2010 Baldrige National Quality Program

NuGrain Laboratories Scorebook

2010 Baldrige National Quality Program
National Institute of Standards and Technology • Department of Commerce

NuGrain Laboratories Scorebook

The *NuGrain Laboratories Scorebook* was prepared for use in the 2010 Malcolm Baldrige National Quality Award Examiner Preparation Course. This scorebook was developed by a team of experienced Baldrige Examiners who evaluated the *Nugrain Laboratories Case Study*, using the Independent and Consensus Review Process. The *NuGrain Laboratories Case Study* describes a fictitious government-owned, contractor-operated research laboratory. There is no connection between the fictitious NuGrain Laboratories and any other organization, either named NuGrain Laboratories or otherwise. Other organizations cited in the case study also are fictitious, except for several national and government organizations. Because the primary purpose of the case study is to provide learning opportunities for training Baldrige Examiners and others, there are areas in the case study where Criteria requirements purposely are not addressed.

NuGrain Laboratories scored in band 5 for both Process and Results Items. An organization in band 5 for Process Items typically demonstrates effective, systematic, well-deployed approaches responsive to the overall requirements of most Criteria Items. The organization demonstrates a fact-based, systematic evaluation and improvement process and organizational learning, including innovation, that result in improving the effectiveness and efficiency of key processes. For an organization that scores in band 5 for Results Items, results typically address most key customer/stakeholder, market, and process requirements, and they demonstrate areas of strength against relevant comparisons and/or benchmarks. Improvement trends and/or good performance are reported for most areas of importance to the Criteria requirements and the accomplishment of the organization's mission. Performance projections for some high-priority areas are reported.

Scoring Ranges

Item	Scoring Range (%)
1.1	70 +/- 10%
1.2	60 +/- 10%
2.1	65 +/- 10%
2.2	50 +/- 10%
3.1	60 +/- 10%
3.2	60 +/- 10%
4.1	60 +/- 10%
4.2	50 +/- 10%
5.1	60 +/- 10%
5.2	65 +/- 10%
6.1	65 +/- 10%
6.2	65 +/- 10%
7.1	50 +/- 10%
7.2	50 +/- 10%
7.3	60 +/- 10%
7.4	60 +/- 10%
7.5	65 +/- 10%
7.6	60 +/- 10%

Total Score for Process Items (points): 338 +/- 10% (Band 5)
Total Score for Results Items (points): 257 +/- 10% (Band 5)

Consensus Scorebook

2010

Examiner's Name	**Training Scorebook Team**	Number of Hours Worked	**Many**
Applicant Number	**2010 Case Study**		

Criteria and Scoring Guidelines Used:

X	Business/Nonprofit		Health Care		Education

Key Factors Worksheet

P.1a Organizational Environment

Main Product Offerings

Government-owned, contractor-operated (GOCO) strategic research organization managed by Nebraska Free University (NFU). Products consist of Strategic Research Plan, research publications, commercialization pathways (licenses), and an agricultural research capability. Manages 152 projects in four program areas. Approximately 70% of funding is from the USDA, 20% from work with other federal agencies (e.g., DOE, HHS, etc.), and remaining 10% from the Work for Others (WFO) program.

Culture

Organizational culture of leadership, efficiently run organizational systems, and respect for scientific inquiry.

Mission and Vision

Mission: To develop and manage agricultural research of strategic importance to the U.S. economy and security. Vision: To be the premier government-owned laboratory system through partnerships and innovative solutions for America's farmers.

Values

Values: (1) demonstrate integrity in our science, relationships, and management of government assets; (2) pursue scientific knowledge and respect diverse opinions; (3) cultivate innovation and creativity; (4) practice open and honest communication with each other and our partners, maintaining the security of confidential information; (5) demonstrate leadership in all we do, in all the communities we serve; (6) focus on efficient and effective processes; and (7) respect the land and the people who use it.

Core Competencies

Core competencies: (1) systematic agricultural research; (2) systematic and controlled Process Portfolio Management and Research Portfolio Management; (3) development of close, collaborative partnerships among academia, government, and the agricultural science industry to merge science with solutions to create commercialization pathways; and (4) specialized research competencies in corn endosperm mutations, corn and wheat breeding/physiology, grain gene splicing and engineering, wheat germplasm, and crop nanotechnology.

Workforce Profile

5,653 nonunion employees at sites in four states: Nebraska (53%), Mississippi (12%), Pennsylvania (19%), and California (16%). Segmented by site and job type (scientists, lab support, farm operations, students, administrative support, maintenance, senior leaders, program leads, and program administrators). Diversity includes white (46%), African American (23%), Hispanic (12%), Asian (13%), and other (6%). All have high school or equivalent, doctorates (37%), master’s (24%), bachelor’s (28%).

Workforce Engagement Factors

Engagement factors—scientists: scientific freedom, collaborative environment, access to state-of-the-art technology, and opportunity to publish and present; laboratory support and farm operations staff: organization's mission, recognition, reliable compensation, tools to do the job, and benefits; students: work experience while in school, opportunity to grow and learn, and ability to participate in cutting-edge research; administrative support staff and maintenance staff: job security, alignment to organization's

mission, and recognition; senior leaders, program leads, and program administrators: making a difference in farm productivity and the opportunity to shape the research agenda.

Workforce Satisfaction Factors

Satisfaction factors—scientists: challenging and meaningful work, compensation and benefits, effective support processes; laboratory support and farm operations staff: flexible hours, adequate employee staffing for projects, opportunity to grow and learn; students: career support and quality mentoring, challenging work environment, recognition, opportunity to publish and present; administrative support staff and maintenance staff: compensation and benefits, tools to do the job; senior leaders, program leads and program administrators: opportunity to grow and learn, challenging and meaningful work.

Benefits, Health and Safety Requirements

Multiple benefits focused on four areas: (1) sustain a healthy workforce; (2) create a safe and healthy environment; (3) develop the workforce; and (4) sustain workforce satisfaction and engagement. Health and safety factors include chemical and electrical hazards; ergonomic issues; strains, sprains, trips, and falls; incidents related to operation of machinery, lab equipment use, and security.

Major Facilities

All facilities and equipment operated by the applicant are the property of USDA. The applicant owns field laboratories that include farmland in various regions (Nebraska, California, Mississippi, and Pennsylvania) that enable it to test the effects of disparate climates. All laboratory locations are near collaborating universities.

Technologies and Equipment

Key technologies include configurable laboratory technology, data acquisition and remote sensing systems, global positioning systems, field science technology, a nationwide virtual private network, and a virtual agricultural library. Key equipment includes lasers; electron microscopes; mass spectrometers; centrifuges and mixing equipment; tractors; harvesters; planters; information technology servers; and desktop and network equipment.

Regulatory Environment

EEOC, OSHA, EP/State Environmental Health, and the USDA Inspector General.

P.1b Organizational Relationships

Organizational Structure and Governance

Joint reporting structure between USDA and NFU. Applicant's Director reports directly to NFU Chancellor and Director of Strategic Research at USDA Agricultural Research Services Administrative Council. Nine- member Senior Leadership Team that provides guidance and oversight to the Research Leadership Team and the Operations Leadership Team. The Research Leadership Team oversees the applicant's research and related activities (e.g., publications review), while the Operations Leadership Team oversees day-to-day operations at the four sites.

Market Segments and Requirements

Market segments include funding community, agricultural community, and scientific community. Funding community requirements: achievement of contract deliverables; efficient prime contract management with adherence to timeline, low contract fees, collaborative relationships and shared technology; total project cost within budget; and cost-effective and timely commercialization process. Agricultural community requirements: easily applied farming practices, increased crop yields, savings through reduced fertilizer and pesticide usage, timely commercialization of products, and reduction of

soil erosion. Scientific community requirements: publication of articles in strategic thrust areas, high ratings of programs by peers, and publications in peer-reviewed journals.

Customers and Requirements

Customer groups include USDA program managers, other government agency program managers, and WFO program managers. Their requirements include achievement of contract deliverables, award and commercialization of patents, publication of articles in peer-reviewed journals, project overhead costs at or below contract specification, low contract fees, effective program and project execution at a competitively lower cost, collaborative relationships and shared technology, and reduction of research cycle times and adherence to deadlines.

Stakeholder Groups and Requirements

Key stakeholder groups include NFU, students, industry partners, and collaborating universities. NFU: low project costs associated with overhead, low contract fees, efficient process management, total project cost within budget, and positive public relations. Students: opportunities to contribute to research, scholarship awards, and diverse training opportunities. Industry partners: opportunities for shared research, learning and collaboration, collaboration with the agricultural community, timely commercialization of products, and WFO projects within budget, with effective, on-time project planning and execution. Collaborating universities: achievement of contract deliverables, collaborative relationships and shared technology, cost effective and timely commercialization of products, publications in peer-reviewed journals, and positive public relations.

Suppliers, Partners, and Collaborators

Suppliers, partners, and collaborators include Cultibiz Equipment and Supplies, Hardway Office Supply Store, Ill International, Zepro Chem, universities, and the Cooperative Extension System. Provide research materials and equipment, crop-growing equipment and supplies, innovative ideas for new work technologies, expertise in technology, non-core-competency services, administrative and program management of contracts, methodology to disseminate knowledge, and innovative solutions.

Supply Chain Requirements

Supplier and partner supply chain requirements include quality, on-time delivery, flexible/tailorable solutions, best value, knowledge transfer, fair treatment, innovation, and capable staff.

Key Communities

Key communities include local communities surrounding applicant's laboratory sites, agriculture-focused students, agricultural-degree-program graduates, farmers, colleges, universities, high schools, and middle schools with future technical workforce potential.

P.2a Competitive Environment

Competitive Position, Size, and Growth

Largest GOCO in the USDA and the 15th largest GOCO in the United States. Conducts 10 percent of all USDA research projects, with budget approximately one-half that of the largest GOCO in the country. Has increased contracts from $20 million in 1997 to $2.4 billion in 2009. Projects have increased from 10 to 152 during same time frame. Some 100 competitors in agricultural research, including universities, laboratories, and companies performing competing research.

Principal Success Factors

Principal success factors: (1) research cycle times, (2) rate of innovation implementation, (3) ability to engage in high risk research, (4) ability to attract the brightest minds, (5) strong business practices that provide systematic, repeatable results in business management, (6) a strategic research system, (7)

excellent and sustainable relationships with customers, suppliers, partners, and collaborators, (8) participation and visibility in the community, and (9) a reputation for a customer-centered culture.

Changes Affecting Competitive Situation

Key changes affecting competitive situation are the reduction in funding opportunities for general crop research and consolidation of food research companies within the private sector that is resulting in much larger private competitors.

Competitive and Comparative Data

Data sources inside industry include GOCOs; annual performance evaluations of government-owned, government-operated organizations (GOGOs); partnerships with progressive GOCOs/GOGOs; personal relationships; and the Virtual Agricultural Library for Online Research. Sources outside industry include prior Baldrige Award recipients. Limitations are that short-term private industry strategies are not comparative to the applicant’s long-term strategies.

P.2b Strategic Context

Strategic Thrusts

Applicant's strategic thrust areas include efficient and precision farming, better nutrition approaches, new and useful product development, and grain safety and resistance.

Strategic Challenges

Key strategic challenges include the high cost of entry into new research programs, conflicts between industry and government, and high expense of new technologies for farmers. Challenges affecting sustainability include uncertain funding environment, competition with other contractors, changing contract performance requirements, and declining number of agricultural graduates.

Strategic Advantages

Key strategic advantages include well-established facilities and a reputation for continuing success, strong relationships with community colleges, and a strong reputation for leading industry research. Advantages affecting sustainability include the USDA's knowledge of the organization, a record of strong results and efficient processes, the ability to anticipate and adapt to changing research priorities and to develop innovations, long-term continuity, uninterrupted and consistent support based on a continuing relationship, proven Prime Contract Management Process, a strong reputation for agricultural research, and a strong partnership with the Cooperative Extension System.

P.2c Performance Improvement System

Performance Improvement System

Performance improvement system includes strategic planning, scorecard reviews, the Process Team Process, Performance Improvement Process, Six Sigma, Scientific Peer Research Review, Process Idea Wells, USDA peer review panels, and an annual, external Baldrige assessment.

Key Themes Worksheet

What are the most important strengths or outstanding practices (of potential value to other organizations) identified in the applicant's response to Process Items?

- The applicant leverages its core competencies related to systematic agricultural research, Process Portfolio Management, and Research Portfolio Management (Figure 6.1-1) to optimize the long-term life-cycle management of agricultural research contracts. Each strategic objective is aligned with a core competency. These core competencies are supported by an effective, systematic Work System Design Process (Figure 6.1-2) and Stage-Gate Process (Figure 6.2-1) that integrate voice-of-the-customer (VOC) needs and expectations into the design of the key processes and work systems. This integrated approach demonstrates the organizational value of focus on efficient and effective processes.
- The applicant demonstrates management by fact through systematic approaches for data measurement, analysis, and use; the Measure Selection Process; and a schedule of organizational performance reviews aligned with contract, strategic, and other business needs (Figure 4.1-3). An example of the applicant's ability to translate data into meaningful information is senior leaders' use of the Senior Leadership Team (SLT) Scorecard to monitor progress on research projects and programs and achievement of the Strategic Plan. As part of strategy development, the Metrics Infrastructure Group (MIG) collects and aggregates data for the environmental scan. R-37 survey data are used both to identify potential products for customers and in the Requests for Proposals development process. These processes allow the applicant to improve organizational performance, incorporate learning as cycles of refinement into current processes, and build on the success factor related to strong business practices that provide systematic, repeatable results in business management.
- The applicant focuses on customer-driven excellence through designing and improving systematic processes that include using a VOC approach to determine key customer requirements, using the Performance Evaluation Plan (PEP) to ensure a focus on customer requirements, developing staff capability to engage customers via Touch Point training, obtaining input from customers and partners to incorporate into the Strategic Planning Process (SPP), and using the complaint process and the Irritant Program to address customer dissatisfaction. To incorporate organizational learning, these customer-focused processes have undergone cycles of refinement resulting in improved processes over time. All of these approaches support the applicant's customer-focused culture and align with its principal success factor related to excellent and sustainable relationships with customers, suppliers, partners, and collaborators.
- The applicant utilizes a well-executed approach to organizational learning that includes continuous improvement of existing processes. For example, the Senior Leader Communication Plan was refined in 2008 to include daily rounding with employees, and it was recently refined to include the collection of topics and questions prior to Hoedown Sessions. The SPP is evaluated annually, and improvements include the revision of planning horizons, the introduction of the Strategic Alignment Document, and the formation of the MIG. Other examples of approach refinements include the Product and Service Offering Process, the VOC Process, workforce engagement and communication processes, and approaches used to improve work processes. By assessing and refining approaches important to organizational success, the applicant supports its cultural focus of identifying problems, innovating solutions, and improving performance results.

What are the most significant opportunities, concerns, or vulnerabilities identified in the applicant's response to Process Items?

- Although the applicant has multiple approaches to engage customer and stakeholders groups, there are gaps in deployment to some of these groups. For example, it is not evident that potential customers included in the Product and Service Offering Committee (PSOC) include representatives from diverse geographies and market segments. It is not evident that the Irritant Program is deployed to all relevant customer/partner groups, nor is it clear that Touch Point training is individualized to meet the varying requirements of customers and stakeholders. The PEP Negotiation Process is not deployed to all relevant customer groups, such as non-USDA government agencies and the Work for Others (WFO) program managers. Lastly, it is not clear how work process management approaches are deployed to partners and collaborators. Without full deployment, the applicant may be limited in its ability to fully leverage its principal success factor of excellent and sustainable relationships with customers, key suppliers, partners, and collaborators.
- While the applicant tracks data and information on a variety of measures to use for organizational performance improvement, it is not clear that it utilizes systematic processes for determining organizational goals, performance projections, or comparative data. Goals are not included in the Strategic Alignment Document (Figure 2.2-1), and it is not evident how the projections that are included in this document and in results data were chosen. Additionally, it is not clear how the Comparative Data Selection Process ensures the effective use of comparative data or how the process supports top-box comparisons and innovation. Developing and implementing systematic processes for determining organizational goals, performance projections, and comparative data may help the applicant achieve exceptional performance, as well as attain its vision of becoming the premier government-owned laboratory.
- Several operational processes do not appear to be fully deployed to all relevant workforce segments and geographic sites. For example, while social responsibility is a priority and voluntarism is supported by the applicant, it is clear whether its workforce members in all types of jobs (e.g., scientists, farm operations staff) at all locations participate in its volunteer activities. While the applicant identifies four methods used to improve work processes, it is not clear that they are deployed to all sites and workforce segments. Also, it is unclear if succession planning and career progression processes are deployed to all workforce members, including scientists in highly technical, specialized areas, and it is unclear whether the Engagement of Workforce Assessment (EWA) differs across workforce segments. Without fully deploying key operational processes to all relevant workforce segments and sites, the applicant may miss opportunities to engage the entire workforce and demonstrate leadership in the communities it serves.

Considering the applicant's key business/organization factors, what are the most significant strengths found in its response to Results Items?

- Multiple process effectiveness outcomes that are aligned with the applicant's key customer requirements of reduced cycle times and effective program execution demonstrate good performance levels, beneficial trends, and favorable comparisons. Research Total Cycle Time (Figure 7.5-1) shows improvement in strategic thrust areas and overall, with overall performance improving from 39 months in 2003 to 30 months in 2009 and outperforming the best competitor since 2005. External Peer Review Scores (Figure 7.5-2) also show improvement overall and in strategic thrust areas from 2003 to 2009, with overall results equal to or better than the best competitor’s since 2006. During the same time period, the Process Management Efficiency Ratio (Figure 7.5-4) improved from about 100 to

approximately 1,700, with performance equal to or better than the best competitor's the last two years. In addition, results for Idea Well suggestions and implementations (Figure 7.5-16) show that from 2005 to 2009, submissions increased from 586 to 1,129, and implementations grew from 92 to 564. These results indicate the applicant's success in building on its principal success factors of research cycle times and strong business practices that provide systematic, repeatable results in business management, as well as its value of cultivating innovation and creativity.

- Several of the applicant's product and financial outcomes demonstrate beneficial trends and favorable comparisons. For example, the percentage of Incentive Award Fees Earned (Figure 7.1-2) almost doubled between 2003 and 2009 and exceeded the performance for the best USDA competitor each year. Similarly, the number of patents awarded for 2009 (Figure 7.1-3) was more than four times the 2003 level and 17 percent above the best competitor's performance. Also, in 2009, the applicant exceeded its best competitor in the number of articles published in peer-reviewed journals (Figure 7.1-4), with a total of 3,000 articles compared to 2,400 for the competitor. In addition, from 2003 to 2009 the value increase for Crop Yields (Figure 7.1-5) improved from $10 to $150 per acre, outperforming the best competitor each year. Also, results for Funding Growth (Figure 7.3-1) show steady improvement from $20 million in 1997 to $2.4 billion in 2009, surpassing its two top competitors. Results for Funding Sources by Customer Group (Figure 7.3-5) show an increase from 2003 to 2009 in funding from other government agencies from zero to over 20 percent, while WFO funding increased about eight percent. These results indicate the applicant's success in addressing its strategic challenges of uncertain funding and increasing competition.
- Several customer-focused and workforce-focused results demonstrate good performance levels, beneficial trends, and/or favorable comparisons. Results for USDA Satisfaction with Research Program Elements and USDA Satisfaction with Research Project Elements (Figures 7.2-1 and 7.2-2) show significant improvement from 2005, when scores ranged from 75 to 80, to 2009 scores that range from 86 to 95. Results from the EWA for Engagement Overall and by Segments, Engagement by Location and Years of Service, and Engagement by Education and Ethnicity (Figures 7.4-1−7.4-3) show improvement for all segments from 2005 to 2009, with the applicant's 2009 overall engagement score exceeding the best peer comparison. During the same time period, results for Engagement on Elements of Organizational Health (Figures 7.4-4) show improvement to a score at or above 4.0 (on a five-point scale) for all seven elements, with six of those elements equaling or surpassing the best peer's score. Also, the applicant's Training Effectiveness by Assessment Level (Figure 7.4-8B) has been better than the best competitor's results since 2007 and has steadily improved for each level from 2005 to 2009. These results support the principal success factor of attracting the brightest minds by addressing the opportunity to grow and learn and other workforce engagement and satisfaction factors.

Considering the applicant's key business/organization factors, what are the most significant opportunities, vulnerabilities, and/or gaps (related to data, comparisons, linkages) found in its response to Results Items?

- The applicant is missing several results that may be needed to address its overall organizational performance. For example, results are not included for several strategic thrust areas, such as enhancing the taste of healthier products (Better Nutrition Approaches); new or more useful products from plants, including fiber-conversion products (New and Useful Product Development); or fertilization in different growing environments (Grain Safety and Resistance). In addition, results are not presented for the applicant's core competency of specialized research competencies, such as corn or wheat enhancements from gene engineering or crop nanotechnology. Also, there are no results related to the success factor of engagement in high-risk research. Results are not provided for measures of engagement and

loyalty for several key market segments, such as the agricultural and scientific communities. Likewise, the applicant has not reported results for many important measures of workforce engagement and satisfaction, such as scientific freedom, access to state-of-the-art technology, the opportunity to publish and present, tools to do the job, work experience while in school, job security, challenging and meaningful work, effective support processes, flexible hours, and adequate staffing. The applicant may not be able to fully achieve its mission and vision without a full complement of organizational performance measures.

- Several results do not include competitive or comparative data. For example, comparisons are not provided for results related to the satisfaction of the scientific and agricultural communities, collaborating universities, or students (Figures 7.2-6–7.2-9). Also, no comparative data are included in several leadership outcomes, such as measures of fiscal accountability (Figure 7.6-2), regulatory and legal findings (Figure 7.6-3), and ethical behavior (Figure 7.6-4). In addition, some comparisons may not support the applicant's vision to be the premier government-owned laboratory system. For example, comparisons for published articles to other USDA competitors (Figure 7.1-4) do not take into account the many laboratories outside the agricultural industry. Similarly, several financial results, such as Overall Performance to Budget (Figure 7.3-2) and Project Overhead Costs (Figure 7.3-6), are compared only to a very limited number of competitors. The applicant may not be able to maintain its strategic advantage of strong results without robust and appropriate comparative data.

Consensus Review Worksheet—Item 1.1

Senior Leadership

Relevant Key Factors

1. Vision: To be the premier government-owned laboratory system through partnerships and innovative solutions for America's farmers.
2. Mission: To develop and manage agricultural research of strategic importance to the U.S. economy and security.
3. Values: (1)demonstrate integrity in our science, relationships, and management of government assets, (2)pursue scientific knowledge and respect diverse opinions, (3)cultivate innovation and creativity, (4)practice open and honest communication with each other and our partners, maintaining the security of confidential information, (5)demonstrate leadership in all we do, in all the communities we serve, (6)focus on efficient and effective processes, and 7)respect the land and the people who use it.
4. 5,653 nonunion employees at sites in four states: Nebraska (53%), Mississippi (12%), Pennsylvania (19%), and California (16%). Segmented by site and job type (scientists, lab support, farm operations, students, administrative support, maintenance, senior leaders, program leads, and program administrators).
5. Customer groups include USDA program managers, other government agency program managers, and WFO program managers.
6. Key strategic challenges include the high cost of entry into new research programs, conflicts between industry and government, high expense of new technologies for farmers. Challenges affecting sustainability include uncertain funding environment, competition with other contractors, changing contract performance requirements, and declining number of agricultural graduates.

Strengths

++	Strength	Item Ref.
	The applicant's Leadership Integration Model (Figure 1.1-1) provides a systems approach to leadership that includes multiple linked processes to guide and sustain the organization through setting direction and vision, planning, aligning the mission to customer/stakeholder requirements and organizational core competencies, deploying resources, developing the workforce, and other leadership functions. The model places the applicant's mission at the center of all leadership activities. Senior leaders (SLs) deploy the mission, vision, and values (MVV) by posting them in the cafeteria and other common areas, reinforcing them at new employee orientation and Hoedown Sessions, and creating 10-minute MVV/strategic objective teaching moments for monthly presentation by managers. The applicant also includes the MVV and performance expectations in all partner and supplier contracts. The MVV are reviewed and kept current as part of the Strategic Planning Process (SPP).	a(1)
	The applicant's organizational value of demonstrating integrity in its science, relationships, and management of government assets sets the foundation for SLs to foster, require, and ensure legal and ethical behavior. On an annual basis, SLs sign the Code of Conduct during a quarterly workforce meeting and provide personal examples of ethical business conduct. SLs enforce a no-tolerance approach for violations of the Code of Conduct. As a result of a performance improvement review in 2006, SLs began conducting an annual, mandatory legal and ethical webcast for	a(2)

++	Strength	Item Ref.
	the workforce and partners. During this webcast, SLs review the annual USDA Ethics Report, identify new legal requirements, and role-play case studies.	
	The Senior Leader Communication Plan is used to enhance and ensure communications with the workforce, customers, and stakeholder groups. The plan notes what is to be communicated by which leadership group and the frequencies of communication. Methods of communicating with the workforce (Figure 1.1-3) include such approaches as Hoedown Sessions, e-mail, an internal newspaper, and weekly face-to-face or webcam discussions with 10 randomly selected employees. The approach was refined in 2008 when SLs began daily rounding with employees and was more recently refined to add the solicitation of topics and questions prior to Hoedown Sessions. Approaches used by SLs to reward and recognize members of the workforce include personal thank-you notes, awards for high performance, and staff performance incentives/bonuses. These multiple methods support the applicant's value to "practice open and honest communication with each other and our partners and reinforce a culture of high performance."	b(1)
	Innovation of processes is part of the applicant's organizational culture. SLs personally participate in the SPP, action planning, the Process Design Process, and the Stage-Gate Process with the intent of ensuring that innovation is a focus. Additionally, partner agreements contain measurable outcomes for implementing new approaches, and three workforce awards are given for innovation. Further, benchmarks are built into data analysis to challenge the organization's workforce to use innovation to match and exceed competitors' performance.	a(3)

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
	Although the applicant routinely obtains input from customers and other stakeholders and uses this input during the SPP, it is not evident how the organization balances value for all customers and other stakeholders. For example, customer relationship development concentrates on the U.S. Department of Agriculture (USDA), with little evidence of similar relationship development with the newer research funding customers. Additionally, organizational action planning does not appear to fully address university partnership opportunities outside of Nebraska Free University (NFU). Without effectively balancing value for all customers and stakeholders, the applicant may have difficulty maintaining its principal success factor of maintaining excellent and sustainable relationships with customers and partners, as well as addressing its sustainability strategic challenge of an uncertain funding environment.	b(2)
	Although SLs identify one leadership skill they will work on together each year, leaders do not appear to have a fact-based, systematic approach in place for each senior leader to develop and enhance his or her personal leadership skills. Additionally, there is little evidence that the applicant's approach to development of future leaders, including succession planning, is deployed to a variety of workforce segments. For example, it is not clear that it is deployed to all key personnel, such as scientific researchers with specialized knowledge and expertise and employees who are primary contacts with key partners. A lack of deployment to such workforce members could limit the applicant's attempts to create a sustainable organization.	a(3)

Scoring for Item 1.1

Score Range: **70-85%**
Score Value: **70**

Consensus Review Worksheet—Item 1.2

Governance and Societal Responsibilities

Relevant Key Factors

1. Value: respect the land and the people who use it
2. Value: demonstrate integrity in our science, relationships, and management of government assets
3. Value: demonstrate leadership in all we do, in all the communities we serve
4. Joint reporting structure between USDA and Nebraska Free University (NFU). Applicant's Director reports directly to NFU Chancellor and Director of Strategic Research at USDA Agricultural Research Services Administrative Council. Nine member Senior Leadership Team (SLT) that provides guidance and oversight to the Research Leadership Team and the Operations Leadership Team. The Research Leadership Team oversees the applicant's research and related activities (e.g., publications review), while the Operations Leadership Team oversees day-to-day operations at the four sites.
5. Key stakeholder groups include NFU, students, industry partners, and collaborating universities.
6. Key communities include local communities surrounding applicant's laboratory sites, agriculture-focused students, agricultural degree program graduates, farmers, colleges, universities, high schools, and middle schools with future technical workforce potential.

Strengths

++	Strength	Item Ref.
	SLs are accountable to the NFU Board of Trustees (BOT) and Chancellor. The applicant's Director meets quarterly with the Chancellor and the USDA Director of Strategic Research to review governance and contract responsibilities. Several approaches are used by the applicant to achieve fiscal accountability and independence in audits. These include random monthly audits of internal systems, an annual external audit, and piloting of the U.S. Office of Management and Budget (OMB) Federal Funding and Transparency Act of 2006 standards. The applicant also uses an open performance review system that allows any stakeholder to view the results of the performance review meetings.	a(1)
	Ethical and legal behavior is an organizational expectation for all staff members and partners. To support a no-tolerance environment for unethical behavior, the applicant's systematic, well-deployed approaches include ethics training for new employees, training on the responsible conduct of research, annual signings of the general and research Codes of Conduct, enforcement of the Codes of Conduct by the Research Integrity Officer and the Legal/Compliance Officer, investigations of all allegations and hot line calls, and an internal audit. Based upon an improvement in the ethics process, audit findings and scenarios are shared with SLs and the workforce for use in understanding and recognizing ethics issues. The Code of Ethics is included in NFU and partner/supplier agreements. The applicant also has established measures and goals for many of these processes (Figure 1.2-2).	b(2)
	The applicant demonstrates effective, systematic approaches to reduce potential adverse impacts of its products and operations on the environment. The Environmental Protection Process uses environmental impact statements and risk management plans to identify compliance and societal risks, and it includes review by the SLT and the	b(1) & c(1)

++	Strength	Item Ref.
	Ethics, Safety, and Research Review Committees. Public meetings are held annually at each site to share current and future project information and to gather feedback from farmers, local citizens, and businesses. The feedback is used during the environmental scan portion of the SPP. The applicant also demonstrates societal responsibility in its processes related to environmental well-being. Examples include the recapture of water, the use of solar cells, the use of environmentally friendly fertilizer products, the establishment of Green Teams, and an environmental review of all new research projects. All of these approaches support the organizational value of respect the land and the people who use it.	
	The performance of all SLs is evaluated annually, and the Director's review is with the NFU Chancellor. The BOT conducts its own annual self-assessment to identify opportunities for improvement. An organization-wide leadership development plan is created annually, using the strategic objectives, core competencies, and action plans as input, as well as individual leaders' performance plans. Demonstrating organizational learning, the applicant has improved and refined these approaches; for example, in 2005, it developed the Leadership Integration Model, and in 2006, it added workforce participation to the evaluation of the leadership system.	a(2)

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
	While the applicant has several mechanisms in place to protect stakeholder interests, including restriction of gifts, specifications for selection of suppliers, and compliance with hiring laws, it is not clear that each method has been deployed to all stakeholders. Specifically, the applicant has identified several stakeholder groups (Figure P.1-6), such as industry partners, whose interests do not appear to be addressed by these policies. Additionally, since the governance structure mainly involves NFU and the USDA, it is not clear how the other university and non-USDA funding agencies' interests are represented. A more comprehensive governance approach may help ensure that there are no gaps in the protection of stakeholder interests.	a(1)
	While the applicant states that it identifies key communities based upon core competencies, there is little evidence that a fact-based, systematic approach is used to determine those key communities. Additionally, although the applicant indicates that it strengthens its key communities through voluntarism and environmental protections, it is not evident that all components of the workforce at all locations participate. For example, it is not clear how many scientists participate, whether staff members use their 24-hour allotment of work time for voluntarism, or whether there is involvement of students in voluntarism that might support learning and provide opportunities for growth, such as participating in science fairs or partnerships with universities. Without a systematic process that is fully deployed, the applicant may not be addressing its value of “demonstrate leadership in all we do and in all the communities we serve.”	c(2)

Scoring for Item 1.2

Score Range: 50-65%
Score Value: 60

Consensus Review Worksheet—Item 2.1

Strategy Development

Relevant Key Factors

1. Mission: To develop and manage agricultural research of strategic importance to the U.S. economy and security. Vision: To be the premier government-owned laboratory system through partnerships and innovative solutions for America's farmers.
2. Core competencies: (1) systematic agricultural research; (2) systematic and controlled Process Portfolio Management and Research Portfolio Management; (3) development of close, collaborative partnerships among academia, government, and the agricultural science industry to merge science with solutions to create commercialization pathways; and (4) specialized research competencies in corn endosperm mutations, corn and wheat breeding/physiology, grain gene splicing and engineering, wheat germplasm, and crop nanotechnology.
3. Principal success factors: (1) research cycle times, (2) rate of innovation implementation, (3) ability to engage in high risk research, (4) ability to attract the brightest minds, (5) strong business practices that provide systematic, repeatable results in business management, (6) a strategic research system, (7) excellent and sustainable relationships with customers, suppliers, partners, and collaborators, (8) participation and visibility in the community, and (9) a reputation for a customer-centered culture.
4. Applicant's strategic thrust areas include efficient and precision farming, better nutrition approaches, new and useful product development, and grain safety and resistance.
5. Key strategic challenges include the high cost of entry into new research programs, conflicts between industry and government, high expense of new technologies for farmers. Challenges affecting sustainability include uncertain funding environment, competition with other contractors, changing contract performance requirements, and declining number of agricultural graduates.
6. Key strategic advantages include well-established facilities and a reputation for continuing success, strong relationships with community colleges, strong reputation for leading industry research. Advantages affecting sustainability include the USDA's knowledge of the company, record of strong results and efficient processes, the ability to anticipate and adapt to changing research priorities and to develop innovations, long term continuity, uninterrupted consistent support based on a continuing relationship, proven Prime Contract Management process, strong reputation for agricultural research, and strong partnership with Cooperative Extension System.

Strengths

++	Strength	Item Ref.
X	A 12-step SPP (Figure 2.1-1) is used annually to conduct planning. Participants include SLs, the NFU Chancellor, industry partners, collaborating universities, program managers, and agricultural community members. Blind spots are identified through data analysis, the environmental scan, the strengths, weaknesses, opportunities, and threats (SWOT) analysis, and input from stakeholders. SWOT results are used to identify strategic challenges and advantages. The short-term planning horizon is set to allow for rapid changes in the political, economic, or regulatory environment, and the long-term planning horizon is set to align with research timelines and to stretch beyond the USDA contract timeline. The SPP is evaluated annually, and improvements include revision of planning horizons, the introduction of the Strategic Alignment Document, and the formation of the Metrics Infrastructure Group (MIG), which has responsibility for providing data to leaders for performance review.	a(1)

++	Strength	Item Ref.
	To help ensure that the SPP addresses various key factors, the MIG collects data and information for analysis by SLs one month prior to the planning retreat (see Figure 2.1-2). Data are collected on customer needs, industry trends, the competitive environment, technology shifts, human resource needs and capabilities, organizational capabilities, financial capabilities and needs, partner/supplier directions and capabilities, and regulatory issues. These inputs allow the applicant to perform the SWOT analysis in Step 5 of the SPP. To ensure the applicant's ability to execute the Strategic Plan, the budget, human resources, and IT plans are aligned with the Strategic Plan, and progress is closely monitored throughout the year through the applicant's performance review process so that action plans can be modified or added as needed.	a(2)
	The applicant utilizes the Strategic Alignment Document (Figure 2.2-1) to outline the strategic objectives that are determined during the SPP. Each objective is aligned to the applicant's core competencies, strategic challenges, and strategic advantages. Each objective has associated key measures with short-term action plans, as well as both short-term and longer-term projections. In many cases, best-in-class or competitor comparison projections also are included. To consider the needs of key stakeholders, the applicant considers input from all stakeholder groups during Step 1 of the SPP, and it includes representatives from industry and the agricultural community in the strategic planning retreat.	b(1, 2)

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
	Although the applicant identifies short- and longer-term projections in Figure 2.2-1, no goals are presented. Setting goals may serve to more clearly focus the organization on achieving its vision to be the premier government-owned laboratory system.	b(1)
	It is not evident how the applicant's strategic objectives balance short- and longer-term challenges and opportunities or address future core competencies. Additionally, while the applicant uses key stakeholder input in the SPP, it is unclear whether this approach ensures that the needs of all key stakeholders, such as NFU, collaborating universities, and students, are balanced in the strategic objectives. This lack of balance may make it difficult to ensure organizational sustainability in light of the applicant's key strategic challenges of uncertain funding, changing contract performance requirements, and increased competition with other contractors.	b(2)

Scoring for Item 2.1

Score Range: **50-65%**
Score Value: **65**

Consensus Review Worksheet—Item 2.2

Strategy Deployment

Relevant Key Factors

1. Core competencies: (1) systematic agricultural research; (2) systematic and controlled Process Portfolio Management and Research Portfolio Management; (3) development of close, collaborative partnerships among academia, government, and the agricultural science industry to merge science with solutions to create commercialization pathways; and (4) specialized research competencies in corn endosperm mutations, corn and wheat breeding/physiology, grain gene splicing and engineering, wheat germplasm, and crop nanotechnology.
2. 5,653 nonunion employees at sites in four states: Nebraska (53%), Mississippi (12%), Pennsylvania (19%), and California (16%). Segmented by site and job type (scientists, lab support, farm operations, students, administrative support, maintenance, senior leaders, program leads, and program administrators).
3. Principal success factors: (1) research cycle times, (2) rate of innovation implementation, (3) ability to engage in high risk research, (4) ability to attract the brightest minds, (5) strong business practices that provide systematic, repeatable results in business management, (6) a strategic research system, (7) excellent and sustainable relationships with customers, suppliers, partners, and collaborators, (8) participation and visibility in the community, and (9) a reputation for a customer-centered culture.
4. Applicant's strategic thrust areas include efficient and precision farming, better nutrition approaches, new and useful product development, and grain safety and resistance.
5. Key strategic challenges include the high cost of entry into new research programs, conflicts between industry and government, high expense of new technologies for farmers. Challenges affecting sustainability include uncertain funding environment, competition with other contractors, changing contract performance requirements, and declining number of agricultural graduates.
6. Key strategic advantages include well-established facilities and a reputation for continuing success, strong relationships with community colleges, strong reputation for leading industry research. Advantages affecting sustainability include the USDA's knowledge of the company, record of strong results and efficient processes, the ability to anticipate and adapt to changing research priorities and to develop innovations, long term continuity, uninterrupted consistent support based on a continuing relationship, proven Prime Contract Management process, strong reputation for agricultural research, and strong partnership with Cooperative Extension System.

Strengths

++	Strength	Item Ref.
	Short- and long-term action plans are outlined in Figure 2.2-1. Key planned changes identified by the applicant include improving key work processes to address stagnant or declining financial and human resources. Teams that are led by SLs and include staff members, suppliers, and partners develop short-term action plans and measures using the Work System Design Process. A standardized template introduced in 2002 is used to record and track action plan progress, which is reviewed monthly by the SLT as part of organizational performance review. Action plans are deployed to the entire workforce using interactive Web-based sessions and meetings at each location. Workforce members' accountability for completion of action plans is incorporated into the performance plans that are part of the Workforce Performance Management Process, and employee incentives are based	a(1, 2)

++	Strength	Item Ref.
	on completion of action plans. Key supplier and partner responsibilities are reviewed monthly at supplier meetings.	
	Human resource allocation occurs in Step 8 of the SPP. A ten-year workforce Capability and Capacity Plan is developed and linked to the applicant's strategic short- and long-term action plans. For example, key elements of the plan that are aligned with the applicant's strategic challenge of a declining number of agricultural graduates include recruitment, a development plan for new hires, scholarship support, and incentives.	a(5)
	To identify the potential need to modify or revise action plans, the SLT conducts a monthly review of action plan templates and the SLT Scorecard (Figure 4.1-2) as part of the organization's performance review process. Strategic objective teams routinely review their metrics, and progress is communicated and needed changes identified through regular meetings with the workforce, the BOT, suppliers, and partners. Changing customer requirements, including changes related to policy and emergencies, also may necessitate modification of action plans. When changes are implemented, they are deployed through discussions and meetings.	a(4)

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
	Although the applicant notes a few improvements (e.g., the 2002 introduction of a standardized template for action plan design and tracking and its 2003 revision to include budget information), there is no evidence that the approaches used to develop and deploy action plans are evaluated in a fact-based, systematic way to identify opportunities for improvement. A systematic approach in this area may support the applicant’s principal success factor of strong business practices that provide systematic, repeatable results.	a(2)
	While strategic objective teams identify the performance projections for the organization and for competitors and best-in-class organizations provided in Figure 2.2-1 and in many reported results, the approach they use to determine the applicant's performance projections and those of its key comparisons is not evident. For example, while the applicant notes that it analyzes its competitive environment and considers prior performance against goals, it is unclear what steps are in place to estimate the organization’s rate of improvement and change. Determining an effective approach may help the applicant more accurately estimate future performance and its progress on achieving its vision.	b
	It is not evident that the applicant has a systematic approach for assessing and managing financial and other risks associated with action plans. While the applicant has a small contingency fund for unanticipated circumstances, it is not clear how this fund is set, evaluated to mitigate potential risks, or deployed in times of need. A systematic approach to address these risks could be particularly important since upcoming changes may require the applicant to do more with stagnant or declining resources, and it has identified the uncertain funding environment as a key strategic challenge.	a(3)

Scoring for Item 2.2

Score Range: **50-65%**
Score Value: **50**

Consensus Review Worksheet—Item 3.1

Customer Engagement

Relevant Key Factors

1. Government-owned, contractor-operated (GOCO) strategic research organization managed by Nebraska Free University (NFU). Products consist of Strategic Research Plan, research publications, commercialization pathways (licenses), and an agricultural research capability. Manages 152 projects in four program areas. Approximately 70% of funding is from the USDA, 20% from work with other federal agencies (e.g., DOE, HHS, etc.), and remaining 10% from the Work for Others (WFO) program.
2. Market Segments include funding community, agricultural community, and scientific community. Funding Community requirements: achievement of contract deliverables, efficient prime contract management with adherence to time line, low contract fees, collaborative relationships and shared technology, total project cost within budget, and cost-effective and timely commercialization process. Agricultural Community requirements: easy applied farming practices, increased crop yields, savings through reduced fertilizer and pesticide usage, timely commercialization of products, and reduction of soil erosion. Scientific Community requirements: publication of articles in strategic thrust areas, high ratings of programs by peers, and publications in peer-reviewed journals.
3. Customer groups include USDA program managers, other government agency program managers, and WFO program managers. Their requirements include achievement of contract deliverables, award and commercialization of patents, publication of articles in peer-reviewed journals, project overhead costs at or below contract specification, low contract fees, effective program and project execution at a competitively lower cost, collaborative relationships and shared technology, and reduction of research cycle times and adherence to deadlines.
4. Key stakeholder groups include NFU, students , industry partners and collaborating universities. NFU: low project costs associated with overhead, low contract fees, efficient process management, total project cost within budget, and positive public relations. Students: opportunities to contribute to research, scholarship awards, and diverse training opportunities. Industry partners: opportunities for shared research, learning and collaboration, collaboration with the agricultural community, timely commercialization of products, and WFO projects within budget, with effective, on time project planning and execution. Collaborating universities: achievement of contract deliverables, collaborative relationships and shared technology, cost effective and timely commercialization of products, publications in peer-reviewed journals, and positive public relations.
5. Principal Success Factors: excellent and sustainable relationships with customers, suppliers, partners and collaborators, a reputation for a customer-centered culture.

Strengths

++	Strength	Item Ref.
	The Product and Service Offering Process (PSOP; Figure 3.1-1) is used to identify customer product offerings to meet customer requirements and expectations. This process is a component within the Research Portfolio Management Work System (Figure 6.1-1) and is overseen by the Product and Service Offering Committee (PSOC). The PSOP is a six-step process designed to incorporate and translate the voice of the customer (VOC) into research product features. Committee suggestions for revising the PSOP are submitted and reviewed on an annual basis. A recent improvement was to add industry partners and farmers to the committee.	a(1)

++	Strength	Item Ref.
	To build a customer-focused culture, the applicant utilizes multiple systematic approaches, including the Touch Point program and the Customer Relationship Management (CRM) process. Touch Point training, instituted in 2007 as a cycle of learning, provides the workforce with the communication tools needed to effectively seek information and provide service to customers. The CRM process is used to enhance customer and stakeholder partnerships, and the Program Oversight Panel (POP) helps engage customers in an ongoing manner. Working together, these systematic approaches effectively support the applicant's culture, which is designed to engage its customers and stakeholders.	b(1)
	Customer support requirements are identified through the VOC Process (Figure 3.2-1), using information gathered through a variety of listening and learning mechanisms (Figure 3.2-2). The requirements are deployed through meetings, Hoedown Sessions, and Touch Point training. The applicant uses multiple customer support and communication mechanisms (Figure 3.1-2), and the VOC Process provides opportunities to expand relationships with customers and stakeholders. Data gathered from the VOC Process are analyzed by the VOC Committee (VOCC) and used for organizational learning, as well as integration into the SPP.	a(2)
	The applicant uses the Idea Well and the Innovation Service Now (ISN) approaches to help ensure a positive customer experience. The ISN approach includes an ISN Committee that collects and trends data, selects ideas for improvements, and develops themes. The approach was deployed organization-wide in 2007. Via this approach, workforce members receive tokens of appreciation or bonuses for their ideas. The applicant receives over 1,000 ideas per year using these methods.	b(1)

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
	It is not evident that a systematic process is in place to identify and innovate product offerings to attract new customers. While potential customers are represented on the PSOC, it is not clear whether they include representatives from diverse geographies and market segments or how their input or other methods are used to attract new customers. This potential gap could hinder the applicant's efforts toward new and useful product development, which it has identified as a key strategic thrust.	a(1)
	Although all staff members receive Touch Point training, which includes customer support requirements, it is unclear how the training or the program is individualized to meet the varying communication needs of customers and other stakeholders. As a result, the applicant may be missing opportunities to enhance its success factor of excellent and sustainable relationships with customers, suppliers, partners, and collaborators.	a(2)

Scoring for Item 3.1

Score Range: **50-65%**
Score Value: **60**

Consensus Review Worksheet—Item 3.2

Voice of the Customer

Relevant Key Factors

1. Customer groups include USDA program managers, other government agency program managers, and WFO program managers. Their requirements include achievement of contract deliverables, award and commercialization of patents, publication of articles in peer-reviewed journals, project overhead costs at or below contract specification, low contract fees, effective program and project execution at a competitively lower cost, collaborative relationships and shared technology, and reduction of research cycle times and adherence to deadlines.
2. Key stakeholder groups include NFU, students, industry partners and collaborating universities. NFU: low project costs associated with overhead, low contract fees, efficient process management, total project cost within budget, and positive public relations. Students: opportunities to contribute to research, scholarship awards, and diverse training opportunities. Industry partners: opportunities for shared research, learning and collaboration, collaboration with the agricultural community, timely commercialization of products, and WFO projects within budget, with effective, on time project planning and execution. Collaborating universities: achievement of contract deliverables, collaborative relationships and shared technology, cost effective and timely commercialization of products, publications in peer-reviewed journals, and positive public relations.
3. Suppliers, partners and collaborators include Cultibiz Equipment and Supplies, Hardway Office Supply Store, Ill International, Zepro Chem, universities, and the cooperative extension system. Provide research materials and equipment, crop-growing equipment and supplies, innovative ideas for new work technologies, expertise in technology, non-core-competency services, administrative and program management of contracts, methodology to disseminate knowledge, and innovative solutions.
4. Principal success factor: excellent and sustainable relationships with customers, suppliers, partners, and collaborators,

Strengths

++	Strength	Item Ref.
	The VOCC leads a well-deployed, systematic approach to determine current customer satisfaction and engagement. Metrics capture actionable information for use in exceeding customer expectations and for analysis and use in improvements. The applicant uses multiple sources of satisfaction and engagement information, including the R-37 and E-10 surveys to obtain information on customer satisfaction and engagement with competitors, the use of the quarterly E-10 to monitor customer engagement, VOCC review and analysis of CRM data, and the SLT and program leads' use of data and information analysis. The use of the R-37 for non-USDA customers and the development of the E-10 to assess customer engagement are examples of refinements to this approach, which supports the applicant's strategic advantages of long-term continuity of relationships and its reputation for research	b(1,2)
	The applicant utilizes multiple systematic, well-deployed, qualitative and quantitative methods for listening to and learning from current and future customers (Figure 3.2-2). The VOC Process (Figure 3.2-1), which is used to deploy these methods, is managed by the cross-functional VOCC composed of SLs, program	a(1)

++	Strength	Item Ref.
	leads, and project leads, with all locations represented. Data and information are fed into the SPP, with improvement cycles in 2002 and 2005 that identified the need to gather more quantitative data and enhanced customer-engagement data, respectively. Additionally, in 2005, a cycle of refinement was added to cultivate relationships with writers of leading journals that includes using PR Alert software to track media. In 2006, a key learning was to begin monitoring blogs for related news, customer trends, preferences, and information.	
	The applicant solicits customer complaints via the monthly Performance and Engagement Review (PER) meetings. Complaints are immediately discussed with the customer to correct the issue and recover the customer's confidence. If warranted, the complaint is passed to the Process Team Process for evaluation and improvement. Also, complaint data are captured and aggregated with the CRM results, which then become inputs into the SPP environmental scan.	a(3)

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
	Although the Irritant Program is utilized to capture just-in-time feedback on customer preferences and dissatisfaction to enable staff response before the irritant becomes a complaint, it is not evident that the process is fully deployed to all locations and relevant customer/partner groups. It also is not evident that the data and information from the Irritant Program are used to improve other parts of the organization. Aggregating and analyzing information from the Irritant Program and the complaint process in a timely manner may assist the applicant with increasing satisfaction, engagement, partnership, and long-term loyalty.	a(3), c
	While customer, market, and product information provide input during Step 4 of the SPP, it is not evident how it is used to identify current and anticipate future customer groups and market segments or to identify and anticipate key customer requirements. Also, although the applicant makes use of customer and market information to improve marketing and to identify opportunities for innovation, it is not clear how this information is used to build a more customer-focused culture. Without a systematic approach, the applicant may have difficulty ensuring that it is making the most effective use of its multiple data sources.	c
	While the applicant has various means to collect customer dissatisfaction data, it is not clear how this information is shared and used for improvement efforts with relevant partners. For example, it is not evident that the information is used with industry partners such as seed suppliers, equipment manufacturers, IT specialists, and GPS technology manufacturers, or with collaborating universities, including SurfU-Davis, Mississippi Universal University, and Pennsylvania Proper College. Fully deploying these processes may be important since the applicant has identified excellent and sustainable relationships with partners as a principal success factor.	b(3)

Scoring for Item 3.2

Score Range: **50-65%**
Score Value: **60**

Consensus Review Worksheet—Item 4.1

Measurement, Analysis, and Improvement of Organizational Performance

Relevant Key Factors

1. Vision: To be the premier government-owned laboratory system through partnerships and innovative solutions for America's farmers
2. Core competencies: systematic agricultural research; systematic and controlled Process Portfolio Management and Research Portfolio Management; specialized research competencies in corn endosperm mutations, corn and wheat breeding/physiology, grain gene splicing and engineering, wheat germplasm, and crop nanotechnology
3. Nine-member Senior Leadership Team (SLT) that provides guidance and oversight to the Research Leadership Team and the Operations Leadership Team. The Research Leadership Team oversees research and related activities (e.g., publications review), while the Operations Leadership Team oversees day-to-day operations at the four sites.
4. Data sources inside industry include GOCOs; annual performance evaluations of government-owned, government-operated organizations (GOGOs); partnerships with progressive GOCOs/GOGOs; personal relationships; and the Virtual Agricultural Library for Online Research. Sources outside industry include prior Baldrige Award recipients. Limitations are that short-term private industry strategies are not comparative to the applicant’s long-term strategies
5. Performance improvement system includes strategic planning , scorecard reviews, the Process Team Process, Performance Improvement Process (PIP)

Strengths

++	Strength	Item Ref.
	The applicant's systematic process for selecting, collecting, and integrating data for tracking operational performance (Figures 4.1-1 and 4.1-2) is well deployed throughout the organization. The Chief Technology Officer is the process owner and is supported by a Six Sigma yellow belt. The process is fully aligned, cascading through the organization through the contract process, the Performance Evaluation Plan (PEP), programs, processes, action plans, and departments. An Enterprise Architecture Process ensures consistent measurement and alignment at all user, data, and application levels, allowing tracking of daily operations and overall performance. Cycles of refinement include the addition of the Beedakers Framework in 2004, a Project Learning and Analysis Tool System (PLANTS) enhancement to provide comprehensive portfolio management capabilities in 2007, and a Research Data and Information System (RDIS) expansion to provide access to key partners in 2008.	a(1)
	The applicant reviews organizational performance following a systematic schedule that is aligned with contract, strategic, and other business needs (Figure 4.1-3). Performance reviews are conducted by all levels of the workforce to track progress on strategic objectives and action plans, research projects, key and non-key processes, and process improvement projects. Leaders at multiple levels conduct monthly reviews of scorecard indicators, program deliverables, department-level measures, and process improvement measures. Weekly project reviews involve process teams and key partners.	b

++	Strength	Item Ref.
	The applicant has a systematic, well-deployed approach to translating performance review findings into action plans, setting priorities, and providing opportunities for improvement. Action plans are captured in a database that is analyzable through PLANTS. The SLT reviews action plan data aggregated by specific priorities, enabling it to set priorities based on a global review. A special PLANTS report keeps partners, suppliers, and collaborators informed of improvement priorities.	c

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
	Although the applicant states that it uses its Comparative Data Selection Process and Measure Selection Process (Figure 4.1-1) to select effective comparative data, it is not clear how these processes govern the selection and use of comparative data. Further, it is unclear how alignment matrices used in the Comparative Data Selection Process ensure effective use of comparative data or how the process supports top-box comparisons and innovation. Without a systematic approach for selecting and using the most effective benchmarks and other comparative data, the organization may be limited in its ability to evaluate its success relative to the industry and to competitors, as well as its progress on its vision of being the premier government-owned laboratory system.	a(2)
	Although the applicant uses the Process Management Process (PMP) to keep its performance measurement system current with business needs and directions, it is not clear how the approach ensures that the system is sensitive to rapid or unexpected organizational or external changes. It also is not evident that performance analysis and review approaches are evaluated for effectiveness. Without a clear approach to improve the measurement system and to keep it agile, the applicant may have difficulty positioning itself to overcome its strategic challenges of increased competition from other contractors and changing contract performance requirements.	a(3)
	While the applicant has conducts multiple organizational performance reviews (Figure 4.1-3), it is not clear that the reviews include performance in some areas that the applicant has identified as key to its success. These areas include the cycle time of research, efficient farming, relationships, and participation in the community.	b

Scoring for Item 4.1

Score Range: **50-65%**
Score Value: **60**

Consensus Review Worksheet—Item 4.2

Management of Information, Knowledge, and Information Technology

Relevant Key Factors

1. Values: cultivate innovation and creativity; practice open and honest communication with each other and our partners, maintaining the security of confidential information
2. Key technologies include configurable laboratory technology, data acquisition and remote sensing systems, global positioning systems, field science technology, nationwide virtual private network (VPN), and a virtual agricultural library. Key equipment includes lasers, electron microscopes, mass spectrometers, centrifuges, and mixing equipment, tractors, harvesters, planters, information technology servers and desktop and network equipment.
3. 100 competitors in agricultural research including universities, laboratories and companies performing competing research.
4. Principal success factors: ability to engage in high risk research; ability to attract the brightest minds,
5. Strategic challenge: competition with other contractors
6. Strategic advantage: the ability to anticipate and adapt to changing research priorities and to develop innovations

Strengths

++	Strength	Item Ref.
	The applicant makes data and information available through systematic, well-deployed approaches utilizing the intranet, a high-speed network that connects all research and operations sites, and home pages customized for job type and responsibilities. As a cycle of refinement to the process in 2005, the portal concept was expanded to suppliers, partners, collaborators, and customers. To keep its data and information availability mechanisms current with business needs and technological changes, the applicant conducts an Annual Process Performance Analysis that includes reviewing data, information, and knowledge management processes. Employees and customers contribute ideas to the IT Idea Well for process improvements, as well as for new hardware and software. A five-year IT plan is used to prepare for organizational changes.	a(2), b(3)
	The applicant's Information Management Contingency and Disaster Recovery Process is a systematic, effective approach to identifying, reducing, and managing risk associated with information systems. Process tools and analyses cover risk and site impact analysis, identification of critical components and their impact on other systems, and evaluation of the costs of system downtime and restoration. Information Systems uses these analyses to develop a Disaster Recovery Plan and a Contingency Plan for the organization. All plans are reviewed and revalidated annually. Systems are backed up off-site and are subject to monthly emergency preparedness drills.	b(2)
	The applicant uses multiple approaches (Figure 4.2-1) to help ensure the accuracy, integrity, timeliness, and security of organizational data and information. These approaches include trained data owners, certification of data sources, a System Testing Process, and one-time token cards for passwords.	a(1)

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
X	It is unclear whether the applicant has systematic, fully deployed approaches in place to ensure the reliability and user-friendliness of its hardware and software. For example, although the applicant uses formal enterprise processes to maintain systems and has a plan for emergencies, it is unclear if these processes are deployed to include key technologies used for research, such as configurable, laboratory technology or the nationwide virtual private network (VPN). In addition, it is unclear if pilot testing to help ensure the user-friendliness of new products is conducted at all geographic sites. Systematic approaches in these areas may help the applicant support its core research competencies.	b(1)
	It is unclear if the applicant fully addresses data confidentiality and security. For example, although the Knowledge Management Process deploys knowledge sets to defined users, it is unclear how the applicant manages confidential or proprietary business intelligence and organizational knowledge to protect its assets resulting from successful operations of its core research business. For example, while the workforce signs the Codes of Conduct, it is not clear whether this or any other mechanism addresses nondisclosure or confidentiality issues. Likewise, it is unclear how the applicant manages patent rights and ownership or how proprietary information is protected when workforce members leave the organization. Without clear processes to support the organizational value of demonstrating integrity in science and management of government assets, the applicant may find it more difficult to ensure its principal success factors of engaging in high-risk research and attracting the brightest minds.	a(1)
	It is unclear how the applicant is managing its organizational knowledge to facilitate identifying, sharing, and implementing best practices. For example, it is not clear how monthly meetings and Idea Wells systematically transfer needed information and best practices. Nor is it clear how the Process Development Process and Process Management Process are used for this purpose. Enhancing processes for sharing best practices so that the transfer of knowledge is fully deployed may increase innovation and efficiencies across the applicant's large organization.	a(3)

Scoring for Item 4.2

Score Range: **50-65%**
Score Value: **50**

Consensus Review Worksheet—Item 5.1

Workforce Engagement

Relevant Key Factors

1. Values: pursue scientific knowledge and respect diverse opinions; cultivate innovation and creativity; practice open and honest communication with each other and our partners, maintaining the security of confidential information; demonstrate leadership in all we do, in all the communities we serve
2. 5,653 nonunion employees at sites in four states: Nebraska (53%), Mississippi (12%), Pennsylvania (19%), and California (16%). Segmented by site and job type (scientists, lab support, farm operations, students, administrative support, maintenance, senior leaders, program leads, and program administrators). Diversity includes white (46%), African American (23%), Hispanic (12%), Asian (13%), and other (6%). All have high school or equivalent, doctorates (37%), master's (24%), bachelor's (28%).
3. Workforce engagement factors—scientists: scientific freedom, collaborative environment, access to state-of-the-art technology, and opportunity to publish and present; laboratory support and farm operations staff: organization's mission, recognition, reliable compensation, tools to do the job, and benefits; students: work experience while in school, opportunity to grow and learn, and ability to participate in cutting-edge research; administrative support staff and maintenance staff: job security, alignment to organization's mission, and recognition; senior leaders, program leads, and program administrators: making a difference in farm productivity and the opportunity to shape the research agenda.
4. Workforce satisfaction factors: Scientists- challenging and meaningful work, compensation and benefits, effective support processes. Laboratory support and farm operations staff- flexible hours, adequate employee staffing for projects, opportunity to grow and learn. Students- Career support and quality mentoring, challenging work environment, recognition, opportunity to publish and present. Administrative support staff and maintenance staff- compensation and benefits, tools to do the job. Senior leaders, program leads and program administrators- opportunity to grow and learn, challenging and meaningful work.
5. Strategic challenges affecting sustainability include competition with other contractors, changing contract performance requirements, and a declining number of agricultural graduates.
6. Key strategic advantages include well-established facilities and a reputation for continuing success, strong relationships with community colleges, strong reputation for leading industry research. Advantages affecting sustainability include a strong reputation for agricultural research.

Strengths

++	Strength	Item Ref.
	The applicant uses multiple approaches to encourage its culture of open communication, an engaged workforce, and respect for diverse opinions. One method is the Idea Wells. Ideas go to the Well Team, which reviews and immediately implements those considered to be quick wins. More complex ideas are shared with process owners and process Six Sigma yellow belts. Other methods utilized to encourage an exchange of ideas across the organizational disciplines include quarterly colloquiums at rotating sites, monthly operational forums, and the Scientific Peer Research Review (SPRR) Process. A 2007 improvement cycle	a(2)

++	Strength	Item Ref.
	initiated communities of interest and discussion groups that communicate across the organization through the Internet and intranet.	
	The applicant's learning and development system systematically addresses workforce learning and development needs, transfer of knowledge from departing and retiring workers, and reinforcement of new knowledge and skills on the job. The system includes shadowing or cross-training with retiring employees, risk management audits, regular competency checks, and on-the-job learning. Learning needs are identified in workforce performance plans and are aggregated to determine knowledge gaps. Programs are then developed to address the gaps. The applicant also uses an extensive computer-based training library to support self-identified training needs and career development. These approaches demonstrate a commitment to both organizational and individual learning and align with the workforce satisfaction and engagement factor of the opportunity to grow and learn.	b(2)
	The applicant worked with the NFU Education Department to develop a systematic evaluation process for its training curriculum. The applicant uses all four levels of the Ebonywood Model for Assessment to evaluate training effectiveness. Data are gathered at each evaluation level and used as inputs into the biannual curriculum review to determine if there are opportunities for improvement. Efficiency of the learning and development system is measured through several approaches, such as dollar investment per workforce member and participation in online training and mentoring. Data on accident rates and safety violations are used to track the effectiveness of safety training.	b(3)
	The Workforce Performance Management Process provides the foundation for workforce career progression. The Work System Design Process (Figure 6.1-2) includes the identification of performance expectations, skills, and competencies, along with requirements for training and development for each work process and job category. This approach supports alignment with the strategic objectives and a focus on efficient and effective processes for workforce development, career goals, and job progression. Plans are reviewed quarterly to monitor progress on career goals and job progression strategies. Additionally, new hires are assigned buddies to help them adjust to the organization, and mentors are available for workforce members who are looking for job or career development assistance. The applicant has established a Succession Planning Process (Figure 5.1-3) that is implemented through a Leadership Development Plan managed by a Leadership Development Committee at each site and linked to the organization's strategies and the Human Resource Plan.	b(4)

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
	While the applicant states that the WPM Process and Work System Design Process are used to accomplish career progression and there is a systematic Succession Planning Process (Figure 5.1-3) for leadership and management positions, it is not clear how these approaches manage effective career progression for all segments of the workforce, including fellows, junior and senior scientists, and the highly technical, expert scientists in fields such as gene splicing and natural-based fuels. The lack of an effective approach to manage career progression for workforce members with specialized research competencies may impact sustainability, as well as innovation, achievement, and the ability to secure highly competitive funding.	b(4)
	The Employee Workforce Assessment (EWA) tool, which was initiated in 1995, is	c(1)

--	Opportunity for Improvement	Item Ref.
	used annually as the applicant's primary approach to assess workforce engagement and satisfaction. However, it is not clear how this assessment tool or other informal processes differ across the applicant's multiple workforce segments. In addition, it is not evident that the EWA has undergone any additional cycles of improvement since 2000. Without employing cycles of improvement, as well as assessment methods tailored to its diverse workforce and their varying satisfaction and engagement factors, the applicant may miss information that is critical to retaining a high-quality workforce.	

Scoring for Item 5.1

Score Range: **50-65%**
Score Value: **60**

Consensus Review Worksheet—Item 5.2

Workforce Environment

Relevant Key Factors

1. Organizational culture of leadership, efficiently run organizational systems, and respect for scientific inquiry.
2. 5,653 nonunion employees at sites in four states: Nebraska (53%), Mississippi (12%), Pennsylvania (19%), and California (16%). Segmented by site and job type (scientists, lab support, farm operations, students, administrative support, maintenance, senior leaders, program leads, and program administrators). Diversity includes white (46%), African American (23%), Hispanic (12%), Asian (13%), and other (6%). All have high school or equivalent, doctorates (37%), master's (24%), bachelor's (28%).
3. Multiple benefits focused on four areas: (1) sustain a healthy workforce, (2) create a safe and healthy environment, (3) develop the workforce, and (4) sustain workforce satisfaction and engagement. Health and safety factors include chemical and electrical hazards; ergonomic issues; strains, sprains, trips, and falls; incidents from operation of machinery; incidents related to lab equipment use; and security incidents
4. Key strategic challenges: the high cost of entry into new research programs, Challenges affecting sustainability: uncertain funding environment, competition with other contractors, and declining number of agricultural graduates
5. Key strategic advantages: well-established facilities and a reputation for continuing success, strong relationships with community colleges, strong reputation for leading industry research. Advantages affecting sustainability: the ability to anticipate and adapt to changing research priorities and to develop innovations, a proven Prime Contract Management process, and a strong reputation for agricultural research
6. Principal success factor: ability to attract the brightest minds in agricultural science and technology

Strengths

++	Strength	Item Ref.
	To assess workforce capability and capacity needs, the applicant's Recruitment and Staffing Team conducts an annual assessment using the Six-Sigma Process. The team gathers information from program and project leads at all locations to verify current and projected needs. Key process performance data are reviewed, and a matrix is constructed to determine the needed skill mix, competencies, and staffing levels. This information is used by the Recruitment and Staffing Team to project staffing needs, create a staffing matrix, and update the ten-year Capability and Capacity Plan. This process led the applicant to identify a potential downturn in funding in 2006, which resulted in an initiative to begin training and knowledge-sharing meetings on research in renewable energy, enabling the applicant to be well positioned to help the USDA lead this effort. This process is consistent with meeting the applicant's principal success factor of attracting the brightest minds in agricultural science and technology.	a(1, 4)
	The applicant uses a multistep Recruitment and Hiring Process (Figure 5.2-1) that includes the use of a Diversity Council at each location to recruit, place, and retain new members of the workforce. The process is integrated with the applicant's staffing matrix. The process includes behavioral interviews and may include testing for some positions. The applicant uses a Workforce Referral Program that gives employees a bonus for referring successful applicants. To remain current with changing business	a(2)

++	Strength	Item Ref.
	needs, the applicant conducts an annual review of its recruitment and retention policies and procedures that has led to multiple cycles of improvement.	
	The applicant uses multiple approaches to manage and organize the workforce to accomplish work. These approaches integrate with the applicant's work systems; the Process Portfolio Management Work System and the Research Portfolio Management Work System (Figure 6.1-1) are used to help translate customer requirements and strategic objectives into multiyear research programs. The applicant uses the Work System Design Process to design and monitor its key processes to capitalize on core competencies and to review the organization structure of teams and work systems. Leveraging one of its strategic advantages, the applicant uses the Prime Contract Management Process to define product specifications, performance expectations, and staffing requirements.	a(3)
	The applicant organizes support of its workforce via services, benefits, and policies around four focus areas (Figure 5.2-2) that serve to integrate the identified factors related to workforce satisfaction and engagement (Figure P.1-4). The array of offerings covers the major areas identified, and the applicant tailors these offerings to meet the needs of its diverse workforce by allowing individuals to select those that best meet their needs. The set of services, benefits, and policies is reviewed annually by focus groups at each site that are constructed to represent each of the workforce segments. Feedback from these focus groups is used to identify improvements to the offerings and has resulted in upgrades such as the recent addition of dependent care benefits to address the growing number of workforce members with small children and/or aging parents.	b(2)

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
	While the applicant has listed numerous approaches to address workforce health, safety, and security, the performance measures and improvement goals the applicant has established to address workforce needs are not clear. For example, while a few health and safety measures are listed in Figure 2.2-1, it is not clear how these are aligned to specific workforce needs. Identifying a set of aligned measures with goals for a safe and healthy workplace environment may be helpful in managing and improving these processes.	b(1)
	The applicant has indicated a strategic challenge of a declining number of agriculture graduates and identifies several approaches to help retain employees; however, it appears these approaches may be limited in scope and deployment. For example, while the applicant identifies the employee-supervisor relationship as having a strong correlation to retention, it is not evident that other factors, such as compensation and career growth opportunities, were included in these assessments. It also is not clear if these correlations and other approaches have considered variations among the applicant's diverse workforce segments of job types and geographical locations. This may limit the applicant's ability to retain key workforce members, potentially interrupting key research, partnerships, contracts, and other business-critical areas.	a(2)

Scoring for Item 5.2

Score Range: **50-65%**
Score Value: **65**

Consensus Review Worksheet—Item 6.1

Work Systems

Relevant Key Factors

1. Government-owned, contractor-operated (GOCO) strategic research organization managed by Nebraska Free University (NFU). Products consist of Strategic Research Plan, research publications, commercialization pathways (licenses), and an agricultural research capability. Manages 152 projects in four program areas. Approximately 70% of funding is from the USDA, 20% from work with other federal agencies (e.g., DOE, HHS, etc.), and remaining 10% from the Work for Others (WFO) program.
2. Core competencies: (1) systematic agricultural research; (2) systematic and controlled Process Portfolio Management and Research Portfolio Management; (3) development of close, collaborative partnerships among academia, government, and the agricultural science industry to merge science with solutions to create commercialization pathways; and (4) specialized research competencies in corn endosperm mutations, corn and wheat breeding/physiology, grain gene splicing and engineering, wheat germplasm, and crop nanotechnology.
3. Customer groups include USDA program managers, other government agency program managers, and WFO program managers. Their requirements include achievement of contract deliverables, award and commercialization of patents, publication of articles in peer-reviewed journals, project overhead costs at or below contract specification, low contract fees, effective program and project execution at a competitively lower cost, collaborative relationships and shared technology, and reduction of research cycle times and adherence to deadlines.
4. Suppliers, partners and collaborators include Cultibiz Equipment and Supplies, Hardway Office Supply Store, Ill International, Zepro Chem, universities, and the cooperative extension system. Provide research materials and equipment, crop-growing equipment and supplies, innovative ideas for new work technologies, expertise in technology, non-core-competency services, administrative and program management of contracts, methodology to disseminate knowledge, and innovative solutions.
5. Principal Success Factors: strong business practices that provide systematic, repeatable results in business management; excellent and sustainable relationships with customers, suppliers, partners and collaborators; a reputation for a customer-centered culture.
6. Strategic advantages: well-established facilities and a reputation for continuing success; long-term continuity; uninterrupted consistent support based on a continuing relationship; proven Prime Contract Management Process.

Strengths

++	Strength	Item Ref.
	The applicant uses the Work System Design Process (Figure 6.1-2), which is owned by the SLT, to design its work systems. The process considers both core competencies and capabilities. A process salience scoring matrix is used to help determine key internal processes, and processes not determined to be key are evaluated for potential outsourcing. Several processes have been outsourced over the years, resulting in significant cost savings. Over time, this approach has been used to reduce the number of key work processes by 40 percent. Other refinements have resulted from the improvement approach that is embedded within the process. This approach supports the applicant's efforts toward strong business practices that provide systematic, repeatable results in business management, which the applicant has identified as a principal success factor.	a(1)

++	Strength	Item Ref.
	The applicant uses the Work System Design Process (Figure 6.1-2) to ensure that the organization capitalizes on its core competencies. Core competencies have been deployed to key processes using this approach (Figure 6.1-3). For example, core competencies are embedded in key work processes and in job descriptions. Additionally, the Workforce Performance Management Process ensures core competencies are built into education, training, and performance plans.	a(2)
	The applicant uses site emergency plans to help ensure workplace preparedness for disasters and emergencies. The plans, which are approved by the Emergency Director, include components such as categorization of emergencies, how to assess hazardous material conditions, and protective actions to prevent emergencies. These plans are updated and re-approved annually as part of the SPP. To facilitate organizational learning, annual performance review and improvement workshops are held. These workshops have resulted in several improvements and refinements such as an electronic hazardous material inventory.	c
	The applicant has identified 22 key processes that contribute to organizational success, financial return, and customer value, as well as their associated key requirements and measures (Figure 6.1-4). These processes are segmented as Program Management Processes, Project Management Processes, and Enabling Processes. With this approach, program and project deliverables are tied to annual contract performance ratings and to the applicant's award fee. The applicant's process teams use Six Sigma tools (e.g., Suppliers-Inputs-Process-Outputs-Customers [SIPOC] maps, value stream maps, and relationship maps) to formally document each process in a process specification document. These teams include suppliers, partners, and collaborators, as appropriate.	b(1,2)

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
X	It is not clear whether the applicant's site emergency plans address continuity of operations other than for information systems. For example, plans for continuity of operations that may be necessary in the event of natural disasters such as fires, floods, tornadoes, and blizzards, are not evident. This could be particularly important since the applicant operates in four diverse geographic areas, and the applicant's strategic advantages include well-established facilities, long-term continuity, and uninterrupted support.	c
	A key element of the applicant's strategy for ensuring that key processes contribute to organizational success, financial return, and customer value is for program leads to engage their USDA counterparts during the annual PEP Negotiation Process; however, it is not clear that the applicant has deployed the same approach (or additional approaches) to its other customer groups—other government agency program managers and WFO program managers (Figure P.1-6). This could be particularly important since the applicant has identified one of its principal success factors as excellent and sustainable relationships with customers, and the WFO and other government agencies contribute 30 percent of the applicant's funding.	b(1)

Scoring for Item 6.1

Score Range: **50-65%**
Score Value: **65**

Consensus Review Worksheet—Item 6.2

Work Processes

Relevant Key Factors

1. Customer groups include USDA program managers, other government agency program managers, and WFO program managers. Their requirements include achievement of contract deliverables, award and commercialization of patents, publication of articles in peer-reviewed journals, project overhead costs at or below contract specification, low contract fees, effective program and project execution at a competitively lower cost, collaborative relationships and shared technology, and reduction of research cycle times and adherence to deadlines.
2. Principal success factors: strong business practices that provide systematic, repeatable results in business management
3. Advantages affecting sustainability: the ability to anticipate and adapt to changing research priorities and to develop innovations; proven Prime Contract Management process
4. Performance improvement system includes strategic planning , scorecard reviews, the Process Team Process, Performance Improvement Process (PIP), Six-Sigma, Scientific Peer Research Review, Process Idea Wells, USDA peer review panels, and annual, external Baldrige assessment.
5. Strategic challenges: uncertain funding environment; competition with other contractors
6. Changes affecting competitive situation: reduction in funding for general crop research; consolidation of food research companies in the private sector that is resulting in much larger private competitors.

Strengths

++	Strength	Item Ref.
X	The applicant's process designs are managed as projects, using the Process Design Process (PDP) and the Six Sigma Define-Measure-Analyze-Design-Verify (DMADV) Process. In step four of the DMADV Process, factors such as cost, quality, and cycle time are considered. The PDP has a formalized process handoff approach that includes the process specification document, process measures, training, and updated procedures, as needed. The process handoff also includes 90-day and 180-day process reviews to ensure the process is performing as designed. Process performance gaps trigger a Define-Measure-Analyze-Improve-Control (DMAIC) Process. This approach includes using Process Design Teams (PDTs) that are led by Six Sigma black belts and may include customers, suppliers, and partners, as needed. Work process innovation occurs in the analyze step of the DMADV Process through the use of benchmarking and innovation brainstorming.	a
	The applicant utilizes a systematic approach towards implementing and managing its work processes. For example, the six-step PMP is used to ensure day-to-day operations meet key requirements. Process yellow belts monitor processes using measures that are in PLANTS and RDIS. Most process teams include customer and stakeholder representatives. Key measures and indicators used to control and improve key processes have been defined (Figure 6.1-4).	b(1)
	To improve its work processes to achieve better performance, the applicant uses four approaches: the Annual Process Performance Analysis, Lean-Kaizen Blitzes	c

++	Strength	Item Ref.
	to address issues from the monthly PEP reviews, the Process Team Process (PTP), and external program reviews. Several of these approaches utilize Lean or Six Sigma methods. All four methods use the Idea Wells as sources of ideas and repositories for lessons learned. Some of these processes have gone through cycles of refinement and improvement.	
	The applicant uses multiple approaches for cost control, defect prevention, and rework prevention, including the deployment of the PDP and PMP. The applicant also utilizes the Stage-Gate Process (Figure 6.2-1) that is designed to reduce program uncertainty and risk. Each gate is designed to prevent rework costs in succeeding stages. These approaches support the applicant's strategic advantage of strong results and efficient processes, as well as its principal success factor of strong business practices that provide systematic, repeatable results in business management.	b(2)

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
	While the applicant identifies four methods it uses to improve its work processes, it is not clear whether the four methods have been fully deployed at all sites and across all workforce segments. For example, it is not clear if Six Sigma yellow belts and black belts at all sites have access to each others' projects and thus share lessons learned. Given the dispersed nature of the applicant's workforce and processes, opportunities to share best practices or learn from others may be missed, thus raising the potential for missed opportunities to improve work processes.	c
	While the applicant involves customer and stakeholder representatives in most process teams, it is not clear this is a well-deployed and systematic approach for the applicant. For example, the types of customers and examples of inputs that they are providing are not evident. Additionally, it is not clear how customer and supplier inputs are considered when they are not included on these process teams, and partners' and collaborators' roles in work process management are not clear. This may limit the applicant's ability to fully achieve its potential in the area of work process management.	b(1)
	It is unclear how the applicant's process review timelines support keeping processes current with business needs, including the organizational agility to meet changes in those needs. Of the applicant's four methods to improve work processes, three occur on a yearly timetable. It is unclear how the applicant responds in a timely manner to changes in the research or business environment that arise during the yearly cycle. The applicant may benefit from having approaches in place so that challenges and changes that affect sustainability, such as uncertain funding, reduced funding for general crop research, and increased competition from larger organizations, can be addressed quickly.	c

Scoring

Score Range: **50-65%**
Score Value: **65**

Consensus Review Worksheet—Item 7.1

Product Outcomes

Relevant Key Factors

1. Scientific community requirements: publication of articles in strategic thrust areas, high ratings of programs by peers, and publications in peer-reviewed journals.
2. Funding community requirements: achievement of contract deliverables, efficient prime contract management with adherence to time line, low contract fees
3. Agricultural community requirements: easy applied farming practices, increased crop yields, savings through reduced fertilizer and pesticide usage, timely commercialization of products, and reduction of soil erosion
4. Their requirements include achievement of contract deliverables, award and commercialization of patents, publication of articles in peer-reviewed journals
5. 100 competitors in agricultural research including universities, laboratories and companies performing competing research.
6. Applicant's strategic thrust areas include efficient and precision farming, better nutrition approaches, new and useful product development, and grain safety and resistance.

Strengths

++	Strength	Item Ref.
X	Several product performance results demonstrate good performance levels, beneficial trends, and favorable comparisons to the applicant's best USDA competitor. The percentage of incentive award fees earned (Figure 7.1-2), an indicator of meeting customer requirements for achievement of contract deliverables, increased from about 5 percent in 2006 to 9.4 percent in 2009, compared to about 5.5 percent for the best competitor that year. The number of patents awarded (Figure 7.1-3) increased from 10 in 2003 to more than 45 in 2009, which is 17 percent above the best competitor's 2009 performance. The applicant has far exceeded its best competitor in the number of articles published in peer-reviewed journals (Figure 7.1-4), with 3,000 total in 2009, compared to 2,400 for the best competitor. Segmented results indicate that the Efficient and Precision Farming research program contributes the majority of the publications.	a
	From 2003 through 2009, the applicant's results show good performance levels and steadily improving trends for areas important to the agricultural community market segment. For example, the value increase for Crop Yields (Figure 7.1-5) improved from \$10 to \$150 per acre, savings on Fertilizer and Pesticide Usage (Figure 7.1-6) trended favorably from \$1 to \$24 per acre, and Soil Erosion (Figure 7.1-7) was reduced from 2.5 to approximately 0.8 tons per acre. The applicant's performance on all three of these measures has compared favorably with that of its best competitor since 2006.	a

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
X	Results are not provided for several areas of importance to the accomplishment of the applicant's mission. For example, results are not included for several strategic thrust areas, such as enhancing the taste of healthier products (Better Nutrition Approaches);	a

--	Opportunity for Improvement	Item Ref.
	new or more useful products from plants, including fiber-conversion products (New and Useful Product Development); and fertilization in different growing environments (Grain Safety and Resistance). In addition, results are not presented for the applicant's core competency of specialized research competencies, such as corn or wheat enhancements from gene engineering or crop nanotechnology. Also, there are no results related to the success factor of engagement in high-risk research. Measuring and monitoring the product outcomes of all relevant research focus areas may help the applicant leverage its core research competencies, build its competitive position in an uncertain funding environment, and further take advantage of its ability to adapt to changing research priorities.	
	Limited or no segmentation by product offerings, customer segments, or market segments is included in the product results provided. For example, while the segmentation by strategic thrust area provided for Published Articles (Figure 7.1-4) provides information on the progress of the applicant's various research programs, this or other segmentation is not included in results for Patents Awarded and Commercialized (Figure 7.1-3). Likewise, while results for Increase in Grain Protein Content (Figure 7.1-8) that are segmented by location provide insight into outcomes from different growing environments, no segmentation is provided for Crop Yields (Figure 7.1-5), savings on Fertilizer and Pesticide Usage (Figure 7.1-6), or reductions in Soil Erosion (Figure 7.1-7).	a
	Some comparisons may not support the applicant's vision to be the premier government-owned laboratory system. Specifically, most results are compared to those of competitors, not necessarily to best-in-class benchmarks. For example, comparisons for Published Articles (Figure 7.1-4) to other USDA competitors do not take into account the many other laboratories outside the USDA realm. Results for Increase in Grain Protein Content (Figure 7.1-8) are compared to the best competitor's average, and the Bellefonte site has remained below that average for five years. Increased use of best-in-class comparative data may increase the applicant's opportunities to identify best practices and demonstrate its organizational value of "leadership in all we do."	a

Scoring for Item 7.1

Score Range: **50-65%**
Score Value: **50**

Consensus Review Worksheet—Item 7.2

Customer-Focused Outcomes

Relevant Key Factors

1. Government-owned, contractor-operated (GOCO) strategic research organization managed by Nebraska Free University (NFU). Products consist of Strategic Research Plan, research publications, commercialization pathways (licenses), and an agricultural research capability. Manages 152 projects in four program areas. Approximately 70% of funding is from the USDA, 20% from work with other federal agencies (e.g., DOE, HHS, etc.), and remaining 10% from the Work for Others (WFO) program.
2. Market segments include funding community, agricultural community, and scientific community. Funding community requirements: achievement of contract deliverables; efficient prime contract management with adherence to timeline, low contract fees, collaborative relationships and shared technology; total project cost within budget; and cost-effective and timely commercialization process. Agricultural community requirements: easily applied farming practices, increased crop yields, savings through reduced fertilizer and pesticide usage, timely commercialization of products, and reduction of soil erosion. Scientific community requirements: publication of articles in strategic thrust areas, high ratings of programs by peers, and publications in peer-reviewed journals.
3. Customer groups include USDA program managers, other government agency program managers, and WFO program managers. Their requirements include achievement of contract deliverables, award and commercialization of patents, publication of articles in peer-reviewed journals, project overhead costs at or below contract specification, low contract fees, effective program and project execution at a competitively lower cost, collaborative relationships and shared technology, and reduction of research cycle times and adherence to deadlines.
4. Key stakeholder groups include NFU, students, industry partners, and collaborating universities. NFU: low project costs associated with overhead, low contract fees, efficient process management, total project cost within budget, and positive public relations. Students: opportunities to contribute to research, scholarship awards, and diverse training opportunities. Industry partners: opportunities for shared research, learning and collaboration, collaboration with the agricultural community, timely commercialization of products, and WFO projects within budget, with effective, on-time project planning and execution. Collaborating universities: achievement of contract deliverables, collaborative relationships and shared technology, cost effective and timely commercialization of products, publications in peer-reviewed journals, and positive public relations.
5. Principal success factors: research cycle times; rate of innovation implementation; ability to engage in high-risk research; strong business practices that provide systematic, repeatable results in business management; a strategic research system; excellent and sustainable relationships with customers, suppliers, partners and collaborators; and a reputation for a customer-centered culture.
6. Data sources inside industry include GOCOs; annual performance evaluations of government-owned, government-operated organizations (GOGOs); partnerships with progressive GOCOs/GOGOs; personal relationships; and the Virtual Agricultural Library for Online Research. Sources outside industry include prior Baldrige Award recipients. Limitations are that short-term private industry strategies are not comparative to the applicant's long-term strategies.

Strengths

++	Strength	Item Ref.
	Several results for customer satisfaction show beneficial trends and favorable comparisons. Ten measures related to USDA Satisfaction with Research Program	a(1)

++	Strength	Item Ref.
	Elements (Figure 7.2-1) and Satisfaction with Research Project Elements (Figure 7.2-2) show significant improvement from 2005, when scores ranged from 75 to 80 percent, to 2009 scores ranging from 86 to 95 percent. Projections through 2014 predict continued improvement. In 2009, the applicant outperformed two key competitors in all ten measures, and it equaled the best R37 score in six of the measures. These results support the applicant's vision to be the premier government-owned laboratory system.	
	The applicant demonstrates good performance levels and beneficial trends for customer loyalty, a key indicator of customer engagement. Results for USDA Customer Loyalty (Figure 7.2-11) show that this customer's likelihood to renew the applicant's contract increased from 80 percent in 2005 to about 95 percent in 2009, compared to approximately 72 percent and 62 percent for its two top competitors and equaling the best score. The likelihood to contract for additional research improved from 80 percent in 2005 to approximately 93 percent in 2009, compared to 60 percent and 70 percent for the top competitors and near the best score. Likewise, during this same time period, other customers' loyalty as shown by their likelihood to contract for additional research (Figure 7.2-12) increased from 70 percent to about 88 percent for other government agencies and from approximately 65 percent to 80 percent for WFOs.	a(2)
	The applicant demonstrates strong results for engagement through the customer life cycle and for the effectiveness of its engagement methods. Results for overall Engagement through the Customer Life Cycle (Figure 7.2-13) from 2005 to 2009 show improvement from 67 percent to 95 percent for the USDA, from 64 percent to 87 percent for other government agencies, and from 60 percent to 87 percent for WFOs. Likewise, the score for Effectiveness of Engagement Methods (Figure 7.2-14), increased during this time period from an overall rate of 86 percent to 93 percent for the USDA, from 75 percent to 88 percent for other government agencies, and from 74 percent to 90 percent for WFOs.	a(2)

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
	Although the applicant measures and monitors customer satisfaction, comparisons are limited. For example, comparisons are not provided for results related to the satisfaction of the scientific and agricultural communities, collaborating universities, or students (Figures 7.2-6–7.2-9). Without comparatives, the applicant may have difficulty assessing its progress in addressing challenges affecting its sustainability, such as the uncertain funding environment and increasing competition.	a(1)
	Although very few formal complaints are filed against the applicant, results are missing for in-process measures of customer and stakeholder dissatisfaction. For example, the applicant maintains a system to capture customer irritants, yet no results are reported for this measure of customer dissatisfaction. Without fully measuring and monitoring customer dissatisfaction, the applicant may overlook opportunities for improvement with a customer group that, if addressed, could lead to higher levels of organizational performance and customer loyalty.	a(1)
	Results are limited for measures of engagement and loyalty for all of the applicant's key market segments and customer groups. For example, no results are reported for the agricultural or scientific communities. Also, while overall loyalty and engagement results are provided for the customer groups of non-USDA government agencies and	a(2)

--	Opportunity for Improvement	Item Ref.
	WFOs (Figures 7.2-12 and 7.2-13), data are not provided for individual organizations within those groups. Without data in these areas, the applicant may miss an opportunity to build and/or maintain key relationships with organizations that influence the organization's long-term sustainability.	

Scoring for Item 7.2

Score Range: **50-65%**
Score Value: **50**

Consensus Review Worksheet—Item 7.3

Financial and Market Outcomes

Relevant Key Factors

1. Mission: To develop and manage agricultural research of strategic importance to the U.S. economy and security. Vision: To be the premier government-owned laboratory system through partnerships and innovative solutions for America's farmers.
2. Customer groups include USDA program managers, other government agency program managers, and WFO program managers. Their requirements include achievement of contract deliverables, award and commercialization of patents, publication of articles in peer-reviewed journals, project overhead costs at or below contract specification, low contract fees, effective program and project execution at a competitively lower cost, collaborative relationships and shared technology, and reduction of research cycle times and adherence to deadlines.
3. Key stakeholder groups include NFU, students , industry partners and collaborating universities. NFU: low project costs associated with overhead, low contract fees, efficient process management, total project cost within budget, and positive public relations. Students: opportunities to contribute to research, scholarship awards, and diverse training opportunities. Industry partners: opportunities for shared research, learning and collaboration, collaboration with the agricultural community, timely commercialization of products, and WFO projects within budget, with effective, on time project planning and execution. Collaborating universities: achievement of contract deliverables, collaborative relationships and shared technology, cost effective and timely commercialization of products, publications in peer-reviewed journals, and positive public relations.
4. Key changes affecting competitive situation are the reduction in funding opportunities for general crop research, and consolidation of food research companies in the private sector that is resulting in much larger private competitors.
5. Data sources inside industry include GOCOs; annual performance evaluations of government-owned, government-operated organizations (GOGOs); partnerships with progressive GOCOs/GOGOs; personal relationships; and the Virtual Agricultural Library for Online Research. Sources outside industry include prior Baldrige Award recipients. Limitations are that short-term private industry strategies are not comparative to the applicant’s long-term strategies.
6. Key strategic challenges include the high cost of entry into new research programs, conflicts between industry and government, high expense of new technologies for farmers. Challenges affecting sustainability include uncertain funding environment, competition with other contractors, changing contract performance requirements, and declining number of agricultural graduates.

Strengths

++	Strength	Item Ref.
	In keeping with the organization's vision of becoming the premier government-owned laboratory system, the applicant shows strong, steady Funding Growth (Figure 7.3-1) from $20 million in 1997 to almost $2.4 billion in 2009. The applicant's performance on this measure was equal to or better than two key competitors in 2008 and 2009. Additionally, the applicant’s growth in funding from other government agencies and its WFO program reflects its efforts to address the sustainability challenge of uncertain funding with a dependency on a single main funding source; results for Funding Sources by Customer Group (Figure 7.3-5) display a decrease in USDA funds from 100 percent in 2001 to about 70 percent in 2009, while funding from other government agencies grew from zero in 2003 to over	a(1)

++	Strength	Item Ref.
	20 percent in 2009, and WFO funding increased about 8 percent from 2003 to 2009. Projections through 2014 are presented that predict continued improvement.	
	The applicant demonstrates positive results for measures of financial performance tied to its strategic challenges of the high cost of entry into new research programs and competition with other contractors. Overall Performance to Budget (Figure 7.3-2) shows steady performance levels below budget, ranging from 96 to 99 percent from 2005 through 2009. Project Overhead Costs (Figure 7.3-6) show a steadily improving trend from 40 percent in 2003 to about 17 percent in 2009. The applicant's performance on this measure has been better than a key competitor's since 2007. Results for Contract Fees (Figure 7.3-7) demonstrate a steadily improving trend from approximately 22 percent of budget in 2005 to about 12 percent of budget in 2009. On this measure, the applicant has performed better than two competitors since 2007. All three results contain projections through 2014 that predict continued improvement.	a(1)
	The applicant's market share of USDA GOCO research (Figure 7.3-9) steadily increased from 20 percent in 2005 to 40 percent in 2009, and its performance has been equal to or better than two competitors' since 2008. Its market share of USDA overall research funding (Figure 7.3-10) steadily increased from 5 percent in 2005 to 10 percent in 2009, despite declines in funding from the USDA. The applicant's performance has been equal to or better than two competitors' since 2008. Projections are reported for both measures that show continued improvement. These results are aligned with the applicant's vision to be the premier government-owned laboratory system.	a(2)

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
	Although the applicant indicates that its Measure Selection Process is used to determine comparative data, results for measures of financial performance contain data for only a few of its competitors and no other comparisons or benchmarks. For example, Figures 7.3-1, 7.3-2, and 7.3-7 related to Funding Growth, Overall Performance to Budget, and Contract Fees report results for only two competitors, and no other comparative data are provided. Results for Project Overhead Costs (Figure 7.3-6) include data for only one competitor, and no other comparisons are presented. Not tracking the results of all key competitors and other comparisons may result in an inaccurate picture of the applicant's organizational performance and may hamper its efforts to be the premier government-owned laboratory system.	a(1)
	Several measures of financial performance are not reported by the applicant; these include the value related to the over 300 patents that the applicant has received, funding for high-risk research and the results of Foundation investments or other measures of the Foundation's performance. Additionally, the applicant's marketplace performance is not reported for elements of its funding community market segment, such as the U.S. Department of Energy, U.S. Department of Homeland Security, U.S. Department of Health and Human Services, and National Science Foundation, or for WFOs. Not tracking and reporting these key measures may limit the applicant's ability to be successful in a marketplace of increased competition, decreased funding, and a declining number of agricultural graduates.	a(1,2)
	It is unclear whether the applicant's projected overall funding growth is supported by its projections of growth from separate funding sources and other financial data.	a(1,2)

--	Opportunity for Improvement	Item Ref.
	The applicant projects overall funding growth of 67 percent from 2009 to 2014 (Figure 7.3-1). At the same time, the percentage of funding from the USDA is projected to continue a decline evidenced since 2003. Increases from other funders are projected to grow by less than 20 percent, from 22 percent in 2009 to 30 percent in 2014 (Figure 7.3-5). Other factors such as Overall Performance to Budget (Figure 7.3-2) and Market Share (Figures 7.3-9 and 7.3-10) are projected to remain relatively stable until 2014. It is unclear how projected growth will take place without larger increases in funding from other government agencies and WFOs. Without clearly justified growth projections, the applicant may not be able to overcome its strategic challenge of uncertain funding.	

Scoring for Item 7.3

Score Range: **50-65%**
Score Value: **60**

Consensus Review Worksheet—Item 7.4

Workforce-Focused Outcomes

Relevant Key Factors

1. Values: pursue scientific knowledge and respect diverse opinions; cultivate innovation and creativity; practice open and honest communication with each other and our partners, maintaining the security of confidential information,
2. 5,653 nonunion employees at sites in four states: Nebraska (53%), Mississippi (12%), Pennsylvania (19%), and California (16%). Segmented by site and job type (scientists, lab support, farm operations, students, administrative support, maintenance, senior leaders, program leads, and program administrators). Diversity includes white (46%), African American (23%), Hispanic (12%), Asian (13%), and other (6%). All have high school or equivalent, doctorates (37%), master's (24%), bachelor's (28%).
3. Engagement Factors: Scientists- Scientific freedom, collaborative environment, access to state-of-the-art technology and opportunity to publish and present. Laboratory support and farm operations staff- Organization's mission, recognition, reliable compensation, tools to do the job, and benefits. Students- Work experience while in school, opportunity to grow and learn, and ability to participate in cutting-edge research. Administrative support staff and maintenance staff- Job security, alignment to organization's mission, and recognition. Senior leaders, program leads and program administrators- Making a difference in farm productivity, and the opportunity to shape the research agenda.
4. Satisfaction Factors: Scientists- challenging and meaningful work, compensation and benefits, effective support processes. Laboratory support and farm operations staff- flexible hours, adequate employee staffing for projects, opportunity to grow and learn. Students- Career support and quality mentoring, challenging work environment, recognition,opportunity to publish and present. Administrative support staff and maintenance staff- compensation and benefits, tools to do the job. Senior leaders, program leads and program administrators- opportunity to grow and learn, challenging and meaningful work.
5. Multiple benefits focused on four areas: (1) sustain a healthy workforce; (2) create a safe and healthy environment; (3) develop the workforce; and (4) sustain workforce satisfaction and engagement. Health and safety factors include chemical and electrical hazards; ergonomic issues; strains, sprains, trips, and falls; incidents related to operation of machinery, lab equipment use, and security.
6. Strategic challenges affecting sustainability include uncertain funding environment, competition with other contractors, and declining number of agricultural graduates.

Strengths

++	Strength	Item Ref.
X	Several results for workforce engagement and satisfaction demonstrate good performance levels and beneficial trends. Results from the EWA for Engagement Overall and by Segments, Engagement by Location and Years of Service, and Engagement by Education and Ethnicity (Figures 7.4-1−7.4-3) show improvement for all segments from 2005 to 2009, with the applicant's 2009 overall engagement score at about 4.1 on a five-point scale, compared to the best peer at 4.0. During the same time period, results for Engagement on Elements of Organizational Health (Figures 7.4-4) show improvement to a score at or above 4.0 for all seven elements, with all elements but one (feedback) equaling or surpassing the best peer's score. Results for Workforce	a(1)

++	Strength	Item Ref.
	Satisfaction (Figure 7.4-5) show improvement from 2005 to 2009 on three out of the five measures. Some measures, including teamwork, knowledge sharing, rewards and recognition, training, and compensation and benefits, are aligned with the applicant's key workforce motivation and satisfaction factors. Most measures include projections through 2014 that forecast continued improvement.	
	Results related to workforce health and safety have shown significant improvement in both the number and severity of incidents over the past six years. From 2003 to 2009, the number of Total Recordable Cases (TRC) per 200,000 work hours (Figure 7.4-12) declined from about 1.1 to approximately .8 for lab workers and from nearly 5 to about 3.1 for farm workers, with 2009 performance for both workforce segments equal to the best competitor's and exceeding the OSHA 80th percentile. Likewise, the number of Days Away/Restricted Time (DART) per 200,000 work hours (Figure 7.4-13) has declined for both these workforce segments over the past six years. Results for Workforce Health, Safety, and Security: Reported Incidents (Figure 7.4-14) show improvement in five of the six reported categories from 2006 to 2009, with three of the categories (chemical and electrical hazards, incidents related to lab equipment use, and security incidents) experiencing substantial reductions. These results reflect the applicant's focus on safety excellence, which it has identified as a key element of its workforce climate.	a(4)
	Results for Students Choosing Careers in Agriculture (Figure 7.4-10) show that the number of interns remaining with the applicant or staying in the industry has been increasing since 2005. The number of students that have remained with the applicant increased from about 26 percent in 2005 to 35 percent in 2009, compared to 14 percent and 10 percent for two of the applicant's competitors, whose performance levels also show a decrease from 2007 to 2009. These results indicate the applicant's success in addressing its strategic challenge of a declining number of agricultural graduates.	a(3)
	Several results provided for workforce capability and workforce capacity demonstrate a beneficial trend. The applicant's Training Effectiveness by Assessment Level (Figure 7.4-8B) has steadily improved for each level from 2005 to 2009 and has outperformed the best competitor's results since 2007. Hiring Cycle Time and Costs (Figure 7.4-9) have been cut by 50 percent, from 120 days and $6,000 per hire in 2001 to 60 days and $3,000 per hire in 2009. Results from 2005 to 2009 for Employee Voluntary Turnover (Figure 7.4-11) show good performance levels and beneficial trends for most workforce segments, with the overall turnover rate improving from approximately 7.2 percent to about 6.1 percent, compared to more than 7 percent for the applicant's key competitor. These results are aligned with the applicant's workforce satisfaction factors of adequate staffing and career support.	a(3)

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
X	The applicant has not provided results for many measures of engagement and satisfaction identified as important by its workforce. Not reported are results for measures such as scientific freedom, access to state-of-the-art technology, opportunity to publish and present, tools to do the job, work experience while in school, job security, challenging and meaningful work, effective support processes, flexible hours, and adequate staffing (Figure P.1-4). This gap may make it more difficult to attract the brightest minds in agricultural science and technoloy, which the applicant has identified as a principal success factor.	a(1)

--	Opportunity for Improvement	Item Ref.
	Although the applicant reports results for Training Investment (Figure 7.4-6) by employee and student and for Participation in Training and Development Activities (Figure 7.4-7), it is not apparent how either of these metrics provides a clear indication of the overall development of employees, especially leaders. These data also do not provide any segmentation by workforce segments (job types and locations). Results in these areas may help the applicant assess whether it is developing its employees to align with the organizational value of cultivating innovation and creativity and if it is affording the workforce the opportunity to grow and learn—a key factor in engagement and satisfaction.	a(2)

Scoring for Item 7.4

Score Range: **50-65%**
Score Value: **60**

Consensus Review Worksheet—Item 7.5

Process Effectiveness Outcomes

Relevant Key Factors

1. Government-owned, contractor-operated (GOCO) strategic research organization managed by Nebraska Free University (NFU). Products consist of Strategic Research Plan, research publications, commercialization pathways (licenses), and an agricultural research capability. Manages 152 projects in four program areas. Approximately 70% of funding is from the USDA, 20% from work with other federal agencies (e.g., DOE, HHS, etc.), and remaining 10% from the Work for Others (WFO) program.
2. Core competencies: (1) systematic agricultural research; (2) systematic and controlled Process Portfolio Management and Research Portfolio Management; (3) development of close, collaborative partnerships among academia, government, and the agricultural science industry to merge science with solutions to create commercialization pathways; and (4) specialized research competencies in corn endosperm mutations, corn and wheat breeding/physiology, grain gene splicing and engineering, wheat germplasm, and crop nanotechnology.
3. Key technologies include configurable laboratory technology, data acquisition and remote sensing systems, global positioning systems, field science technology, nationwide virtual private network (VPN), and a virtual agricultural library. Key equipment includes lasers, electron microscopes, mass spectrometers, centrifuges, and mixing equipment, tractors, harvesters, planters, information technology servers and desktop and network equipment.
4. Principal success factors: research cycle times; rate of innovation implementation; ability to engage in high risk research; strong business practices that provide systematic, repeatable results in business management; a strategic research system; excellent and sustainable relationships with customers, suppliers, partners and collaborators
5. Data sources inside industry include GOCOs; annual performance evaluations of government-owned, government-operated organizations (GOGOs); partnerships with progressive GOCOs/GOGOs; personal relationships; and the Virtual Agricultural Library for Online Research. Sources outside industry include prior Baldrige Award recipients. Limitations are that short-term private industry strategies are not comparative to the applicant's long-term strategies.
6. Key strategic advantages include a strong reputation for leading industry research. Advantages affecting sustainability include the record of strong results and efficient processes, long-term continuity, uninterrupted consistent support based on a continuing relationship, proven Prime Contract Management process, and a strong reputation for agricultural research.

Strengths

++	Strength	Item Ref.
	Several process effectiveness outcomes demonstrate good performance levels and beneficial trends that are aligned with the key customer requirement of reduced cycle times, as well as the applicant's success factor of research cycle times. Research Total Cycle Time (Figure 7.5-1) shows improvement in strategic thrust areas and overall, with overall performance improving from 39 months in 2003 to 30 months in 2009 and performance better than the best competitor's since 2005. Collaborative Agreement Cycle Time (Figure 7.5-7) improved from approximately 153 days in 2005 to fewer than 60 days in 2009, comparing favorably with the best competitor's level of	a(1,2)

++	Strength	Item Ref.
	about 80 days. From 2004 to 2009, results for Research Project Stage-Gate Cycle Time (Figure 7.5-8) show an improvement in total cycle time from approximately 1,110 days to about 900 days, and those for Research Program Stage-Gate Cycle Time (Figure 7.5-9) show total cycle time improving from about 330 days to 140 days. In addition, results for both materials and subcontractor cycle time (Figure 7.5-15) improved from 2005 to 2009, outperforming the best competitor and the national research laboratory best-in-class comparison, respectively.	
	Results for several key measures of work system performance show beneficial trends and favorable comparisons. External Peer Review Scores (Figure 7.5-2) show improvement for all strategic thrust areas, and the applicant's overall score increased from approximately 91 percent in 2003 to 96 percent in 2009, with results equal to or better than the best competitor's since 2006. In addition, from 2003 to 2009, the overall Stage-Gate Approval Rate (Figure 7.5-3) improved from approximately 72 percent to about 86 percent. During the same time period, the Process Management Efficiency Ratio (Figure 7.5-4) improved from about 100 to approximately 1,700, with performance equal to or better than the best competitor's the last two years. These results reflect the applicant's success in meeting the key customer requirement of effective program execution.	a(1)
	Results for several measures of work process performance demonstrate sustained good levels of performance and/or beneficial trends. Results for Information Management Performance (Figure 7.5-14) show that system availability increased from 99.5 percent in 2001 to over 99.9 percent in 2009, equaling the best-in-class comparison, while system vulnerabilities decreased from 0.5 percent to 0.2 percent. In addition, results for Total Project Cost vs. Baseline Project Cost (Figure 7.5-10) show performance from 2004 to 2009 within the good range of 0.95 to 1.05, while the best competitor's performance was above this range from 2006 through 2008. This result indicates the applicant's success in addressing customer requirements related to cost.	a(2)
	The applicant's Idea Well suggestions and implementations (Figure 7.5-16) have both increased. From 2005 to 2009, submissions increased from 586 to 1,129, and implementations grew from 92 to 564. These results may be particularly noteworthy since the Idea Well process is integrated at various points within the organization and is a key part of the applicant's performance improvement system.	a(2)

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
	The applicant provides limited or no results for some measures that may be needed for the organization to assess its overall work system effectiveness. For example, while the applicant provides results from its emergency drills (Figure 7.5-6; Emergency Readiness Rating), results are not provided for any of the applicant's other approaches for workplace preparedness for disasters, such as the effectiveness of the Information Management Contingency and Disaster Recovery Process. Also, the applicant has identified several processes that are performed by suppliers and partners, but results for these processes are not provided. In addition, results are not provided for measures that would address supply chain requirements for key suppliers (Figure P.1-7), such as quality, on-time delivery, flexible/tailorable solutions, best	a(1)

--	Opportunity for Improvement	Item Ref.
	value, knowledge transfer, fair treatment, innovation, and capable staff members. The absence of these results may limit the applicant's overall work system efforts.	
	Results for several process effectiveness measures do not demonstrate performance levels that support the applicant's vision of being the premier government-owned laboratory system. For example, in results for Prime Contract Management Performance (Figure 7.5-11), the percentage of milestones delivered on time, while improving from 2001 to 2009, remains below the performance level of the best GOCO. Similarly, the applicant's Commercialization Process Performance (Figure 7.5-13) has improved, but only to a 2009 level equal to the national research laboratory average.	a(1,2)

Scoring for Item 7.5

Score Range: **50-65%**
Score Value: **65**

Consensus Review Worksheet—Item 7.6

Leadership Outcomes

Relevant Key Factors

1. Value: demonstrate integrity in our science, relationships, and management of government assets
2. Value: demonstrate leadership in all we do, in all the communities we serve
3. Value: focus on efficient and effective processes
4. Value: respect the land and the people who use it.
5. Principal success factors: excellent and sustainable relationships with customers, suppliers, partners and collaborators; participation and visibility in the community; a reputation for a customer-centered culture.
6. Challenges affecting sustainability include uncertain funding environment, competition with other contractors, changing contract performance requirements, and a declining number of agricultural graduates.

Strengths

++	Strength	Item Ref.
	The applicant demonstrates good to excellent performance for the accomplishment of its strategic objectives (Figure 7.6-1), with an overall average of 94 percent of near-term action plans accomplished and 88 percent of long-term action plans completed in 2009. These plans, which are important for identifying opportunities for related research and the sustainability of the organization, are related to results such as Patents Awarded and Commercialized (Figure 7.1-3) and USDA Customer Loyalty (Figure 7.2-11). Additionally, the applicant has met 100 percent of its near-term and 93 percent of its long-term completion rates for actions plans related to building the capability and capacity of its workforce, one of the strategic challenges for the organization (Figure 7.6-1).	a(1)
	Results for numerous indicators of fiscal accountability, ethical behavior, legal compliance, and governance show sustained high performance levels and/or beneficial trends. For example, from 2005 to 2009, nine measures of fiscal accountability (Figure 7.6-2) show good levels and beneficial trends, including zero USDA and Office of Management and Budget external audit material weaknesses and 100 percent compliance with Sarbanes Oxley/IRS 990. Eight measures of regulatory and legal compliance (Figure 7.6-3) also show good levels and beneficial trends, with no EEOC validated complaints or USDA findings from 2005 to 2009. Results for ethical behavior (Figure 7.6-4) show 100 percent ethics training attendance, signing of both Codes of Conduct, and America COMPETES Act compliance in 2009, as well as zero ethical violations for five years. Also, results for Workforce Members' Trust in Senior Leaders/Governance (Figure 7.6-5) segmented by the multiple workforce groups show improvement from 2006 to 2009, with the 2009 overall average exceeding the top peer and national top 10 percent comparisons. These results align with the organizational value of demonstrating integrity.	a(2-4)
	The applicant demonstrates beneficial trends for the organization's fulfillment of its societal responsibilities in regard to “Greening” the Environment (Figure 7.6-8).	a(5)

++	Strength	Item Ref.
	Results from 2005 to 2009 show improvement in can recycling from 8.5 tons to 8.8 tons, electronics recycling increasing from 0.23 tons to 0.28 tons, green waste decreasing from 80 tons to 72 tons, safe disposal of hazardous materials increasing from 95 percent to 100 percent, and gasoline usage decreasing from 11.5 tons to 9.1 tons. Results for two of the measures (safe disposal of hazardous materials and gasoline usage) demonstrate 2009 results equal to the top peer's. These results align with the organizational values of integrity and respect for the land and the people who use it.	

Opportunities for Improvement

--	Opportunity for Improvement	Item Ref.
	Although the applicant provides results for overall support of its key communities through voluntarism (Figure 7.6-9), it is not evident that these results address some of the specific community support actions identified in Item 1.2. For example, results are missing for leadership participation in community service, grants for farmers to purchase equipment, specific speaking engagements, support for 4-H or Future Farmers of America, participation in local science fairs, and education (e.g., tutoring or research projects). In addition, the results provided in Figure 7.6-9 are not segmented for the applicant's four local communities. Measuring and monitoring segments of community service may assist the applicant with determining if the voluntarism/community benefit provided is in alignment with the organizational value of respect for the land and the people who use it, as well as the applicant's principal success factor of support of communities adjacent to research facilities.	a(5)
	Results are not provided for several of the applicant's approaches related to ethics. For example, although results provided for Ethical Behavior (Figure 7.6-4) include data on breaches of ethical behavior and for attendance at ethics training and signing Codes of Conduct, results are not provided for some of the identified approaches for building an ethical culture. For example, it is not clear whether there are results related to leaders' efforts to model and require ethical behavior, the discussions of ethical concerns at Hoedown Sessions, or the interactive webcasts for the workforce and partners that focus on ethical issues. Tracking results in these areas may enhance the applicant's ability to maintain its value of demonstrating integrity.	a(4)
	Comparative data are not provided for several leadership outcomes. For example, no comparatives are provided for measures of fiscal accountability (Figure 7.6-2), regulatory and legal findings (Figure 7.6-3), or ethical behavior (Figure 7.6-4). Additionally, although the applicant exceeded its peer in total volunteer hours (Figure 7.6-9) from FY2007 to 2009, it is unclear if the peer comparison is to a similar-sized organization. Without effective comparisons to competitors, comparable organizations, and/or benchmarks, the applicant may not recognize opportunities to improve in these areas of leadership and societal responsibility.	a(2-5)

Scoring for Item 7.6

Score Range: **50-65%**
Score Value: **60**

Score Summary Worksheet

Summary of Criteria Items	Total Points Possible	% Score	Score	Scoring Band
Category 1 - Leadership				
1.1 Senior Leadership	70	70%	49	
1.2 Governance and Societal Responsibilities	50	60%	30	
Category Totals	120		79	
Category 2 - Strategic Planning				
2.1 Strategy Development	40	65%	26	
2.2 Strategy Deployment	45	50%	23	
Category Totals	85		49	
Category 3 - Customer Focus				
3.1 Customer Engagement	40	60%	24	
3.2 Voice of the Customer	45	60%	27	
Category Totals	85		51	
Category 4 - Measurement, Analysis, and Knowledge Management				
4.1 Measurement, Analysis, and Improvement of Organizational Performance	45	60%	27	
4.2 Management of Information, Knowledge, and Information Technology	45	50%	23	
Category Totals	90		50	
Category 5 - Workforce Focus				
5.1 Workforce Engagement	45	60%	27	
5.2 Workforce Environment	40	65%	26	
Category Totals	85		53	
Category 6 - Process Management				
6.1 Work Systems	35	65%	23	
6.2 Work Processes	50	65%	33	
Category Totals	85		56	
PROCESS ITEMS SUBTOTAL (Categories 1-6)	**550**		**338**	**5**
Category 7 - Results				
7.1 Product Outcomes	100	50%	50	
7.2 Customer-Focused Outcomes	70	50%	35	
7.3 Financial and Market Outcomes	70	60%	42	
7.4 Workforce-Focused Outcomes	70	60%	42	
7.5 Process Effectiveness Outcomes	70	65%	46	
7.6 Leadership Outcomes	70	60%	42	
RESULTS ITEMS SUBTOTAL (Category 7)	**450**		**257**	**5**
GRAND TOTAL	**1,000**	**TOTAL SCORE**	**595**	

Baldrige National Quality Program

Baldrige National Quality Program
National Institute of Standards and Technology
United States Department of Commerce
Administration Building, Room A600
100 Bureau Drive, Stop 1020
Gaithersburg, MD 20899-1020

The National Institute of Standards and Technology (NIST), an agency of the U.S. Department of Commerce, manages the Baldrige National Quality Program (BNQP). For more than a century, NIST has helped to lay the foundation for the innovation, economic growth, and quality of life that Americans have come to expect. NIST promotes U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life. Through a network of nearly 400 assistance centers that serve all 50 states and Puerto Rico, NIST provides technical and business assistance to help smaller manufacturers overcome barriers to productivity and competitiveness.

Call BNQP or visit our Web site for

- information on improving the performance of your organization
- information on eligibility requirements for the Baldrige Award
- information on applying for the Baldrige Award
- information on becoming a Baldrige Examiner
- information on the Baldrige Award recipients
- individual copies of the Criteria for Performance Excellence—Business/Nonprofit, Education, and Health Care
- information on BNQP educational materials
- case studies

Telephone: (301) 975-2036; Fax: (301) 948-3716; E-mail: nqp@nist.gov
Web site: www.nist.gov/baldrige

American Society for Quality
600 North Plankinton Avenue
P.O. Box 3005
Milwaukee, WI 53201-3005

By making quality a global priority, an organizational imperative, and a personal ethic, the American Society for Quality (ASQ) becomes the community for all who seek quality technology, concepts, or tools to improve themselves and their world. ASQ administers the Malcolm Baldrige National Quality Award under contract to NIST.

Call ASQ to order

- bulk copies of the Criteria
- Award recipients DVD

Telephone: (800) 248-1946; Fax: (414) 272-1734; E-mail: asq@asq.org
Web site: www.asq.org