



# ILLINOIS CENTURY NETWORK

## **POLICY COMMITTEE MEETING AGENDA**

**September 26, 2001 2:00 p.m.**

**ILLINOIS CENTURY NETWORK  
POLICY COMMITTEE  
MEETING AGENDA  
September 26, 2001  
2:00 p.m.**

| <b>Item<br/>Number</b>   |   | <b>Page<br/>Number</b> |
|--------------------------|---|------------------------|
| 1.                       | Minutes   | 3                      |
| 2.                       | Announcements and Remarks by Mary Barber Reynolds,<br>Chair | -                      |
| 3.                       | Remarks by H. Neil Matkin, Director                         | -                      |
| <b>ACTION ITEMS</b>      |   |                        |
| 4.                       | Secretary to the Policy Committee                           | 13                     |
| 5.                       | ICN Contracts: Update and Inclusion of Constituents         | 14                     |
| 6.                       | Advanced Engineering Taskforce                              |                        |
|                          | a. 2002 Report and Recommendations                          | 17                     |
|                          | b. ICN Staff Response                                       | 21                     |
| 7.                       | FY 2002 Budget Report                                       | 43                     |
| 8.                       | Collocation Policy  | 48                     |
| <b>INFORMATION ITEMS</b> |   |                        |
| 9.                       | Regional Technology Centers – First Year Report Card        | 50                     |
| 10.                      | ICN Staff Training Plan                                     | 54                     |
| 11.                      | Web Site Utilization  | 57                     |

Item # 1  
September 26, 2001

ILLINOIS CENTURY NETWORK  
JULY 25, 2001 POLICY COMMITTEE MINUTES

**Submitted for:** Action

**Summary:** Distribution of July 25, 2001 minutes for review by the Policy Committee.

**Action Requested:** Adoption of July 25, 2001 minutes.

**Recommended Motion:** *That the ICN Policy Committee adopts the July 25, 2001 minutes with any edits as noted.*

ILLINOIS CENTURY NETWORK

**JULY 25, 2001 POLICY COMMITTEE MINUTES**

The meeting was called to order by Mary Reynolds.

Members present: Jean Wilkins, Illinois State Library; Bruce McMillan, State Museum; Keith Sanders, Illinois Board of Higher Education; Virginia McMillan, representing Joe Cipfl, Illinois Community College Board; Mary Reynolds, Governor's Office; Lugene Finley, Illinois State Board of Education; Frank Cavallaro, representing Mike Schwartz, Department of Central Management Services.

Others attending included: Doug Dougherty, Illinois Telecommunications Association; Neil Matkin, Lynn Murphy, Karlin Sink, Dirk French, Doug Jurewicz, and Rebecca Dineen all from the Illinois Century Network.

1. Policy Committee Minutes

Staff requests the adoption of the June 1, 2001 Policy Committee meeting minutes.

Motion: Keith made motion; Lugene seconded.

Keith Sanders moved that the ICN Policy Committee adopt the June 1, 2001 minutes with any edits as noted. (No edits were noted.)

Motion carried.

2. Announcements

Mary invited everyone to visit Techtown between 10:00 a.m. and 8:00 p.m. at the Illinois State Fair. The ICN will provide network connectivity for Techtown through the generosity of Ameritech. The entire building will showcase the technology of over two-dozen state agencies including ISBE and IBHE and agencies such as Argonne. The ICN will also be a part of the Illinois Online Leadership Council exhibit.

3. Remarks

Neil distributed the ICN Facts at a Glance sheet. The ICN now has almost 5000 institutions connected and is serving an estimated 1.4 million people of approximately 11 million people in the state.

Senior staff will have a budget plan ready for the September Policy Committee meeting. The staff is also working on monthly budget reports. Currently, the reports are generated manually from state systems, but the staff is investigating ways to make the process faster and more automatic.

Staff has started to inventory all ICN network equipment located at approximately 200 sites throughout the state. Staff has worked closely with the Auditor General and ISBE personnel to perform the inventory and ensure a smooth transition of ownership from ISBE to ICN with the IBHE acting as fiscal agent. Conducting the inventory should take about two weeks. Once complete, an audit firm will come in and do a statistical or sampling audit.

Neil has received the final draft of the Advanced Engineering Taskforce report. Once the report is edited and formatted, it will be mailed to the Policy Committee Members and designees. The Committee should get a preview of the report in September. Some of the issues identified in the report will be discussed later in this meeting.

Neil extended his appreciation to Director Schwartz and his associates for CMS's continued support in streamlining the ICN procurement process allowing the ICN to react more quickly to constituent needs. Neil also extended thanks to Keith Sanders for helping expedite the process with Director Schwartz. Keith added his appreciation to CMS for their openness and willingness to negotiate through some tough issues.

Jean noted that this week was the kick-off for the Gates grant for public libraries. Libraries will receive a little more than 4 million dollars through the Gates foundation. The grant is for public libraries only and 702 in Illinois qualify. In order to determine eligibility, libraries complete an application providing general and technical information.

#### 4. Network Operating Policy

A revision to the motion included with the agenda was distributed. Neil led a discussion on the types of educational and religious institutions that can connect to the ICN. There are two types of institutions addressed in this item - for-profit accredited education entities such as DeVry and non-profit religious organizations that serve Illinois citizens. Several different religious organizations operate day care centers and after or before school programs that are directly tied to education especially in rural communities and some of the urban communities.

The staff's recommendation attempts to determine the conditions under which religious institutions and for-profit education institutions are allowed to connect to the network. The conditions are outlined in the revised motion that Neil distributed. Both motions are in keeping with Illinois statute and the Illinois Constitution. Secondly, the amount of bandwidth needed by religious organizations is minuscule and self-limiting in the respect that they have to pay for their own access point to connect to the network. As long as the for-profit institutions abide by the participation agreement and are not re-selling services as profit centers the staff is recommending that the Policy Committee approve allowing those institutions to connect under the conditions specified in the motion.

Keith asked about using the term “non-discriminatory” in the revised motion. Neil explained that the terminology is used to describe institutions that are not providing services for their membership only. It is our attorneys’ recommendation that ICN has no business providing connection to services that are targeted or legally discriminatory services. Mary used daycare centers as an example; if a daycare is religiously based, but will take children of any denomination, then they would be eligible to connect. ISBE uses some of the same guidelines in providing some technical resources to non-public schools.

Keith asked whether a for-profit religious organization (i.e. daycare) would be covered under both policies. Neil responded that it is necessary to have both motions because the for-profit educational entities must also be accredited by the Board of Higher Education or State Board of Education.

Keith asked about broadening the use of the phrase “exclusively for the purpose of providing educational content” to include “*non-denominational* educational content”. The change is suggested in an effort to keep the ICN from being accused of subsidizing one group and not another. After a brief discussion, it was decided to leave the motion as presented recognizing that the possibility exists that there may be denominational religious materials on the network.

Virginia commented that even though the phrase “exclusively for the purpose of providing educational content and services” is included it would be extremely difficult to monitor.

Neil reminded the Committee that all institutions are required to sign a participation agreement. It is based on the honor system that the ICN believes that institutions are connected for the purpose that they have stated and that they are following the guidelines set in the participation agreement. It would be next to impossible to police every constituent. The phrasing is a legal differentiation, more for the protection of the ICN and its policies as opposed to something that is actually enforceable, although blatant violations of the participation agreement would not be tolerated. Legal council is modifying the participation agreement to reflect the inclusion of for-profit and religious organizations offering services as described in this motion.

Motion: Keith made motion; Jean seconded.

Keith Sanders moved that the Policy Committee adopt staff recommendations to allow for-profit accredited education entities authorized to operate in the State of Illinois by the applicable education board to connect to the network exclusively for the purpose of providing educational content and services subject to current policies and future cost recovery policies. The network may not be used for for-profit administrative purposes.

Keith also moved that the Policy Committee adopt staff recommendations to allow public service providers of not-for-profit services to Illinois citizens, including non-discriminatory educational services sponsored by religious organizations, to connect to

the network subject to current policies and future cost recovery policies and limited to the specific purposes herein approved for the connection.

Discussion: Lugene asked that he and Gerald Spinner see the modified participation agreement when it became available. Mary asked whether entities sign new participation agreements on a regular basis. Neil indicated that entities that have connected to the ICN and those that were transferred from LincOn were required to sign the ICN participation agreement so that all are current. Motion carried.

#### 5. Intergovernmental Cooperation Agreement

This agreement brings the funding agencies together to work long term for the ICN. The interagency cooperation agreement seeks to recognize the ICN as a legislative entity. This is the position of legal staff on all sides. The ICN has been working with Gerald Spinner at the State Board of Education, Bill Feurer at the Board of Higher Education and has retained separate counsel with Feldman, Wasser, Draper and Benson. In light of previous discussions with the Policy Committee, this agreement identifies the BHE as the fiscal agent on behalf of the ICN. In that role, the agreement specifies that IBHE employ a director and staff to implement and administer the network according to policies passed by this group. The agreement also establishes the duties of the director and reporting responsibility as well as identifying the fiscal agent and assigns that fiscal agent the principal role in all the contracts and ownership of property. It creates a long-term agreement between the two boards and other partners that might join at a later time. On page 23 of the agenda are provisions for review, modifications, termination and the joinder. The joinder allows for this agreement to expand and incorporate other bodies that might have a special interest in becoming a funding entity. There will be some entities that are likely to take advantage of that. The ICN is in discussions with multiple hospital groups that are very interested in having the ICN serve as their primary network. The BHE Board will vote on this agreement at their August 21, 2001 meeting.

Motion: Virginia made motion; Lugene seconded.

Virginia moved that the Policy Committee approve the Intergovernmental Cooperation Agreement between the State Board of Education and the Board of Higher Education as the funding agencies of the Illinois Century Network in order to establish the Illinois Century Network as a fully functional entity for which the Board of Higher Education will serve as fiscal agent.

Discussion: Lugene indicated that the State Board of Education does not need to act legally on the agreement in the same fashion as the Board of Higher Education. Keith supports the agreement and will take it to the BHE Board with his strong recommendation.

Motion carried

#### 6. Advanced Engineering Taskforce Membership Selection

The ICN has received multiple requests across the state from people who would like to be part of the Advanced Engineering Taskforce (AET). A list of current members was distributed. Procedures that determine how individuals can become involved need to be developed. Areas of interest that are not well represented on the AET include research institutions, local government, and museums. Neil expressed his concern that the ICN have a procedure in place that the policy committee can approve to ensure that we have representation that guides the Network's future development and that reflects the constituencies. Neil also added that ICN staff attend the meetings as a resource to the Taskforce.

Motion: Keith moved; Lugene seconded.

Keith moved that the Policy Committee adopt staff recommendations regarding constituency representation, appointments, length of membership terms, and reporting schedule for the Advanced Engineering Taskforce.

Motion carried

#### 7. ICN Roles and Responsibilities

Lynn provided a brief explanation of the roles and responsibilities of the different areas of the ICN. This was developed as a complementary piece to the revised organization chart that was provided at the last meeting. Mary suggested defining the role of the Learning Technology Centers (LTCs) and other regional organizations such as libraries and higher ed consortia even though they are not part of the ICN. Lugene did not disagree with adding the LTC, but wanted to be sure that it did not appear as though they were a part of the ICN. To date, all documents that have been handed out have shown the LTCs to be under the control of ISBE and the RTCs to be under the control of ICN. The staff will work with other agency staff to develop a comprehensive list that will be distributed to the Policy Committee in the future. Keith commented that the importance of the document is to show Illinois citizens that there is a relationship between all of these entities.

#### 8. ICN Custom DS1/T1 Customer Service Agreement Extension

Neil introduced Dirk French. Dirk explained that the Illinois Video Education Network consortia members were facing expiration of contracts based on soon to be discontinued tariffs. This would result in dramatic increases of T1 costs over the next few months. The ICN approached Ameritech with a proposal to extend the ICN custom T1 tariff rates to both IVEN users and ICN constituents who connect to sites not officially paid for, owned, or sponsored by ICN, such as ICN POP sites. Depending on locale and the contract term that they choose. ICN constituents could save up to 40% off standard tariffs. Under this agreement, constituents can choose to contract individual circuits for different lengths of time if that flexibility is something they require.

The extension of this custom pricing only applies to the Ameritech service area which covers about 60% of ICN's primary constituents. The service agreement extension will

impact E-rate reimbursements and some schools may need to re-apply for e-rate funding if they change contract terms. Doug Jurewicz will coordinate with Ricardo Tostado on the implementation and impact for K12 schools.

In anticipation of constituent needs, Neil indicated that Dirk and Doug have already begun to re-negotiate a future ICB or Individual Case Basis tariff that would give ICN constituents discounts on circuits larger than a T1.

#### 9. Community Network Evaluation Procedures: MSA-by-MSA Analysis

The ICN backbone Map, Telecommunications Map, and a combination of the two maps were distributed. Doug explained that a ninety-day MSA-by-MSA analysis is underway to identify where constituents are located and the costs they incur in order to gain a better understanding of how the ICN can more effectively meet the needs of its constituents. The handouts illustrate that the ICN has done an excellent job of bringing at least one POP to every MSA within the state. On the most recent telecommunications map released by the Illinois Commerce Commission, each color represents a different telecommunications provider. The white areas represent many different small providers. Ameritech reaches 60% of our constituents, but 40% of our constituents have to acquire service from the variety of carriers throughout the state. In some instances, constituents have to purchase transport from three different telecommunications carriers to get to the network; as a result they are paying three fees. In some parts of the state there are T1 lines that cost constituents as much as \$800 per month. The ICN is looking for ways to lower these costs. Through the MSA analysis, we hope to re-engineer or extend our network out to our constituents thus reducing their costs without substantially increasing our costs. We are 30 days into this 90-day analysis and will have a draft report by November.

Neil also indicated that this analysis deals directly with the community network concept. The community network process is essentially flawed in the sense that constituents have to pay for two connections - one at the local loop to the telephone company and one at the community network point. In coordination with this analysis, the ICN is investigating what can legally be done to cooperate with telephone companies to help them function as the community network point so constituents not only have a local access point but only have to pay for one connection. Ameritech has led the way by providing the ICN some great pricing. Neil has spoken with Doug Dougherty at the Illinois Telecommunications Association regarding these issues, and met with the executive director of Illinois Commerce Commission two weeks ago. The ICC executive director has agreed to assign legislative legal staff and analysts to work with us. Neil extended his appreciation to Mary for her help in facilitating that meeting and securing those resources.

The role of wireless technologies as a means to reduce costs was raised. Neil responded that wireless has achieved this goal in some locations. The ICN is using wireless at Adam's Telco and part of the backbone link is wireless. Wireless technology is not always cost effective, but there are some applications where it may make sense to encourage its use. We have met with CIPS and acquired a map of all their towers throughout Western and Southern Illinois and are exploring some alternative possibilities

if telecommunications companies are not able to provide affordable facilities, although this is not our preference. Some of the communities are using it for local distribution where it's more suited. Lynn has been working with an advisory group at Waubensee Community College and their report is due out shortly after the grant ends in August. A copy of the preliminary report was sent to Neil, and Lynn will seek staff recommendations and feedback on the report.

Mary commented that there is a need for this analysis to answer the Governor's question of who is connected and why some are not connected. Mary also raised the possibility of using GIS in this analysis and offered to bring in expertise from other agencies if required. EPA, DOT, State Police, and Revenue all have an extensive GIS staff, and the State Board of Education has recently purchased software and trained their staff. Neil welcomed the offer. Currently, the staff is using MapInfo and other resources to gather the information that is already available. The ICN welcomes any additional information that other agencies could provide.

Mary raised the concern that community networks can be defined in human terms that are hard to quantify. Mary encouraged the ICN not to try to re-define the community based on boundaries. Neil responded that the ICN will provide a resource based on the geographic realities and does not believe that the ICN should try to re-define communities based on telecommunications terms. The staff will report in September or November on the state fiber efforts and state owned fiber. Virginia commented that the ICN should help people understand what the most efficient connections are and how those can be manipulated to serve the purposes of their defined community as well as a community that is more efficient.

Keith commented that the analysis does not attempt to determine what the network is being used for. This is a technical review, MSA by MSA. Keith asked, "Who is being educated that wouldn't otherwise be educated? Who went to a museum on the ICN who wouldn't have gone otherwise? Who got a book they couldn't otherwise get?" That information is being gathered from regional user groups. Keith reiterated his concern that the Board and others know how the people of the state benefit from the presence of the ICN.

The staff is also compiling a report on multicast technology. Multicast technology allows video streams at 30 rates per second to come across the network. This allows for simultaneous video cast, live lectures, materials, or documentaries from the Smithsonian or NASA for example. Staff is working not only to make people aware of applications that can be supported by the network but is also considering a plan to equip the Regional Technology Centers, and perhaps the Learning Technology Centers or Consortia, to be places throughout the state where people can go and see what can be achieved with this level of access.

Doug Dougherty, ITA, cautioned the group to think about tax dollars being used to bypass local private investment. The fact that the ICN receives federal and universal service funds continues to be a concern of Illinois Telephone Association's members, which are all represented on the telecommunications map. Some of the smaller ITA

members receive dollars from universal funds and that pot is shrinking. There is a case before the Commerce Commission that local independent telephone companies may have to raise their rates. Another concern is that he has heard the base constituency for this network is public institutions of higher education, community colleges, K12, museums and libraries, and the adoption of these two policy changes today begins to incorporate for-profit amenities and not-for profit religious organizations. Other than those concerns, he applauds the effort but believes the ICN needs to be careful as it applies a more vigorous network beyond the backbone and begins to serve constituents who he believes are out of the core group originally discussed.

Keith commented that we are trying to supplement the private investment not diminish it. It is not in the network's interest or in the state's interest to chase private vendors out of business. Keith also agreed with the need to be cautious and noted that Doug had a well made point.

Neil clarified that it was not the intent of the ICN to bypass local telco's and our legal inquiries and clarifications are to help determine what the ICN offers local telcos in partnership and collaboration. Mr. Dougherty welcomed the idea of collaboration and expressed his belief in public/private partnership. He offered his help in the event that ICN faces difficulties with local exchange carriers. Discussion of telecommunications markets and conditions throughout the state continued.

#### 10. Permanent Virtual Circuits

Karlin explained that permanent virtual circuit (PVC) is a term used to represent taking a piece of bandwidth out of a large pipe and dedicating it toward one particular application. The ICN should provide PVCs because there are constituents who need specific amounts of bandwidth for certain applications. There are economies of scale that can be achieved if the ICN aggregates backbone bandwidth needs with constituent needs for dedicated bandwidth. The ICN has had four requests for PVC's from University of Illinois, Southern Illinois University - Carbondale, Bradley University, and Shawnee Public Library.

Lugene commented on the use of more sophisticated equipment and software like video streaming or web cast in schools. Without resources like dedicated bandwidth, the broadcast would be extremely slow. Mary added that Public Health connecting to hospitals would need dedicated private bandwidth to enable authenticity and to abide by federal regulations.

The ICN currently uses some PVCs to provide distance learning to schools. Constituents would be charged enough for a PVC to replenish the network in the event that services to primary constituents become compromised.

#### 11. Cost Recovery Model

Neil discussed the complicated technical issues and the methodology behind the cost recovery model. The methodology the staff is pursuing assumes we are offering these

services at their cost. The funding that ICN receives annually is used to lower the cost to constituents so that the ICN can continue to provide a network services at a lower cost than constituents would pay otherwise. For example, ITT and Argonne had a 40 megabit sustained video stream. That is 10 % of the entire network capacity. At this point, as constituent needs grow the ICN needs to have the ability to let them make a choice of whether they can afford to do that. If ITT wants to have 45 megabits of bandwidth, the ICN knows that there is a certain base level of bandwidth that we provide, and that anything beyond that that amount would be subject to cost recovery to allow us to build the capacity first. This item simply details the first installment of the model and provides a look into the pricing and other considerations. The staff intends to provide follow up items in September and November with the rest of the model. Ultimately we will be able to explain what the ICN will cost per institution without the 27 million dollars in funding and what it costs with the funding intact.

Keith commented that he liked the concept of an organization paying a cost recovery fee when they have extraordinary or unusual demands so the network can accommodate their request and not hurt the primary constituents.

#### 12. Peoria POP Relocation/Bradley Agreement

Karlin explained that earlier this year McLeod made the decision not to allow guests in their POP site. The ICN received notification that we must leave the site by the end of December 2001. As a result, the staff has been working with Bradley University to possibly use space they have available for the ICN POP site. The staff will come back with a status report on this issue at the September meeting.

#### 13. Scheduled Meeting Dates

Based on the schedule of 6 meetings per year approved at the last meeting, the staff is providing information on when those meetings actually fall on the calendar for easier planning. There were no conflicts or objections to the dates listed.

Keith introduced Dan Lazell who has recently been hired as a Deputy Director for Planning and Technology at the Board of Higher Education.

Keith proposed that meeting adjourn. Meeting adjourned at 3:50 p.m.

ILLINOIS CENTURY NETWORK  
SECRETARY TO THE POLICY COMMITTEE

**Submitted for:** Action

**Summary:** Rebecca Dineen, ICN Human Resources Officer, also serves a dual role as a key administrative assistant within the ICN management team. Rebecca has also provided administrative support for the Policy Committee. In addition to making meeting arrangements and recording Policy Committee meeting minutes, Rebecca has been responsible for coordinating communication about Policy Committee meeting issues. The ICN management team is recommending that Rebecca Dineen be officially recognized as the Secretary to the ICN Policy Committee.

**Action Requested:** The Illinois Century Network Policy Committee is requested to approve the appointment of Rebecca Dineen to the position of Secretary to the ICN Policy Committee.

**Recommended Motion:** *The Policy Committee approves the appointment of Rebecca Dineen to the position of Secretary to the Policy Committee.*

ILLINOIS CENTURY NETWORK

**ICN CONTRACTS:  
UPDATE AND INCLUSION OF CONSTITUENTS**

**Submitted for:** Action

**Summary:** The ICN has received constituent requests to establish master contracts for network related equipment and services that will allow them to take advantage of lower costs achieved through volume purchasing. Due to the delegations in procurement authority, the ICN is now able to enter into master contracts that can be extended to constituents. This item describes the staff's plan and rationale for offering this service to ICN constituents.

**Action Requested:** The Illinois Century Network Policy Committee is requested to adopt the staff recommendation to allow the ICN to act in a consortial manner and establish master contracts for the purpose of reducing constituent and ICN costs.

**Recommended Motion:** *The Policy Committee adopts staff recommendations to allow the ICN to act in a consortial manner to establish master contracts for network related equipment and services for the purpose of reducing constituent and ICN costs.*

## ILLINOIS CENTURY NETWORK

### **ICN CONTRACTS: UPDATE AND INCLUSION OF CONSTITUENTS**

On July 13, 2001, the Department of Central Management Services delegated authority to the Illinois Century Network to conduct direct procurements of high bandwidth telecommunications and data services and equipment. This delegated authority permits the ICN to enter into direct relationships with vendors to facilitate more timely procurements and better planning for future needs. Additionally, the ICN will realize reductions in telecommunications charges as a result of eliminating administrative fees previously paid to CMS who conducted telecommunications procurements on behalf of the network.

Staff is working closely with CMS and telecommunications vendors to transfer circuit ownership from CMS to ICN. This process has involved identifying more than 550 circuits and coordinating with 10 different vendors to ensure all records are updated to reflect the transfer. To prepare for the transition, provisioning and fiscal staffs are establishing systems to track and verify circuit charges while the network operations staff is establishing procedures for reporting and tracking trouble calls.

The ICN will continue to coordinate telecommunications procurements with CMS where both organizations can realize benefits from aggregate purchases. An example is the state's network services contract, which is currently in the bidding process. ICN staff is participating in the final stages of evaluating vendor proposals. Preliminary evaluations of the proposals indicate a thirty to thirty-five percent (30-35%) cost savings for ICN backbone circuits over current pricing effective January 2002.

The ICN has received numerous constituent requests to establish master contracts for network related equipment and services. Typically, the individual constituent's annual purchases for this type of equipment are not large enough to warrant significant cost reductions. Because of the delegation in procurement authority, the ICN has the ability to establish these types of contracts for the direct benefit of both the network and education constituents. Acting in a consortial manner, these aggregate purchases will reduce costs for the constituent and the ICN.

The ICN is acting in a similar role today by providing constituents the opportunity to purchase Cisco equipment at discounted prices directly from the ICN's contract vendor. The state has the opportunity to realize better pricing by becoming a "distributor" and placing all orders to the vendors through a single source.

Staff recommends the following resolution:

*The Policy Committee adopts staff recommendations to allow the ICN to act in a consortial manner to establish master contracts for network related equipment and services for the purpose of reducing constituent and ICN costs and providing greater service to Illinois Education.*

ILLINOIS CENTURY NETWORK

**ADVANCED ENGINEERING TASKFORCE REPORT:  
RECOMMENDATIONS**

**Submitted for:** Action

**Summary:** In order to plan for the long-term scalability and sustainability of the ICN, the management team assembled the Advanced Engineering Taskforce to look at current network infrastructure, identify areas of concern, and offer possible course of action that will help the ICN accommodate constituent needs and demands into the future. This item presents the 2001 report of the Advanced Engineering Taskforce.

**Action Requested:** The Illinois Century Network Policy Committee is requested to accept and endorse the 2001 report of the Advanced Engineering Taskforce.

**Recommended Motion:** *The Policy Committee accepts and endorses the 2001 report of the Advanced Engineering Taskforce.*

ILLINOIS CENTURY NETWORK  
**ADVANCED ENGINEERING TASKFORCE REPORT:  
RECOMMENDATIONS**

Until recently, ICN staff have been working from engineering plans and practices developed as part of the LincOn project and additional work done on behalf of higher education in pursuit of state funding. The funding legislation makes clear that ICN is to be a single network for all of education as well as for other public sector entities. Because K-12 activities were so far along when this additional clientele was added, the influence of their prior activities was very strong. There are new challenges for the network's management, related both to the evolution of applications and technology and to changes taking place in the communications industry. To assist the management in navigating these changes, the Advanced Engineering Taskforce (AET) was established approximately a year ago. This report presents an assessment of status and progress, and the most important technical issues facing ICN in the next two years. An update to this report should be presented one year from now or alternatively in time for budget discussions for FY 2003.

The AET consists of a number of individuals from institutions within Illinois which are representative of the clients ICN serves. Some are from highly technical networking activities while others are more closely aligned with the applications areas of greatest importance. In addition, there are several people from the ICN staff, CMS and other agencies who serve as expert sources of information and who participate fully in the discussions. The opinions expressed in our reports are those of the institutional representatives and may not be those of the ICN or agency staff members.

There has been very substantial progress in reaching the goal of getting initial connections to all of the intended clientele, especially public institutions. Two of the principle issues the report addresses are the adequacy of these connections to meet the educational objectives, and keeping the performance of the network ahead of demand - i.e. performing well enough to be attractive as an educational delivery system.

By far the most important long-term issue facing ICN is the ability to obtain and use dark fiber rather than leasing circuits from carriers. This must become the basis for the high capacity backbone if Illinois is to be competitive with other states making strategic investments in network infrastructure. The existing arrangements and future plans of the Department of Transportation in conjunction with CMS can provide much of what is needed, but ICN should also look at opportunities provided by the current excess

capacity of some carriers and even at a few limited construction projects. It is likely that some traditional suppliers of service will oppose this approach, but this is solely because it impacts their revenue and control.

On the matter of adequate capacity in the connection of institutional buildings to the backbone network, the full AET report outlines the requirements for different kinds of educational uses. It is clear that the current connections of many K-12 sites are not adequate, and that upgrades will be needed in the very near future. This reflects the differences between the largely text based applications that were of interest when ISBE began its efforts, and the much more demanding applications which are now emerging. There has been some argument that present use is not overloading the current implementation, and thus aggressive growth is not called for. Since it is impossible to run the more current applications this means of forecasting demand can be a self-fulfilling prophesy, leaving Illinois far behind other state educational systems.

The performance of both the backbone, and the interconnections to the Internet, is good. It is, however, reaching saturation. This is an area where traffic doubles more than doubles each year, and several recommendations to address this are included in the report. These recommendations are consistent with actions already being pursued by the ICN staff, including increasing the amount of Internet egress capacity, adding facilities within the network to allow much more of the traffic to be served within the Intranet, and completing the initial upgrade of the backbone circuits. The AET endorses the purchase of caching servers and mirroring services. These will reduce the traffic to the outside by 30 percent or more.

In support of the issues above, and the ongoing engineering of the network, it will be necessary for the operations staff to measure traffic and client patterns in a systematic way. The AET has been reviewing such data as is available, and recommends expansion of the measurement program. In addition to measures directly related to performance, the AET will also suggest measurements that help present the story of ICN to its clients, the funding providers, and the public.

Another area in which AET makes recommendations is the degree to which the ICN should go beyond basic network connectivity, and into assuring the availability of enhanced services to those clients who are not self-sufficient or large enough to justify local services. Examples include providing Web servers, streaming servers for audio and video materials, and email. For the present time AET recommends the ICN not directly offer such services but pursue approaches such as offering consultation and advice on those services, leaving the clients to establish their own solution. The AET also recommends looking at partnerships with ISPs or arrangements through regional consortia in the RTC coverage areas.

Video is one of the rapidly developing areas for Internet technology, and the AET offers recommendations on how to proceed in this arena. This needs to include a plan for transition from the current educational video system as well as making video much more pervasive and easy to support. It should be a goal of ICN to make the video educational

content available at all ICN member sites either on desktop systems or via traditional video displays.

There are some areas of the state where services are not readily available through the current approach to procurement. In addition, the AET anticipate that there will be a need to make a large number of upgrades in capacity of K-12 connections, including many in areas where services may be difficult to find. The AET makes several recommendations on how to approach this aspect of the digital divide. It is also clear that many of the K-12 organizations with preexisting connections from their own early initiatives are paying punitive prices, and that ICN should be able to serve as an effective intermediary in this upgrade process. It is also possible that cooperation with community based networking efforts can plan a role in solving this problem.

This report outlines the AET's work in all of the aforementioned areas, identifying areas of concern and offering recommendations for possible solutions and future planning.

Staff recommends the following resolution:

*The Policy Committee accepts and endorses the 2001 report of the Advanced Engineering Taskforce.*

ILLINOIS CENTURY NETWORK

**ADVANCED ENGINEERING TASKFORCE REPORT:  
ICN STAFF RESPONSE**

**Submitted for:** Action

**Summary:** This item updates the Policy Committee as to the staff response, current or recommended implementation and time frames, estimated first year costs, estimated recurring costs in following years, and staff comments as they relate to the particular recommendations outlined in the 2001 Advanced Engineering Taskforce Report.

**Action Requested:** The Policy Committee is requested to accept and endorse the staff's prioritization and action items related to the key issues identified in the 2001 Advanced Engineering Taskforce Report.

**Recommended Motion:** *The Policy Committee accepts and endorses the staff's prioritization, recommendations, and action items related to the key issues identified in the 2001 Advanced Engineering Taskforce Report.*

ILLINOIS CENTURY NETWORK

**ADVANCED ENGINEERING TASKFORCE REPORT:  
ICN STAFF RESPONSE**

The ICN staff appreciates routine access to the broad experience and expertise represented by the members of the Advanced Engineering Taskforce (AET). The members of the Taskforce make an effort to forgo their institutional affiliations and perspectives to take a global view. Members have been asked to allow their specific technical or policy expertise to craft the best possible recommendations in an attempt to guide the ICN to a successful future in the best interest of its primary constituents and state as a whole. The staff applauds the Taskforce for their efforts in this regard and for a product that is, with minor exceptions, free from parochial agendas.

The Taskforce is charged to assist staff by providing an independent assessment of current ICN activities. More importantly, the Taskforce is commissioned to provide high-level engineering and technical policy expertise to craft answers to immediate and future issues facing the ICN. After careful review of the actions or recommendations detailed in the AET Report, the following item updates the Policy Committee as to the particular recommendations in the report, the staff response, current or recommended implementation and time frames, estimated first year costs, estimated recurring costs in following years, and staff comments.

The staff considers certain recommendations of the report to be global in scope and takes the opportunity to address these in this introductory section.

Demonstrated Educational Value

The first issue raised in the report is that the ICN should demonstrate educational value of the investment in ICN. While the network clearly represents incredible value, the staff has not done enough to publicize and delineate the unique contributions of the ICN. Part of the difficulty in representing the value comes from the broad scope of expectations for the network. If the network is examined purely from an implementation standpoint it is clear that the sum of the parts are indeed adding value. In toto, it would cost the ICN constituents a combined annual amount of between \$45 and \$50 million to replace services that, in the aggregate, cost approximately \$30 million annually as currently deployed.

It is clear though that the staff has much to do to continue promotion of the network and identify the educational services currently being served. To this end, with the prior approval of the staffing plan presented to the Policy Committee at its June 1, 2001 meeting (Item 9, ICN Organization), the staff has added personnel to assist in coordinating this effort.

Similarly, the AET recommendation that the staff sponsor a joint meeting of the AET, ICN technical staff, and content related groups, will be addressed this fiscal year as staff articulates the ICN's value in a far broader context than simple terms of aggregate purchasing and economies of scale.

The ICN participates in a consortium of major online projects throughout the state and seeks to provide leadership in collaboration with those projects through the Illinois Online Leadership Council. The creation of the ICN removes many barriers for online content creators by providing network resources that enable such products. The ICN staff will continue to work as recommended to identify educational content and promote its use throughout Illinois.

Staff will make a renewed effort to work with Regional User Groups, Learning Technology Hubs, Higher Education Consortia, Library Systems, and other organizations to seek out and promote meaningful content offerings.

The report states that the ICN should associate with other networks – nationally and internationally. We are in routine conversation with most state networks in the Midwest and have twice presented and interfaced with state network peers at national conferences specifically designed for this purpose. Staff will explore ways in which we can become more involved, however, both nationally and internationally. As the most successful state network in the nation, Illinois is uniquely positioned to transcend boundaries to share and gain expertise from networking peers.

#### Digital Divide Issues and Remedies

The Taskforce encourages staff to work to reduce the Digital Divide and this is and must be an ongoing focus of the network. The report recommends providing options and lower cost services for underserved areas in order to address digital divide issues among constituents. The staff agrees that this must be a continued focus of the network and of the Policy Committee. The report also encourages the ICN to acquire digital divide monies with the intention that the network is extended with these resources specifically targeted to affected areas of the state.

Please note the following staff activities related to Digital Divide issues:

- 1) Staff provided counsel during the telecommunications rewrite activities in the Spring legislative session. Language was adopted in legislation that provides specific funding and revenue streams based on telecommunications provider penalties for the purpose of addressing digital divide issues. Preliminary discussions with Mary Reynolds, Policy Committee Chair and Illinois Chief Technology Officer, have begun to discuss ICN's role in future digital divide issues.

- 2) Staff continues to work to extend the ICN backbone closer to constituents in rural Illinois. The initial effort to accomplish this was to develop community networks, but these efforts required constituents to procure what amounted to two circuits to reach the ICN. In some areas of the state, community networks have proven to be workable, but not everywhere.
- 3) Staff is now working directly with telecommunications providers and with legal specialists in the field of telecommunications to map out a long-term strategy which may include extending services to ICN constituents in direct collaboration with telecommunications providers.
- 4) The ICN, through its comprehensive MSA-by-MSA analysis, will continue to work with telcos to build sound business cases to encourage deployment of services into areas where they would not traditionally build.
- 5) Phrases such as "not well served" and "adequate services" will be quantified in consultation with the Policy Committee and other leaders in Digital Divide efforts to generate a baseline service level that the ICN will adhere to for every constituent.
- 6) Staff continues to investigate development of an Individual Case Basis tariff to provide non-education sites with lowest possible rates to connect. The MSA-by-MSA analysis will assist in identifying those areas in need of assistance.
- 7) RTCs are gearing up to provide more enhanced network planning services to assist constituents in gaining necessary resources.
- 8) Meetings continue with the Illinois Commerce Commission to address telecommunication provider pricing in underserved areas.
- 9) The ICN represents the best possible vehicle to proactively address many digital divide issues and will actively pursue any and all available funding to extend services accordingly.
- 10) The ICN seeks to add value by adding network-based services (detailed in priority three below).

### Procurement Issues

Another area of import highlighted in the report are the ICN procurement processes. The report specifies that the ICN's procurement processes have been a restricting factor to achieving its mission. Staff points out that while this may have been accurate at the time the report was written, through the Department of Central Management Services and their demonstrated willingness to work in partnership with the ICN, this is no longer an obstacle. CMS has delegated the purchasing function to the ICN and as a result, the ICN has focused procurement specifically on its constituent

needs and therefore broadened its abilities to better serve all ICN constituents. The issues raised in the AET Report have been suitably addressed and the staff extends its continued appreciation to Policy Committee members Director Michael Schwartz, CMS, and Executive Director Keith Sanders, IBHE for their combined efforts to collaborate and enable the ICN to better serve Illinois Education.

The report further recommends that the ICN should also begin a process of working through the RTCs on the process of acquiring favorable arrangements for district network upgrades. Staff is aggressively moving forward to enact statewide strategies to further utilize ICN buying power and the aggregate consortial buying power on behalf of its 5,200 constituents in order to gain favorable pricing for telecommunications circuits and equipment. The previously reported Individual Case Basis tariff was a first step and an early success; however, much more must be done to accomplish the goal of providing lower cost services for all constituents. It is unlikely that this function will be delegated to Regional Technology Centers or, more specifically, to the institutions under contract to provide office space and fiscal services. Regional Technology Centers were formed to provide local technical expertise and maintenance for the network and will remain dedicated to implementing ICN's core strategy to ensure world-class statewide services for Illinois Education. This function will continue uninterrupted and unabated by the goals of individual institutions.

#### Major Points of the Report

The remaining major categories and specific items discussed in the AET Report are presented in an outline form and the treatment attempts to update the Committee on current staff activities as well as near-term implementation plans. Note that the staff response does not follow the organization of the Advanced Engineering Report but is instead presented in order of priority as recommended by the staff. Most, if not all, of the activities identified and recommended by the AET are ongoing currently and many overlap. To that end, staff prioritization is in many cases an exercise of suggesting degrees of emphasis and may have other issues that affect timing such as resource availability, human resource management, or the relationship to existing and critical services. To this end, cross references are provided for each point to more easily enable the Committee members to refer to specific language in the AET report.

The outline and cross-reference follows:

| Staff Response   | AET Report   |
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| <p><b>1. Backbone Network Issues:</b></p> <ul style="list-style-type: none"> <li>a) Encourage the unconditional use of dark fiber and access to state owned fiber and conduit in the right-of-ways.</li> <li>b) Expand capacity of the backbone.</li> <li>c) Forgo ICN move to IP version six (IPv6).</li> </ul>   | <p>Page 7, last paragraph</p> <p>Page 2, paragraph 3</p> <p>Page 6, paragraph 2</p>    |
| <p><b>2. K-12 Bandwidth Requirements:</b></p> <ul style="list-style-type: none"> <li>a) ICN to inform school districts and ISBE of anticipated growth and pending need for upgrading connections and equipment.</li> <li>b) Work to attain a minimum of 10 Mb/s connectivity for all K-12 schools with 1Mb/s burst ability per student to take advantage of enhanced content offerings such as H.323/IP video.</li> </ul>                              | <p>Page 10, first paragraph</p> <p>Page 11, paragraph 2</p>                            |
| <p><b>3. Add Value Through New Services:</b></p> <ul style="list-style-type: none"> <li>a) Investigate cost and feasibility of providing services to constituents, i.e. email, web hosting, content development, technical consulting, LAN consulting, and other consulting services regarding multicast, QoS, and H.323 video.</li> <li>b) Move to implement Internet2, MREN, and video initiatives for higher performance of the network.</li> </ul> | <p>Page 7, next to last paragraph</p> <p>Page 17, next to last paragraph</p>           |
| <p><b>4. Constituent Connections:</b></p> <ul style="list-style-type: none"> <li>a) Review list of constituents not connected to the ICN and identify the reasons why.</li> <li>b) Connect the new clients such as universities, community colleges, libraries and museums.</li> <li>c) Address how to work with higher education sites not wanting to connect to ICN.</li> </ul>  | <p>Page 2, paragraph 2</p> <p>Page 2, first paragraph</p> <p>Page 3, paragraph 2</p>   |
| <p><b>5. Video Related Recommendations:</b></p> <ul style="list-style-type: none"> <li>a) Update video infrastructure for cost savings, improved video quality, and make video instruction more available.</li> <li>b) Interconnect the current educational video network to the ICN using H.323.</li> <li>c) Develop a plan to re-deploy/redesign viable existing H.320 sites to better take advantage of ICN connections where feasible.</li> </ul>  | <p>Page 13, paragraph 2</p> <p>Page 13, last paragraph</p> <p>Page 14, top of page</p> |

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| <ul style="list-style-type: none"> <li>d) Investigate alternative transport methods to assist in the migration of H.320 video to H.323.</li> <li>e) Abandon circuit emulation services - promote transition to H.323.</li> <li>f) Convert T1 video circuits to the ICN Individual Case Basis tariff.</li> </ul>                                       | <p>Page 14, first paragraph</p> <p>Page 14, first paragraph</p> <p>Page 13, last paragraph</p>        |
| <p><b>6. Improve Network Performance: Caching</b></p> <p>Implement caching servers at all ICN egress points to help control explosive growth in Internet use and minimize demand on the backbone.</p>   | <p>Page 5, paragraph 2</p>  |
| <p><b>7. Improve Network Performance: Add Egress Capacity</b></p> <p>Secure additional egress based on demand and expected growth of the network. Develop and implement a plan to increase Internet egress by 100% by the end of FY2002.</p>  | <p>Page 2, next to last paragraph</p>   |
| <p><b>8. Improve Network Performance: Mirroring</b></p> <p>Implement mirroring sites which generate high access throughout the network so traffic to the Internet is reduced.</p>   | <p>Page 5, next to last paragraph</p>   |
| <p><b>9. Data Gathering, Monitoring, and Traffic Analysis:</b></p> <ul style="list-style-type: none"> <li>a) Perform traffic analysis of egress points and at the interconnection of the heaviest traffic institutions.</li> <li>b) Gather data to determine upgrade schedule.</li> <li>c) Perform traffic analysis of community colleges.</li> </ul> | <p>Page 14, last paragraph</p> <p>Page 14, next to last paragraph</p> <p>Page 15, first paragraph</p> |

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| <b>1</b>                                    | <p><b>Backbone Network Issues:</b></p> <ul style="list-style-type: none"> <li>a) Encourage the unconditional use of dark fiber and access to state owned fiber and conduit in the right-of-ways.</li> <li>b) Expand capacity of the backbone.</li> <li>c) Forgo ICN move to IP version six (IPv6).</li> </ul>   |
| <p><b>Staff Response</b></p>                | <p>Conditionally agree with recommendations.</p>  |
| <p><b>Implementation and Time Frame</b></p> | <p>These efforts have been and are ongoing.</p>   |
| <p><b>Status</b></p>                        | <ul style="list-style-type: none"> <li>1) ICN staff continues to work with CMS personnel and others involved in large-scale deployment of statewide research networks to create a partnership that addresses deployment of state-owned dark fiber resources for use by all partners.</li> <li>2) The ICN considers acquisition of this fiber resource or a reasonable marketplace alternative as absolutely critical for its long-term success and service to Illinois Education.</li> <li>3) In addition to expanding the backbone through dark fiber acquisition, staff continues to monitor closely backbone growth and has begun to target specific links for upgrade from OC-3 to OC-12 and OC-12 to OC-48 to meet projected volume of traffic. As more data is available, the Policy Committee will receive updates that cover future deployment planning.</li> <li>4) The backbone network uses Internet Protocol version four (IPv4) today as the primary protocol or electronic language of the network. IP version six (IPv6) is a future version of this protocol that is still experimental. ICN staff believes there is value in working with IPv6 in a lab setting to prepare for future migrations when they occur.</li> </ul> |
| <p><b>Estimated First Year Cost</b></p>     | <p>First year funding for the backbone network as deployed is \$26 million inclusive of backbone circuits, egress, and necessary equipment and upgrades. Of this total, approximately \$17 million is required in FY 2002 for backbone circuits alone, \$4 million is required for Internet egress, and the remainder is divided between equipment, software, and ongoing maintenance contracts.</p>  |
| <p><b>Recurring Year Costs</b></p>          | <p>Currently under investigation. An example of potential savings by intelligently moving to state-owned dark fiber implementation can be understood by considering the current cost of the circuit from Collinsville to Champaign to Chicago. The \$3.6 million per year cost for an OC-12 level circuit today would easily pay for an OC-</p>   |

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|                        | <p>192 circuit on state-owned fiber – a sixteen-fold increase with virtually no limit on future expansion. Conversely, the existing OC-12 would cost roughly half of current expenditures if state-owned dark fiber were utilized.</p>  |
| <p><b>Comments</b></p> | <p>Future funding requirements for the backbone network depends on many variables including but not limited to market pricing, availability of dark fiber, and the growth of the network. Additional funds will be required but the level of funding will be determined by the level of success ICN attains in gaining access to state-owned dark fiber resources and the intelligent deployment of these resources. Other alternatives are under investigation.</p> <p><b>Attaining unfettered utilization of state-owned dark fiber resources or viable marketplace alternatives in the earliest possible time frame is paramount, that is, absolutely vital for the ICN's continued success. As such, gaining access to these resources is priority one for ICN staff.</b></p> |

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| <b>2</b>                      | <p><b>K-12 Bandwidth Requirements:</b></p> <ul style="list-style-type: none"> <li>a) ICN to inform school districts and ISBE of anticipated growth and pending need for upgrading connections and equipment.</li> <li>b) Work to attain a minimum of 10 Mb/s connectivity minimum for all K-12 schools with 1Mb/s burst ability per student to take advantage of enhanced content offerings such as H.323/IP video.</li> </ul>  |
| Staff Response                | Agree with recommendation.  |
| Implementation and Time Frame | Information as described is to be provided starting in Fall 2001 through Summer 2002 initially, ongoing afterward. K-12 bandwidth upgrades depend entirely upon the ability of the state or local districts to provide sufficient funding. Although the ICN will work to enable this increase in every way possible, the timing for implementation is beyond the control of the ICN.  |
| Status                        | <ul style="list-style-type: none"> <li>1) <b>Lower Costs of Circuits to Make Bandwidth More Affordable for K-12 Schools:</b> A series of meetings with all major telecommunications providers has been in process over the last months and large discounts for some services have been successfully negotiated (see Policy Committee Item # 8, 07/25/01, ICN DS1 Custom Service Agreement Extension). These negotiations and discussions are continuing throughout the state.</li> <li>2) <b>Encourage Public Awareness and Engagement in Telecommunications Equity Issues:</b> Two very profitable meetings with the Illinois Commerce Commission have occurred to map out a strategy to address long-term pricing concerns and equity issues. The ICN is developing a white paper from the MSA-by-MSA Analysis for consideration by the ICC to be followed by public hearings in 2002.</li> <li>3) <b>Identify Bandwidth Requirements for Specific Educational Applications:</b> A matrix of recommendations is under development to clearly identify required resources to successfully implement specific educational applications.</li> <li>4) <b>Document Telecommunications Capacity and Pricing Statewide:</b> Staff is in the process of completing a statewide MSA-by-MSA analysis to document and understand the availability of telecommunications services throughout Illinois.</li> </ul> |

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|                                  | <p>5) <b>Explore and Understand All Available Remedies and Options for Collaboration:</b> A contract with a leading legal firm specializing in telecommunications law and policy has been established to develop a “road map” of options to guide the Policy Committee in expanding the network to the furthest reaches of Illinois and address digital divide and equity issues within the scope of available resources. Written discussions have ensued between staff and counsel that are now in the third iteration with at least twenty key legal issues identified and documented.</p> <p>6) <b>Continue to Encourage Regional User Groups:</b> Through ICN Regional Technology Centers and host fiscal agents, Regional User Group activities continue to receive emphasis to assist constituent institutions to utilize the services offered by the network.</p> |
| <b>Estimated First Year Cost</b> | Currently under examination.   |
| <b>Recurring Year Costs</b>      | Currently under examination.   |
| <b>Comments</b>                  | The Illinois Century Network is the provider of the most robust backbone network in the state of Illinois. It is dedicated to serving the needs of Illinois Education. To be effective, the ICN must be proactive in implementation of policy and be a driver of the equitable pricing and availability of telecommunications services throughout the state. In addition, the staff is dedicated to educating constituent institutions regarding options and necessary resources to meet their objectives.   |

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| <b>3</b>                             | <p><b>Add Value Through New Services:</b></p> <ul style="list-style-type: none"> <li>a) Investigate cost and feasibility of providing services to constituents, i.e. email, web hosting, content development, technical consulting, LAN consulting, and other consulting services regarding multicast, QoS, and H.323 video.</li> <li>b) Move to implement Internet2, MREN, and video initiatives for higher performance of the network.</li> <li>c) The AET encourages the RTCs to work with local clientele to arrange such services. The RTC hosts may wish to provide such services on a cost recovery basis.</li> </ul>   |
| <b>Staff Response</b>                | Agree with recommendation.   |
| <b>Implementation and Time Frame</b> | Fall 2001 through Summer 2002.   |
| <b>Status</b>                        | <ul style="list-style-type: none"> <li>1) Staff has facilitated a series of statewide meetings to determine what services are most important to ICN constituents and examine the feasibility of adding these services.</li> <li>2) These discussions culminating in a service implementation workshop in Springfield on September 10, 2001.</li> <li>3) Staff has completed technical requirements and upgrades necessary for some services such as multicast and quality of service (QoS) and is now in the process of finalizing a cost recovery model to roll out these services to constituents by January 2002.</li> <li>4) The ICN will offer a variety of filtering solutions in a January 2002 timeframe followed by e-mail and web hosting targeted no later than Summer 2002.</li> <li>5) Filtering, QoS, and multicast services are included in the FY2002 expenditure plan and feasibility studies are under way for other services mentioned.</li> <li>6) The staff already provides technical consulting to constituents and promotes content development and utilization of the network through work with the Illinois Online Leadership Council.</li> <li>7) Additional network-based services is intended to be optional for ICN constituents and it is anticipated that these services will primarily assist K-12 schools in rural or economically challenged areas of the state. It is likely that other smaller</li> </ul> |

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|                                  | <p>constituents may take advantage of these network services as well.</p> <p>8) ICN staff is actively working to implement Internet2 and is in the pilot stage of such implementation with Northwestern and Southern Illinois University at Carbondale. Staff is in active and ongoing conversation with MREN and other parties to add advanced services to the network.</p> <p>9) The PVC policy was formally approved by the Policy Committee at its June 1, 2001 meeting (Item 5c). Staff has since worked to complete the cost recovery model and progress is ongoing with completion scheduled for the November 2001 time frame. In addition, staff is working to finalize specific legal issues involving contractual arrangements for provision of PVCs. This will add a valuable service for institutions wishing to connect point-to-point over the network.</p> <p>10) Staff encourages RTCs to work on a local basis to investigate specific services and the ICN is willing to work through local hosts or fiscal agents to provide such services. When services are offered statewide, however, a competitive process must be followed and the fact that an institution provides office space and fiscal services for ICN RTCs has no bearing on whether that institution will be chosen to provide such services.</p> |
| <b>Estimated First Year Cost</b> | Currently under examination.  |
| <b>Recurring Year Costs</b>      | Currently under examination.  |
| <b>Comments</b>                  | It is imperative for the ICN to offer much needed services at the network level to better serve its customers. There are insufficient funds to offer these services at no cost to constituents but the staff is committed to match world-class services to an already world-class network to meet the needs of Illinois education and other partners at the lowest possible cost.   |

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| <b>4</b>                                    | <p><b>Constituent Connections:</b></p> <ul style="list-style-type: none"> <li>a) Review list of constituents not connected to the ICN and identify the reasons why.</li> <li>b) Connect the new clients such as universities, community colleges, libraries and museums.</li> <li>c) Address how to work with higher education sites not wanting to connect to ICN.</li> </ul>  |
| <p><b>Staff Response</b></p>                | <p>Agree with recommendations.</p>  |
| <p><b>Implementation and Time Frame</b></p> | <p>These efforts have been and are ongoing.</p>   |
| <p><b>Status</b></p>                        | <ul style="list-style-type: none"> <li>1) Regional Technology Center staff is currently contacting all primary entities that are not connected to the ICN within their respective regions. Staff is documenting specifically why institutions are not connected and recommending ICN strategies to address issues to remove barriers to connectivity where they exist.</li> <li>2) Connection of ICN primary constituents continues with most public entities connected. Many private entities are being approached and invited again to connect and the ICN's addition of key services will make it easier to attract remaining primary constituents.</li> <li>3) The largest groups of potential entities are municipalities and hospitals. The ICN will make a major push to connect these entities in FY 2002 as additional egress is added and the cost recovery model is in place. Connection costs (access circuits) for municipalities and hospitals are high and, to date, telecommunications providers willing to create special pricing for education have not been willing to do so for cities, towns, and hospitals.</li> <li>4) Higher Education sites not wishing to connect to the ICN are generally larger private institutions. The ICN will make a targeted effort to educate these institutions as to the value represented by the network and connect as many as possible in FY 2002.</li> </ul> |
| <p><b>Estimated First Year Cost</b></p>     | <p>No new funds required, within ICN operating budget.</p>  |
| <p><b>Recurring Year Costs</b></p>          | <p>No new funds required.</p>   |

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| <b>Comments</b> | The ICN is continuing to reach out to its primary constituents and today most K-12 schools, community colleges, universities, libraries, and museums are connected. With the addition of 1,968 constituents in the last 17 months, the ICN's success in reaching out to and connecting constituents is without question. Staff will continue to identify new strategies for serving ICN constituent institutions. |
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| <b>5</b>                             | <p><b>Video Related Recommendations:</b></p> <ul style="list-style-type: none"> <li>a) Update video infrastructure for cost savings, improved video quality, and make video instruction more available.</li> <li>b) Interconnect the current educational video network to the ICN using H.323.</li> <li>c) Develop a plan to re-deploy/redesign viable existing H.320 sites to better take advantage of ICN connections where feasible.</li> <li>d) Investigate alternative transport methods to assist in the migration of H.320 video to H.323.</li> <li>e) Abandon circuit emulation services - promote transition to H.323.</li> <li>f) Convert T1 video circuits to the ICN Individual Case Basis tariff.</li> </ul>   |
| <b>Staff Response</b>                | Conditionally agree with recommendations.   |
| <b>Implementation and Time Frame</b> | In process, initial steps completed Fall 2001. QoS analysis and application is ongoing targeted for Spring 2002.  |
|                                      | <ul style="list-style-type: none"> <li>1) Staff will work in cooperation with Higher Education consortia to complete a conversion plan and cost estimate to enable application for funding specific to these issues.</li> <li>2) Staff will provide QoS to allow customers to run uninterrupted H.323 where applicable although cost recovery fees may apply beyond a baseline still to be determined.</li> <li>3) ICN will provide some funding for maintenance on a time and material basis for existing video equipment and facilitate transfer of the equipment to Higher Education Consortia.</li> <li>4) Staff has obtained an Individual Case Basis tariff dramatically reducing the price of video circuits. The new ICB for video will breathe new life and value into existing older equipment and networks freeing up some funds for ongoing maintenance and development at the institution/consortia level; however, it is the responsibility of the institution to take advantage of the ICB. Staff will continue to update Higher Education Consortia and other constituent groups and provide step-by-step instructions but institutions are the customer of record for the circuits and must request the change accordingly.</li> </ul> |

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|                                  | <p>5) While the ICN will encourage migration from H.320 to H.323 video and will assist in research and development necessary to specify working solutions, H.320 sites have many years remaining as effective learning tools. Any standards set or adopted should apply to new systems including details on how a H.320 network connects to the ICN through new standards. To this end, the ICN has dedicated staff to create a roadmap for H.320 to H.323 conversion that allows seamless migration and interaction of both standards.</p> <p>6) ICN funds will not be used to interconnect H.320 video sites to the network since this is premise-based equipment and the responsibility of the institution. Circuit emulation (creation of Private Virtual Circuits) will be allowed as approved on a case-by-case basis at the discretion of the ICN with the understanding that this method of connecting video sites is not scalable or sustainable as a long-term solution and will eventually be phased out. Cost recovery fees may apply.</p> <p>7) The ICN budget is not sufficient to purchase systems for constituents or to provide spare equipment. These services should be provided by institutional funds and managed by the Higher Education Consortia.</p> <p>8) ICN will seek favorable contracts for the procurement of H.323 video equipment and may enable RTCs to demonstrate systems and meet with constituents to provide consultation services over time.</p> |
| <b>Estimated First Year Cost</b> | \$30,000 to 40,000   |
| <b>Recurring Year Costs</b>      | Currently under investigation.   |
| <b>Comments</b>                  | The ICN will leverage its resources to reduce costs where possible but will restrict involvement in video applications to providing backbone network resources and technical assistance and planning. Equipment necessary for conversion from H.320 to H.323 to take advantage of ICN resources are the responsibility of the institution and are considered an institutional match to ICN's service offerings.  |

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| <b>6</b>                      | <p><b>Improve Network Performance: Caching</b></p> <p>Implement caching servers at all ICN egress points to help control explosive growth in Internet use and minimize demand on the backbone.</p>  |
| Staff Response                | Agree with recommendation.  |
| Implementation and Time Frame | Begin Fall 2001, complete Spring 2002.  |
| Status                        | <ol style="list-style-type: none"> <li>1) Testing currently planned within 60 days with equipment from multiple vendors.</li> <li>2) Request for proposal released week of September 17.</li> </ol>   |
| Estimated First Year Cost     | \$200,000 to \$500,000  |
| Recurring Year Costs          | \$50,000 to \$125,000, depending on growth of the network   |
| Comments                      | Caching servers allow "most used" content to reside "on-net" rather than be downloaded from the commercial Internet. This increases the speed to access the application and reduces egress requirements saving time and money. Encyclopedia Britannica would be an example of an application that would benefit from caching servers. |

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| <b>7</b>                             | <p><b>Improve Network Performance:<br/>Add Egress Capacity</b></p> <p>Secure additional egress based on demand and expected growth of the network. Develop and implement a plan to increase Internet egress by 100% by the end of FY2002.</p>   |
| <b>Staff Response</b>                | Agree with recommendation with the caveat that growth expectations be refined as additional data is available in and beyond fiscal year 2002.   |
| <b>Implementation and Time Frame</b> | Already in process. Continue to expand through FY 2002 reaching target of 2.5 times current bandwidth by Fall 2002.   |
| <b>Status</b>                        | <ol style="list-style-type: none"> <li>1) Staff is in the process of issuing Requests for Proposals for the procurement of additional Internet egress and to replace current contracts that will expire in FY2002.</li> <li>2) Monitoring is ongoing to refine Internet egress requirement for future planning.</li> <li>3) Request for proposal released week of September 17 to obtain more favorable pricing.</li> </ol> |
| <b>Estimated First Year Cost</b>     | The ICN spent \$ 2,733,000 in FY 2001 and anticipates an increase in expenditures of approximately \$ 1,267,000 in FY 2002 to reach AET recommendations. Estimated total egress expenditures in FY 2002 are \$4,000,000.  |
| <b>Recurring Year Costs</b>          | Subject to market pricing, competition, results of future RFP processes, successfully peering with other networks, and utilization growth. If growth occurs as anticipated by the AET, approximately \$512,000 per year in new expenditures will be required to provide sufficient egress capacity.   |
| <b>Comments</b>                      | Ongoing budget considerations play an important role in success in the area of acquiring additional egress. Cost recovery models should help to ensure that necessary funds are available to expand the egress as needed and ensure robustness of the network.  |

|                               |   |
|-------------------------------|---|
| <b>8</b>                      | <p><b>Improve Network Performance: Mirroring</b></p> <p>Implement mirroring sites which generate high access throughout the network so traffic to the Internet is reduced.</p>  |
| Staff Response                | Agree with recommendation.  |
| Implementation and Time Frame | Already in process via partnership with Akamai. Equipment has been received and is being installed at all ICN POP sites. Staff will monitor through Spring 2002 to determine the impact and cost savings to the network.  |
| Status                        | <ol style="list-style-type: none"> <li>1) Received equipment 8/6/01.</li> <li>2) Installed equipment at one location 8/31/01.</li> <li>3) Planned for full operational status the week of 9/17/01 depending on Akamai (see comments).</li> </ol>  |
| Estimated First Year Cost     | No cost to ICN or ICN constituents as a result of partnership with Akamai.  |
| Recurring Year Costs          | No future costs other than human resources and administration already provided.   |
| Comments                      | <p>The Akamai partnership, reported to the Policy Committee in Item 6 on 06/01/01 (Egress Issues), is an example of a win-win arrangement whereby the network is able to add capacity and enhance service at no direct cost.</p> <p>In conversations with Akamai during the week following the terrorist attacks of 9/11/01 it was reported that portions of this project may be delayed due to the untimely death of Akamai's co-found and Chief Technology Officer Daniel Lewin who was a passenger on one of the hijacked flights.</p> |

|                               |   |
|-------------------------------|---|
| <b>9</b>                      | <p><b>Data Gathering, Monitoring, and Traffic Analysis:</b></p> <ul style="list-style-type: none"> <li>a) Perform traffic analysis of egress points and at the interconnection of the heaviest traffic institutions.</li> <li>b) Gather data to determine upgrade schedule.</li> <li>c) Perform traffic analysis of community colleges.</li> </ul>  |
| Staff Response                | Agree with recommendations.   |
| Implementation and Time Frame | Capacity to perform AET recommendations underway from Spring 2001 to present with initial steps to be completed by Fall 2001.   |
| Status                        | <ul style="list-style-type: none"> <li>1) Staff began implementation of a network management product called Clairvoyant running on Cobalt servers at a first year cost of \$140,000 (\$18,000 per year recurring) starting 6/25/01 for the purpose of ongoing monitoring and trend determination to predict future capacities. All locations were up and running by 7/16/01 and data is being gathered for future analysis. Clairvoyant provides accurate forecasting, bandwidth utilization monitoring, and tracking of essential router statistics necessary for comprehensive performance monitoring.</li> <li>2) Although the network has used a product called OpenView since 1996 to provide network management, this ability has recently increased by upgrading Hewlett Packard OpenView software in June 2001 at a cost \$10,000. Recurring annual costs for OpenView are included in a larger contract totaling approximately \$100,000 that covers maintenance agreements for all Hewlett Packard servers and software in use on the network. The OpenView software provides constant status monitoring of circuits. All locations are currently using OpenView with some still to be upgraded to the newer version.</li> <li>3) Traffic analysis data is currently being generated and prepared for community college and university high-bandwidth connections.</li> <li>4) A point person has been dedicated to interface with the AET to ensure that data necessary for analysis and future planning is available and accurate.</li> </ul> |
| Estimated First Year Cost     | \$250,000   |
| Recurring Year Costs          | \$100,000 to \$125,000  |

|                 |  |
|-----------------|--|
| <b>Comments</b> | The ICN is committed to proactively monitor the network and provide all data and information possible to assist in future planning and understanding of how the network is utilized. |
|-----------------|--|

Staff recommends the following resolution:

*The Policy Committee accepts and endorses the staff's prioritization, recommendations, and action items related to the key issues identified in the 2001 Advanced Engineering Taskforce Report.*

ILLINOIS CENTURY NETWORK

**BUDGET REPORT: FISCAL YEAR 2001 FINAL, FISCAL YEAR 2002 PROPOSED**

**Submitted for:** Action

**Summary:** Thursday, August 24, 2001 marked the close of the fiscal year 2001 budget period. Staff updated the Policy Committee at its June 1, 2001 meeting regarding expenditures to that date for fiscal year 2001. This item provides a follow up and presents final expenditure data for fiscal year 2001. In addition, the item presents the aggregate budget and spending plan for fiscal year 2002. Staff intended to present the budget plan in June; however, many factors with direct impact upon the overall budget were yet to be decided including the interagency agreement between the funding agencies, delegation of procurement authority, and approval by the Policy Committee to move toward a cost recovery basis for operations.

**Action Requested:** The Policy Committee accepts the fiscal year 2001 end-of-year report and endorses the fiscal year 2002 budget and plan for expenditures presented by the staff.

**Recommended Motions:** *The Policy Committee approves the fiscal year 2002 budget and expenditure plan as presented by staff.*

## ILLINOIS CENTURY NETWORK

### **BUDGET REPORT: FISCAL YEAR 2001 FINAL, FISCAL YEAR 2002 PROPOSED**

Thursday, August 24, 2001 marked the close of the fiscal year 2001 budget period. Staff updated the Policy Committee at its June 1, 2001 meeting regarding expenditures to that date for fiscal year 2001. This item provides a follow up and presents final expenditure data for fiscal year 2001. In addition, the item presents the aggregate budget and spending plan for fiscal year 2002. Staff intended to present the budget plan in June; however, many factors with direct impact upon the overall budget were yet to be decided. These factors included the interagency agreement between the funding agencies, delegation of procurement authority, and approval by the Policy Committee to move toward a cost recovery basis for operations.

Fiscal year 2001 ended on target and actual expenditures were approximately \$18,000 higher than projected in June. Effective immediately, I have asked Cindi Hitchcock, Fiscal Officer, to change the manner in which the ICN budget is reported to reflect actual revenues from all sources to comply with requirements discussed with the Office of the Comptroller. In previous reports Federal E-rate refunds associated with the network were not broken out as a separate line item. These funds went directly to the Department of Central Management Services and were applied as credits to outstanding telecommunications charges for the ICN. As a result of this reporting change, comparisons between the June Budget Report projections and final report for FY 2001 may not appear accurate. If the E-rate revenues/expenditures are subtracted the reports track closely and are within \$18,000 as previously mentioned. Please note the final report for FY 2001 in Table 1 and the budget for FY 2002 in Table 2.

Fiscal year 2002 reveals the beginning of cost recovery revenues and a substantial increase in telecommunications expenditures resulting from the first full year of the backbone network deployment. Even though the costs of backbone circuits are expected to decrease as a result of the delegation of procurement authority and better contract prices are expected to be available beginning January 2002, the cost of OC-12 and OC-3 circuits is substantial.

Further explanation is necessary if comparing fiscal years 2001 and 2002 since the two funding agencies coded expenditures somewhat differently. In fiscal year 2001, the ISBE expenditures for contractual was over \$1.7 million compared to an apparent reduction in fiscal year 2002 to \$1.06 million. This is due to some contractual costs that are now recorded under the telecommunications line in the IBHE system. In fact, the actual amount expended for items previously coded as contractual has increased by a substantial amount as a result of maintenance contracts coming due during this fiscal year.

A similar circumstance occurs in the equipment line when comparing fiscal years 2001 and 2002 since ISBE classified certain telecommunications equipment expenditures under the EDP equipment line. These same items are now reported in the telecommunications line of the fiscal year 2002 budget. The proportion of funding allocated for equipment has remained flat and is targeted primarily for necessary upgrades. Of interest is the fact that the fiscal year 2000 equipment expenditures was roughly double that for both fiscal year 2001 and 2002.

Another source of increased expenditures in the telecommunications line is a one hundred percent increase in egress to the Internet. The ICN has also moved closer to full staffing and this has also had an impact on the fiscal year 2002 budget plan as well. In fiscal year 2001, a number of staff members were added in the last five months of the year and all employees transferred from ISBE beginning in fiscal year 2002 therefore the personnel line for that year is significantly lower than projected expenditures for fiscal year 2002.

A note is in reference to the apparent increase in the amount allocated for the Regional Technology Centers. This expenditure was originally funded for two years beginning in fiscal year 2000 and will now be renewed on an annual basis beginning this fiscal year. The \$350,000 allocation under the Regional Technology Center line for fiscal year 2001 was the grant to assist libraries and museums in connecting to the network.

Total expenditures for fiscal year 2001 and planned for fiscal year 2002 are virtually identical. The apparent increase in overall expending is the result of reporting e-rate as revenue and funds available from other sources on a one-time basis. Other differences between categories are a result of reporting differences between the two funding agencies.

The staff continues to work toward development of a cost recovery model for implementation in fiscal year 2003. The staff will present the fiscal year 2003 budget request in late September to funding agencies for inclusion in their state budget requests. Staff will bring the planned fiscal year 2003 budget and expenditure plan to the Policy Committee at its May 2002 meeting for consideration.

Staff asks that the Policy Committee approve the fiscal year 2002 budget and expenditure plan:

*The Policy Committee approves the fiscal year 2002 budget and expenditure plan as presented by staff.*

Table 1:

**ILLINOIS CENTURY NETWORK**  
**Fiscal Year 2001<sup>1</sup>**  
 (August 24, 2001)

| <b>REVENUE SOURCES:</b>                                      | <b>IBHE</b>       | <b>ISBE</b>       | <b>FEDERAL<br/>E-RATE</b> | <b>OTHER<br/>FUNDS</b> |                      |
|--|-------------------|-------------------|---------------------------|------------------------|----------------------|
| Appropriations:  | 15,000,000        | 12,000,000        |                           |                        |                      |
| E-Rate Reimbursement to<br>CMS Revolving Fund <sup>2</sup> : |                   |                   | 2,370,059                 |                        |                      |
| <b>TOTAL REVENUE:</b>  | <b>15,000,000</b> | <b>12,000,000</b> | <b>2,370,059</b>          | <b>-</b>               | <b>\$ 29,370,059</b> |
| <b>EXPENDITURES:</b>   |                   |                   |                           |                        |                      |
| Personnel:   | 1,491,546         | 700,000           |                           |                        |                      |
| Contractual:   | 919,006           | 1,752,368         |                           |                        |                      |
| Commodities:   | 45,342            | 6,000             |                           |                        |                      |
| Equipment:   | 329,688           | 3,454,350         |                           |                        |                      |
| Telecommunications:  | 4,169,217         | 5,838,315         | 2,370,059                 |                        |                      |
| Regional Technology Centers:                                 | 350,000           | -                 |                           |                        |                      |
| Interagency Grant (ISBE)                                     | 7,500,000         | -                 |                           |                        |                      |
| Build Out:   | 190,317           | -                 |                           |                        |                      |
| <b>TOTAL EXPENDITURES:</b>                                   | <b>14,995,116</b> | <b>11,751,033</b> | <b>2,370,059</b>          | <b>-</b>               | <b>\$ 29,116,208</b> |

<sup>1</sup> End-of-year fiscal reports were provided by funding agencies and are not audited.

<sup>2</sup> ISBE was the Customer of Record for ICN circuits and therefore the agency to file for E-rate discounts for fiscal year 2001.

Table 2:

**ILLINOIS CENTURY NETWORK**  
Fiscal Year 2002

| <b>REVENUE SOURCES:</b>                                      | <b>ICN</b>        | <b>FEDERAL<br/>E-RATE</b> | <b>OTHER<br/>FUNDS</b> |                      |
|--|-------------------|---------------------------|------------------------|----------------------|
| IBHE Appropriation:  | 15,000,000        |                           |                        |                      |
| ISBE Appropriation:  | 12,000,000        |                           |                        |                      |
| E-Rate Reimbursement to<br>CMS Revolving Fund <sup>3</sup> : |                   | 2,461,655                 |                        |                      |
| ISBE Revolving Fund:   |                   |                           | 2,365,722              |                      |
| <b>TOTAL REVENUE:</b>  | <b>27,000,000</b> | <b>2,461,655</b>          | <b>2,365,722</b>       | <b>\$ 31,827,377</b> |
| <b>EXPENDITURES:</b>   |                   |                           |                        |                      |
| Personnel:   | 2,887,260         |                           |                        |                      |
| Contractual:   | 1,061,480         |                           |                        |                      |
| Commodities:   | 51,900            |                           |                        |                      |
| Equipment:   | 132,500           |                           |                        |                      |
| Telecommunications:  | 23,532,582        | 2,461,655                 |                        |                      |
| Regional Technology Centers:                                 | 1,600,000         |                           |                        |                      |
| Build Out:   | 100,000           |                           |                        |                      |
| <b>TOTAL EXPENDITURES:</b>                                   | <b>29,365,722</b> | <b>2,461,655</b>          |                        | <b>\$ 31,827,377</b> |

<sup>3</sup> ICN is the Customer of Record and therefore the appropriate agency to file for E-rate discounts on behalf of K-12 schools, libraries, and hospitals served by the network.

ILLINOIS CENTURY NETWORK

**COLLOCATION POLICY**

**Submitted for:** Action

**Summary:** The ICN has received numerous requests from constituents to provide collocation services in close proximity to the ICN points of presence. Collocation capabilities allow ICN constituents to share educational content and other network services, such as filtering. This item describes the ICN management plan for providing collocation services to ICN constituents.

**Action Requested:** The Illinois Century Network Policy Committee is requested to authorize the development and adoption of a collocation policy as described.

**Recommended Motion:** *The Policy Committee authorizes the staff to establish a collocation policy for ICN constituents.*

ILLINOIS CENTURY NETWORK  
**COLLOCATION POLICY**

The ICN has received numerous requests from constituents to collocate equipment in close proximity to the ICN points of presence (POP) for the purpose of sharing educational content and other services. Recognizing the benefits this would offer ICN constituents, the ICN management team would like to provide a collocation service to its constituents. Examples of services would include applications such as filtering, educational content that may include streaming or other types of video or other high traffic web sites. This offering has the potential to encourage partnerships among constituents to share applications that may in turn dramatically decrease ongoing costs to our constituents.

Implementing a collocation service consists of providing physical space for constituent equipment and direct high bandwidth connectivity to the backbone. The ICN will seek locations within physical proximity of the ICN POP sites. This will allow the ICN to provide robust connectivity as well as 24x7 unescorted access to constituents while retaining the security and limited access to critical POP site equipment. The ICN will first attempt to identify collocation space adjacent to existing sites through in-kind interagency arrangements to avoid expensive circuit costs and lease expenses for remote sites. If there is a need to provide collocation space where an in-kind agreement is unavailable, then the ICN will provide space on a cost recovery basis at strategic points throughout the state. In either case, the ICN will cover the room construction costs for the collocation facilities as its contribution to content on the network.

The ICN will require that the equipment placed in collocation facilities be remotely manageable so that daily visits to the collocation site will not be necessary. Telephone lines or other circuits used for remote management of the equipment are the responsibility of the constituents locating equipment at the site. The ICN management team will develop a collocation agreement that clearly identifies the responsibilities of both the ICN and the constituent. This agreement will also include a statement relieving the ICN of any liability for equipment in the collocation space.

The staff recommends the following resolution:

*The Policy Committee authorizes the staff to establish a collocation policy and collocation space for ICN constituents.*

ILLINOIS CENTURY NETWORK  
**REGIONAL TECHNOLOGY CENTERS:  
FIRST YEAR REPORT CARD**

**Submitted for:** Information

**Summary:** As called for in the grant agreement each Regional Technology Center (RTC) fiscal agent is to be evaluated on an annual basis to ensure that the policies and processes required to support the RTC staff in their efforts to provide field support and customer service to ICN constituents are aligned with overall ICN goals. This item provides a summary report of the on-site evaluations conducted with the fiscal agents for each of the Regional Technology Centers (RTC).

**Action Requested:** None

ILLINOIS CENTURY NETWORK

**REGIONAL TECHNOLOGY CENTERS:  
FIRST YEAR REPORT CARD**

In an effort to provide regional support to ICN constituents, the ICN established nine Regional Technology Centers. Through a competitive grant process, in early spring of 2000, the ICN requested that constituents within defined service regions come together and submit a proposal to establish a Regional Technology Center that would be housed at one of their facilities and provide the RTC staff with office space, human resource services, and fiscal operations. With the exception of RTC I which was established as the Chicago office of the ICN, all of the regions came together and submitted proposals that demonstrated true collaboration across all sectors of constituents and identified a fiscal agent for RTCs II through IX. (Note: Attached to this item is a map indicating the nine regions and a list of primary contact information for each RTC.)

Initially funded for two years, the grant agreement called for an annual evaluation to be conducted between the fiscal agent and the ICN regional coordinator assigned to each RTC. Throughout August 2001, Lori Sorenson, Deputy Director for Administrative Services, and Ralph Lucia, Regional Coordinator conducted site visits for RTCs V through IX, while Lynn Murphy, Deputy Director Client Services and Robin Woodsome, Regional Coordinator, visited II through IV.

After overcoming some initial start-up issues, the relationships established between the ICN and the eight fiscal agents are working quite well. During the course of the evaluations, which were conducted in an informal face-to-face meeting, several themes emerged common to all the RTCs. These included user group activities, communication with the ICN office, and fiscal reporting procedures.

User Group Activities:

Some of the RTCs have been very successful in pulling together user groups of ICN constituents to discuss a variety of issues related to their participation in the ICN. Some of the issues discussed include technical support, hardware and software applications, training needs, LAN issues, such as firewalls and filtering, and community networking. Activities conducted include the publication of a newsletter, technology survey of users in the region, and pursuit of grant funds to support technology. RTCs with active user groups expressed a great deal of interest in a statewide user event that would allow them to come together, see what each other is doing, share information, and possibly enter into collaborative partnerships with others across the state. Where RTCs are struggling to develop active user groups, attendance at an event of this nature may

provide them the impetus to get started. One of the fiscal agent representatives applauded the ICN for having the forethought to include funds within the grants to support user group activities.

Communication:

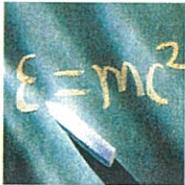
As with most complex organizations, communication among all participants is critical. For the most part, the fiscal agents appreciated the close communication they had with the ICN, citing the email updates from the Director and the availability of RTC staff to speak with user groups. Fiscal agents expressed their appreciation for advanced notice of network outages and a better understanding of changes taking place in the ICN. One fiscal agent requested that the ICN identify and communicate early on, any data that the RTCs should be collecting on a regular basis. Enhancing communication channels with ICN constituents and fiscal agents remains a top priority for ICN management and suggestions made in this area were dutifully noted.

Fiscal Reporting Procedures:

Most of the comments regarding areas of improvement involved the budget reporting process. Unlike most grants, the ICN grants that fund the RTCs are very prescriptive in nature and the fiscal agents needed to make some accommodations to their reporting practices to align them with the ICN. Working closely with the ICN fiscal officer, most fiscal agents expressed an increasing comfort level with the requested budget reports. A suggestion was made to provide the fiscal agents with report templates that would eliminate any further confusion.

This summary report serves to give an overview of the fiscal agent evaluations. ICN management staff will continue to analyze the individual evaluation reports compiled for each RTC in order to be able to respond to any specific questions and concerns.

## REGIONAL TECHNOLOGY CENTERS



### Region I

James R. Thompson Center  
100 W. Randolph, Suite 2-201  
Chicago, IL 60601-3219  
312.814.9790  
312.814.9795 Fax

### Region II

650 E. Higgins, Suite 3E  
Schaumburg, IL 60173  
847.925.6090  
847.490.9917 Fax

### Region III

College of DuPage  
425 Fawell Blvd.  
Room SRC 3040B  
Glen Ellyn, IL 60137-6599  
630.942.2967  
630.942.2935 Fax

### Region IV

Kankakee County Admin. Bldg  
189 East Court Street, Suite LL1  
Kankakee, IL 60901  
815.936.4644  
815.936.4646 Fax

### Region V

Whiteside County ROE  
1001 West 23rd Street  
Sterling, IL 61081  
815.564.9419  
815.564.9573 Fax

### Region VI

211 Fulton Street, Suite 207B  
Peoria, IL 61602  
309.999.5900  
309.999.5808 Fax

### Region VII

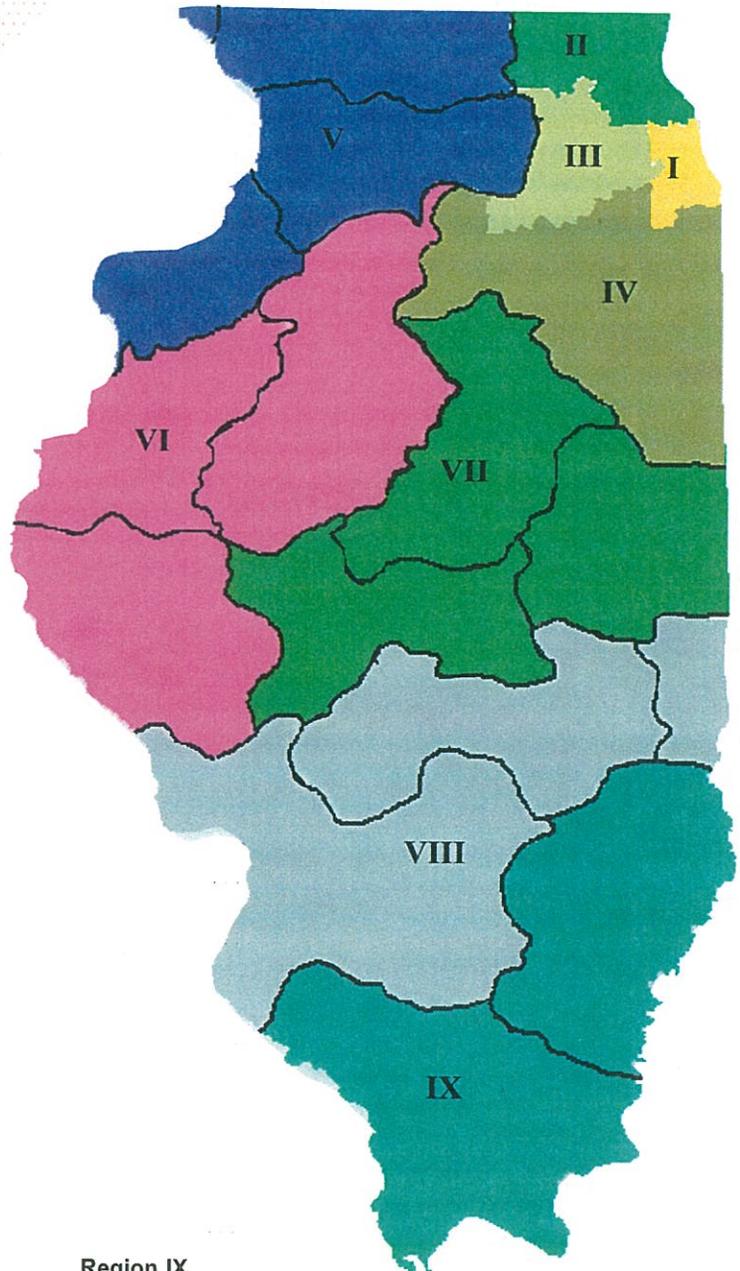
Parkland College  
2400 West Bradley Ave, Rm X132  
Champaign, IL 61821-1899  
217.353.2693  
217.373.3701 Fax

### Region VIII

145 Woodcrest Drive  
Highland, IL 62249  
618.651.9633  
618.651.9639 Fax

### Region IX

Lawson Hall, Room 205A  
Southern Illinois University  
Mail Code 4613  
Carbondale, IL 62901-4613  
618.453.3833  
618.453.4167 Fax



ILLINOIS CENTURY NETWORK

ICN STAFF TRAINING PLAN

**Submitted for:** Information

**Summary:** The ICN has undertaken an aggressive training plan to equip all staff with the skills needed to provide quality service to all ICN constituents. This item outlines the overall staff training plan based on industry-recognized certifications, staff interests, and expertise.

**Action Requested:** None

## ILLINOIS CENTURY NETWORK

### ICN STAFF TRAINING PLAN

The Illinois Century Network has embarked on an aggressive training schedule for all of its technicians in the Network Operations Center and Regional Technology Centers. Technical training recognized by the industry is critical for ICN staff members to provide first-class service to ICN constituents.

All of the network technicians on staff as of May 15, 2001 have completed both the Interconnecting Cisco Network Devices (ICND) and Building Scalable Cisco Networks (BSCN) courses, which are the first two classes of the Cisco networking curriculum. As a result, the number of ICN employees holding the Cisco Certified Networking Associate (CCNA) status has grown from four to twenty-six, a 650% increase in less than one year. The CCNA is the first level Cisco certification. We have also seen the number of Cisco Certified Networking Professionals (CCNP) double as a result of this training. The CCNP is Cisco's second highest certification. In addition to these certifications, there are two technicians actively pursuing the Cisco Certified Internetworking Expert (CCIE). This is not only Cisco's highest certification, but also the industry's highest recognized and most difficult to obtain networking certification. As such, it is recognized worldwide.

In addition to Cisco classes, network security staff has been sent to security training and services staff has participated in Hewlett Packard Unix training. The ICN uses HP Unix for monitoring stations both at the NOC and at the RTCs. HP Unix is also used with the DNS servers in the Point of Presence (POP) sites that service all ICN constituents. Two staff members have also attended Redhat Linux training. Redhat Linux is one of the newest Internet operating systems and is rapidly becoming the most popular and a de facto standard. Currently, Redhat Linux is running traffic analysis computers, the ICN list serve, and other network applications. As a result of this training, the ICN now has a staff member with a Redhat Certified Engineer certification, which is also highly acclaimed in the industry.

The ICN works collaboratively with CMS by sharing vacant seats for training that is sponsored "in-house." CMS sends staff to fill any unused seats in the ICN-sponsored classes and the ICN sends staff to fill any unused seats in CMS offerings. This has increased the knowledge base for both groups and allows the opportunity for technical staff to share their expertise with one another.

The ICN is committed to building and supporting a well-trained, highly qualified staff. As part of this commitment and as an incentive to staff, salary increases are tied

directly to completion of recognized certifications identified by the ICN to provide needed skill sets. The training plan for FY 2002 will be based on ICN training needs and the professional development plans of staff members that are submitted as part of the annual employee evaluation process.

In short, staff plans are ambitious. If all staff members meet individual goals, thirteen additional CCNA certifications and twenty additional CCNP certifications will be achieved during fiscal year 2002. Nine employees plan to pursue certifications in Cisco's design track. Based on these professional development goals, it is evident that the staff shares the ICN commitment to have the best-trained staff providing the highest possible quality service to all of the ICN constituents.

ILLINOIS CENTURY NETWORK

**WEB SITE UTILIZATION**

**Submitted for:** Information

**Summary:** The ICN web site functions as our primary communications medium to reach current and potential constituents. In the past year the ICN has seen significant increases in the numbers of visitors to the web site. This item identifies the most frequently sought after items and how the web site is being used to provide timely information to those interested in the ICN.

**Action Requested:** None

## ILLINOIS CENTURY NETWORK

### WEB SITE UTILIZATION

The ICN web site at <http://www.illinois.net> is often the first point of contact with potential and current constituents. Current users can find their Regional Technology Center, view news items and press releases, look up other constituents in their area and download forms. Potential users can download forms, information, and even apply to the ICN on-line. During the Avenew conversion, the web site was updated daily with the latest information relating to the conversion process. Employment opportunities and staff lists are also available. Reports on site traffic show an increasing number of people accessing the ICN web site.

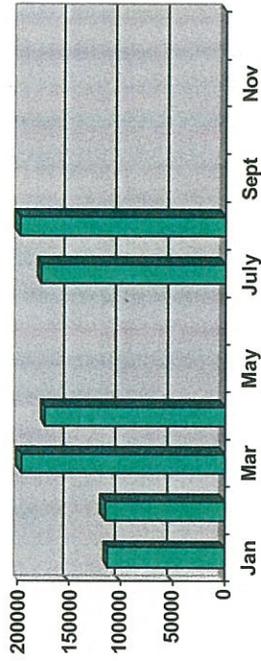
During the past year the Illinois Century Network has seen significant increases in the traffic to the site. Monthly reports to management have shown that traffic to the web site has doubled in the last year. On average more than 4,000 people access the ICN web site each month. The numbers continue to increase as additional constituents are added and word gets out about the ICN. The most popular sections are the home page, about the ICN, the Regional Technology Centers and connect to the ICN. The most popular downloads are the ICN backbone Map and the forms needed to connect to the network.

In the last 6 months the ICN has also taken over hosting and maintenance for the Illinois Video Education Network web site at <http://www.iven.net> and launched the Elearning Illinois web page at <http://elearning.illinois.net>.

## Monthly Statistics for [www.illinois.net](http://www.illinois.net)

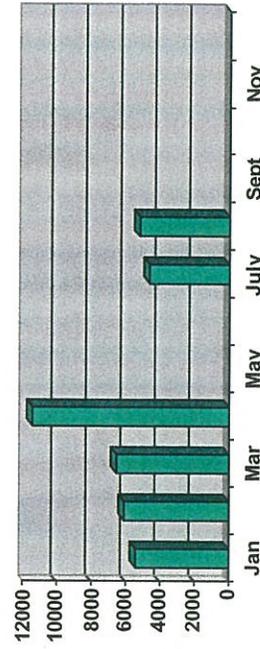
### Total Hits for the Site

| Month    | # of Hits | Month     | # of Hits |
|----------|-----------|-----------|-----------|
| January  | 112,045   | July      | 177,609   |
| February | 115,227   | August    | 198,919   |
| March    | 197,011   | September |           |
| April    | 173,523   | October   |           |
| May      | *         | November  |           |
| June     | *         | December  |           |



### Total Hits for the Home Page

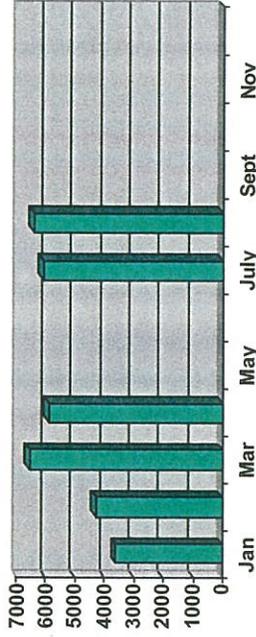
| Month    | # of Hits | Month     | # of Hits |
|----------|-----------|-----------|-----------|
| January  | 5,443     | July      | 4,700     |
| February | 6,145     | August    | 5,269     |
| March    | 6,609     | September |           |
| April    | 11,478    | October   |           |
| May      | *         | November  |           |
| June     | *         | December  |           |



\* Data from May and June was lost due to problems with the server log files.

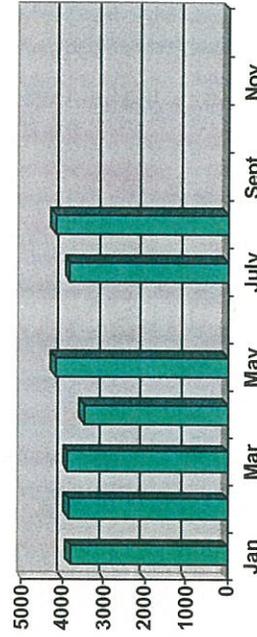
### Average Number of Hits per Day

| Month    | # of Hits | Month     | # of Hits |
|----------|-----------|-----------|-----------|
| January  | 3,614     | July      | 6,124     |
| February | 4,293     | August    | 6,416     |
| March    | 6,562     | September |           |
| April    | 5,934     | October   |           |
| May      | *         | November  |           |
| June     | *         | December  |           |



### Number of Unique Visitors

| Month    | # of Hits | Month     | # of Hits |
|----------|-----------|-----------|-----------|
| January  | 3,814     | July      | 3,823     |
| February | 3,850     | August    | 4,186     |
| March    | 3,870     | September |           |
| April    | 3,480     | October   |           |
| May      | *         | November  |           |
| June     | *         | December  |           |



\* Data from May and June was lost due to problems with the server log files.

## Most Requested Pages

### August

|                                |       |
|--------------------------------|-------|
| 1. ICN-Home                    | 5,269 |
| 2. RTC 5**                     | 1,219 |
| 3. About the ICN               | 742   |
| 4. ICN Users                   | 584   |
| 5. Regional Technology Centers | 566   |
| 6. Connect to the ICN          | 523   |
| 7. ICN Links                   | 428   |
| 8. RTC Phone# Lookup           | 410   |
| 9. ICN News and Archives       | 361   |
| 10. FAQ                        | 328   |

### Year to Date \*\*\*

|                           |        |
|---------------------------|--------|
| 1. ICN Home               | 39,644 |
| 2. About the ICN          | 4,273  |
| 3. Regional Tech. Centers | 3,736  |
| 4. Connect to the ICN     | 3,294  |
| 5. RTC 5**                | 2,820  |
| 6. ICN Users              | 2,730  |
| 7. News and Archives      | 2,400  |
| 8. FAQ                    | 1,969  |
| 9. Avenew Customer Info   | 1,693  |
| 10. Contact Us            | 1,576  |

## Most Requested Downloads

### August

|   |     |
|---|-----|
| 1. Backbone Map                         | 881 |
| 2. Application and Instructions         | 618 |
| 3. Participation Agreement              | 301 |
| 4. DNS Map                              | 258 |
| 5. Info Packet- FAQ                     | 236 |
| 6. Info Packet- Backbone Map            | 140 |
| 7. Avenew Constituent Update            | 124 |
| 8. Ameritech DS1 Service Agreement      | 114 |
| 9. Info Packet- Connection Guide        | 100 |
| 10. Info Packet Participation Agreement | 92  |

### Year to Date \*\*\*

|                                 |        |
|---------------------------------|--------|
| 1. ICN Backbone Map             | 17,080 |
| 2. Application and Instructions | 3,588  |
| 3. Participation Agreement      | 2,667  |
| 4. Info Packet- FAQ             | 1,680  |
| 5. DNS Map                      | 1,155  |
| 6. ICN Letter to Libraries      | 789    |
| 7. Avenew Application           | 776    |
| 8. Library Reimbursement Letter | 763    |
| 9. Avenew Constituent Update    | 686    |
| 10. Backbone Circuits Due       | 677    |

\*\* Many of these hits come from a redirect from the LTH 2 web site.

\*\*\* Data from May and June was lost due to problems with the server log files.