAN. This will require some programming changes if we decide to choose a re-hosting option, which may increase the cost. Another one of our goals is to eliminate the need for DB2 and standardize on SQL for our database.

   A large part of the justification is the cost savings. From our analysis, we see a savings of approximately $350,000 per year once we have moved our applications off the mainframe. I have attached the document showing how we came up with the calculation based off our current mainframe payments and what we would be charged by the OCIO for servers off the mainframe.

5. **Describe other solutions that were evaluated, including their strengths and weaknesses, and why they were rejected. Explain the implications of doing nothing and why this option is not acceptable.**
   We are still trying to decide what option we want to pursue. Re-hosting the applications moves us off the mainframe quicker and we begin to see cost savings sooner, but to provide additional functionality for users would take a longer time. Converting the applications to the Microsoft .NET framework would get us off the mainframe not as quickly as re-hosting, but would be faster for us to provide additional functionality for users. Utilizing COTS system(s) would take longer than the other two but the functionality for users would be faster.

   As mentioned earlier, we have processed an RFI which resulted in two responses. The cost range from these responses were $1.4 million to $2.5 million, with re-hosting on the low end and a proposed COTS solution on the high end. We are still evaluating which direction we would like to proceed.

6. **If the project is the result of a state or federal mandate, please specify the mandate being addressed.**
   This project is not the result of any mandate.

Technical Impact (20 Points)

7. **Describe how the project enhances, changes or replaces present technology systems, or implements a new technology system. Describe the technical elements of the project, including hardware, software, and communications requirements. Describe the strengths and weaknesses of the proposed solution.**
   When completed, this project will have accomplished one of our goals to move away from the mainframe and be in a Microsoft .NET framework that we are able to support now and into the future. C# will be the main programming language and the data will also be converted to SQL from DB2, which will match another one our goals which is to standardize on one database platform.

   Internally, we have already converted a few applications from the mainframe to our .NET framework. Our users are very happy with the added functionality, such as the ability to create a “spreadsheet look and feel” for our Accounting section with our Controller Division. Also, we have replaced other mainframe applications with COTS systems because our users wanted a more modern system that is more flexible.

   The argument can be made that the mainframe is a solid platform—which I will agree with—and will be around for years to come. But what we foresee is resources will be lacking and the ability to acquire them will become costly in the future. Unless something is done either with training or teaching as part of a curriculum in universities and colleges, this could be a problem for a number of agencies in my opinion.

8. **Address the following issues with respect to the proposed technology:**
   - **Describe the reliability, security and scalability (future needs for growth or adaptation) of the technology.**
   - **Address conformity with applicable NITC technical standards and guidelines (available at http://nitc.ne.gov/standards/) and generally accepted industry standards.**
   - **Address the compatibility with existing institutional and/or statewide infrastructure.**
     The applications and related data will be moved from one platform supported by the OCIO to another platform which is also supported by the OCIO, so therefore it will comply with all NITC standards and guidelines. The OCIO is also very flexible when it comes to future growth and

provides the redundancy and backups that we requested. We are requesting a demo, QA and production environment and will utilize our change management system to track changes as well.

Preliminary Plan for Implementation (10 Points)

9. **Describe the preliminary plans for implementing the project. Identify project sponsor(s) and examine stakeholder acceptance. Describe the project team, including their roles, responsibilities, and experience.**
   Project Sponsor – Bill Wehling, BTSD Division Head
   Project Manager – Maurice Vonasek
   Technical Leads – Rodney Gonnerman and Chuck Hanson
   Data Lead – Lou Anne Daugherty
   QA Lead – Cody Lusero
   Team members from the OCIO will be determined once we have awarded an RFP.
   Stakeholders are not only members of BTSD but also the users in each Division and District offices throughout the State. We will be working with them to setup test scenarios as well as signing off on project completion

10. **List the major milestones and/or deliverables and provide a timeline for completing each.**
    Since we have not completed the RFP I cannot give any dates but are key milestones will be;
    - All IBM ZOS COBOL programs moved off the mainframe.
    - All IBM ZOS COBOL Batch and Report programs moved off the mainframe.
    - All IBM CICS systems moved off the mainframe.
    - All IBM DB2 and RACF moved off the mainframe.
    - Mainframe accessed removed for NDOR

    These are the major milestones and once we have a contract signed, we will work with the vendor to refine these milestones and determine a better set of milestones taking into account the various applications and workload of the stakeholders, which will determine when they are available to assist us.

11. **Describe the training and staff development requirements.**
    Training will depend partially on the solution that we decide on and also the vendor we choose. For example, the vendor may have software that we must utilize for some time if we go with a re-hosting option and this will require some training to use their tool. Since the majority of our development staff is already well versed in the Microsoft .NET framework, very little training will be required. We do have a three developers that will need to be trained on the .NET tools.

    As for our stakeholders, our goal is that if we re-host or convert to the .NET framework the “look and feel” will be the same as their mainframe applications.

12. **Describe the ongoing support requirements.**
    Again, this will depend on the option that we will pursue which has not yet been determined. There may be software that we must utilize for some time or there may not. Support and maintenance of the applications and data will continue by BTSD staff until the applications are no longer used.

Risk Assessment (10 Points)

13. **Describe possible barriers and risks related to the project and the relative importance of each.**
    1. Selected vendor did not have a complete understanding of the project
    2. Vendor does not supply enough resources or their resources do not meet expectations
    3. Resources are unavailable from the stakeholders, BTSD or the OCIO

4. Personnel changes for various reasons such as promotions, transfers or personal issues
5. Issues with data conversion
6. Applications identified after the RFP process that were not part of the RFP

14. Identify strategies which have been developed to minimize risks.
    1. Try to have well defined requirements in the RFP that are specific along with other expectations.
    2. Have the required skills defined in the RFP and as part of the response require experience of those who will be involved in the project. If problems occur after vendor selection then meet with the vendor to discuss possible changes.
    3. Move responsibilities around within our own division and work with other divisions to determine when resources will be available and coordinate activities to best fit with the stakeholder's workload.
    4. This may require a change in schedule in order to get someone up to speed and also reassigning of duties.
    5. Work with the vendor to develop a solution. We should also do our best to map out a data migration plan as part of the RFP. Worst case scenario is we have to convert to DB2 and then move to SQL after the project is complete.
    6. Create a change request to add additional tasks or if tools are utilized by the vendor that we must purchase, do the conversion ourselves once the initial RFP is complete.

Financial Analysis and Budget (20 Points)

15. Financial Information

The "Financial" information tab in the Nebraska Budget Request and Reporting System (NBRRS) is used to enter the financial information for this project (NOTE: For each IT Project Proposal created in the NBRRS, the submitting agency must prepare an "IT Issue" in the NBRRS to request funding for the project.)

Worksheet in Project Proposal Form.xls

Nebraska Information Technology Commission
Project Proposal Form
Section 8: Financial Analysis and Budget

	Prior Expended	FY2015 Appr/Reappr	FY2016 Request	FY2017 Request	Future	Total
1. Personnel Costs						$ -
2. Contractual Services						
2.1 Design			$ 300,000.00	$ 300,000.00		$ 600,000.00
2.2 Programming			$ 700,000.00	$ 700,000.00		$ 1,400,000.00
2.3 Project Management			$ 200,000.00	$ 200,000.00		$ 400,000.00
2.4 Other						$ -
3. Supplies and Materials						$ -
4. Telecommunications						$ -
5. Training						$ -
6. Travel						$ -
7. Other Operating Costs						$ -
8. Capital Expenditures						
8.1 Hardware			$ 25,000.00	$ 25,000.00		$ 50,000.00
8.2 Software			$ 25,000.00	$ 25,000.00		$ 50,000.00
8.3 Network						$ -
8.4 Other						$ -
TOTAL COSTS	$ -	$ -	$ 1,250,000.00	$ 1,250,000.00	$ -	$ 2,500,000.00
General Funds						$ -
Cash Funds			$ 1,250,000.00	$ 1,250,000.00		$ 2,500,000.00
Federal Funds						$ -
Revolving Funds						$ -
Other Funds						$ -
TOTAL FUNDS	$ -	$ -	$ 1,250,000.00	$ 1,250,000.00	$ -	$ 2,500,000.00

Mainframe Data and Application Cost Estimate

CURRENT COST ESTIMATE:

Average Monthly Mainframe Expenses for last 24 months		=	$ 32,454
Assumption:	$32,000 per month for mainframe usage		
Cost per Year:	($32,000/month) X (12 months)	=	$384,000
	TOTAL CURRENT COST	**=**	**$384,000**

FUTURE COST ESTIMATE:

Current Units on Mainframe:	134,461.67 cylinders (This is both data and applications)		
Converted to GB:	106.22 GB (This is for both production and test)		
Assumption:	Each environment is 55GB and we need PROD, QA and DEMO		
Space Requirement:	165 GB (55 GB X 3 Environments)		
Assumption:	12 Servers (4GB) will be required		
Cost per Year:	(165 GB) X ($0.20/GB/Month) X (12 Months)	=	$ 396
	(12 Servers) X ($127.50/Server) X (12 Months)	=	$ 18,360
	TOTAL FUTURE COST	=	$ 18,756
	ASSUMED FUTURE COST	**=**	**$ 20,000**

ASSUMED COST SAVINGS ESTIMATE PER YEAR:

$384,000 - $20,000	**=**	**$364,000**