

West Virginia Science and Technology Strategic Plan for Cyberinfrastructure

February 2010

Vision Statement

By 2015, West Virginia will provide a nationally competitive, secure, and accessible cyberinfrastructure.

Introduction and Background

In academic research, cyberinfrastructure (CI) is the framework institutions use to connect to high performance computing networks and resources, allowing researchers to collaborate in real-time without geographic limitations.

With such a clear purpose and potential for far-reaching impact, research-related CI provides the platform for development of innovative scientific theories and knowledge by expanding areas of scholarly inquiry and collaboration.

Beyond this definition, the National Science Foundation (NSF) considers CI a fundamental enabler for science and scientific research. Investments in CI support traditional research, but also open new avenues for activities that allow our researchers to compete on a more equal footing with other across the country.

Within our research institutions, CI is increasingly required to address local, national and global priorities. Research efforts as diverse as national security, nanoscale science, genomics-proteomics, energy and carbon sequestration, climate change, engineering and education all benefit greatly from CI. From super computers to campuses, communities and schools, improved computing power and infrastructure equals improved research.

Numerous studies¹ have demonstrated the positive economic impact of research investments. High-tech jobs are created as a direct result of these investments and the state's economy is strengthened by the influx of revenue and job growth. For this reason, and those mentioned above, we cannot ignore CI investments or we will exclude our institutions from these modern research areas, risking loss of the impact these investments provide.

The overall goals of this plan parallel the national goals for research CI promoted by the NSF Office of Cyberinfrastructure:

1. Deploy and support a statewide **Advanced Research Network Infrastructure**
2. Deploy and support **High-Performance Computing (HPC) and Data Storage Resources for Research**
3. Deploy and support **Inter and Intra-Institutional Collaboration Tools and Resources** that support and utilize the network and HPC resources
4. Ensure that these **Efforts are Sustainable** and that there is a net positive effect on **Economic and Workforce Development** as a result of this work

¹ F. Larry Lesitritz, Ph.D., 2000; Arles and Sclar, 1998; US House of Representatives Summit on Competitiveness, 2005; Association of University Technology Managers, 2005

Within these goals are multiple concrete objectives that will track progress toward these efforts.

Estimated Costs

The total estimated costs of this project are summarized below and exceed \$175 million, with projected sustainability costs near \$10 million annually. While these numbers do at first seem daunting, they do not factor in the positive economic impact this effort will have. As mentioned above, past studies have shown that for every research dollar invested, the total potential economic impact of that dollar approaches 13 times the investment. For this project, that potential is over \$2.4 billion dollars.

	One-Time Investment	Ongoing Annual Cost
Advanced Networking	\$ 111,025,000	\$ 3,462,500
HPC & Data Storage	\$ 13,379,000	\$ 1,349,900
Collaboration Tools & Resources	\$ 50,600,000	\$ 50,600
Sustainability & Workforce Investment Planning	\$ 80,000	\$ 8,000
Total	\$ 175,084,000	\$ 9,880,400

KEY GOAL 1 Advanced Network Infrastructure

SMART OBJECTIVE 1 Define minimum standards for each category of constituent across the State of WV by December 2010

ACCOUNTABILITY Higher Education Strategic Research CI Committee Chairperson

RATIONALE OR BRIEF BACKGROUND

To provide a nationally competitive cyber infrastructure, we must first define the objective for the infrastructure. Research should be completed on comparable research and workforce institutions to help determine what the objectives should be for different constituent types in WV.

MEASUREMENT Minimum standards documents developed and approved for each identified constituent group by December 2010.

ESTIMATED COST \$10,000 one-time / \$1,000 annually thereafter

IMPLEMENTATION PLANS

- The Higher Education Policy Commission Vice Chancellor for Science and Research (HEPC) will establish the Higher Education Strategic Research CI Committee (the Committee) and charge it complete research and draft standards by May 2010.
- The Committee Chairperson will define research guidelines by June 2009, and those results will be presented to the HEPC:
 - what states or related higher educational institutions/systems should be comparable to WV
 - what research organizations could provide good insight on the direction WV should take in this initiative
- The Committee Chairperson will communicate goals and intentions of study to Higher Education institutions in WV by May 2010.
- The HEPC will draft/approve committee charter and goals or tasks by June 2010.
- The Committee Chairperson will complete research of all constituents and the Committee Chair will submit this report to the HEPC by August 2010.
- The Committee Chairperson will draft minimum standards for all constituents and the Committee Chair will report this information to the HEPC by September 2010.
- The HEPC will approve new standards for all constituents by October 2010.
- The HEPC will communicate new minimum standards to all stakeholders in WV by December 2010.
- The Committee Chairperson will annually review minimum standards and communicate any changes to the HEPC for dissemination to stakeholders.

DATE Sept 1, 2009

REVISED February 9, 2010

KEY GOAL 1 Advanced Network Infrastructure

SMART OBJECTIVE 2 Perform a gap analysis between current infrastructure and defined standard for each higher education institution in WV by May 2011

ACCOUNTABILITY Higher Education Strategic Research CI Committee Chairperson

RATIONALE OR BRIEF BACKGROUND

Once standards are defined (separate objective), we must then determine the gap between where we are now as a state and where we need to be to meet the standards. Each institution should be evaluated based on the set standards, their current needs, independent standards, and internal plans for infrastructure upgrades.

MEASUREMENT Gap analysis completed for each higher education institution in WV by May 2011

ESTIMATED COST \$15,000 one-time / \$1,500 annually thereafter

IMPLEMENTATION PLANS

- The Committee Chairperson will communicate to Higher Education Institutions of need to perform this analysis by May 2010.
- The Committee will determine a Project Team and Team Leader that will identify appropriate internal resources or sources of funding for project (whether using staff, consultant or other means) by June 2010.
- The Project Team will define tasks and requirements for gap analysis by July 2010.
 - Define reports and data needed to be included in report
- The Team will identify consultant or other staff/personnel to assist with the completion of the statewide gap analysis by August 2010.
- The Team will develop expectations and timelines with the consultant or other personnel performing gap analysis by September 2010.
- The Team will perform a gap analysis at each institution and prepare summary or report for delivery to the Committee Chairperson by May 2011 for presentation to the HEPC.

DATE Sept 1, 2009

REVISED February 9, 2010

KEY GOAL 1 Advanced Network Infrastructure

SMART OBJECTIVE 3 Obtain funding for physical infrastructure improvements identified by gap analysis by May 2013

ACCOUNTABILITY HEPC Vice Chancellor for Science and Research

RATIONALE OR BRIEF BACKGROUND

For WV to be nationally and globally competitive in research and economic development, we must improve the statewide cyber infrastructure. Using the information of where we want to be and where we are now (the gap analysis), we can identify what it will take to get to our desired state in all Higher Education Institutions in WV and then identify and obtain the needed funding to help schools get to reach minimum standards.

MEASUREMENT Funding sources identified and secured for infrastructure improvements needed by May 2013.

ESTIMATED COST \$5,000 annually

IMPLEMENTATION PLANS

- The HEPC Vice Chancellor for Science and Research (HEPC) will evaluate funding needs, categorized by constituent group or some logical breakdown as identified in gap analysis to help locate and secure funding sources by December 2010.
- The HEPC will identify multiple funding sources to assist in WV cyber infrastructure improvements by May 2011.
- The HEPC will disseminate to institution CIOs, CTOs, and VPs of Research, of the availability of grants and other funding sources that will address issues identified in the gap analysis, accounting for likely success rate of those requests, through May 2012.
- The HEPC will coordinate with institution CIOs, CTOs, and VPs of Research and attempt to obtain funding for physical infrastructure improvements identified by gap analysis by May 2013.

DATE Sept 1, 2009

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KEY GOAL 1 Advanced Network Infrastructure

SMART OBJECTIVE 4 Connect all 4-year institutions to Internet2 / National Lambda Rail by 2015

ACCOUNTABILITY Higher Education Strategic Research CI Committee Chairperson

RATIONALE OR BRIEF BACKGROUND

Internet2 / National Lambda Rail will provide transformative tools and infrastructure for learning and research for West Virginia's institutions. This will allow the state's institutions to more fully participate in research opportunities and to create new research and learning environments using a secure, transparent, and scalable infrastructure. The cyberinfrastructure will provide access to computing resources that in the past have only been available to the most prestigious research institutions. This network enables access to exclusive online instruments and sensor arrays, vast collections of scientific data, and various applications and software toolkits. It also provides the ability to collaborate with geographically distributed teams using all of these capabilities. This infrastructure allows institutions with highly competent professionals to access robust software, leading-edge hardware, specialized instruments, knowledge management facilities, and appropriate training.

MEASUREMENT

- The number WV Higher Education intuitions that are connected each year and by 2015.
- The number of new grant applications that reference use of Internet2/National Lambda Rail in their applications each year
- The number of faculty and/or students that authenticate on and utilize resources via Internet2 each year

ESTIMATED COSTS

- IRU or fiber deployment costs for WVU and MU to supply gigabit connections plus the cost for the bandwidth requirements per institution - \$111,000,000 one-time
- Annual subscription costs - \$755,000. This figure includes regular University Memberships, Affiliate Members with Collaboration Site Status, Affiliate Members, Regional & Education Network Members, and Network Participation Fees required for University Members and Collaboration Sites
- Middleware costs network-wide (i.e. Shibboleth Authentication) - \$200,000 annually
- Annual operational costs for Network Operation Center(s) (NOC) including IT Support Staff and maintenance of the fiber network - \$2,500,000 annually

IMPLEMENTATION PLANS

- The Committee Chairperson will convene a planning group subcommittee (Subcommittee) comprised of Higher Education CIOs, Computer Center Directors, VPs of Research, and representatives from WVNET by Fall 2010.
- The Subcommittee Chairperson will prepare and deliver to the Full Committee Chair a draft cost structure for each institution type six months after the initial meeting.
- The Subcommittee Chairperson will prepare and deliver to the Full Committee Chair a comprehensive plan to connect all 4-year institutions to Internet2 / National Lambda Rail by Spring 2011.
- The Committee Chairperson will work with Higher Education CIOs, Computer Center Directors and VPs of Research, and representatives from WVNET, to implement the

comprehensive plan, meeting deadlines and goals outlined so that all 4-year institutions are connected to Internet2 / National Lambda Rail by 2015.

DATE: Sept 1, 2009

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KEY GOAL 2 High Performance Computing

SMART OBJECTIVE 1 Deploy and enable access to high performance computing resources and tools by May 2013

ACCOUNTABILITY Higher Education Strategic Research CI Committee Chairperson

RATIONALE OR BRIEF BACKGROUND

Modern scientific and engineering methods require the ability to use computational models of scientific phenomenon and engineering issues. The development, execution, and analysis of such models for real problems require far more computational capacity than is available through typical commodity computing resources.

MEASUREMENT

Measure the deployment and access to high performance computing resources and tools at each institution by conducting:

- Periodic census of computational demand and needs among West Virginia researchers
- Periodic inventory of HPC resources available to WV researchers
- Gap analysis between demand/needs and availability

ESTIMATED COST

- Acquisition of HPC resources at key institutions: \$1,000,000 annually
- Annual census of computational demand: \$10,000
- Annual Inventory of HPC resources in WV: \$10,000
- Annual census of HPC projects: \$10,000
- Annual census of Ph.D./Post-Doctoral students using HPC resources and tools: \$10,000

IMPLEMENTATION PLANS

- The Committee will determine a Project Team and Team Leader that will conduct an inventory of existing HPC tools and resources in West Virginia by August 2010.
- The Project Team will conduct a needs assessment of HPC tools and resources among West Virginia researchers and present their findings to the Committee Chair by September 2010.
- The Committee will determine needed HPC tools and resources and related funding requirements over project timeframe by November 2010.
- The Committee Chair will work with institution CTOs, CIOs, and VPs for Research to develop an implementation plan for these tools and resources by January 2011.
- The HEPC will monitor and confirm deployment and enablement high performance computing resources and tools through December 2013.

DATE September 7, 2009

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KEY GOAL 2 High Performance Computing

SMART OBJECTIVE 2 Enable access to high performance and supercomputing resources for researchers in West Virginia institutions of higher education by December 2011

ACCOUNTABILITY Higher Education Strategic Research CI Committee Chairperson

RATIONALE OR BRIEF BACKGROUND

To conduct cutting edge research, West Virginia researchers must have access to supercomputers and other high performance computers and resources. Fortunately, extensive HPC resources already exist and should be made available to WV researchers through the Internet, Internet2 and other research networks. WV must take advantage of these HPC resources and provide ready access to WV's researchers.

MEASUREMENT

- The number of West Virginia projects using various HPC systems and the number of researchers who can not get needed access to such systems

ESTIMATED COST

- Implement technical support system to facilitate WV researcher's use of HPC resources at HPC facilities: \$93,000 one-time / \$9,300 annually thereafter
- Implement system for tracking West Virginia project use and need for high performance computing resources at HPC facilities: \$27,000 annually
- Identify training resources for using HPC: \$27,000 annually
- Develop training programs to assist WV researchers in the use of HPC resources to conduct research: \$54,000 annually
- Conduct training workshops to facilitate WV researchers in the use of HPC resources in their research: \$54,000 annually
- Develop HPC training courses for WV researchers: \$200,000 one-time / \$20,000 annually thereafter

IMPLEMENTATION PLANS

- The Committee Chairperson will convene a High Performance Computing Subcommittee (HPC Subcommittee) to annually survey and inventory available HPC resources available to West Virginia researchers.
- The HPC Subcommittee Chair will quarterly prepare and deliver a report of training programs related to the use of HPC resources available to WV researchers.
- The HPC Subcommittee Chair will annually prepare and deliver a report of use and demand for HPC resources by WV researchers.
- In conjunction with the annual report, the HPC Subcommittee Chair will prepare and implement a plan to match availability and need/demand for HPC systems in WV.
- The HPC Subcommittee Chair will develop and deliver to the Committee Chairperson a plan for supporting and providing training use of HPC systems.

DATE September 7, 2009

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KEY GOAL 2 High Performance Computing

SMART OBJECTIVE 3 Deploy and enable access to data visualization and tools by December 2011

ACCOUNTABILITY Higher Education Strategic Research CI Committee Chairperson

RATIONALE OR BRIEF BACKGROUND

The ability to fully interpret and understand scientific data often boils down to being able to visualize it. The amount of data generated by computational models makes it difficult to “get our arms around” what the data tells us. Data visualization often makes it readily understandable and leads to new discoveries that might have been masked by the enormity of the dataset itself.

MEASUREMENT

Measure the deployment and access to data visualization and tools at each institution by conducting:

- Periodic census of data visualization demand and needs among West Virginia researchers
- Periodic inventory of data visualization tools available to WV researchers
- Gap analysis between demand/needs and availability

ESTIMATED COST

- Survey to assess the number, location and type of visualization tools in WV and the demand for those resources: \$36,000 one-time / \$3,600 annually thereafter
- Acquire visualization systems: \$100,000 annually

IMPLEMENTATION PLANS

- The HPC Subcommittee Chairperson will annually collect data on visualization systems in WV higher education and survey the need or demand for visualization resources.
- The HPC Subcommittee Chairperson will quarterly prepare and deliver a report of visualization resources available to researchers.
- The HPC Subcommittee Chairperson will annually develop a list of needed visualization systems for WV institution of higher education.
- The HPC Subcommittee Chairperson will develop and deliver to the Committee Chairperson a plan to acquire and deploy visualization systems at selected WV higher education institutions.

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KEY GOAL 2 High Performance Computing

SMART OBJECTIVE 4 Deploy and enable access to HPC data storage and management facilities, tools and resources by December 2010

ACCOUNTABILITY Higher Education Strategic Research CI Committee Chairperson

RATIONALE OR BRIEF BACKGROUND

Modern scientific and engineering research produces, in addition to valuable new knowledge, massive amounts of data. This data must be stored and made available for later analyses, re-analyses, data mining, interpretation, and cross project integration. WV researchers must have adequate storage facilities along with corresponding storage management tools to manage this data.

MEASUREMENT

Estimates of current storage requirements for West Virginia researchers; and projections of storage requirements given proposed and planned research projects.
Quantity and availability of large storage resources for large datasets.
HPC data storage and management facilities, tools, and resources deployed, enabled, and being used by WV researchers

ESTIMATED COST

- Annual survey to poll current facilities and future storage needs: \$5,000
- Annual updates to catalog of existing large scale storage resources available to WV researchers: \$5,000
- Development of specifications for one or more large scale storage facilities for use by WV researchers: \$50,000 one-time / \$5,000 annually thereafter
- Acquire one or more large scale (10,000 SqFt +) datacenter storage facilities for use by WV researchers: \$13,000,000 per facility

IMPLEMENTATION PLANS

- The HPC Subcommittee Chairperson will annually survey and prepare a report to the Committee Chairperson that assesses current research storage requirements and solicits projections of future HPC data needs of WV researchers.
- The Subcommittee Chairperson will annually update and disseminate a catalog of existing and potential large scale storage resources that information to researchers.
- The Subcommittee Chairperson will annually assess and prepare a gap analysis report for the Committee Chairperson that describes how to bridge the divide between current existing resources and future storage related needs.
- If the annual gap analysis determines a need, the Subcommittee Chairperson will develop and deliver to the Committee Chairperson the system design and specifications for one or more large scale data storage facilities.
- The Committee Chairperson will work with constituents to acquire the recommended datacenter storage facility or facilities.

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KEY GOAL 3 Collaboration

SMART OBJECTIVE 1 Develop and Deploy State-of-the-Art CI Resources by November 2013

ACCOUNTABILITY HEPC Vice Chancellor for Science and Research

RATIONALE OR BRIEF BACKGROUND

It is imperative that state-of-the-art resources, such as statewide fiber networks, enhanced intra- and inter-organization (federal, state, university, school, private businesses) connectivity, and termination equipment be developed and deployed to take advantage of the advanced and commodity networks. This will enable much needed collaboration via remote instrument access, telepresence, and other collaborative venues. The deployment of such resources will require a commitment of state personnel and the leadership within the state's institutions of higher education.

MEASUREMENT

The development and deployment of state-of-the-art CI resources will be complete by November 2013, such that collaboration between various organizations will be completed by December 2015. Scientific instruments at the two research institutions will be accessible to other researchers via remote access. Significantly enhanced number of peer and outreach forums, which use of the CI resources, and an increased number and utilization of telepresence facilities.

ESTIMATED COST Additional enhanced connectivity (routers, switches, scientific instruments and modules that enable remote access), and termination equipment at all higher education institutions: \$50,000,000 one-time / \$5,000,000 annually thereafter

IMPLEMENTATION PLANS

- The HEPC Vice Chancellor for Science and Research will convene a Collaboration Subcommittee (Collaboration) to annually survey and inventory available and needed state-of-the-art collaboration resources for WV researchers.
- The Collaboration Chairperson will develop by January 2011 and annually update a plan to establish and maintain enhanced state-of-the-art collaboration resources identified by the survey—including remote instrument access and telepresence—that take advantage of advanced networking.
- The HEPC will coordinate with stakeholders in WV research institutions to write proposals and seek external funding from public and private sources to fund the deployment of these resources and tools by May 2011, and annually thereafter.
- The Collaboration Chairperson will coordinate with stakeholders to ensure deployment of these resources and tools as they are funded and report the deployment of these resources to the Committee Chairperson.

DATE September 7, 2009

REVISED February 9, 2010

KEY GOAL 3 Collaboration

SMART OBJECTIVE 2 Research institutions will have access to high-end research administration and compliance packages and tools by June 2015.

ACCOUNTABILITY HEPC Vice Chancellor for Science and Research

RATIONALE OR BRIEF BACKGROUND

The complexities of uploading research proposals on federal agency sites, and new demands on data collection and reporting, funding, , budgetary information, and others makes the installation of a modern electronic research administration a must. Further, it is essential that we establish acceptable state-wide Institutional Review Board (IRB) protocols and reciprocity between the hubs (primary institutions) and spokes (secondary institutions). Procurement and implementation of state-of-the-art IRB packages will advance the clinical and scientific research infrastructure, as well as CI infrastructure in WV.

MEASUREMENT All primary and secondary research institutions will have either procured or will have remote access to high-end electronic research administration (ERA) and compliance packages by June 2015.

ESTIMATED COST High-end electronic research administration systems:
\$500,000/package one-time / \$50,000 annually thereafter
IRB packages: \$100,000/package one-time / \$10,000 annually thereafter

IMPLEMENTATION PLANS

- The Collaboration Chairperson will coordinate with the VPs of Research at the primary research institutions (WVU and MU) to develop plans to acquire state-of-the-art ERA by May 2011.
- The VPs of Research at the primary research institutions will implement plans to acquire state-of-the-art ERA by May 2013.
- The Collaboration Chairperson will coordinate with Research Administrators and/or Faculty at secondary research institutions to develop plans to acquire state-of-the-art ERA by May 2013.
- Research Administrators and/or Faculty at secondary research institutions will acquire the state-of-the-art ERA by June 2015.
- Primary and secondary research institutions will acquire, install, and make operational research compliance packages by June 2015. The Collaboration Chairperson will also report operational status of these applications to the HEPC at this time.

DATE September 7, 2009

REVISED February 9, 2010

KEY GOAL 4 Sustainability, Economic and Workforce Development

SMART OBJECTIVE 1 Develop an administrative management plan for the cyberinfrastructure project and network by December 2010

ACCOUNTABILITY HEPC Vice Chancellor for Science and Research

RATIONALE OR BRIEF BACKGROUND

A lack of a cyber-research culture is attributed to the lack of physical facilities, such as advanced networks, as well as a lack of resources committed to institution-wide outreach to researchers and a lack of dedicated technical support for researchers who are trying to break new grounds in research. To enable the development and operation of a CI, an administrative management team needs to be assembled, which will develop and implement a statewide CI plan.

MEASUREMENT A long-term sustainability plan for the CI by December 2010

ESTIMATED COST \$10,000 one-time / \$1,000 annually thereafter

IMPLEMENTATION PLANS

- The HEPC Vice Chancellor for Science and Research (HEPC) will assemble a state-wide ad hoc Sustainability, Economic and Workforce Development Committee (SEWDC) to address the need for development and implementation of a statewide CI Plan by June 2010.
- The SEWDC Chairperson will develop and deliver to the HEPC Chancellor an administrative management plan for the CI project by August 2010.
- The SEWDC Chairperson will develop and deliver to the HEPC Chancellor an implementation plan by December 2010.
- The SEWDC Chairperson will work with stakeholders to apply the management and implementation plans developed by the SEWDC, and will report annually to the HEPC on implementation progress.

DATE September 7, 2009

REVISED February 9, 2010

KEY GOAL 4 Sustainability, Economic and Workforce Development

SMART OBJECTIVE 2 Develop a long-term sustainability plan for West Virginia's statewide cyberinfrastructure by December 2010

ACCOUNTABILITY HEPC Vice Chancellor for Science and Research

RATIONALE OR BRIEF BACKGROUND

Sustainability is directly linked to a continued availability of a skilled workforce and the availability of funding necessary to retain the skilled workforce. EPSCoR states had 20% of the population but only 11% of allocations to the TeraGrid in 2005. Allocations dropped to 6% in 2006. In other words, EPSCoR states lack the revenue and the skilled workers to perform CI-enabled research. With CI improvement and cyber-enabled research being a major funding focus of the America COMPETES Act (2007) and the NSF, we must develop a plan to ensure long term sustainability that focuses on attracting financial resources and developing the required workforce.

MEASUREMENT Development of a long-term sustainability plan by December 2010.

ESTIMATED COST \$10,000 one-time / \$1,000 annually thereafter

IMPLEMENTATION PLANS

- The SEWDC Chairperson will develop and deliver to the HEPC Chancellor a long-term sustainability plan for the CI project by December 2010.
- The SEWDC Chairperson will work with stakeholders to apply the sustainability plan developed by the SEWDC, and will report annually to the HEPC on implementation progress.

DATE September 7, 2009

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KEY GOAL 4 Sustainability, Economic and Workforce Development

SMART OBJECTIVE 3 Conduct a functional needs assessment for industries beyond academic research that would benefit from the Statewide CI project by December 2010

ACCOUNTABILITY HEPC Vice Chancellor for Science and Research

RATIONALE OR BRIEF BACKGROUND

To provide a strong economic and workforce development impact, we must work with industry to identify its needs and to identify what industry is willing to pay for. This will also help maintain project viability after initial roll out. The needs assessment can lead to development of a catalog of services as well as an inventory of needed skills.

MEASUREMENT Have a survey instrument by December 2010

ESTIMATED COST \$50,000 one-time / \$5,000 annually thereafter

IMPLEMENTATION PLANS

- The SEWDC Chairperson will establish a standing Needs Assessment Subcommittee (Subcommittee) to identify industry classes for these services by May 2010.
- The Subcommittee Chairperson will assign a Project Leader responsible for implementing industry specific CI needs assessments for each industry or related industries by June 2010, and annually thereafter.
- The Project Leader will identify members of each industry across West Virginia by July 2010, and annually thereafter.
- The Project Leader will conduct needs assessment focus groups to develop and deliver to the Subcommittee Chairperson an assessment instrument by August 2010, and revise the instrument as needed annually thereafter.
- The Subcommittee Chairperson will disseminate the survey to those industries across WV identified by the Project Leader and then provide necessary information and follow-up to achieve high response rates by September 2010 and annually thereafter.
- The Subcommittee Chairperson will prioritize and catalog survey responses, collect feedback from (at least some) industry contacts, review with focus groups or focus group contacts, and finalize a report to be delivered to the HEPC by November 2010, and annually thereafter.
- The HEPC will publish the functional needs assessment by December 2010, and annually thereafter.

DATE September 7, 2009

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KEY GOAL 4 Sustainability, Economic and Workforce Development

SMART OBJECTIVE 4 Communicate the value of advanced cyberinfrastructure and the applications supported by December 2010

ACCOUNTABILITY HEPC Vice Chancellor for Science and Research

RATIONALE OR BRIEF BACKGROUND

We must demonstrate the value and need of an advanced, statewide cyberinfrastructure to all stakeholders, including college and university faculty and staff, industry representatives, local and statewide legislators and politicians, and to a smaller extent, the general public. This is needed to successfully launch and sustain the project, including getting the right people involved and obtaining the necessary funds. This is in effect a marketing plan to sell the network and the services that will use the network. This effort will build on the findings of the needs assessment.

MEASUREMENT Have a communication plan by December 2010

ESTIMATED COST \$10,000 one-time / \$1,000 annually thereafter

IMPLEMENTATION PLANS

- The HEPC Vice Chancellor for Science and Research (HEPC) will establish a CI Communications Committee (Communications) that will include communications staff representatives from WV institutions by June 2010.
- The Subcommittee Chairperson will perform a stakeholder analysis to identify people, groups, and institutions that will be targeted by the communications effort by July 2010.
- The Subcommittee Chairperson will define the needs and extent of the chosen communication strategy by August 2010.
- The Subcommittee Chairperson will define current and future costs and determine how the strategy will be developed or conducted (by team, by PR firm, etc.) by September 2010.
 - If needed, the Communications Committee Chair will recommend hiring a PR firm or other consultant or determine who will lead the overall communications effort by October 2010.
- The Subcommittee Chairperson will consider stakeholder input and develop and deliver to the Committee Chairperson a communications strategy by November 2010.
- The Committee Chairperson will work with the HEPC to implement the chosen strategy and begin conducting related communications by December 2010.

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