County of Sacramento
Inter-Department Correspondence

For the Agenda of: August 1, 2002

Date: July 17, 2002

To: Information Technology Policy Board Members

From: Karen Fuson, Chair
              Technology Review Group

Subject: Wide Area Network/Local Area Network Policy

Recommendations:

1. Approve the recommendation for Wide Area Network (WAN)/Local Area Network
    (LAN) roles and responsibilities documented in this policy.
2. Approve the establishment of a WAN Steering Committee chartered with:
    a. Providing input into the strategic direction for the WAN
    b. Recommending standards and procedures to the TRG
    c. Coordinating and approving changes to the WAN
    d. Monitoring and approving Departmental access to privileges to manage routing
        components installed in their LAN.
3. Approve the replacement of the 1998 WAN/LAN Policy with the policy documented
    herein.

Background:

In February 1998, the Information Technology Policy Board (ITPB) approved a policy
regarding the procurement and management of network devices. This policy defined the roles
and responsibilities for management of the network, both WAN and LAN, in relation to the
type of equipment being supported. These definitions have become outdated.

The purpose of this policy is to update the definition of central and departmental IT roles and
responsibilities, define WAN and LAN standards and procedures, and establish a WAN
steering committee responsible for providing input into the strategic direction for the WAN.
This policy covers the internetworking equipment that is specifically used for transporting
electronic data between locations in the County. This internetworking equipment includes
devices such as Routers, Switches, Hubs, Gateways, Firewalls, and other access devices. This
policy does not cover any of the attached hosts on the network such as servers, workstations,
or printers.

Sacramento County's network infrastructure has made significant changes in the types of
network equipment used and in the design for the deployment of this new equipment. In the

past, much of the County's network was designed around a hierarchical set of routers. In this design, routers performed the network routing and hubs or switches handled the local area networks. This hierarchical design has well defined boundaries for management of the network equipment.

Network equipment can now provide both the routing and switching (Cisco's multilayer service (MLS) network equipment). Some of the county Departments have deployed Cisco's MLS networking equipment for internetworking their LANs in a Campus area. This has eliminated the need for separate routers in the Campus and has added routing responsibilities to the Departments. A Departmental network campus is the congregation of those pieces of network equipment (routers, switches, etc.) that serve a single Department. For the purpose of this policy, the Public Works Agency is included in the term Department.

The deployment of MLS networking equipment changes the roles and responsibilities for the WAN and LAN. It also changes the design and implementation of the County networks. Cisco's multilayer design is based on a redundant building block. The multilayer design is modular and scalable, providing Departments the ability to build in redundancy to meet their operational requirements.

The existing WAN/LAN policy approved by the ITPB in 1998 defined roles and responsibilities based on the type of networking device: OCIT was responsible for the routers and the Departments were responsible for the switches and hubs. This definition no longer works with the new type of equipment being deployed where the devices have the combined responsibility for routing and switching.

Discussion:

The overall objective of this policy is to provide a framework within which County IT personnel can provide the services and support needed to meet the business requirements of their customers. It is not the goal of this policy to change the high-level policy previously approved by the ITPB which states that the WAN is a central infrastructure component and as such must be supported by OCIT. This policy further defines the boundaries of WAN and LAN and more concretely defines how these County assets will be supported and managed.

Policy:

This policy will address the formation of a WAN Steering Committee (WSC), OCIT and Departmental roles and responsibilities in regards to management and troubleshooting of the County's network infrastructure, and implementation standards for this infrastructure.

The purpose of the WSC is to oversee planning and maintain continuity of the WAN. The members of the WSC will provide input into the strategic direction for the WAN, recommend standards and procedures to the TRG, coordinate and approve changes, and monitor and approve Departmental access to privileges to manage routing components installed in their LAN. Please see attachment A titled WAN Steering Committee Guidelines for a detailed description of the responsibilities of the WSC.

Following is a list of the OCIT and Departmental supported areas of the County's network infrastructure:

OCIT:
- Sacramento County WAN infrastructure
- Quality of service in the WAN and to each Departmental network campus
- Remote network access to the County WAN infrastructure (Internet access and VPN)
- Network perimeter security
- Network management.

Departmental:
- Departmental campus networks
- Quality of service in the Departmental network campus
- Departmental network campus security
- Departmental network campus management.

Network equipment that supports multiple County Departments will be considered a part of the Sacramento County WAN infrastructure and will be funded by the network connectivity fee. OCIT Network Support will provide the procurement, installation and support of the WAN infrastructure. Network equipment that supports a single Department will be considered a part of the Departmental network campus infrastructure and will be funded, procured, installed, and managed by the Departmental Network Support staff. If the Department chooses not to perform this management function, then OCIT Network Support will provide the procurement, installation and support. All network equipment will be purchased in compliance with adopted standards.

The County's network infrastructure also contains network campuses whose equipment supports multiple Departments. In these multi-Departmental network campuses, the network equipment to support the campus will be funded by the Departments. The Departments may choose to have either OCIT or one of the Departments procure, install, and support the network equipment in the multi-Departmental network campus. The routing components in devices that connect the multi-Departmental network campus to the WAN will be managed by OCIT.

All staff designated to perform network management must have successfully completed Cisco's Networking Professional level of training. The exact classes needed will be determined by the WSC and approved by the TRG. Departments will retain read-only access to WAN network equipment for troubleshooting purposes as granted in the previously approved 1998 WAN/LAN Policy.

Each employee granted the privileges to manage any part of the County's network infrastructure must have passed the Sheriff's security background investigation. If an employee with privileges to manage a part of this network infrastructure violates any of the policies, standards, and procedures outlined in this policy or the Perimeter Security Policy, then privileged access rights will be removed from the employee's core and Departmental

network userid. The privileged access rights referenced here are specific to managing the routing components in devices that connect the Departmental network campus to the WAN. If these privileges are removed, the Departmental network support staff would still retain the privileges to manage all other aspects of the Departmental network campus. The WSC will define a process for determining if an employee has intentionally violated these policies. The WSC will have the right to remove these privileges in these situations. The employee whose privileges have been revoked by the WSC can appeal this decision to the TRG.

All changes to the WAN will be approved by the WSC. All changes will use the change management process devised by the WSC and approved by the TRG. The WSC change management process is not a replacement of the change management process currently used by individual departments. It is intended to be used in addition and incorporated into any departmental process currently in use. Changes to the LAN that have no effect on the WAN are outside the scope of this policy and do not need to be reviewed by the WSC.

The objectives of change management are:
- Encourage advanced planning and coordination among IT personnel and others responsible for changes to the WAN in an effort to minimize impact to customer services, thereby maintaining their continuity, stability, and reliability.
- Consider, in advance, the consequences of an unsuccessful change and plan for a reasonable recovery.
- Reduce the number of changes that are not coordinated or planned in advance of implementing the change.
- Establish a central point for coordinating changes.
- Help identify potential impact of changes on other users of the WAN.
- Minimize the number of problems and/or conflicts that are caused by changes
- Provide adequate advance notification of all changes that will affect the WAN.

The WSC will set standards and procedures for the County's network infrastructure. The WSC will document these and present them to the TRG for approval. Troubleshooting responsibilities and security are also important considerations of operating within these shared roles and responsibilities. One of the initial tasks of the WSC will be to define in greater detail the roles and responsibilities related to troubleshooting and security.

Impact of Implementing these Recommendations:

The WAN and LAN responsibilities and definitions documented in this policy provide flexibility to both the central and departmental IT organizations. The TRG believes that this definition of roles and responsibilities will allow for more efficient and effective resolution of network problems and installation of network equipment.

The WAN steering committee will provide a forum for departmental and central IT support personnel to have input to the strategic direction of the design of this infrastructure and the tactical plans for implementing the design. This will help ensure that the WAN will be able to meet the business requirements of County Agencies and Departments.

WAN/LAN Policy
Attachment A

WAN Steering Committee Charter

Table of Contents

Introduction

This document provides the operational guidelines of the Wide Area Network Steering Committee (WSC) and its responsibilities.

Description

The purpose of the WSC is to maintain continuity throughout the County of Sacramento's Wide Area Network. Their primary focus will be the technical administration of the County Network.

Membership

The Wide Area Network Steering Committee will be comprised of five primary positions and one alternate. Network Administrators that maintain an understanding of the County's network infrastructure will fill all six positions. An OCIT representative will fill one primary position and the other four primary and one alternate position will be selected from Departments that utilize the county WAN. Membership will be limited to one representative from a department. The alternate representative will be called if one of the primary committee members is unavailable or representing a change request to the WSC.

Term of Service

Members will be assigned to the WSC for one year. One position, filled by an OCIT Network Administrator, will be permanent. After the first year term is concluded, two members will be rotated off and replaced by TRG selected Departmental Network Administrators. Rotation of WSC membership is required so that disruption to the Wide Area Network infrastructure is minimized.

Chairperson\Vice-Chairperson

The WSC will require a chairperson and vice chairperson to lead in WSC appointed tasks. In this position, however, the chairperson or vice-chairperson retains no increased authority. All persons of the WSC, including the chairpersons, are equals.

The members of the WSC will select the chairperson and vice-chairperson on a schedule determined by the need of the WSC.

The chairperson will be responsible for taking the lead and ensuring that requests are processed. They will also be responsible for coordinating the WSC sponsored meetings. In the absence of the chairperson, the vice-chairperson will assume the chairpersons responsibilities.

The chairperson responsibilities include:

- Coordinate meetings for review of requested changes

- Respond to change requests

- Chair monthly "Health of the Network" meetings

Responsibilities

The Wide Area Network Steering Committee's responsibilities are to ensure the well being of the County network infrastructure and all of its interests. It is not the responsibility of the WSC to maintain daily health or problem resolution though its individual members may have duties outside the WSC.

Likewise, it is not the responsibility of the WSC to resolve conflicts that may arise between departments utilizing the network. Though the WSC may seek to assist in resolution of concerns, it is incumbent upon departments to provide solutions to conflicts that arise. In the advent a conflict cannot be resolved, involved departments should address their concerns to the TRG for resolution.

It is the responsibility of the WSC to review, approve, or deny changes to the County's network infrastructure. In addition, there are other information/communication tasks that will be performed by the WSC. These major tasks/responsibilities include oversight of the Implementation plan developed by the WSC.

- Responsible for defining and implementing a change management process for the WAN.
- Responsible for review/approval of infrastructure design changes submitted by Network Administrators.
- Responsible for maintenance of a change history databases to track all modifications to the County network infrastructure.
- One member will attend the OCIT change control meeting when changes are required to the County network.
- Responsible for defining the classes and certifications needed to be granted access privileges to manage any part of the County's network infrastructure.
- Review and approve applications for these privileges.
- Responsible for removing these privileges from core and departmental network management userids when an employee is found to have violated this policy or the Perimeter Security Policy. Removal of these privileges can be appealed to the TRG if the employee so chooses.
- Responsible for coordination of a monthly "Health of the Network" meeting to be attended by all County Network Administrators.
- Responsible for reporting any departmental abuses of the Network infrastructure to the TRG.

Quorum and Decision Making

A quorum of the WSC will consist of four members. If the occasion arises that a member cannot attend the alternate will be contacted to temporarily fill the vacant position.
All WSC decisions will be unanimous.

WSC Attendance

The WSC alternate will permanently replace any member who is unable to attend, or misses three consecutive WSC meetings without proper notification. Likewise, if a WSC active member no longer represents a department as a Network Administrator, the alternate will permanently replace them. At the time of replacement, a new WSC alternate will be selected by the TRG.