

NEBRASKA INFORMATION TECHNOLOGY COMMISSION

Project Proposal - Summary Sheet
Biennial Budget FY2007-2009

Project #27-01
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Project #	Agency	Project Title
27-01	Department of Roads	Expansion of Falcon DMS to Agencywide Use

SUMMARY OF REQUEST (Executive Summary from the Proposal)

[Full text of all proposals are posted at: <http://www.nitc.state.ne.us/nitc/documents/fy2007-09/index.html>]

To expand the Falcon Document Management System license to cover all agency (NDOR) employees and acquire the Automate Program Interfaces (APIs) to allow interfacing to in-house developed applications.

FUNDING SUMMARY

	Estimated Prior Expended	Request for FY2007-08 (Year 1)	Request for FY2008-09 (Year 2)	FY2009-10 (Year 3)	FY2010-011 (Year 4)	Future	Total
1. Personnel Costs							\$ -
2. Contractual Services							\$ -
2.1 Design							\$ -
2.2 Programming							\$ -
2.3 Project Management							\$ -
2.4 Other							\$ -
3. Supplies and Materials							\$ -
4. Telecommunications							\$ -
5. Training							\$ -
6. Travel							\$ -
7. Other Operating Costs							\$ -
8. Capital Expenditures							\$ -
8.1 Hardware							\$ -
8.2 Software							\$ -
8.3 Network		\$ 494,250.00					\$ 494,250.00
8.4 Other			\$ 253,733.00	\$ 253,733.00	\$ 253,733.00	\$ 253,733.00	\$ 1,014,932.00
TOTAL COSTS	\$ -	\$ 494,250.00	\$ 253,733.00	\$ 253,733.00	\$ 253,733.00	\$ 253,733.00	\$ 1,509,182.00
General Funds							\$ -
Cash Funds		\$ 494,250.00	\$ 253,733.00	\$ 253,733.00	\$ 253,733.00	\$ 253,733.00	\$ 1,509,182.00
Federal Funds							\$ -
Revolving Funds							\$ -
Other Funds							\$ -
TOTAL FUNDS	\$ -	\$ 494,250.00	\$ 253,733.00	\$ 253,733.00	\$ 253,733.00	\$ 253,733.00	\$ 1,509,182.00

PROJECT SCORE

Section	Reviewer 1	Reviewer 2	Reviewer 3	Mean	Maximum Possible
3: Goals, Objectives, and Projected Outcomes	9	14	10	11.0	15
4: Project Justification / Business Case	15	20	20	18.3	25
5: Technical Impact	10	17	16	14.3	20
6: Preliminary Plan for Implementation	5	6	8	6.3	10
7: Risk Assessment	5	8	7	6.7	10
8: Financial Analysis and Budget	12	16	15	14.3	20
TOTAL				71	100

REVIEWER COMMENTS

Section	Strengths	Weaknesses
3: Goals, Objectives, and Projected Outcomes	<ul style="list-style-type: none"> - Identifies specific objectives - It is clear at a basic level what the desired outcome is expected to be. The product is already in use within the agency. 	<ul style="list-style-type: none"> - Think they confused Automate Program Interface with Application Program Interface. Not sure if they have to increase the number of licenses they need. Not very clear on how important this system

Section	Strengths	Weaknesses
		<p>really is from the information provided. The writer assumes we already understand what the system is all about.</p> <ul style="list-style-type: none"> - Objective 3 (expand to all agency documents) doesn't identify specific additional business areas for implementation - Weakness may be in the cost to expand this solution and the technical requirements to implement and maintain this software.
<p>4: Project Justification / Business Case</p>	<ul style="list-style-type: none"> - Goals of reducing storage space for documents and eliminating multiple copies are valid. The fact that the software is already in use and this would be an expansion of current use is a strength. Other solutions were evaluated in 2000 when this product was selected is mentioned. 	<ul style="list-style-type: none"> - Justification is based on the fact that they already spent a lot of money on this and retraining costs would be too high. However they do not provide any evidence of that. - Does not address implications of doing nothing ...
<p>5: Technical Impact</p>	<ul style="list-style-type: none"> - Enhancement of current capabilities seems straightforward - Strength is that this is an expansion of existing technology. 	<ul style="list-style-type: none"> - Comments like - "I would hazard a guess..." and "To the best of my knowledge..." do not give this reviewer the confidence to say that the author has met the requirement of this part. <p>What is the existing infrastructure? I have no knowledge of that the "in-house" applications are that will interface with this system. That being the case one can't say if this will continue to work they way they want it to.</p> <p>Very limited detail provided.</p> <ul style="list-style-type: none"> - Implementation of new API's could present technical challenges that aren't addressed. I wonder if an imaging solution such as this also presents scalability issues - if so they aren't addressed. - Weakness is that the impact of expanding this software in terms of technical impact and is not well defined. An example of technical impact would be any issues related to all documents being stored centrally and making them available to office locations across the state. Will the current network and hardware configuration support this change?
<p>6: Preliminary Plan for Implementation</p>	<ul style="list-style-type: none"> - At least one new area (ARMS) appears to be ready to utilize the new capability planned in this proposal. - The strength is the expanded use of current software. 	<ul style="list-style-type: none"> - Once the API's are provided a lot of programming work still has to take place. The author does not provide any detail on how that will progress and to what time schedule. - Training requirements are glossed over. Not even a little detail. - Doesn't identify sponsor, timelines, or roles required to implement. - The plan to implement does not provide much detail on how this software will be implemented. It appears to be a minor upgrade, but the goals of agency wide use are not clearly addressed.

Section	Strengths	Weaknesses
7: Risk Assessment	- Strength is that software is already installed; this project only expands current use.	- Again very little detail. One could assume this is a very easy thing to do and yet it could be rather complicated. In that they have had this project for at least six years there must be some positive things to say about it in terms of cost savings already experienced. What has been the training experience been already? How many hours? Is there on-line help built in the system? What about accessibility standards? - The possibility of impact to current technical environment is not described. If scope of project is to retrieve existing stored documents into existing applications, risk should be minimal. The expansion of this solution to other document types and multiple locations could add addition risk. If these issues have not been considered, then stated goals of project may not be achieved without additional costs.
8: Financial Analysis and Budget	- Expansion of existing software.	- Sketchy at best. Are there hardware costs with this upgrade? Training costs? Costs to modify existing applications?? - The numbers seem reasonable, but I'm having difficulty matching the Financial Analysis and Budget form with the detailed costs listed in item 16. - Software is offered with multiple options, if the requirements have not been correctly identified the cost to implement may be greater than budgeted.

TECHNICAL PANEL COMMENTS

Technical Panel Checklist				Technical Panel Comment
	Yes	No	UNK	
1. The project is technically feasible.			✓	
2. The proposed technology is appropriate for the project.			✓	
3. The technical elements can be accomplished within the proposed timeframe and budget.			✓	

- Unknown. Not enough information provided to make a determination.

STATE GOVERNMENT COUNCIL COMMENTS

- The State Government Council recommends this project be categorized as [Tier 3].

NITC COMMENTS

- Tier 4 (Insufficient information to proceed with a recommendation for funding.)
- Commissioner Flanagan moved that Project 27-01 be moved to Tier 4 due to insufficient information to proceed with a recommendation. Commissioner Huggenberger second. Motion passed.

APPENDIX**AGENCY RESPONSE TO REVIEWER COMMENTS**

Section 3: Goals, Objectives and Projected Outcomes

Specific goals and objectives;

This system is how everyone at NDOR can access engineering documents. It may be someone directly involved in the Design process (Engineers, Appraisers, and Traffic Analysts) to District personnel such as District Engineers, Project Managers and Maintenance workers who need to know what they are going to have to build in order to coordinate their people and activities. This system is one of two that handle reference (background) files with CADD documents. This system will automatically copy out all of the reference files when you check out or copy out a CADD document so that you see all of the information without having to go copy out or check out all of the reference files one at a time.

With the success we have had on the Engineering side, it is now time for us to expand this into a full document management system for NDOR. The acquisition of the APIs will allow us to create interfaces to various systems for different applications based on user need and security. There are also several add-on products that we can utilize to transfer information to customers within and outside of NDOR as well as receive information from customers outside of NDOR.

Section 4: Project Justification / Business Case

Tangible Benefits;

- 1) APIs would allow us to create hook functions into our Automated Right-of-Way Management System (ARMS) so our appraisers and negotiators can copy out files to review them or they would be able to make a PDF out of a plan sheet and store it inside of ARMS so they can eliminate the need for carrying a set of plans when they go to negotiate with landowners.
- 2) API's would allow us to create hook functions with our GIS applications such as NECTAR so District personnel can look up as-built plans on old projects by clicking on a map interface and finding TIF images or a PDF of a plan set on a project. Currently they have to go to the District office to look at microfilm images of the plan sheets. Here is the scenario we would eliminate in one of our Construction offices in the Panhandle (District 5).
 - a. Project Manager in Chadron must drive to the District Office in Gering (100 miles and 2 hours time) in order to view the as-builts for a project.
 - b. Project Manger finds what they need and then calls the archives office in Lincoln to print the sheets for them
 - c. Project Manager drives back to Chadron
 - d. Archives office prints off the sheets. The next day (if we catch the mail truck) they are driven out to Chadron. Since the delivery truck goes around to all District offices, this could take two or three days.
 - e. Project Manager receives the sheets after two to four days from viewing the plan sheets.
 - f. Project Manager drives back to the District Office in Gering to review the as-builts because a miscommunication between them and the archives office led to the wrong sheets being printed.
 - g. Go through steps b through e again – Worst case scenario
- 3) APIs would allow us to create a number of front ends for users who store documents into Falcon and have specific security needs. An example is the Human Resources Division who could store all their documentation in Falcon and we could create a front end for them using VB, C#, Java or the web so they can have others access only the information they need to on individuals.
- 4) APIs would allow us to create hook functions into our plotting software so we can automatically send PDF or TIFF images of plans into Falcon and also create CADD files for District personnel to do as-built plans for keeping track of changes made in the field on projects.

- 5) Falcon SVP will allow us to setup a web page for consultants to post files into our system and also to get files out of our system on projects they are designing for us. Current workflow is the consultant has to put the files on a CD or DVD and then NDOR employees have to put the files into the system along with the metadata describing each file.
- 6) Falcon SVP will allow us to setup a storefront for contractors so they find the project they want to bid on and purchase the PDF of the project or specific pages they want or purchase printed copies from NDOR.
- 7) Falcon Transmittal will allow us to track electronic documents and make sure that people have reviewed them in a timely matter. Currently on documents that are routed they sometimes are lost in an inbox and no one knows where they are at. This causes delays in moving forward with projects since decisions cannot be made or documented.

Other evaluated solutions;

As stated earlier there is only one other solution that could possibly handle the needs of NDOR. When we were looking for a solution in 2000, this same solution was available at that time. The reason we could not and still cannot use that solution is because they do not have the APIs to allow us to develop our own applications and they also allow for more than one person to modify a file at the same time. NDOR wants only one person to be modifying a file at a time and if someone else needs to make changes to the file, that person must communicate with the person who has the file. Before we went to Falcon, we had no way to secure these files from having more than two people modifying them at a time. This caused loss of data on a number of occasions which resulted in NDOR employees having to redo work.

The other solution is also more expensive than what we currently have and if we were to change, you would also need to include the cost of migrating the data from the old to the new system as well as the time it will take to run tests to make sure all of the files and database information has been moved and is functioning properly. Also the cost of training on a new system would need to be included.

There are other solutions for document management systems (McClaren, FileNet, IBM DB2 Document Manager) but I could find no evidence that they handle the reference file support that we require so users don't have to find each file they need for a specific drawing. McClaren's Enterprise Engineer comes close but that sits on top of FileNet so you would have to purchase two products in order to handle your document management needs.

Section 5: Technical Impact

Enhances, changes or replaces present technology

- 1) The current process in regard to ARMS is to print off a set of plans and take them with you into the field. This would allow us to let the appraisers save the files into ARMS (PDF, TIFF or CADD file) so they can review the document along with the landowner information on their laptop.
- 2) Connection into NDOR's NECTAR application will allow NDOR personnel and customers to access project information via the web instead of the current situation which is to look at microfilm or come into the office in Lincoln.
- 3) Currently we have to burn CDs' or DVDs' to get information out to the field. A website utilizing Falcon SVP will allow us to give contractors access to the information they need when they need it and not have to wait on getting the information in the mail.
- 4) The creation of a store front to allow contractors to get plan sets or sheets printed without having to make calls into the office or come into Lincoln will eliminate the amount of time contractors will need to wait on getting the information they need to place bids on projects. The ability to get the electronic file will also allow them to redline the drawings so they can determine project phasing and give NDOR the best price for the project.

Training will be required for all of our development staff on utilizing the APIs. Training will also be required for the new users into the system. NDOR currently has a training program setup. We are currently looking to not only have the classroom training but put it on-line as well for people to review

when they have the time. We will need to develop training for using the website and store front applications.

The increase in document storage may require us to purchase an additional server or upgrade the current server. Since our District offices already utilize the system to access engineering drawings, there should be minimal additional impact on the network. We may need to make changes to our network based on the study being completed by our Operations Division in relation to District Operation Centers with the State Patrol. Any modifications made will improve our existing network.

Section 6: Preliminary Plan for Implementation

- 1) Familiarize IT staff with the APIs and other add-on application in the Falcon Suite
- 2) Provide training to development staff in utilizing the APIs
- 3) Meet with project stakeholders and describe to them the various projects we have planned and get their buy-in.
- 4) Finalize training documentation to include the add-on applications in the Falcon Suite.
- 5) Train new users to the system and familiarize them with the add-on applications.
- 6) Setup teams for each project, identify the sponsors and begin developing the business processes that existing and those that may need to be changed
- 7) Once the business processes have been finalized, determine the schedule for the project including development, testing, documentation and training. Set milestones for the project development including a defined end project date.

Steps 6 & 7 would be done for each project described in Section 4 of the Tangible Benefits part of the document.

Support will be required from the vendor as far as the APIs and any malfunctions in the software. We may also utilize the vendor to either develop or assist us in developing applications or hook functions into various software products.

Section 7: Risk Assessment

If we are not able to obtain the APIs and additional add-on applications, NDOR will not be able to improve some of our workflows which would allow us to save time. Things such as burning DVDs, printing plans sheets, routing paper documents, etc. will still be standard practice for NDOR if we cannot obtain these things. We will have some of this still within NDOR but it would decrease the amount of this significantly in my opinion with this purchase.

This system has provided many benefits to NDOR.

- 1) It allows us to find CADD drawings easily without having to look in different locations since our folder structure is now a standard.
- 2) It eliminated the loss of data since only one person may modify a file at a single time.
- 3) It has made it possible for District personnel to review files without having to copy the files since the system has a built-in viewer.
- 4) It provides us a mechanism (utilizing Crystal Reports) to track who and when someone has made modifications to a file as well as when the file was added into the system and who deleted a file.

Section 8: Financial Analysis and Budget

We may need to purchase a new server or upgrade the existing server since more documents will be placed into the system.

Training documentation is completed for everything but the add-on applications. That needs to be written and it will be taught by our existing Falcon Administrator or his staff. We will contract with the vendor on how to utilize the APIs for developer training.