
**State of North Dakota
Information Technology Department**



STAGEnet Infrastructure Services 2006

Project Plan

DRAFT

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1. Executive Summary

The North Dakota Statewide Technology Access for Government and Education network (STAGEnet) was created by the 1999 legislative session. STAGEnet provides broadband connectivity, Internet access, video conferencing and other networking services. All state agencies, colleges and universities, local government, and K-12 are required to participate in STAGEnet.¹

The contract with the current statewide network infrastructure provider expires in June of 2006. In order to maintain eligibility for Federal E-Rate funds, the state is required to go to bid after each contract period. In the years during the current contract, technology has changed and the needs of the state have also increased. The Information Technology Department (ITD) is looking to design a network that can grow with the state's needs over the next five to seven years. The STAGEnet Infrastructure Services (SIS) 2006 project was chartered in February 2005 to achieve these objectives.

In order to meet the state's goal for procuring a network service provider by Sept. 30, 2005, Federal Engineering, Inc. has been hired to expedite vision statement development, requirements definition, and vendor procurement tasks. To facilitate planning and task execution, the project is split into three definitive phases:

- Phase 1 will define the future state or vision of STAGEnet's architecture (through analysis, focus groups, vendor meetings, and other design activities) and create a procurement strategy to help ITD select a vendor or vendors to achieve the vision.
- Phase 2 will be the performance of a request for proposal (RFP), including the development, release, and evaluation of the RFP, the selection of the vendor and contract negotiations. A key deliverable of this stage (besides the contracts) is a document providing the reasons for selecting the services and vendor(s) that were chosen and providing a cost/benefit analysis for those choices.
- Phase 3 will be the implementation of the chosen architecture/vendor(s). This future stage may be broken into a transition phase (part of the project) and enhancements (part of on-going operational activities).

The schedule calls for a contract for five to seven years to be signed with a provider by September 2005. It will include expansion plans to grow with the state's needs. The contract will be implemented by July 2006, (with some overlap of coverage's if necessary).

Ideally, the new contract would address all of the users' needs using the newer technologies based on Gigabit Ethernet rings and lambda light wave technology. However, the state will need to balance those choices with cost effectiveness and the availability of proven solutions to meet the needs.

2. Version Control

Once this document is formally approved, changes should be tracked and reviewed by the assigned individual in the table below.

¹ <http://www.stagenet.nd.gov/>

Table-1. Version Control

Date	Author	Change	Reviewed and/or Approved By
15-March-05	P. Reichert (FE)	Draft version 1.0	
<u>05-April-05</u>	<u>Dirk Huggett</u>	<u>Draft version 1.1</u>	

List of related documents and information sources

Table 2 lists documents and information sources that were referenced to develop this plan.

Table-2. Reference Documents

Version	Title	Agency	Publish Date
Final	Project ND-TEL-REF Statement of Work State of North Dakota Telecommunications Systems Refresh	FE	15-Feb-05
Final	SIS 2006 Project Charter	ITD	24-Feb-05
Final	SIS 2006 Business Case	ITD	24-Feb-05
Final	ITD Enterprise Project Management Project Plan template	ITD	08-Feb-05
Draft	Meeting Notes from Project Orientation with ITD staff on March 7-8, 2005	FE	10-Mar-05
Current	Websites: http://www.stagenet.nd.gov/ http://www.state.nd.us/itd/	State	2004-2005

3. Introduction

This document is the project plan for the State of North Dakota STAGEnet Infrastructure Services (SIS) 2006 project. In collaboration with ITD's Policy and Planning Department Federal Engineering, Inc. (**FE**) prepared and will execute this plan based on **FE's** Statement of Work issued: February 15, 2005. The period of performance for the Phase 1 is February 23, 2002 to May 6, 2003. As products of Phase 1, **FE** will deliver this *SIS Project Plan*, the *Vision*, and the *Procurement Strategy Report*.

Phase 2 will immediately succeed Phase 1, and is scoped around providing procurement support to ITD with the objective of completing a service provider contract by September 30, 2005. Depending on the chosen architecture and vendor solution, Phase 3 implementation services will likely last through a transition period and into the new contract period beginning July 2006.

Purpose of this Document

This plan, one of three document deliverables describes the background, scope, technical approach, schedule, budget, task activities, and estimated resources for completing Phase 1 of the SIS 2006 project. In addition, it describes project management best practices that will be followed to ensure creation of complete, consistent, well-documented, quality deliverables for all phases of the project. As a living document, this plan will be updated to include new project scope and planning guidelines for the subsequent phases as new information becomes available.

Background

The contract with the current telecommunication infrastructure provider expires in June of 2006. In order to maintain eligibility for E-Rate funds, the State of North Dakota is required to go to bid after each contract period. In the years during the current contract, technology has changed and the needs of the state have also increased. ITD is looking to design a network that can grow with the state's needs over the next five to seven years.

Business Drivers

Some of the challenges the state is currently facing to supply technology services to meet the business needs of state agency administrators and educators are:

- The overall network population and number of sites continue to grow.
- The network core has expanded and requires an architectural review for overall capacity.
- The demand for Virtual Private Networking (VPN) challenges the current design.
- Customer demand for bandwidth continues to grow.
- Video services continue to expand across the state.
- Asynchronous Transfer Mode (ATM) services have been reduced with recent migrations to fiber.
- Universities have to limit Internet access due to current network costs/constraints.
- Applications are requiring increased bandwidth and lower latency (such as *ConnectND* and the *Retirement and Investment Office's TTFR* project.)
- Network security continues to demand changes and reconfigurations.

- The backbone is currently only accessible in Bismarck and Fargo while the demand for backbone access in other sites is increasing.
- Homeland security issues have brought new concerns to the network with respect to expanding disaster recovery, redundant connectivity, and possibly additional network hubs.
- Internet telephony and Voice-over IP (VoIP) is beginning to be used in state government.

In addition, the state recognizes that new technologies, such as Multiprotocol Label Switching (MPLS), Virtual Local Area Networks (VLANs), and Lambda (light waves) are known to be generally available and the state desires to explore how to take advantage of them. The state also wants to explore the possibilities of wireless mobility access, increased access to fiber and expansion of broadband services for smaller sights.

The end users impacted by this include all of state government, the North Dakota university system, K-12 entities, and many political subdivisions.

Project Purpose

The current telecommunications systems used by the State of North Dakota are aging and require refresh. The Information Technology Department (ITD) desires a comprehensive and cohesive approach to acquiring new systems including state owned assets, leased capacity, and telecommunications based services. This project will result in a five to seven year service provider contract implemented by July 2006. The new contract will include expansion plans to grow with the state's needs incorporating as many of the capabilities expressed by the project steering committee and stakeholders including:

- Contemporary telecom architecture configured as separate logical networks for managing state government, political subdivision, and education, voice/video, and partner services;
- Statewide wireless coverage for over 200 communities that provides as much bandwidth as needed for immediate and future needs;
- Technology options that expand capabilities beyond the ATM base;
- A contract that allows the state to get the most services possible from the next service provider;
- Tiered pricing (i.e. postalized rates) for TI lines provided to rural and urban administration and education centers;
- A system and vendor pricing model to accommodate E-Rate program billing needs;
- An architecture that decouples the backbone ATM cloud from the fiber service.

Project Assumptions and Constraints

There are several business conditions and limitations that, for planning purposes, are considered to be true, real, or certain.

Constraints:

- The current contract expires June 30, 2006.
- A contract must be signed prior to the 2006 E-Rate submission deadline.
- The ITD project team is not currently aware what possible solutions are available to them.
- The overall cost of service needs to be controlled.

Assumptions:

- ITD staff resources will be assigned to the project at required times and at the required percentage of time.
- The present vendor Dakota Carrier Network (DCN) will bid on the project.
- There are alternative vendors that can provide some or all of the desired services.

4. Program Management Approach

The method of project management to be used in this project is based on **FE's** program management approach, and where applicable, follows planning best practices described in the North Dakota Project Management Guidebook. The combination of these approaches will ensure that the project completes its objectives on time and on budget, while meeting the quality expectations of the stakeholders.

Program Organization

Federal Engineering will provide program and project management services for work performed toward completing the contract for STAGEnet Infrastructure Services project. This includes strategic-level oversight, continuous planning and schedule coordination, status reporting, and associated administrative tasks required to manage all technical work. **FE** is responsible for maintaining consistent and concise communications between ITD's steering committee, project team members, related stakeholders, and associated vendor agencies involved with the project. Although the three phases will be conducted in sequence requiring approvals between phases, the project team will seek ways to leverage work performed across all tasks to gain efficiencies where possible.

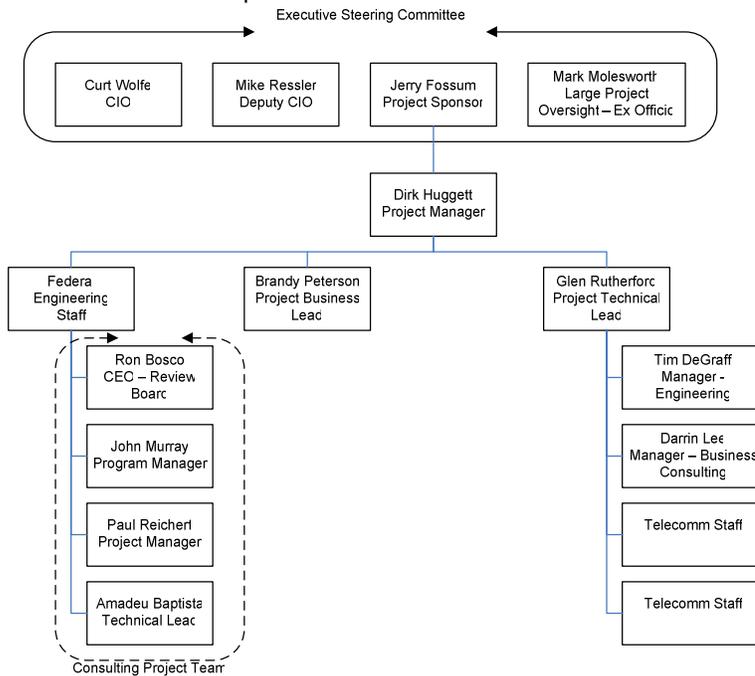


Figure1. - Project Organization Chart

Project Communications

FE's program manager is the focal point for communications related to all Phase 1 tasks. Special efforts will be made to ensure timely and complete communications among all project team members, sponsors, and related stakeholders. To promote clear communication and to monitor progress, regular review meetings will be held to discuss the project's status in relation to the task schedule, work performance, and deliverable acceptance criteria.

FE's designated project manager and technical lead will provide administrative and technical services as appropriate to complete task assignments while maintaining consistent communications with ITD's project manager and project team. Decision-making and informal project team working meetings will be held as needed with the core **FE** team members. Informal weekly status memos and **FE** biweekly status reports will be produced as required to maintain communications with ITD and related stakeholders. Any decisions requiring stakeholder input will be managed through **FE's** program manager, via a formal documented decision request, if necessary. Below is a simplified table to clarify communications.

Table-3. Communication Matrix

<u>Role</u>	<u>Name, Position</u>	<u>Entity</u>	<u>Formal Review</u>	<u>Informal Review</u>	<u>Provide Information</u>	<u>Supply Resources</u>	<u>Assist</u>	<u>Perform</u>
Executive Steering Committee	Curt Wolfe, CIO	ITD	X		X			
	Mike Ressler, Deputy CIO	ITD	X		X	X		
	Jerry Fossum, Director	ITD - Telecommunication Services	X					
<u>Executive Sponsor</u>	<u>Jerry Fossum, Director</u>	<u>ITD - Telecommunication Services</u>		X	X	X	X	
<u>Program Manager</u>	<u>John Murray, Sr. Vice President</u>	<u>Federal Engineering</u>		X		X	X	
<u>State Project Manager</u>	<u>Dirk Huggett, IT Business Analyst</u>	<u>ITD – Policy & Planning</u>	X	X				X
<u>FE Project Manager</u>	<u>Paul Reichert, Senior Consultant</u>	<u>Federal Engineering</u>		X				X
<u>Technical Project Lead</u>	<u>Glen Rutherford, IT Architect</u>	<u>ITD - Telecommunication Services</u>		X	X		X	X
<u>Business Project Lead</u>	<u>Brandy Peterson, Administrative Assistant II</u>	<u>ITD - Telecommunication Services</u>		X			X	X
<u>Project Leader</u>	<u>Amadeu Baptista, Senior Consultant</u>	<u>Federal Engineering</u>		X	X		X	X
<u>Functional Team</u>	<u>John Alvarez, Time DeGraff, Rod Erickson, Mike Eslinger, Darrin Lee, John Sheldon, Kim White</u>	<u>ITD - Telecommunication Services</u>			X		X	X
Customer Groups	Jennifer Witham (DHS), Sloan Thigpen (DHS), Larry Zubke (JSND), Cheri	State			X			

	Giesen (JSND), Cher Thomas (AG), Doug Faiman (DOT), Wayne Dosch (DOT), Randy Meissner (G&F), Michael Abel (NDAoC), Russell Timmreck (DEM), Barry Stein (DOH), Darin Meschke (DOH)							
	Bonnie Jundt (UND), Kevin Danielson (UND) , John Grosen (NDSU), Bruce Curtis (NDSU) , Jerry Rostad (JYN), Dorette Kerian (UND), Tom Moberg (NDSU) Joan Chapek (NDSU)	Higher Ed			X			
	Jody French (EduTech), Wayne Wermager (EduTech) , Darin King (GF) , Lisa Feldner (Bis), Ward Knutson (Bis) , Mark Wagner (Beulah), Ted Reiter (Hatton), Paul Jensen (Kindred), Barb Bickel (Bowman), Dan Pullen (ETC), Craig Nansen (Minot), Brian Rossow (Minot), Julie Palmer (Williston), Gerry Hagen (WFargo) , Steve Swenson (WFargo) , Bill Strasser (GWN) , Chris Kalash (DPI)	K-12			X			
Vendors	Bruce Cosby (Sprint), Shirley Rickel (Qwest), Greg Herndon (Qwest), Todd Jensen (AT&T), Evan Hass (DCN), Cary Degenstein (Verizon), Mike Herberg (Cellular One), Tammy Glasser (Cellular One) , Steven Hubacher (Cellular One) , Ed Schafer (Extend America) Carla Anderson (Extend America) Jim Wilson (Extend America) , Dennis Peterson (MDU), Chuck Boger (MDU)	Various			X			

Status Reporting

Formal project status reports will be created, based on ITD’s standard format, and distributed biweekly through the ITD project manager. Ad hoc (informal) project status reports will be prepared in e-mail format by **FE**s project manager and provided to the ITD project manager for

distribution. ITD will prepare a status report on an opposite biweekly schedule oriented to the Customer Groups and other entities external to the performing organizations.

Regular internal status meetings will be conducted, at the discretion of **FE**'s program manager, to discuss resources, schedules, planning, progress, and related project issues. All project status reports and related communications will be maintained in electronic format. ITD will hold informal status meetings weekly.

A more detailed communication plan can be found in Appendix B.

Issue Management

FE's project manager intends to resolve problems, concerns, issues, or conflicts at the lowest organizational level on a peer-to-peer basis. If issues cannot be resolved at this level, they will be escalated to **FE**'s program manager and ITD project sponsor for resolution. Issues will be logged in status reports and monitored until accepted as resolved by ITD's project manager.

A draft Issue Log can be found in Appendix C.

5. Scope Management

This section describes the scope of work along with task details, deliverables and scheduled due dates. The detailed task plan is managed in the work breakdown structure (WBS) maintained in Microsoft Project 2003. The original WBS is included in the Appendix.

Project Scope

To meet the state's scope and schedule objectives the project is organized into three sequential phases:

Phase 1 – Develop *Vision and Procurement Strategy*: During the first phase, **FE** working in concert with ITD will develop a vision document describing the future state of the network over the next 7-10 years and create a procurement strategy on how to bid that vision.

Phase 2 – Procurement Support: In the second phase, **FE** will create the request for proposal (RFP), release and manage it, assist in evaluation of candidate vendors, and create a vendor selection document describing the reasoning behind the selection and providing cost/benefit information. (The Phase 2 task plan will be approved at the completion of Phase 1).

Phase 3 – Implementation Support: The third phase is intended to manage the actual implementation of the successful bidder. If the current services provider wins the bid, then this last step will be fairly simple. If another provider is chosen, then this could become a fairly complex step. A successful bid should provide improved technology as part of the base infrastructure as well as increased bandwidth, low network latency, high availability and reliability, alternate access for small sights, among other factors. (The Phase 3 task plan will be approved at the completion of Phase 2).

Phase 1 – Develop Vision and Procurement Strategy Task Objectives

The major tasks to be completed during Phase 1 are described below.

Conduct Program Orientation

Federal Engineering will conduct a program orientation meeting with representatives from the State. The purpose of this meeting will be to introduce the **FE** program team, firm up the Phase

I tasks, review project objectives and key milestone dates, identify the relevant agencies and stakeholders and/or the key personnel who will participate, organize project logistics, outline expected deliverables, review status reporting methodologies (including *FEClientNet*), and resolve any other issues that may arise.

- Deliver Project Plan: As a result of this meeting, **FE** delivered this project plan that will serve as the guiding document throughout the program.

Develop Telecommunications Vision

FE will meet with state management including the Chief Information Officer and the ITD Director of Telecommunications to develop an understanding of the Vision, refine it, and document it for further analysis. Selected voice, data, and video services will be addressed with the exception of Public Safety Mobile Radio. The Vision will include a high level discussion of the primary requirements for the new contract based on achieving these network goals:

1. More bandwidth
 2. Highly reliable and survivable service
 3. Security and privacy
 4. Wireless connectivity
 5. Low-end access
- Deliver Vision Statement: The Vision statement will lay out the plan for ITD for the next 5-7 years by summarizing the current conditions and where the state needs to go, as well as provide information to the vendor/provider community to launch into the procurement discussions.

Review Existing Systems

To gather the necessary key inputs to develop the Vision and Procurement Strategy deliverables, **FE** will work with ITD to review existing networks and their end points. This review will, at a minimum, include the services currently in use, future services desired, the bandwidth provision currently being used, and the bandwidth anticipated over the five and ten year planning horizons. Information to be reviewed includes details regarding:

- Centrex and other CO based services
- Servers
- Internet WEB sites
- Modems, routers, switches
- Networked PCs
- Telemedicine networks
- Telephone and data lines by type
- Network access facilities
- Host computers
- 802.11x & other wireless
- Legacy systems and networks
- 802.11x & other wireless
- Intranets and Internet access
- Multiplexers and routers
- Network gateways
- LANs and data switches
- Wideband and other digital circuits
- Video teleconferencing
- Distance learning systems
- Satellite uplinks & downlinks
- Multimedia systems
- PBXs and key systems

Conduct Focus Group Meetings

The focus of this task is to present the Telecommunications Vision to key stakeholders for validation and acceptance. **FE** will conduct three focus group meetings with the following user groups:

- State government
- K-12
- Higher education

To maximize the time spent with the focus groups, **FE** will prepare advanced correspondence, for the state Project Manager to send to each group emphasizing the need to be prepared and participate in this process. **FE** will develop presentation materials and handouts describing the Vision.

- ◆ Milestone: Input and feedback from the focus groups will be incorporated into an updated version of the Telecommunications *Vision*.

Meet with Vendor Community

The objective of this task is to review the Telecommunications *Vision* with potential equipment and service providers to ensure that the RFPs developed in Phase II are based upon real-world solutions. In addition, this process will begin to encourage providers to consider future investments.

Federal Engineering will work with the ITD Project Manager to identify existing and potential service and equipment providers. **FE** will contact the providers and schedule the meetings in Bismarck. **FE** will develop presentation materials and handouts describing the *Vision*. This scope of work assumes a maximum of five days of vendor meetings.

- ◆ Milestone: Input and feedback from the vendor interviews will be incorporated into the Procurement Strategy deliverable.

Develop Procurement Strategy

FE will incorporate the findings of the previous tasks and develop a Procurement Strategy for providing cost-effective, shared, reliable telecommunications. The strategy will be based upon currently available solutions but will also encourage vendors to invest in emerging technologies.

The primary objective will be to document how many difference procurements should be implemented. Candidate RFPs include:

- Network backbone
- Access to ATM services
- Statewide wireless
- 802.11x and other "hot spot" technologies
- customer premises data equipment - LANs, routers, switches and other
- Internet access service providers
- video networking and teleconferencing
- Statewide wire and cable service

The Procurement Strategy will also include a high level program plan scheduling the recommended procurements. **FE** will meet with the state to present its finding and recommendations. The goal of this meeting is to gain the state's concurrence prior to development of the final Procurement Strategy report.

- Deliver Draft Procurement Strategy: **FE** will generate and deliver three (3) copies of the Draft Procurement Strategy Report and submit it to ITD for review and approval. The report will provide an overview of each of the procurements to be accomplished including a description of the services and/or equipment to be procured and a top-level program plan.
- Deliver Final Procurement Strategy: **FE** will incorporate the state's comments and deliver three (3) copies of the Final Procurement Strategy Report. The State must approve the Final Report before the commencement of Phase II.

Phase 1 Product Deliverables

The products produced as a result of executing Phase 1 tasks are listed in the table below.

Table-4. Phase 1 Deliverables

Task	Product Deliverable	Due Date
Program Orientation	<i>Project Plan</i>	March 15, 2005
Telecommunications <i>Vision</i>	<i>Draft Vision Statement</i> <i>Final Vision Statement</i>	March 25, 2005 April 18, 2005
Review Existing Systems	Inputs to <i>Vision Statement</i>	
Conduct Focus Groups	Inputs to <i>Vision Statement</i>	
Meet with Vendor Community	Input to Procurement Strategy	
Develop Procurement Strategy	<i>Draft Procurement Strategy</i> <i>Final Procurement Strategy</i>	April 29, 2005 May 6, 2005

Phase 2 – Procurement Support Task Objectives

The statement of work for this phase of the program is preliminary in nature and will be revised and solidified at the end of Phase I. Specifically, the number and types of RFPs will be determined as a result of Phase I. The high-level task plan for Phase 2 includes these activities:

- Creating functional requirements specifications
- Developing request for proposals
- Create a list of potential vendors
- Assist the state during vendor pre-proposal meetings
- Develop vendor evaluation criteria
- Assist the state in vendor presentation and selection process
- Conduct vendor contract negotiations

Phase 3 – Implementation Support Task Objectives

The statement of work for this phase of the program is preliminary in nature and will be revised and solidified at the end of Phase II. Specifically, the number of unique procurements and the contracts awarded will have a major impact upon the scope and duration of this phase. In general implementation support includes:

- Coordinating tasks for all organizations functionally supporting a project
- Prioritizing all program activities

- Planning and coordination of support interfaces
- Preparation of a high level program plan and obtaining agreement from all concerned
- Continuous review and update of the plan and ensuring all obligations are fulfilled to the satisfaction of the State
- Maintaining program documentation, controlling program variance from the plan, and reporting program status to ITD and other management as required.

Not in Scope

The following tasks are considered to be excluded from this project:

1. Changes to current operational practices or any changes to those practices.
2. Voice services including telephone and wireless cellular for voice
3. Long distance services or RFP for procuring LD carriers
4. Voice Over IP (VoIP) and other convergence services
5. Call center management
6. Paging services

Scope Control

Federal Engineering's program manager and project manager will monitor project progress in relation to the approved scope of project and product. Any occurrences of "scope creep," or not performing to scope, will be investigated and documented with action taken to resolve. The scope of Phase 1 will be managed from two perspectives:

- Project Scope: All work performed to produce the deliverables identified for Phase 1, and once authorized subsequent phases and related tasks.
- Product Scope: The specific product deliverables described above in Table 3.

Deliverable Acceptance Process

A standard ITD deliverable acceptance form will be used as required to complete the acceptance process. A deliverable (or the acceptance form) will be presented to the state Project Manager. The state will perform a review of the deliverable to ensure completeness and quality. If the deliverable meets all criteria, the project sponsor will present the deliverable to the state Executive Steering Committee, and after getting their confirmation, sign the acceptance form. The form will be converted to PDF and returned to FE for their records and posting on the ClientNet. The document may also be posted on the STAGEnet project site.

6. Time Management

FE's Project manager will promote the concept of "plan the work - work the plan" in managing the project schedule. Microsoft Project 2003, project management software, will be used for tracking, display of work schedules, and status reporting throughout the course of the project.

ITD will be responsible for tracking each ITD employee's time. It will be record on a spreadsheet in hour increments. Each ITD employee will provide the amount of hours spent and the deliverable they spent their time on. A sample time sheet is below.

Name:

Date	Hours	Deliverable
Total:	0.0	

Figure 2. – Timesheet

Schedule Control

The WBS in Appendix A, lists the activities scheduled to complete the work identified for phases 1-3. This WBS is a “living plan” and will be updated bi-weekly to reflect changes in tasks, assignments, and resource schedules. The deliverable dates displayed in the WBS include all available slack time and match deliverable due dates presented in the table below. Significant deviations to this plan will only be approved through the change order process.

The table below illustrates the project milestones and deliverable schedule.

Table-5. Phase 1 Schedule

Phase 1 – Develop of <i>Vision</i> and Procurement Strategy	Start Date	Deliverable Due Date
Program initiation	Feb. 23, 2005	
Project Orientation Meeting with the State	Mar. 6 - 7, 2005	March 7, 2005
Phase 1 Planning	Mar. 8 -14, 2005	Mar. 15, 2005
Vision meetings with State	Mar. 15 -17, 2005	
Review existing systems	Mar. 9 -18, 2005	
Draft <i>Vision</i> delivered	Mar. 25, 2005	March 25, 2005
Focus group Meetings	Mar. 28 - 30, 2005	
<i>Vision</i> revised pursuant to focus groups	April 1, 2005	
Meetings with potential vendors	April 4 - 8, 2005	
Receive follow-up information from potential vendors	April 17, 2005	
Final <i>Vision</i> delivered	April 18, 2005	April 18, 2005
Systems Procurement Strategy meeting with State	April 21, 2005	
Draft Procurement Strategy Report delivered to State	April 29, 2005	April 29, 2005
Comment received from to State	May 3, 2005	
Final Procurement Strategy Report delivered to State	May 5, 2005	May 5, 2005
Phase 2 Planning Begins	May 6, 2005	
<u>RFP Release</u>	<u>July 8,2005</u>	<u>August 19,2005</u>
<u>Contract negotiations completed</u>		<u>September 30,2005</u>
<u>Phase 3 Planning Begins</u>	<u>October 3, 2005</u>	

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7. Cost Management

Project cost management respects the ITD processes required to ensure that the project is completed within the approved budget.

Project Budget

The budget for the first phase is approximately \$110,000. Overall project costs will depend upon which provider is ultimately chosen, but the estimated cost could be up to \$50 million over seven (7) years. Funding for this project is from multiple sources such as chargeback to the agencies, political subdivisions, and universities. Funding for the K-12 aspects is a combination of Federal E-Rate and State General funds.

Phase 2 and Phase 3 Budgets

Detailed budgets for phases 2 and 3 will be presented at the completion of [the previous phase](#).

Deleted: Phase 1

FE Consulting Cost Management

All project expenditures will be monitored to ensure that the project proceeds within the approved budget. *FE's* program manager will track all project costs through *FE's* project accounting system. Project expenditures will be reported each month in the status reports.

8. Quality Management

Federal Engineering's program management team is responsible for quality assurance for all project deliverables. Quality will be maintained by:

- Ensuring all planning, analysis, and documentation tasks are completed on time, within budget, and approved by ITD project sponsor.
- Reviewing system design document deliverables with *FE's* project program managers prior to delivery to ITD.
- Providing bi-weekly status reports to update ITD project manager and stakeholders on schedule, cost, and work performance.
- Using earned value analysis techniques when appropriate (e.g. during the implementation phase) to accurately measure scope, schedule, and performance results.
- [ITD will ensure all project management processes are followed \(i.e. open issues, status and due dates\).](#)

Deliverable review process

FE employs a peer review process to ensure the quality of work performed. A peer review board is constituted made up of individuals with skill sets unique to the program. Members of this board are not, typically, involved in the day-to-day aspects of the program but rather serve in a "red team" capacity challenging the program team and ensuring that all decisions have been well thought out. Periodic technical reviews are conducted throughout the duration of the program and deliverables will be evaluated before transmittal to ITD for review. The schedule is setup allowing for a two day turn-around cycle for ITD review and revisions.

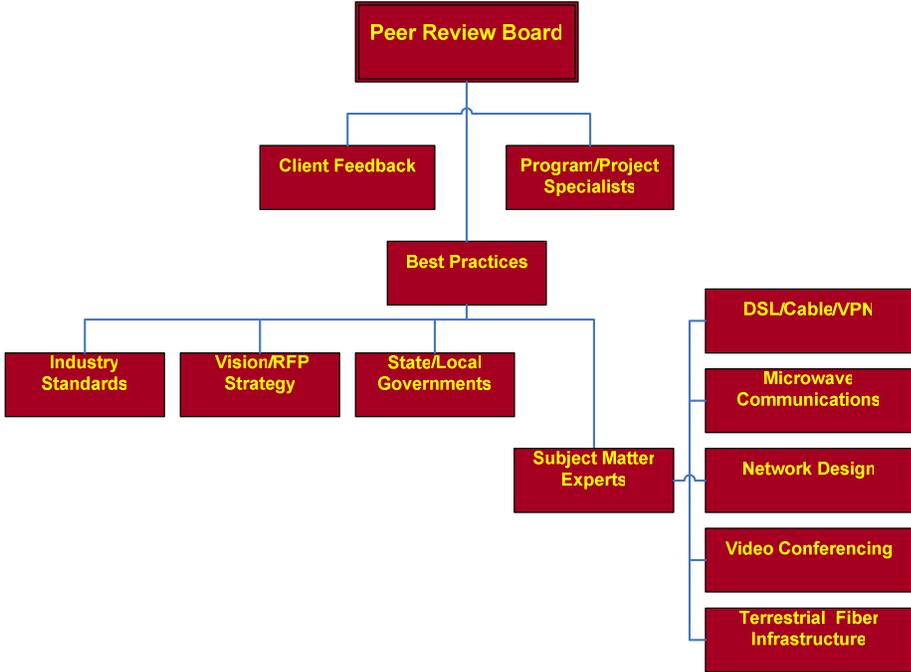


Figure 3. - FE Peer Review Board

9. Integrated Change Control

Integrated change control is concerned with the following:

- Influencing the factors that create changes to ensure that changes are agreed upon;
- Determining that a change has occurred;
- Managing the actual changes when and as they occur.

FE's project manager will monitor project progress in relation to the approved scope of project and product. Occurrences of scope creep, or not performing to scope, will be investigated and documented with action taken to resolve out-of-scope issues. Requests for changes in scope or deliverables will be reviewed.

Change control will begin when a requestor completes the Change Request Form and submits it to FE. FE will analyze the request in terms of the level of effort and skill required to implement it. FE will make a recommendation and communicate the recommendation to the Project Manager. The Project Manager will analyze the recommendation and determine the overall effect of the requested change. The information will be documented on the change request form. The Project Change Request will be then presented to the Executive Steering Committee to make the determination to approve or deny the change. Once a change has been approved, the Project Manager will incorporate the effect of the change into the Project Schedule. A log (similar to the Issue Control Log found in Appendix C) will be used to track all change requests.

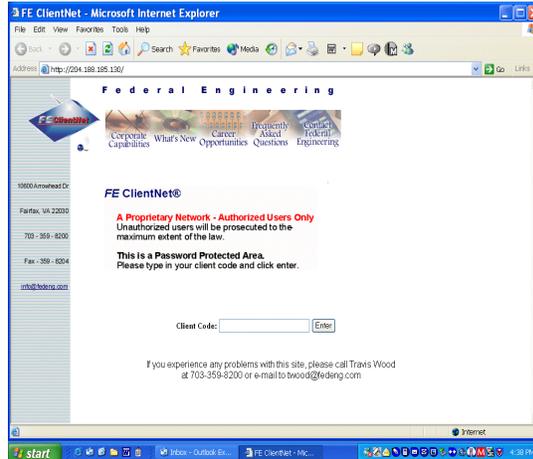
Deleted: Change order authorization will follow ITD policies requiring FE and project sponsor approvals.

Version Control

FE's Project manager is responsible for ensuring that appropriate version control (VC) practices are performed for each phase/ task. VC practices will vary depending on the deliverable products and limited primarily to project documents produced during the first two phases.

Version control for documentation including project schedule, status reports, and deliverables will be maintained in electronic format in **FEClientNet** file management system. Document versions will be labeled for efficient identification and version control.

FEClientNet is an Internet information resource for timely exchanges between **FE** and ITD staff and among the engagement staff for internal communications. **FEClientNet** facilitates web-enabled program management through a broad range of capabilities including real-time reporting of status and information, a repository for program documents, and a rapid and efficient method of collecting information. **FEClientNet** will be customized to meet the needs of the ITD and stakeholders information sharing needs. If necessary, multiple web sites will be used for hierarchical reporting targeted to specific audiences in the state.



[Upon completion of the project FE will provide ITD with a electronic copy of the information that was posted on FEClientNet.](#)

10. Human Resources Management

FE will employ a qualified consulting team including network engineering and system design specialists, business analysts, and project management professionals to complete the SIS 2006 project. The **FE** team will work in concert with ITD's project management and technical team to develop the vision statement, conduct focus group sessions, interview vendors, and assemble the procurement strategy document.

Table-6. Federal Engineering Project Team

Role	Name	Phone Number	Email Address
Key Client Executive	Ron Bosco	Office: 703-359-8200	rbosco@fedeng.com
Program Manager	John Murray	Office: 703-359-8200 Cell: 703-946-3626	jmurray@fedeng.com
Project Manager	Paul Reichert	Office: 360-297-8481 Cell: 360-981-9039	preichert@fedeng.com
Project Technical Lead	Amadeu Baptista	Cell: 973-454-1550	abaptista@fedeng.com
Technical Staff	To be determined		

Table-7. ITD Project Team

Role	Name	Entity	Phone Number	Email Address
Steering Committee	Curt Wolfe, CIO	ITD	701-328-1000	cwolfe@state.nd.us
Steering Committee	Mike Ressler, Deputy CIO	ITD	701-328-1001	mressler@state.nd.us
Exec. Sponsor	Jerry Fossum, Director	ITD – Telecom	701-328-1002	jfossum@state.nd.us
Project Manager	Dirk Huggett, Business Analyst	ITD – Policy & Planning	701-328-1998	dhuggett@state.nd.us
IT Manager	Tim DeGraff, Manager IT Engineering	ITD – Telecom	701-328-1940	tdegraff@state.nd.us
Technical Lead	Glen Rutherford, IT Architect	ITD - Telecom	701-328-2489	grutherford@state.nd.us
Business Lead	Brandy Peterson, Admin. Assistant II	ITD - Telecom	701-328-1002	blpeterson@state.nd.us
Business Analyst	Patrick Forster	ITD - Telecom	701-328-1992	pforster@state.nd.us
Functional Staff	To Be Determined			

11. Risk management

While this project has very high potential for a positive impact to the statewide network operation, it also entails some risks. **FE's** project manager is responsible for managing the risk control plan and communicating results to ITD stakeholders. To accomplish this effectively, **FE's** project team will monitor each risk identified and suggest risk control measures be taken when necessary. Corrective actions will be determined and communicated to the designated ITD project manager and technical lead and other stakeholders, as needed, for resolution.

Project risk will be managed through a four-stage process designed to reduce potential adverse effects on the project. This process has been used to identify risk areas and to establish the mitigation strategies described in this section.

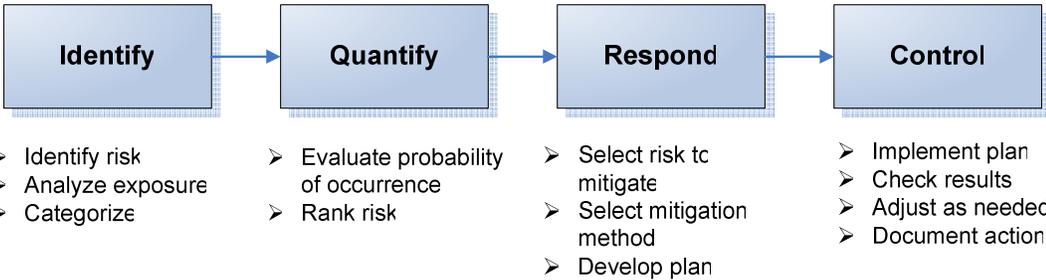


Figure-3 Four-Stage Risk Management Process

The matrix in the table below provides an assessment of potential risks that have been identified by the ITD² and **FE** project teams during the planning stage of the project. The matrix identifies the severity of impact on the project (high, medium, low) and the probability

² The source of the ITD identified risks are the SIS 2006 Project Business Case

(expressed as % of chance) of these risk events occurring. With each risk are the steps that are currently being taken, or which will be invoked, to mitigate or avoid the impact of the risk.

Note: The values assigned to the **Severity** and **Probability** (%) columns in the table below are preliminary estimates; and it is expected that these values will be revised after review and discussion with ITD's project manager.

Table-8. Risk Matrix

I.D. Source	Phase Impact	Type / Risk	Risk Description	Severity ³ Probability (%)	Impact Exposure	Risk Mitigation Strategy
1 ITD	1,2,3	Cost affordability	The desired state will not be available, or will not be affordable, requiring ITD to go out for a second RFP.	High 25	<ul style="list-style-type: none"> • Cost • Schedule • Scope 	<ul style="list-style-type: none"> • Ensure that the consultant (i.e. FE) who develops the RFPs is aware of this risk and develops the RFPs in a way that allows the state to manage expectation without impacting a fair bid process.
2 ITD	3	Schedule constraint	Implementation timeline is too short for transition to new provider.	Med 25	<ul style="list-style-type: none"> • Schedule 	<ul style="list-style-type: none"> • Monitor consultant (i.e. FE) RFP schedule closely to ensure timelines initially laid out are met so that the Sept. 30, 2005 award date is achieved.
3 ITD	1,2	Schedule constraint (Requirements definition)	Requirements are not defined in a timely fashion delaying the release of the RFP.	High 25	<ul style="list-style-type: none"> • Schedule • Cost 	<ul style="list-style-type: none"> • Monitor the RFP consultant's (i.e. FE) schedule closely and work with the consultant to ensure availability of ITD staff as necessary. ITD prefers that the consultant be on-site for much of this portion of this project.
4 ITD	3	Implementation	Migration causes significant outages for customers.	High 25	<ul style="list-style-type: none"> • Quality • Cost 	<ul style="list-style-type: none"> • Any transitions will need to be carefully planned to minimize the impact to the customer. Back-out processes will need to be planned in advance. Anticipate some overlap of services to minimize complete loss of service.
5 ITD	3	Implementation	The provider is unable to deliver as proposed.	High 25	<ul style="list-style-type: none"> • Schedule • Cost • Quality 	<ul style="list-style-type: none"> • In the short-term, a detailed implementation plan will be monitored to ensure the provider is meeting the required needs. The contract will also need to have penalties attached for failure to meet contractual obligations.
6 FE	1,2	Requirements definition	RFP requirements that are not identified, validated, and included in the procurement strategy will cause confusion during the vendor evaluation process.	Med 50	<ul style="list-style-type: none"> • Cost • Quality 	<ul style="list-style-type: none"> • Customer focus group sessions are intended to confirm the <i>Vision</i> and validate the system and provider requirements. Formal requirement reviews are scheduled to ensure that a comprehensive set of system requirements is assembled. • Vendor interviews are scheduled to collect feedback on requirements and providers' capabilities to meet requirements.

³ Severity refers to the potential impact and consequences of the risk event occurring on the project on a scale – Low, Medium (Med), or High

7 FE	2	Project scope (Requirements)	Multiple services provider contracts may be required to meet all requirements.	<u>Low</u> 25	<ul style="list-style-type: none">• Schedule	<ul style="list-style-type: none">• If multiple provider contracts are required to meet all service needs, they could be implemented in phases beginning with the highest priority – backbone network service provider.
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12. Appendices

Appendix A – Microsoft Project Task Plan

SIS 2006 – Work Breakdown Structure

ID	SOW	Task Name	Duration	Start	Finish	Due Date	2005				2006		
							Q1	Q2	Q3	Q4	Q1	Q2	
0		STAGenet Infrastructure Services draft wbs1	352 days	Wed 2/23/05	Thu 6/29/06								
1	2.0	Phase 1 - Develop Vision and Procurement Strategy	53 days	Wed 2/23/05	Fri 5/6/05	2/23/05							
2	2.1	Program Management Office	53 days	Wed 2/23/05	Fri 5/6/05								
13	2.4	Conduct Program Orientation Meeting	9 days	Mon 3/7/05	Thu 3/17/05	3/8/05							
14		Conduct kickoff meeting and vision session	2 days	Mon 3/7/05	Tue 3/8/05								
15		Present Plan and WBS to ITD	2 days	Mon 3/14/05	Tue 3/15/05								
16		Incorporate feedback and finalize plan	2 days	Wed 3/16/05	Thu 3/17/05								
17		<i>ITD Approves Plan</i>	<i>0 days</i>	<i>Thu 3/17/05</i>	<i>Thu 3/17/05</i>	3/17/05							
18	2.5	Develop Telecommunications Vision	28 days	Wed 3/9/05	Fri 4/15/05								
19	2.6	Review existing systems	5 days	Wed 3/9/05	Tue 3/15/05								
20		Develop Draft Vision Report	7 days	Wed 3/16/05	Thu 3/24/05								
21		Deliver Draft Vision Report	1 day	Fri 3/25/05	Fri 3/25/05	3/25/05							
22	2.7	Conduct Focus Group Meetings	3 days	Mon 3/28/05	Wed 3/30/05								
23		State government	1 day	Mon 3/28/05	Mon 3/28/05								
24		K-12	1 day	Tue 3/29/05	Tue 3/29/05								
25		Higher education	1 day	Wed 3/30/05	Wed 3/30/05								
26		Revise vision report - per focus group feedback	2 days	Thu 3/31/05	Fri 4/1/05								
27	2.8	Meet with Vendor Community	5 days	Mon 4/4/05	Fri 4/8/05								
28		Receive follow-up information from potential vendors	5 days	Mon 4/11/05	Fri 4/15/05								
29		<i>Deliver Final Vision Statement</i>	<i>0 days</i>	<i>Fri 4/15/05</i>	<i>Fri 4/15/05</i>	4/18/05							
30	2.9	Develop Procurement Strategy	14 days	Mon 4/18/05	Thu 5/5/05								
31		Conduct procurement meeting with State	2 days	Mon 4/18/05	Tue 4/19/05								
32	2.10	Develop Procurement Strategy Report (PSR)	7 days	Wed 4/20/05	Thu 4/28/05								
33		Deliver PSR to State	0 days	Thu 4/28/05	Thu 4/28/05								
34		State reviews PSR and comments	3 days	Fri 4/29/05	Tue 5/3/05								
35		Revise PSR for State feedback	2 days	Wed 5/4/05	Thu 5/5/05								
36		<i>Deliver Final PSR to State</i>	<i>0 days</i>	<i>Thu 5/5/05</i>	<i>Thu 5/5/05</i>	5/5/05							
37													
38	3.0	Phase II - Procurement Support	105 days	Fri 5/6/05	Thu 9/29/05	9/30/05							
55													
56	4.0	Phase III - Implementation Support (Schedule TBD)	195 days	Fri 9/30/05	Thu 6/29/06	6/30/06							

Appendix B – Communications Plan

Deliverable/Description	Sender/Organizer	Receiver Categories	Delivery Method	Delivery Frequency
Weekly Meeting	Project Managers	Sponsor, state project leaders, any on-site FE staff	Meeting	Weekly @ 4 p.m. Wednesday
Executive Steering Committee Meetings	State PM	ESC, Sponsor, PMs & Leads	Meeting	As Needed
State Status Reports	Project Managers	Project Team, Customer Groups, Vendors	PDF posted to STAGEnet Web site	Biweekly by EOB. Friday (Opposite FE report)
FE Status Reports	Facilitator	Formal & Informal Reviewers, Provide Resources	Paper report via e-mail	Biweekly by EOB. Friday (Opposite state report)
Initial Change Requests	Project member	FE & State PMs	Form via e-mail	As Needed
Escalated Change Requests – Requests requiring significant project adjustments	Project Managers	State ESC & FE Review Board	Form via e-mail	As Needed
Project Charter	State PM	State ESC	Paper report via e-mail	Project Initiation
Project Plan	State & FE PMs	Project Team	MS Word doc via ClientNet	Project Initiation
Draft Vision Document	FE Project Lead	Project Team	MS Word doc via e-mail	Once on due date
Final Vision Document	FE Project Lead	Project Team	PDF via ClientNet & posted to STAGEnet Web site	Once on due date
Final Procurement Strategy Report	FE Project Lead	Project Team	PDF via ClientNet & posted to STAGEnet Web site	Once on due date
Final RFPs	FE Project Lead	Project Team	PDF via ClientNet & posted to STAGEnet Web site	Once on due date
Vendor(s) Selected	FE Project Lead	Project Team	PDF via ClientNet & posted to STAGEnet Web site	Once on due date
Final Business Case (Selection Document)	FE Project Lead	Project Team	PDF via ClientNet & posted to STAGEnet Web site	Once on due date
Contracts Signed	FE Project Lead	Project Team	PDF via ClientNet & posted to STAGEnet Web site	Once on due date

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Post Project Review	Project Managers	Project Team	PDF via ClientNet & posted to STAGEnet Web site	Once on project Closeout

[Other deliverables may be added as the project progresses.](#)

