



 HILTON HEAD ISLAND
Cross Island Parkway

SCDOT Electronic Toll System

VECTOR

Security, Backup and Disaster Recovery Plan

Rev 2.0

June 2009



ACS
Transportation Solutions
Systems.

Revision History

Revisions of this document are listed in chronological order. There is no relationship between the document release number and the software release number.

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Owner	ACS Project Management
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Important: This document has been through a formal review process. To the best of our knowledge, it is accurate. ACS reserves the right to make further modifications as necessary.

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1. Introduction

1.1 Summary

Affiliated Computer Services, Incorporated (ACS) provides back-office operations for electronic toll collection from two locations for the state of South Carolina. Below is a table listing the two primary locations and the services that each location provides:

Table 1-1: SCDOT Back-Office Locations

Location	Facility Focus	Hosted Technology Services
Cross Island Parkway Customer Service Center (CSC)	Back-Office operations and walk-in center for handling customer support, tag distribution, etc.	Image Storage Voice Response System Print Services Report Services
Tarrytown Data Center (TTDC)	Houses equipment for Systems that SCDOT operates in-house in a 24x7 data center designed for mission critical operation of computer systems and networks	Host for transaction processing Host for CSC Online application Environment Manager Web Site (www.crossislandparkway.org) Payment Processing

This document serves as a security, backup and disaster recovery plan (DR) for the SCDOT Electronic Toll System (ETC).

1.2 External References

The SCDOT Disaster Recovery Plan covers ACS-related software and onsite/offsite networks only. Documents that are external to this plan are indicated throughout this document in *italics*.

1.3 Audience

The audience for this plan is as follows:

- Participants involved in the development and implementation of the SCDOT Security, Backup and Disaster Recovery Plan
- Internal Auditing Staff
- Executive Management

1.4 Ownership

Maintenance of this plan is the responsibility of the ACS *VECTOR* Technical Recovery Team. To request changes to this plan, make a copy, and complete the *Disaster Recovery Plan Update Request Form* found in Appendix G, then mail to the following address:

ACS

ATTN: Anthony DePodesta

4 Marshland Lane

Hilton Head Island, SC 29926

Email: Anthony.depodesta@acs-inc.com

2. Executive Summary

2.1 Objective

The purpose of the South Carolina Department of Transportation (SCDOT) VECTOR Electronic Toll Collection (ETC) Security, Backup and Recovery Plan is to provide an organized and comprehensive approach to providing security to assets, managing the backup process for the VECTOR supporting systems, and recovering from a declared disaster.

This plan focuses exclusively on the Plaza server, VECTOR CSC Application, VECTOR CSC Database, and LAN Server.

2.2 Scope

This plan covers all ACS owned and operated equipment on ACS and SCDOT premises. The plan addresses the backup and restoration of the following ACS provided information technology resources:

- Lane software and data
- VECTOR software, and data located at SCDOT sites
- VECTOR software, and data located at ACS sites
- ACS provided communication between the two major locations and two plazas

This plan covers the daily procedures for backing up, storing and restoring critical data. It is limited to the Plaza server, VECTOR CSC Application, VECTOR CSC Database backups. The systems listed in this document are backed up nightly and are transferred securely to Iron Mountain.

2.3 Plan Maintenance

SCDOT, ACS managers and backup team leaders will report any changes in organization, function, contact information, vendors, and services to the ACS Program Manager.

2.4 Disclosures

This plan contains information that is not for general viewing. This plan contains information about systems, data center facilities, and includes names and phone numbers of support staff. It



should be protected with the same levels of control used to protect confidential consumer information. This document should only be distributed on a “need to know” basis.

3. Security Plan

3.1 Purpose

This plan outlines the physical and logical network controls in place to secure the equipment, data, and the VECTOR application.

3.2 Physical Security Controls

Procedures are in place grant or remove physical access on the basis of authorized requests. Physical access controls are in place to prevent unauthorized physical access to ACS facilities and include:

- Developing and implementing local Security Procedures in accordance with ACS physical security policies and ensuring compliance with the policies and procedures.
- Managing the physical security access system, including the creation, modification, and termination of access rights and the issuance and retrieval of keys.
- Managing the visitor control and delivering screening and badging processes.
- Investigating Intrusion Alarms where unauthorized physical access is indicated.

Access to ACS physical security documents by external organizations is restricted to “read only” and only when management justifies a business need. ACS Business Unit Management is responsible for securing non-disclosure agreements (NDAs) for ACS clients, their representatives or contractors before disclosing any proprietary or confidential information.

Sensitive system documentation, ACS and client information are physically protected from unauthorized access or damage. Measurements for physical security controls include reviews that confirm that:

- The controls are in place
- The controls are effective, as defined by Corporate-wide physical security

The CSC’s server room and the server room at each plaza utilize card key entry access systems. The Tarrytown Data Center secures access to the server environment by utilizing the following controls:

- Closed circuit TV monitoring
- 24/7 security force
- Card key entry access to office areas
- Biometric access to data floor
- Visitors are issued visitor badges and are escorted at all times
- No wireless networks
- Frequent internal and external audits

3.3 Network Security Controls

Network security is implemented through the use of logins for access into servers and workstations and router configuration for network access. The primary point of entry into the system is through a Windows server login. A username and password is assigned to each user and managed centrally on the primary domain controller (Windows 2003 Active Directory Server). This user ID controls access to both local Windows server resources and network resources.

Further access into the VECTOR ETC application is controlled through the VECTOR ETC application. A VECTOR login and password are required to login to the VECTOR application and provide the ability to limit access to various functions within VECTOR. The VECTOR login also provides the ability to limit access to only those resources on the host that are required.

Access into the network from the outside is controlled through the Cisco routers and secured through a firewall. The primary method of network security is to limit the routing tables (of all routers) to known networks with the ETC system.

4. Backup and Restoration Plan

4.1 Purpose

This plan outlines the necessary backup actions and provides a predetermined course of action for the restoration of files and/or tapes as necessary.

4.2 Offsite Storage Facility

The VECTOR data is scheduled for a daily complete database backup by the ACS Data Center. The backup tapes are sent daily to Iron Mountain, an off-site storage facility. Plaza backups are scheduled for daily complete backups, and the tapes are delivered to Wachovia Bank on Mondays, excluding holidays when delivery will occur on Tuesdays.

4.3 Backup Procedures

The application, plaza and CSC servers use attached tape drives for backing up as part of their daily activities. The daily backup of servers will include the database backup and the application file backup. All tapes are stored in the backup storage locations described in this section. The ACS Data Center initiates, monitors and controls the backup process. The Data Center maintains a reliable system backup process and has well-secured shipping process to send the backup media to the off-site storage facility, Iron Mountain.

Retrievals of tape media from Iron Mountain will be carried out in an expedited manner in the event of a hard disk failure. In the event of a system site failure, the data center provides for disaster recovery services with vendors such as Sungard. This service allows for the entire system to be recovered and brought online at Sungard's data center.

Utilizing a job scheduler, the backup processes run on a scheduled basis, depending on the type of backup required (ie, daily, weekly, incremental, full, etc.) A labeled, organized stock of tapes is systematically utilized for the appropriate backup type and volume of data scheduled. The stock of tapes is maintained at the server locations. As tapes are created and moved to off-site storage, tapes held in the off-site storage location that are scheduled for reuse will be rotated back to the server locations' stock.

The NetBackup product is used to perform backups; it also validates that each backup is successful and confirms the tape contents. Daily emails are generated to specific technical ACS staff members.

The backup schedule remains in tact after builds and point releases are installed. These backups will be retrieved for system restoration, if necessary. Configuration Management maintains a repository of code specific to each build that will also be utilized for system recovery efforts.

4.3.1 VECTOR Application

The VECTOR application is backed up daily at the Tarrytown Data Center, according to the schedule included in this section. All tapes are stored in the backup storage location described in this section. The Data Center maintains a reliable system backup process and has well-secured shipping process to send the backup media to the off-site storage facility, Iron Mountain.

Table 4-1: VECTOR Application Backup Schedule

Data Backup	Schedule
Database backup	Daily: Full
Application file backup	Daily: Full

4.3.2 Plaza Server

The daily backup of plaza servers includes the database backup and the application file backup. All tapes are stored in the backup storage location described in this section.

Database backup A complete backup of the database is performed daily. The database backup includes all elements required to cleanly restore the database.

Application file backup A complete image backup of each application disk is performed daily. The plaza server also stores data files and configurations outside of the database such as tag status, toll fare, employee files for lanes, 90 days of images, and application binaries. Full backups are run every day of the week.

Table 4-2: Plaza Server Backup Schedule

Data Backup	Schedule	Off-site Storage Location
Database backup	Every day: Full	Wachovia Bank
Application file backup	Every day: Full	Wachovia Bank

4.3.3 CSC

The CSC's local area network (LAN) data is backed up daily to tape. The tapes are moved to a local off-site storage location at Wachovia Bank.

4.3.4 Software Maintenance

ACS software maintenance for the SCDOT is performed on the plaza servers and lane controllers. The host computer and plaza servers are administered by personnel assigned to the ACS Tarrytown group.

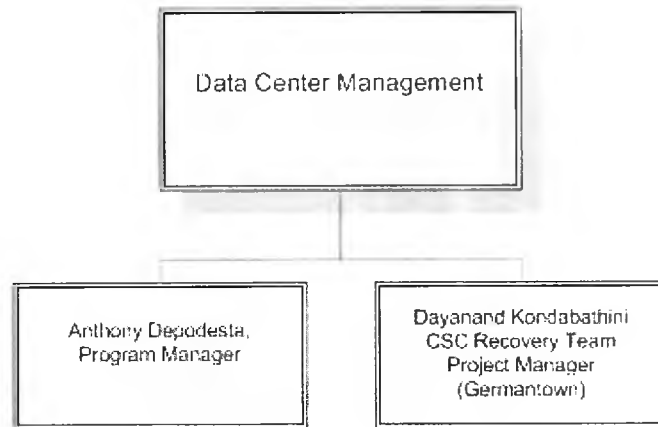
ACS system administration monitoring duties include the following areas:

- VECTOR system hardware and software monitoring
- VECTOR application monitoring
- VECTOR database server monitoring

During system operation, the system administrator checks the system devices and software to ensure they are operating properly and meet all specified ETC performance criteria. The system administrator ensures the effective system operations and recommends actions to correct capacity or performance inadequacies. When there is a need for correcting or improving the system operation, ACS will create an incident report and a corrective action. As part of the system monitoring activities, the ACS system administrator also checks the health status of the VECTOR server and its databases.

4.4 ACS Team Roles and Responsibilities

ACS Data Center Managers ensure that the SCDOT VECTOR backups are conducted daily and a backup summary log is maintained. The ACS SCDOT Project Manager receives daily notification from NetBackup on the status of the backups. If any issues arise during the daily backup, the ACS CSC Project Manager works with Data Center Management and the ACS Program Manager to resolve the issues.



5. Disaster Recovery Plan

5.1 Purpose

This plan presents the guidelines for action as well as procedures to be followed in the event of a disaster. A disaster can be any major event that affects the Violation Enforcement Customer Service Toll Operations Reporting (VECTOR) system supporting SCDOT Lane, Plaza, and Host operations. This Plan defines the individuals accountable for declaring a disaster, establishing and maintaining the plan, specific data processing requirements of the application, and detailed system recovery procedures. The objective of the disaster recovery plan is to provide the necessary recovery resources and predetermined course of action for recovering the information technology that supports the SCDOT lane and ETC information systems should a disaster occur. This plan focuses on the steps necessary to restore processing at these locations so critical application and toll collection can continue in the event of a disaster.

Retrievals of tape media from Iron Mountain are carried out in an expedited manner. In the event of a system site failure, the data center provides for disaster recovery services with vendors such as Sungard. This service allows for the entire system to be recovered and brought online at Sungard's data center.

5.2 Disaster Recovery Strategy

There are several disaster avoidance processes built into the network at the CSC, the Tarrytown Data Center (TTDC) and the plazas to prevent significant downtime. The risk-mitigating measures and preventive controls include:

- Use of uninterruptible power supply (UPS) on all critical servers
- Redundancy Array of Interruptible Disks (RAID) on all storage devices
- Mirrored and/or redundant disks and systems
- Fire suppression systems in each computer room (recommended)
- Fire and smoke detectors at all facilities (recommended)
- Offline and offsite storage of critical data and documentation

In the event of a disaster, ACS will restore the VECTOR critical application at the location and to the systems provided by the SCDOT. The recovery strategy for SCDOT technology resources is as follows:

- In the event of a disaster, recover the VECTOR application, data, and communications to an alternate Data Center facility.
- In the event of a disaster at a lane and/or plaza, relocate and/or rebuild the lane and/or plaza at the SCDOT's discretion.
- In the event of a disaster, replace damaged server(s).
- Publish and distribute this Disaster Recovery Plan to be used as a reference for restoring VECTOR and supporting environments at the alternate site on the provided system(s).
- Maintain this plan as changes are made to the VECTOR environment, system design, and configuration.
- Maintain normal processing on this alternate site until normal operations can be migrated back to the primary site.

5.3 Assumptions

The procedures for recovering the ACS and SCDOT information technology components require the coordination of efforts across multiple departments and vendors. This disaster plan was developed under the following assumptions:

- This plan details activities that take place once a disaster has been declared; it does not describe disaster declaration criteria.
- The SCDOT will be responsible for addressing the recovery of non-ACS network(s), infrastructure, and communication components.
- This Plan does not address business continuity.
- The SCDOT's business continuity plan addresses the key metrics of recovery point objective (RPO) and recovery time objective (RTO) for various business processes.
- A physical disaster such as a hurricane, flood, bomb, etc., could lead to the loss of some data.

5.4 Limitations

This plan addresses the recovery of information technology resources that support the VECTOR ETC solution that is within the scope of ACS' control. The recovery of communication between the lane and the processing center, communications to statewide offices, and other SCDOT equipment provided by third party vendors are not topics within the scope of this document. The



recovery of those resources is the responsibility of the SCDOT and/or SCDOT contracted third party vendors.

5.5 Planning

5.5.1 Command Center and Alternate Processing Facilities

In the event of a disaster, the following location will serve as the command center for coordination of recovery operations.

Command Center Place Name		
100 First Avenue		
XXX, SC 29926		
Director		(843) 999-9999
Operations Manager		(843) 999-9999

In the event of a disaster, the following location will serve as the alternate site for SCDOT CSC and/or data processing center.

Alternate Processing Facility Place Name		
100 First Avenue		
XXX, SC 29926		
Director		(843) 999-9999
Operations Manager		(843) 999-9999

5.5.2 Off-site Storage Facilities

Section 4 of this document, Backup and Restoration Plan, describes the processes and schedules for creating backups of the CSC and plaza databases. The backup and data required to restore the VECTOR system is located at the following locations:

Tarrytown Data Center		
777 Old Saw Mill River Road		
Tarrytown, NY 10591		
Steve Dodge		(914) 789-6117
SCDOT Customer Service Center (CSC)		
4 Marshland Lane		
Hilton Head Island, SC 29926		

Mike Young (843) 683-9818

SCDOT Customer Service Center (Plaza)

Wachovia Bank

75 Matthews Dr.

Hilton Head Island, SC 29926

Mike Young

(843) 683-9818

5.5.3 Technical Recovery Team Organization

This section describes the organizational structure and responsibilities of the technical recovery team. It also documents the line of succession to identify personnel responsible to assume authority for executing the disaster recovery plan in the event the designated person is unavailable or unable to do so.

In the event of a disaster, the ACS Disaster Recovery Team's responsibility is to restore VECTOR data and application processing and ensure VECTOR processing continues. The following are the duties of each team member during a disaster. These responsibilities can and may be redirected by the Recovery Team Coordinator. In addition, members of the recovery team are expected to continue performing normal duties in a diminished capacity until data processing is restored at the primary site. Some ACS recovery team members may have overlapping responsibilities with the SCDOT technical recovery team.

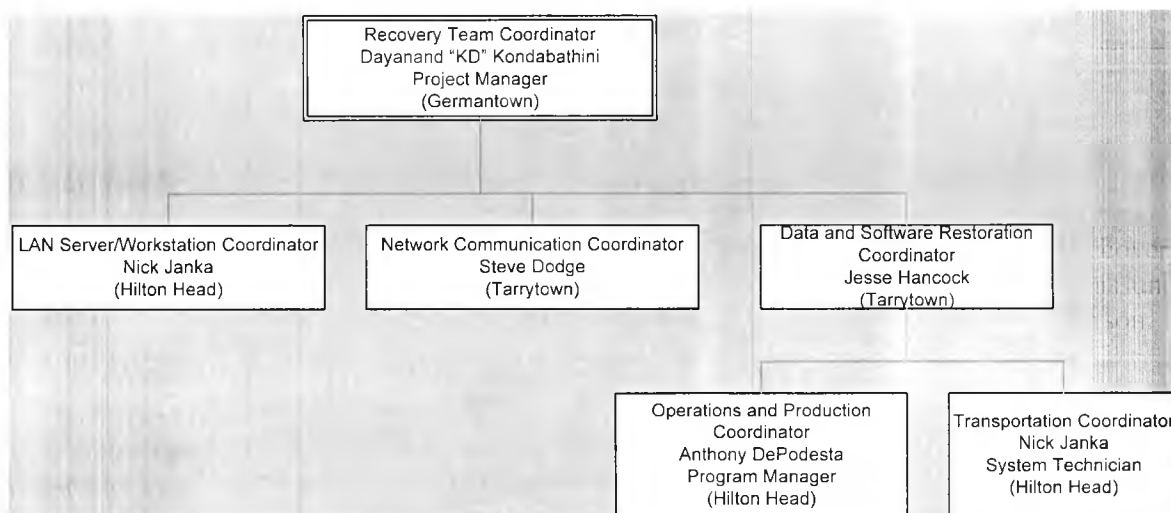


Figure 5-1: SCDOT Disaster Recovery Team Organization

5.5.4 Technical Recovery Team

The following is the name, assignment, and contact information for each recovery team member. It is critical that the Recovery Team Coordinator and the SCDOT check this information periodically to ensure that it is accurate.

Table 5-1: ACS Lane/Plaza Recovery Team

Name	Assignment	Cell	Office	Home
Steve Hamilton	Incident Commander	717-659-9077	(301) 820-4234	717-659-9077
Sal Laspatha	Alternate Incident Commander	908-482-1164	(732) 738-8655	732-671-7464
Anthony DePodesta	Operations Officer	(843) 683-9816	(843) 682-5550	(843) 683-9816
Christina Wright	Procurement Coordinator	None	(301) 820-4430	
Andrew Scaljon	Engineering Manager	(443) 306-6249	(301) 820-4205	(240) 686-1470
John Deppen	Software Engineering Lead	(856) 261-8607	(301) 820-4375	(301) 309-1461

Table 5-2: ACS CSC Recovery Team

Name	Assignment	Pager/Cell	Office	Home
Dayanand "KD" Kondabathini	Recovery Team Coordinator	(240) 422.2017	(301) 820-4376	(301) 874-6722
Karen Thaniel	Alternate	(410) 655-4753	(301) 820-4363	(443) 204-2339
Jesse Hancock	Data Recovery Coordinator		(979) 575-1516	
Manish Chourey	Software Recovery Coordinator	(240) 277-5035	(301) 820-4248	(301) 540-5132
Anthony DePodesta	Production Recovery Coordinator	(843) 683-9816	(843) 682-5550	(843) 683-9816
Mike Young	Alternate	(843) 683-9818	(843) 682-5542	(843) 683-9818
Steve Dodge	Communications Recovery Coordinator	(914) 456-9321	(914) 789-6117	(845) 452-3920
Jack Egloff	Alternate	(203) 240-4769	(914) 789-6117	(203) 438-5317
Nick Janka	LAN Workstations/Servers Recovery Coordinator	(843) 247-6126	(843) 682-5546	(843) 247-6126
Nick Janka	Transportation Coordinator	(843) 247-6126	(843) 682-5546	(843) 247-6126

Table 5-3: Key Agency Management Contacts

Name	Title	Phone	Email
SCDOT Agency Contacts			
Marge Dorey	Director of Toll Operations	803-737-0479 (O) 803-413-0356 (C)	DoreyMM@scdot.org
Carmen Wright	Director of Contract Services	803-737-1428 (O) xxx-xxx-xxxx (C)	wrightCL@scdot.org
Michael Covington	Director of Administration	803-737-0593 (O) xxx-xxx-xxxx (C)	covingtonMD@scdot.org
	SCDOT IT?		
	SCDOT Finance?		
	SCDOT Communications?		
	SCDOT Engineering?		
ACS Senior Management Leaders			
Satish Kolangara	Director of Project Delivery	(732) 543-6354	(301) 820-4219
Mark Shannon	Senior Director	(301) 537-7961	(301) 820-4297
Mark Cantelli	Senior Director	(240) 305-2228	(301) 820-4205
Susan Davis	Chief Operating Officer	(845) 323-1521	(973) 368-1571
Ken Philmus	Senior Vice President and Managing Director		(973) 368-1518

Table 5-4: Off-site Storage Contact Information (Plaza)

Contact	Cell Phone	Office Phone
Nick Janka	(843) 247-6126	(843) 682-5546
Mike Young	(843) 683-9818	(843) 682-5542

Table 5-5: Vendor Contact Information

Vendor	Address	Phone	Miscellaneous
Allied Telesyn	19800 North Creek Parkway, Suite 200 Bothell, WA 98011	(800) 428-4835	
AutoComm, Inc	1200 S. Lynndale Dr. Appleton, WI 54914	(800) 724-4896	

Vendor	Address	Phone	Miscellaneous
Black Box Baltimore	44873 Falcon Place Suite 118 Sterling, VA 20166	(703) 404-8885	
Computer Dynamics, Inc	7640 Pelham Road Greenville, SC, 29615	(864) 627-8800	
Control	6655 Wedgwood Road, Suite 120 Maple Grove, MN 55311-3646	(763) 494-4100 (763) 494-41992 fax	8:00am to 6:00pm CST
Cybertech Inc.,	935 Horsham Road, Suite 1 Horsham, PA	(215) 957-6220	
Eaton Vorad	13100 East Michigan Galesburg, MI 49053	(866) 788-6723	Rick Youngblood
EGS Electrical Group	9377 W. Higgins Road Rosemont, IL 60018	(877) 999-7652	
Grizzly Services	7387 Washington Blvd Suite 103 Elkridge MD 21075	(410) 796-0555	
HID Corporation	9292 Jeronimo Road Irvine, CA 92618-1905	(800) 872-5359	
Hewlett-Packard	301 Rockrimmon Blvd. South Colorado Springs, CO 80919 Map Stop 9-2H43	(916) 785-3635	Michael Avila
LADD Industries Customer Service	4849 Hempstead Station Drive Kettering, OH 45429	(800) 223-1236	
Magnetic Automation Corp	3160 Murrell Road, Rockledge, FL 32955	(321) 635-8585	Andy or Chris Fuchs
Mark IV Industries, Inc.	P.O. Box 810 Amherst, New York 14226	(716) 689 4972	
Newark InOne	197 Highway 18 S., Ste 205 East Brunswick, NJ 08816	(800) 463-9275 (732) 937-6600	
Opti-Forms	42310 Winchester Rd Temecula, CA 92590	(951) 296 1300	
Power Sources Unlimited, Inc.	200 Stonewall Blvd., Ste. 4 Wrentham, MA 02093-2210	(800) 966 PSUI (7784)	
PowerVolt Inc	300 Factory Rd Addison, IL 60101-5004	(888) 797-8658	
Pulnix	625 River Oaks Parkway San Jose, CA 95134	(800) 445-5444 (415) 699-9641	Scott Goetsch
Robinson Electric Distributors	2103 B Street Meridian, MS 39302	(601) 693-6711	

Vendor	Address	Phone	Miscellaneous
SICK	6900 W 110th St. Minneapolis, MN	(800) 325-7425	
Western Reserve Control	1485 Exeter Drive Akron, OH, 44306	(330) 733-6662 (330) 733-6663 fax	
Wireless Solutions	Global Logistics Center 11126 McCormick Road Hunt Valley, MD 21031	(410) 229-1000 (410) 527-0005 fax	
Hitachi Data Systems (HDS)		(800) 446-0744	
QSGI (IBM Tape Drives)		(866) 507-2094	
STK (StorageTek)		(800) 525-0369	Site Number 61422
IBM		(800) 426-7378	Customer Number 2353116
AMDAHL		800-538-8486	Site # 19361 Serial # 3100399 914-592-1204 dial-in line
HP (Digital Equipment)		Silver support 1-800-345-3746 Regular Support 1-800-633-3600	Note: Dial in # for hardware support: 914-347-2678. Must turn on modem in NOC located in 1st blue cabinet rack B4 - port 1 on modem.
SMS Systems Maintenance Services, Inc. for Compaq	Raymond E. Miura Supervisor, Field Service RMiura@sysmaint.com 475 S. Dean St Englewood, NJ 07631 cell: 516-983-8049 Vincent G Cavell, VP (ONLY with Kevin's Approval) 201-871-7115 VCavell@Sysmaint.com	201-871-7445 (8a-5p) 1-800-933-9547 (after hours) www.sysmaint.com	You will be asked the following questions: Which SMS office services you? What is your name? What is your company name? What is your call back number? What type of equipment are you having a problem with?
Iron Mountain	Rosendale, NY	88-365-IRON	

5.5.4.1 Recovery Team Coordinator

The Recovery Team Coordinator directs the functions for the entire plan. The coordinator is responsible for the following:

In the event of a disaster, direct all activities for the recovery team, transportation and equipment

- Develop and implement a disaster recovery training program
- Develop and implement a recovery exercise schedule
- Execute periodic disaster recovery plan exercises
- Maintain the disaster recovery plan
- Ensure the safe storage of disaster recovery materials including tapes, instructions, and documentation at designated off-site storage facilities in accordance with SCDOT policies
- Monitor the recovery functions and ensure the accuracy and quality of information technology systems being restored
- Review the recovery schedules to ensure application recover is completed within the established recovery time objectives
- Communicate the state of recovery operations to the SCDOT management team
- Coordinate the recovery of services to the primary site

5.5.4.2 Data and Software Recovery Coordinator

The Data and Software Restoration Coordinator is accountable for the restoration of the VECTOR application to close to or normal operation at the alternate site. The data and software restoration coordinator will report to the recovery team coordinator for the duration of the disaster. The following resources report to the data and software restoration coordinator for the duration of the disaster:

- Transportation Coordinator
- Operations and Production Coordinator

The Data and Software Restoration Coordinator has the following responsibilities:

- Transfer all necessary materials from offsite storage locations to the recovery site
(*Transportation Coordinator*)

- Restore, install, and test the VECTOR application and data on the recovery system
- Initiate production control and normal daily processing within VECTOR (*Operations and Production Coordinator*)
- Perform the required restoration back to the primary site as directed by the recovery team coordinator

5.5.4.3 Transportation Recovery Coordinator

The Transportation Coordinator is responsible for the transportation of the recovery materials from the offsite storage location to the alternate facility. The transportation coordinator reports to the data and software restoration coordinator for the duration of the disaster.

The Transportation Coordinator has the following responsibilities:

Transport the recovery materials such as backup tapes, instructions, and documentation from the offsite location to the alternate site

Perform periodic inventory inspection of the recovery material stored off-site to ensure the inventory list is valid and current

Ensure backup tapes are transported to and from the off-site storage vaults based on the tape rotation schedules for the duration of the disaster

Perform requested restoration tasks as directed by the data and software restoration coordinator

5.5.4.4 Production Recovery Coordinator

The Production Coordinator is responsible for the restoration of production and operations functionality at the alternate site. The production coordinator reports to the data and software restoration coordinator for the duration of the disaster.

The Production Coordinator has the following responsibilities:

- Support production processing at the alternate site
- Supervise production control and computer operator personnel
- Communicate system availability and status to end users
- Perform requested restoration tasks as directed by the data and software restoration coordinator

5.5.4.5 Communications Recovery Coordinator

The Communications Coordinator is responsible for the restoration of network communications between the client workstations, LAN server, and VECTOR servers at the alternate site. The communications coordinator reports to the data and software restoration coordinator for the duration of the disaster.

The Communications Coordinator has the following responsibilities:

- Install and test the necessary VECTOR client on the workstations
- Restore and/or configure gateways, routers, etc., for connectivity between the CSC and the alternate site
- Work with SCDOT personnel to restore and/or configure gateways, routers, etc., for connectivity between the data processing center and the alternate site
- Perform requested restoration tasks as directed by the recovery team coordinator

5.5.4.6 LAN Workstation/Server Recovery Coordinator

The LAN Server/Workstation Recovery Coordinator is responsible for the restoration of VECTOR Client software and functionality. The LAN server/workstation coordinator reports to the recovery team coordinator for the duration of the disaster.

The Communications Coordinator has the following responsibilities:

- Install and configure the VECTOR client on the desktop workstations
- Install and configure the VECTOR related web client on the desktop workstations
- Perform requested restoration tasks as directed by the Recovery Team Coordinator

5.5.5 SCDOT Recovery Vault Contents

The SCDOT recovery items maintained at the off-site storage location include:

- The ACS SCDOT Disaster Recovery Plan
- VECTOR Computer operations and procedures documentation
- VECTOR Operational Documentation (batch schedules, system configurations, runbooks, etc)
- VECTOR network diagram

- VECTOR critical username, password, and IP address list
- VECTOR application backup tapes
- VECTOR database backup tapes
- Disaster recovery detailed tape inventory reports
- Backup software manual and installation materials
- HP and/or other vendor hardware and software documentation
- LAN server backup tape(s) of server
- Network Operating System software installation CDs, licenses and documentation
- WAN Server and Communication device configuration, network name, network id, and IP address

The documents listed above are stored in ACS' document management system and physical artifacts such as tapes are stored in the locations as described throughout this document.

5.6 Disaster Declaration

The purpose of this Plan is to provide an organized and comprehensive approach to managing a major unplanned incident or significant disruption and to restore operations in a timely and effective manner. This plan outlines the necessary recovery actions and resources and provides a predetermined course of action for recovering SCDOT operations after a disaster is declared by appropriate SCDOT and ACS personnel.

This section identifies the personnel authorized to declare a disaster and outlines the initial actions taken once a system disruption or emergency has been detected or appears to be imminent. It also documents damage assessment procedures to quickly assess the nature and extent of damage to the system(s).

This plan will be used as a guideline in the event any of the following situations or conditions occurs alone or in a combination and a disaster is declared. The list is not intended to be a complete list of all possible situations that may cause a disaster to be declared.

- Water – intrusion of water or other liquids into lane/plaza, host or CSC equipment
- Fire – combustible or electric
- Infrastructure outages – power outages, drops, surges, utility outages, telecommunications failures, corrupt data, etc.

- Hardware or software failures – loss of network access, equipment overheating, magnetic destruction, hard disk failure, wear of equipment, etc.
- Sabotage by hackers, employees, system users, viruses, vandalism, etc.
- Accidental destruction of hardware, software, or data

5.6.1 Identify the Disaster

The first step in this disaster recovery plan is to identify the disaster. For the purpose of this plan, a disaster is any event that (SCDOT TO COMPLETE). Conditions such as extended power outages to the computer systems, fire, water, or other damage to the computer system would be considered disaster level events.

The SCDOT is responsible for providing all information, training, and continuing education to its employees as required by the Occupational Safety Health Act (OSHA) standards. SCDOT is also responsible for the safety and integrity of all buildings, toll plaza ramps, and any other county related facilities as required by the Uniform Building Code (UBC).

ACS is responsible for restorations of the VECTOR related functions and applications during the contract period.

5.6.2 Disaster Declaration Authority

The declaration of a disaster is a joint decision between the SCDOT and ACS. The following individuals are authorized to declare a disaster and invoke the recovery response and procedures in the document. The list is broken down by chain of command. In the event one of these individuals is not available, the next person on the list will assume authority for the declaration of the disaster.

Table 5-6: Disaster Declaration Authority

#	Name	Title
1	Marge Dorey	Director of Toll Operations
2	Carmen Wright	Director of Contract Services
3	Anthony DePodesta	Program Manager
4	Dayanand "KD" Kondabathini	Project Manager
5	Satish Kolangara	Director of Project Delivery

5.6.3 Damage Assessment Guidelines

In the event of a disaster, the Recovery Team Coordinator or an alternate will use the following checklist to identify the severity of the disaster.

Table 5-7: Preliminary Assessment Checklist

Resource(s)	Question(s)	Comment(s)
Power	Is the power off?	
	If so, how long has it been off?	
	When will you regain power?	
	Are all power sources affected?	
	If not, which power sources are affected?	
	What will be the quality and reliability of power after recovery?	
Hardware	Was the hardware shut down normally or was it a hard crash?	
	Which units, if any, are functioning?	
	How quickly can replacement units and/or parts be available?	
	Is the vendor/supplier involved?	
Software	Which software is affected?	
	How does the problem affect processing?	
	What corrective actions are being taken?	
Data	What data is lost and how easily can it be recovered?	
	How critical is the data?	
	What is the source of the data?	

Resource(s)	Question(s)	Comment(s)
Personnel	What is the current level of staffing relative to the needs of the emergency?	
	Are special arrangements needed?	
	Are special arrangements being planned?	

5.6.4 Disaster Recovery Plan Activation

Once the decision has been made to declare a disaster and activate this Plan, the SCDOT Recovery Team Coordinator will perform the following tasks to initiate the response procedures in Section 5 of this Plan.

Action	Status	Comments
Identify an available location for use as the command center.		
Initiate Contact of the Recovery Team personnel and inform them of the situation.		
Contact the alternate processing facility to inform the staff a disaster has been declared.		
Determine site availability, scheduling, and prioritization issues.		
Contact the SCDOT Disaster Recovery Plan Administration team leader or the highest-ranking SCDOT official.		
Provide to the team leaders information regarding the emergency and the steps that have been taken so far as a result of the disaster.		

5.7 Recovery Procedures

This plan documents the pre-established checklist for each of the Technical Recovery Team Coordinators or their alternates to follow after a disaster has been declared. These checklists address each coordinator's area of responsibility, and are designed to provide step-by-step instructions for the recovery response.

Table 5-8: VECTOR Application Restoration Checklist

Action	Status	Comments
Contact the Transportation Coordinator to ensure the off-site backup tapes and documentation are available for use at the alternate site		
Contact Data Center Support to ascertain the following: The VMS Operating system is available The Oracle database is available The VECTOR system(s) tape drive(s) are available for restore		
Restore the VECTOR Application according to the instructions in Appendix B using the most current backup tape(s)		
Restore VECTOR Oracle database according to the instructions in Appendix B using the most current backup tape(s)		
Test the VECTOR application		
Contact the Communication Coordinator to ensure the communication lines are available		
Report VECTOR application and communication availability to the Recovery Coordinator		

Table 5-9: VECTOR Database Restoration Checklist

Action	Status	Comments
Contact the Transportation Coordinator to ensure the off-site backup tapes and documentation are available for use at the alternate site		
Contact Data Center Support to ascertain the following: The VMS Operating system is available The Oracle database is available The VECTOR system(s) tape drive(s) are available for restore		
Restore VECTOR OracleRdB database according to the instructions in Appendix B using the most current backup tape(s)		
Test the VECTOR application		
Test the VECTOR database		
Contact the Communication Coordinator to ensure the communication lines are available		
Report VECTOR application, database and communication availability to the Recovery Coordinator		

Table 5-10: VECTOR Desktop Workstation Recovery Checklist

Action	Status	Comments
Establish contact with the SCDOT workstation equipment team		
Contact Data Center Support to ascertain the following: The workstation operating system has been restored The physical configuration of the workstation has been restored The workstation has access to the network		
Restore and configure the VECTOR client according to the instructions in Appendix B using the documentation from the recovery vault		
Test connecting to the VECTOR application using the client		
Report VECTOR workstation availability to the Recovery Coordinator		

5.7.1 VECTOR Network Communication Recovery Checklist

Action	Status	Comments
Establish contact with the SCDOT Network Communications Team		
Contact Data Center Support to ascertain the following:		
<ul style="list-style-type: none"> Connectivity between the lanes and the Plaza 		
<ul style="list-style-type: none"> Connectivity between the plaza and the DP Center 		
<ul style="list-style-type: none"> Connectivity between the DP center and the CSC 		
<ul style="list-style-type: none"> Connectivity between the CSC, DP center, and the Tarrytown data center 		
Verify connectivity between the workstations and the VECTOR application		
Verify connectivity between the workstations and the website		
Verify connectivity between all plazas and the data processing center		
Report VECTOR workstation, plaza, server, and site communication availability to the Recovery Coordinator		

5.8 Restoration of Services at Original Site

The procedure to return processing to the original site is similar to the steps to restore processing at the alternate site. The first step is to conduct a meeting of all interested parties involved in the restoration of service at the primary site. This meeting should be used to determine the specific actions to be taken and the assignment of responsibilities. In some cases, the responsibilities will follow those outlined in this document.

It is possible that the primary site may be at a different location than the original primary site. In all cases, the restoration planning must take into consideration the specific configurations and logistics related to the new primary site.

5.8.1 Restoration of Service Agenda

This is a sample meeting agenda to be used to commence restoration of processing at the primary site.

MEETING AGENDA

Subject: Restoration of VECTOR processing to the primary processing facilities

Meeting Date:

Attendees:

Items for Discussion:

- Determine current processing points and status of data site
- Review lessons learned during restoration at the alternate processing site
- Review errors and/or problems to avoid during restoration at primary site
- Draft schedules for the move back to the primary site
- Review SCDOT Recovery Team assignments
- Review off-site storage to ensure required tapes and documentation are available for recovery

Additional Discussion:

5.8.2 Primary Facility Checklist

The following checklist should be used to initiate recovery at the primary site:

Table 5-11: Primary Site Checklist

Action	Status	Comments
Refer to section 5 of this plan for the Recovery Team Responses and Procedures and perform the checklist items to restore the VECTOR application, database, and client to the primary processing site		
<i>VECTOR Application Restoration Checklist</i>		
<i>VECTOR Database Restoration Checklist</i>		
<i>VECTOR Desktop Workstation LAN Recovery Checklist</i>		
<i>VECTOR Network Communication Checklist</i>		

5.8.2.1 Primary Site Recovery Assumptions

The following is assumed prior to initiating the above checklist:

- The servers at the primary site have been recovered
- The web site at the Tarrytown data center has been recovered
- The network communication between the primary site and the plaza has been established

5.9 Post Recovery Assessment Report and Evaluation

Upon completion of the disaster recovery, a report must be prepared and reviewed by the Recovery and Executive Teams. All information that is inaccurate and/or needs revision must be a part of this report. Those areas requiring change should receive the most attention.

5.9.1 Post Recovery Report Topics

The following topics should be part of this report.

Table 5-12: Topics to Include in Post Recovery Report

Topic	Contents
Adequacy of Disaster Recovery Plan	<ul style="list-style-type: none"> Was recovery completed within the RTO? Was recovery completed within RPO? Was the plan content and ease of use adequate?
The efficiency of the Recovery teams	
An analysis of the team performance as a group	
An analysis of individual team member performance	
Effectiveness of the alternate site and resources	<ul style="list-style-type: none"> Was the alternate site accessible? Did the alternate site provide adequate computing resources for normal processing Was adequate technical support provide? Was the communication between the alternate site and the remaining facilities adequate?
The effectiveness of the off-site storage facilities	
The effectiveness of the off-site storage contents	
Compliances of service level agreements (SLA) by all parties	<p>Did the parties provide service in-line with the agreed level of performance, rates, and conditions?</p> <p>Were any non-contracted service required?</p>
Describe in detail any recommended changes to the existing Disaster Recovery Plan	

Appendix A – Hardware and Software Specification

The hardware and software requirements to run the VECTOR application are listed in detail in the *SCDOT Communication Plan* document. Listed in the *Communication Plan* is each piece of equipment currently installed and running the VECTOR application. This list is to be used as a guide for the replacement of equipment in the event of a disaster.

Appendix B – Communication Architecture

B.1 Communication Overview

The following is an overview of the communication and protocols used in the SCDOT network infrastructure. This information gives a general overview of the different communication process and protocols used in the SCDOT network infrastructure.

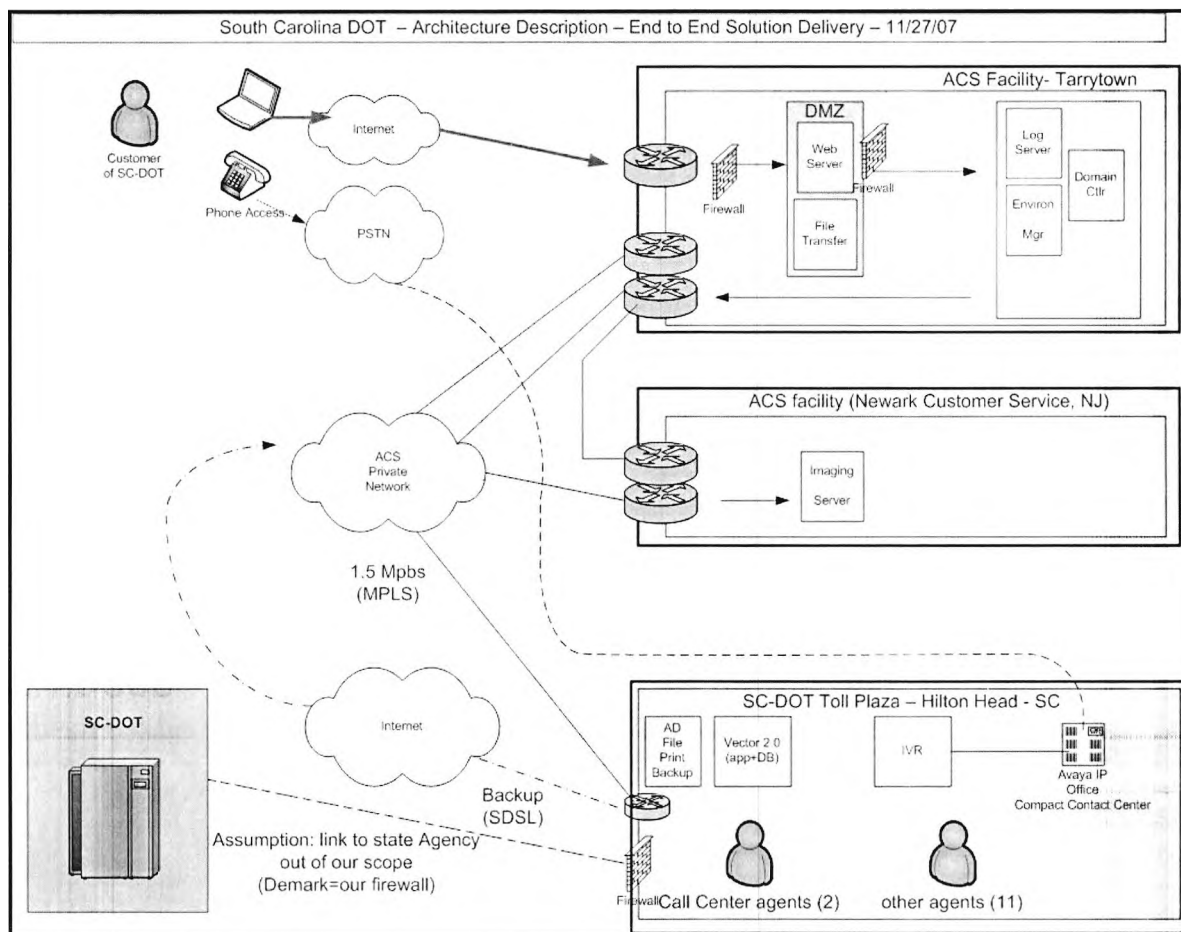
B.1.1 Communication Infrastructure

Table B-1: SCDOT Communication Infrastructure Overview

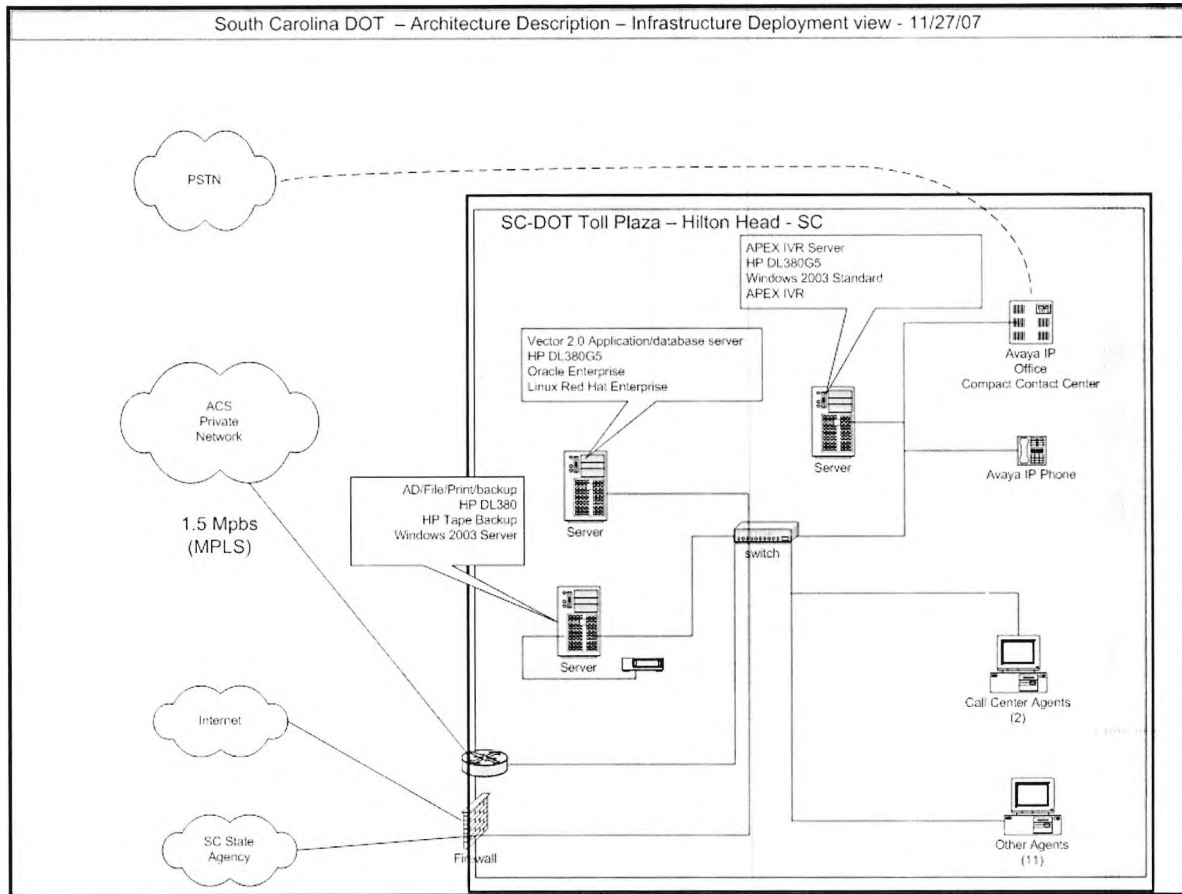
Environment	Infrastructure Overview
Lane Controller Communications	All lane transactions, diagnostics message, plaza messages, system updates, ETC validation tables, and maintenance messages from the Lane Controller will be immediately placed on the LAN by fiber optics and sent to the host computer for immediate processing and database storage. The MessageQ intelligent transaction routes will send the transaction to the host and plaza workstation automatically. The host computer continuously monitors the network connections to the lanes and notifies the plaza of a lane disconnect. The MOMS immediately notifies the maintenance staff. Lane controllers are connected to their local area network by Multimode Fiber Optics (MMFO) cabling, providing optimum connectivity to the host
Workstation Communications	All workstations are connected to the host computer by their local LAN connection as depicted in Workstation Connectivity. The workstations are equipped with 10BaseT Ethernet, Simple Network Management Protocol (SNMP) manageable, and Network Interface Cards (NIC). Category 5 UTP cable is installed from each workstation to its local network hub.
Physical Network	Each plaza is configured with a network hub, 10BaseT, 10BaseFL, and router modules providing LAN connectivity needed for the lanes, and WAN connectivity needed to integrate all plazas.
System Level Communications Network	The communications network design incorporates the latest technology in network operating systems, cabling, routers, and network interface cards.
HOST Communications	The host is located at the SCDOT computer facility. It is connected to the WAN by a Cisco 3640 router. The router also provides a LAN connection for interfacing with the existing local area network. The router is connected to the local TELCO system for connectivity to the WAN.

Environment	Infrastructure Overview
Plaza Communications	Each Plaza is configured with a DEC Multistack stackable Hub and a Cisco 2621 router providing the required connections to the LAN and WAN. Drawing ML-80, Multi-Facility Network Configurations displays the data path from the router.
Local Area Network	The Multistack hub is configured with a 16-port 10BaseT repeater, and 10 BaseFL repeaters providing connectivity to the printers, workstations, and personal computers associated with the plaza. The 90FL provides the local area network connectivity for lane controllers configured in a remote configuration. The following drawings depict the connectivity of each plaza in detail.

B.1.2 SCDOT Architecture Description – End-to-End Solution



B.1.3 SCDOT Architecture Description – Infrastructure





B.1.4 SCDOT Network Configuration

The following diagrams show the existing facilities each location that accesses the VECTOR application. Where possible, the location of existing workstation, printer, and ports are identified.

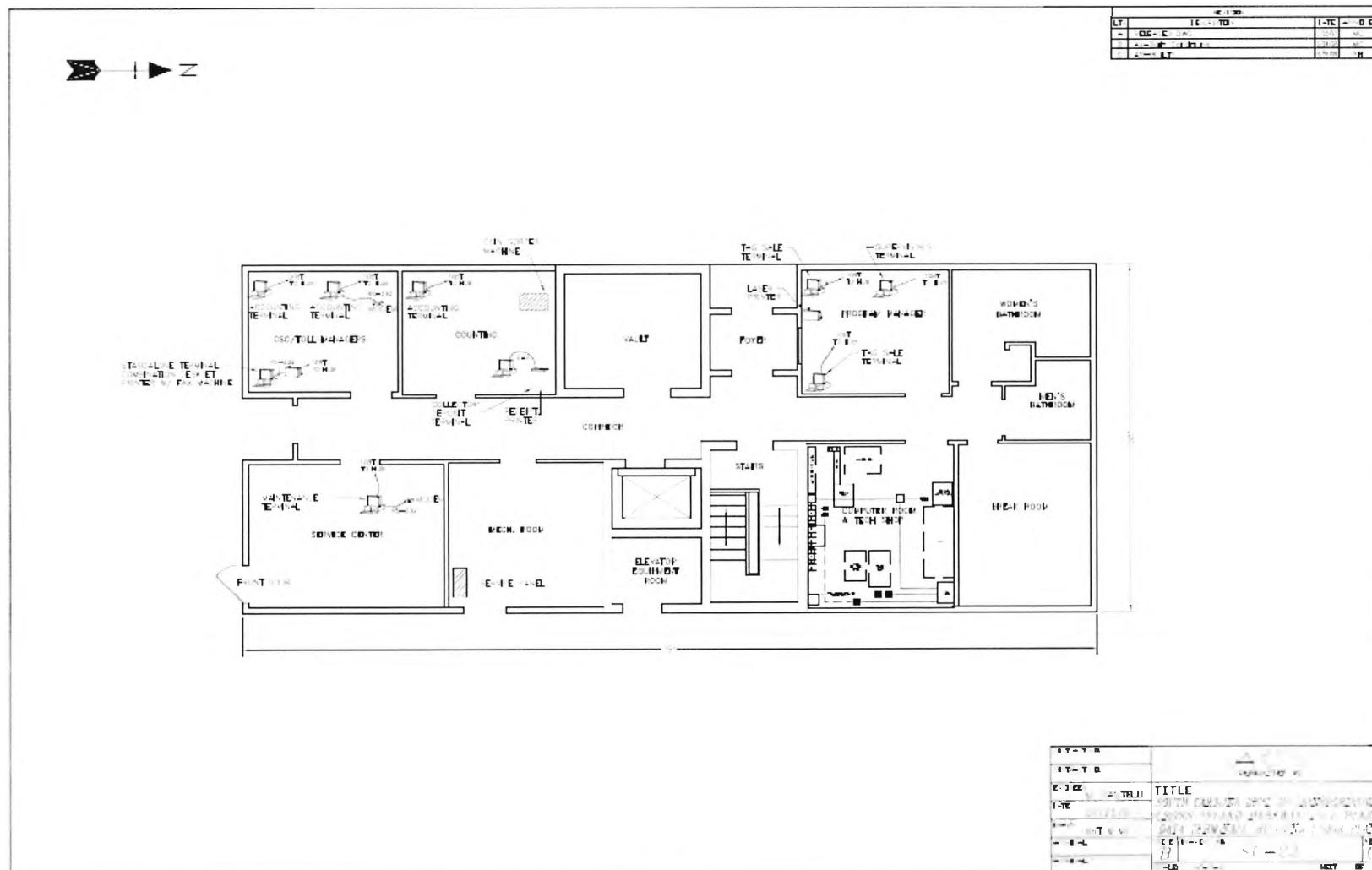


Figure B-0-2: CIP Building Floor Plan

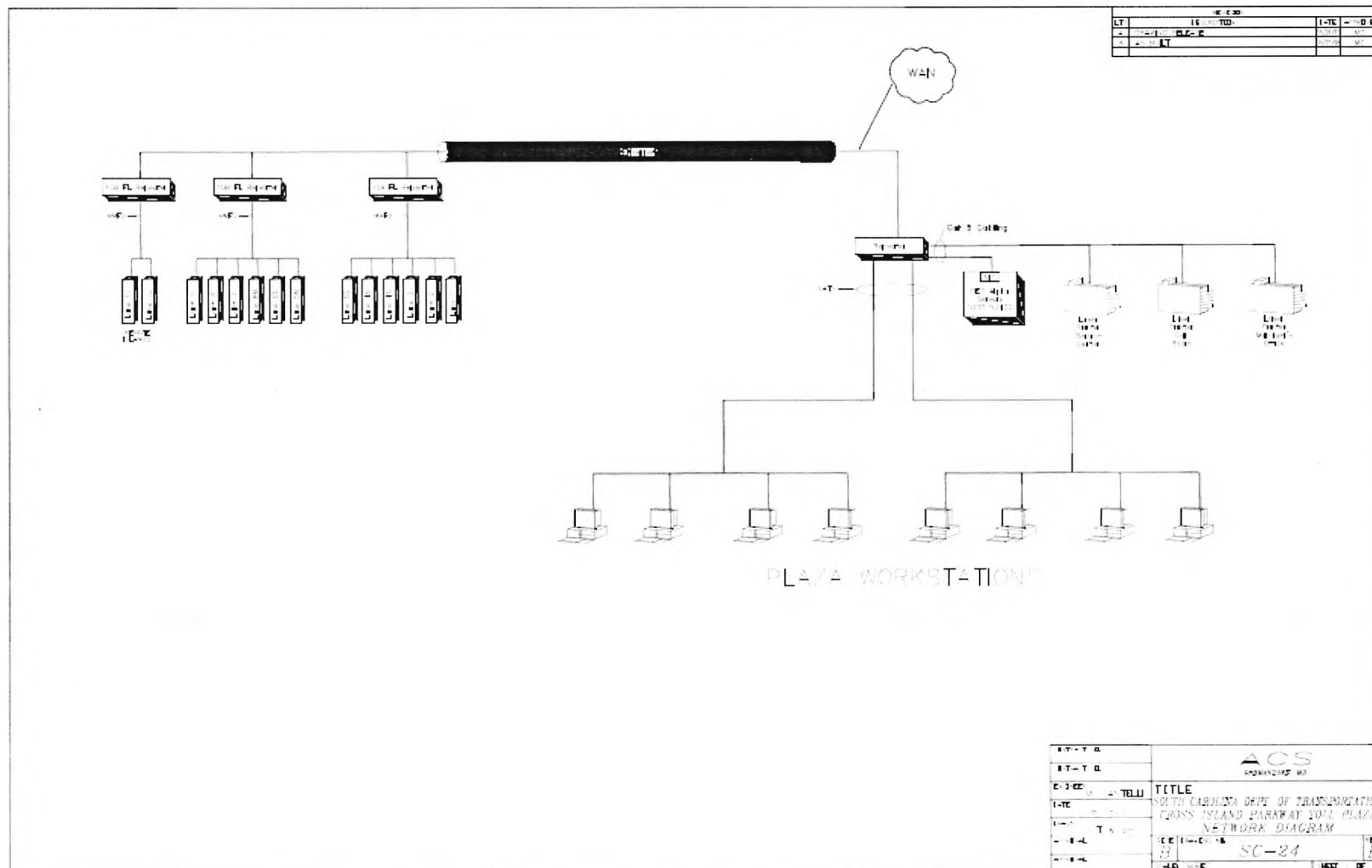


Figure B-0-3: CIP Network Diagram

B.1.5 Plaza/Lane Communication

The Plaza application was built using the JAVA/J2EE paradigm and uses IBM's Websphere application server to provide basic J2EE services. The Plaza application user interface was built on the MVC (Model View Control) design pattern as supported by the Struts framework. The application provides the functions necessary to monitor and control toll collection operations.

All Lane-to-Plaza Supervisor interfaces are handled using the XMS-JMS middleware. The JMS implementation on the Websphere application server uses MQ series for its robustness. The transaction data is stored into the plaza's database.

The Graphical User Interface (GUI) for plaza functions and logon mechanisms are documented in the plaza supervisor user manual.

The Plaza Supervisor subsystem is designed to perform several major functions:

- Ability to monitor detailed lane attributes from all lanes in all plaza
- Current operational mode of the lane (Dedicated ETC, Manual/ETC, Detour)
- Current state of the lane (Open, Closed, Standby), Color code of Red indicates the Entry gate is closed.
- ID of the toll collector currently logged in at the lane
- Ability to monitor the most recent detailed transaction attributes from all lanes at the plaza
 - o Axles indicated by the AVC system
 - o Axles indicated by the toll collector classification
 - o Axles read from the tag read (if present)
 - o Toll transaction revenue type (Cash, Non-Revenue, ETC)
 - o Toll amount paid
 - o CMMS health code (Color coded lane equipment health)
 - ☐ Green—lane health is satisfactory
 - ☐ Amber—lane is degraded but operational
 - ☐ Red—lane is degraded and needs immediate attention
- Lane grouping and display by traffic direction under two side-by-side directional windows for the plaza

- To view traffic data for all lanes by direction (North/South /East /West), the views will be configured at startup based on plaza configuration.

The lane controller immediately sends transaction messages, diagnostics messages, system updates, and maintenance messages to the plaza. VES images are transmitted by FTP from the Lane to the Plaza server via a process that runs on the lane controllers every 5 minutes.

Appendix C – Directions to Alternate Site

The following is the direction to the alternate site:

From Hilton Head Island CSC to Hardeeville, SC:

Start address: 4 Marshland Ln Hilton Head Island, SC 29926

End address: Hardeeville, S Carolina

Start at: 4 Marshland Ln Hilton Head Island, SC 29926

1. Head northeast on Marshland Ln toward Marshland Rd - 10.0 mi
 2. Turn left at Marshland Rd - 0.5 mi
 3. Turn right to merge onto Cross Island Hwy - 1.0 mi
 4. Slight right at US-278/Western Hwy - 0.5 mi, then follow US-278 - 21.1 mi
 5. Turn left onto the ramp to I-95 - 0.3 mi
 6. Merge onto I-95 - 0.5 mi
- Arrive at: Hardeeville, SC





Appendix D – Disaster Recovery Plan Update Request Form

Disaster Recovery Plan Update Request	
Requestor	
Phone Number	
Requested Changes:	1.
	2.
	3.
	4.
Please Sign if You Approve the Requested Changes	
Route for Approval	
Recovery Team Coordinator	
Data Restoration Coordinator	
Production Coordinator	
Network Communication	
Coordinator	
LAN/Workstation Coordinator	
Transportation Coordinator	

Appendix E - Acronym List

Acronyms	
Abbreviation	Definition
ACH	Automated Clearing House
ADM	Administrative Data Mailhouse
ATP	Automatic Transaction Posting
AVC	Automatic Vehicle Classification
AVI	Automatic Vehicle Identification
CAMS	Customer Account Management Subsystem
CAN	Canada
CC	Credit Card
CLMM	Class Mismatch
CSC	Customer Service Center
CSR	Customer Service Representative
CTOL	Casual Toll
DBA	Do Business As
DIMS	Device Inventory Management Subsystem
DISC	Discarded transactions (from Unmatched Handler)
DMV	Department of Motor Vehicles
EPH	Electronic Plaza Host
ETC	Electronic Toll Collection
ETOL	Electronic Toll
EXT	Exterior
FDD	Functional Description Document
FNDX	IAG Facility Operator Distribution Interface File
FNRX	IAG Facility Operator Reconciliation Interface File
FNTX	IAG Facility Operator Transaction Interface File
FPMS	Financial Processing Management Subsystem
FRXN	IAG Facility Operator Reconciliation Correction Interface File
FTAG	IAG Facility Operator Device Status Interface File
FTOL	Facility Operator Toll
FTP	File Transmission Protocol
FTXN	IAG Facility Operator Transaction Correction Interface File
GUI	Graphical User Interface

Acronyms	
Abbreviation	Definition
IAG	Inter-Agency Group
ICLP	IAG License Plate Interface File
ICRX	IAG Toll Reconciliation Interface File
ICTX	IAG Toll Transaction Interface File
ID	Identification (number)
IITC	IAG Invalid Device Interface File
INRX	IAG Non-Toll Reconciliation Interface File
INRX	IAG Non-Toll Reconciliation Interface File
INT	Interior
INTX	IAG Non-Toll Transaction Interface File
IPA	Internet Protocol Address
IRXC	IAG Toll Correction Reconciliation Interface File
IRXN	IAG Non-Toll Reconciliation Correction Interface File
ITAG	IAG Device Status File
ITGU	IAG Device Status Update File
ITOL	Image Toll (violation toll after image review)
ITXC	IAG Transaction Correction Interface File
JDBC	Java Database Connectivity
JSTL	Java Server Pages Standard Tag Libraries
JTA	Java Transaction API Resources
LCMS	Lane Controller Management Subsystem
LDAP	Lightweight Directory Access Protocol
LPMS	Lane/Plaza Management Subsystem
MOMS	Maintenance On-Line Management System
MOU	Memorandum Of Understanding
MTBF	Mean Time Between Failures
MTOL	Manual Toll
MTTR	Mean Time To Repair
MVA	Motor Vehicle Administration
MVC	Model View Control
NOL	Notice Of Liability
NPST	Not Posted
NSF	Non-Sufficient Funds
ORM	Object Relational Mapping

Acronyms	
Abbreviation	Definition
PC	Personal Computer
PDR	Payment Detail Report
PIN	Personal Identification Number
PM	Preventative Maintenance
PO	Purchase Order
POC	Point Of Contact
POI	Point of Issuance
POPS	Production Operations Performance Statistics
PR	Purchase Request
PROV	Province
REJC	Rejected Transactions
RFI	Request for Information
RFP	Request for Proposal
RFQ	Request for Quote
RMAN	Recovery Manager
SAMS	System Administration Management Subsystem
SASL	Simple Authentication and Security Layer
SOW	Statement of Work
ST	State
TE	Toll Evasion
TER	Territory
TIMS	Transportation Information Management System
TLS	Transport Layer Security
TOD	Tour of Duty
TOR	Transfer of Responsibility
TPMS	Transaction Processing Management Subsystem
TSC	Transportation Service Center
UCTX	Unmatched Handler Toll Transactions for Inclusion in ICTX File
UI	(Windows) User Interface
UNMA	Unmatched Transactions for the Unmatched Handler
UNTX	Unmatched Handler Non-toll Transactions for Inclusion in INTX File
USA	United States of America
UTOL	Unmatched Handler Toll
VCTX	Violations Tolls for Inclusion in ICTX File

Acronyms	
Abbreviation	Definition
VECTOR	Violation Enforcement Customer Service Toll Operations Reporting
VEMS	Violation Enforcement Management Subsystem
VES	Violation Enforcement System
VIOL	Violation Toll
VPC	Violations Processing Center
VRS	Voice Response System
VTOL	Violation Toll (before image review)
WAN	Wide Area Network
WTOL	Wave Toll
YTD	Year-to-Date



Contract Number: 07-S7442-A13264
Submittal Number: 07-S7422-SUB-008 Security Backup Recovery
Description/Title: Security Backup Recovery, Version 2.0
Date of Submission: 2009-05-29

No.	Page	Section	Comment	ACS Response
1.	Transmittal	General	<p>In Section 9 of the Maintenance Plan, this document is referred to as the "Security Backup and Disaster Recovery Plan" however as submitted, this contains no material on Disaster recovery.</p> <p>Also, in Section 9 of the Maintenance Plan, it states information on software maintenance activities can be found in this document. Where is that information?</p>	<p>This document has been rewritten, and this information can be found in Section 5.</p> <p>Please see Section 4.3.4.</p>
1. a		General	Does ACS have letters from either manufacturers or vendors stating that in case of a disaster, that ACS would have priority for part replacement? If yes, would ACS either provide SCDOT copies of such letters or written confirmation of such arrangement(s)?	ACS does not have letters from manufacturers or vendors regarding priority parts replacement.
1. b		General	When will the testing of this plan take place? One suggestion would be during the May lane/plaza testing when SCDOT staff would be present.	Backups are validated every time they are created. In addition, ACS performs a quarterly restore test.
1. c		General	How does ACS ensure that data is on backup tapes? Please describe.	A single file is restored to verify the tape is good. In addition, ACS performs a quarterly full restore test.
2.		Appendix	As in other submittals, would ACS please provide an Appendix with acronyms and abbreviations and their definitions?	Please see Appendix E.
3.		Appendix	Would ACS please provide an Appendix listing the Customer Service Center/Violations Processing System hardware and software?	Complete inventory lists were submitted to SCDOT on 5/9/09.

No.	Page	Section	Comment	ACS Response
4.		Appendix	Would ACS please provide an Appendix listing the plaza hardware and software/application components?	Complete inventory lists were submitted to SCDOT on 5/9/09.
5.		Appendix	Would ACS please provide an Appendix listing the lane hardware and software/application components?	Complete inventory lists were submitted to SCDOT on 5/9/09.
6.	1	1.1 Objective	Please change "South Carolina Transportation Authority" to "South Carolina Department of Transportation".	The document has been updated.
7.	1	1.1 Objective	The document is called the Security Backup Recovery Plan, but the Objective as presented seems to address only Backup and does not contain anything about Recovery.	This document has been rewritten.

No.	Page	Section	Comment	ACS Response
8.	1	1.1 Objective and 1.2 Scope	<p>Both sections state the focus of this material is on the Plaza server, Vector CSC Application, Vector CSC database and LAN Server. Does CSC include Violations Processing systems?</p> <p>Also, what about Backup and Recovery of <u>lane</u> data, systems and subsystems?</p> <p>What about the money room/cash handling systems?</p> <p>What about the <u>website</u>?*</p> <p>What about the Interactive Voice Response System (IVRS)?*</p> <p>*Note these two items are included in Table 1, but not referenced in the Scope or elsewhere.</p> <p>Please provide Tarrytown recovery plan.</p>	This document has been rewritten. Please review the new submission.
9.	1	1.1 Objective and 1.2 Scope	LAN Server backup is included in Section 1.1 but not in Section 1.2. Please clarify.	This document has been updated.
10.	1	Table 1	What is meant by "Houses equipment for Systems that SCDOT operates in-house..."? Please clarify.	This equipment is physically located in Tarrytown.
11.	1	1.3 Plan Maintenance	<p>Describes intent to perform annual reviews of the Plan. Would ACS please provide the baseline information to be reviewed/updated, including: organization, contact information, and vendors?</p> <p>Will ACS please provide SCDOT with updated documentation as a result of these annual reviews?</p>	All changes to the Plan are to be reported to Anthony DePodesta. All updates to this document will be provided to SCDOT.

No.	Page	Section	Comment	ACS Response
12.	2	1.4 Assumptions	Refers to only one third party vendor, but Backup and Recovery procedures actually require coordinated efforts with more than one third party vendor (e.g., Iron Mountain, Sunguard, others). Also, would ACS please clarify or elaborate on bulleted assumption?	This document has been updated. Please re-review.
12. a	2	1.5 Disclosures	Please explain why all the information within this document is "need to know".	This plan contains information about systems, data center facilities, and includes names and phone numbers of support staff, all of which is information that should be delivered only to a controlled group of personnel.
13.	3	2. Offsite Storage	Refers to "VECTOR ETC data..." Does this include all transactions data, including not only ETC transactions, but also cash and violations?	The document has been updated. It is all Vector data.
14.	3.	2. Offsite Storage	How are backup tapes sent to Iron Mountain? Where are the backup tapes sent to for the CIP?	An Iron Mountain security van picks up the tapes daily. Wachovia Bank
15.	3	2. Offsite Storage	What else, if anything, is stored offsite? What is the process for restoring data from offsite storage, should that be necessary?	Please see Section 5.

No.	Page	Section	Comment	ACS Response
16.	3	2.2 ACS Team Roles and Responsibilities	<p>This section seems to address Backup only and does not provide any information on Recovery and/or Restoration roles and responsibilities (which should address lane, plaza, CSC, web and IVRS).</p> <p>Please provide Team Members' contact information and responsibility for CIP, Germantown, MD and Tarrytown, NY.</p> <p>SCDOT Program Manager should also receive daily notification on the status of the backups.</p>	This document has been rewritten. Please re-review.
16. a	3	2.2.1 Offsite Storage Information	Please provide number for local contacts in Hilton Head, SC.	Please see Section 5 for contact information.
17.	4	3. Backup Recovery Response Procedures	No information is provided on the individuals and/or organization responsible for the procedures described in this section.	Please see Section 5 for contact information.
18.	4.	3.1 Backup Restoration Procedures	Please provide more information regarding the referenced "...attached tape drives..."	There are two TZ89 backup tape drives that are part of the Compaq TL892 tape library.
19.	4	3.1 Backup Restoration Procedures	<p>Please provide more information on the application disk referred to here.</p> <p>Also, perhaps the parentheses should be deleted from the 2nd sentence in the Application file backup paragraph?</p>	<p>The application disk is that disk on which the Vector application resides.</p> <p>Updated.</p>
20.	4	3.1 Backup Restoration Procedures	States "The daily backups are retained at Iron Mountain for 30 days." Then what happens? Please clarify.	They are reused; all tapes are bar coded and controlled by Iron Mountain and ACS.

No.	Page	Section	Comment	ACS Response
21.	4	3.1 Backup Restoration Procedures	As noted earlier, does not address restoration of the lanes, the plaza or other data, subsystems and/or systems. Please list out different databases and retention as separate items for all locations.	This document has been rewritten. Please re-review.
21. a	4	3.1.1 Plaza Server Backup Schedule	Does not address Plaza Server backup.	This document has been rewritten. Please re-review.
22.	5	3.1.3 VECTOR CSC Database Backup	Document ends with this table. Is this the entire submittal, or is something missing?	This document has been rewritten. Please re-review.