

VII - FIELD OPERATIONS

A - BACKGROUND

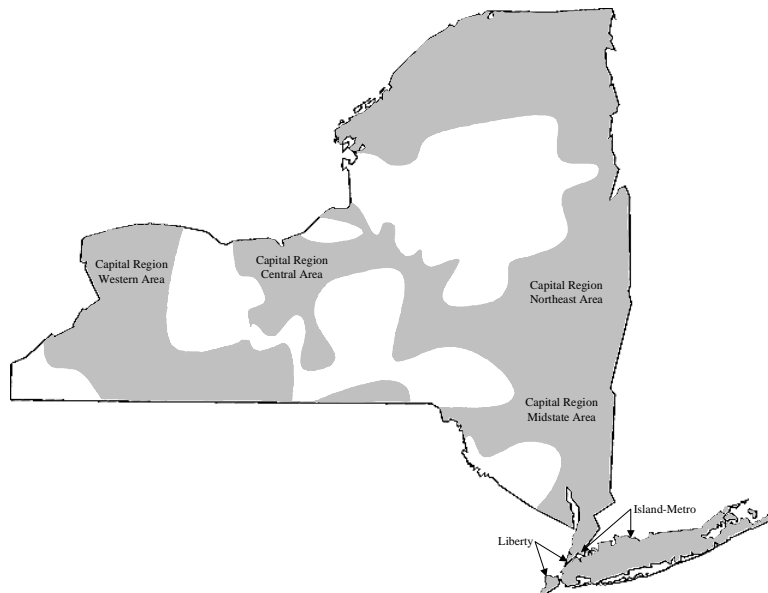
INSTALLATION AND MAINTENANCE

The Installation and Maintenance (I&M) organization at Verizon New York (Verizon NY) is assigned the responsibility for installation, repair, and maintenance of Verizon's outside plant (OSP) portion of the facility that provides customer service. The OSP is defined as all customer-service-providing facilities, from the central office (CO) to the end-user customer, both wholesale and retail, throughout the Verizon NY service territory.

The I&M organization, located within the Network Services Group of Verizon Communications, is structured on a geographic basis. It is divided into three Market Areas—Capital, Liberty, and Island Metro—within New York, as shown in *Exhibit VII-1*.

Exhibit VII-1

I&M MARKET AREAS



Note: Shaded areas identify Verizon as primary Local Exchange Carrier (LEC); other LECs may also operate in shaded areas

These Market Areas, although different in geographic size, are similar in many ways, as shown in *Exhibit VII-2*.

Exhibit VII-2

**I&M MARKET AREA COMPARISON AS OF OCTOBER 2003 AND AS REPORTED TO THE
NYPSC – DOES NOT INCLUDE SPECIAL SERVICES**

[redacted]

The service territory of each of these Market Areas is described below. Additionally, the following discussion includes a review of each Market Area's organizational structure, which is illustrated in *Exhibit VII-3*, *Exhibit VII-4*, and *Exhibit VII-5* for each area respectively.

- The Capital Market Area's geographic area extends from north of New York City to the Canadian border, and west to the New York State border with Canada and Pennsylvania. In essence, it is comprised of all territory north of the New York City metro area. Urban areas served include Westchester and Rockland counties, and the metropolitan areas of Albany, Buffalo, Syracuse, Binghamton, and Utica. The Market Area includes 402 central office entities, many of which are small in size. [redacted]

The total Market Area serves approximately [redacted] million access lines. The encompassed geographic area is quite large, and the workforce is dispersed accordingly. Customers served include both residential and general business.

Eleven Dispatch Resource Centers (DRCs) exist, four in Capital, four in Island Metro, and three in Liberty. The Market Area organization also includes a Director for the Construction organization. The Construction Director holds responsibility for the four geographic areas defined as Westchester/Rockland, Northeast, Central (Albany, Potsdam, Syracuse, Binghamton), and Western (Niagara Falls, Buffalo).

While the geographic sizes of the areas of responsibility vary widely, the number of access lines per Director is roughly the same. There are approximately 2,500 I&M associates in the Market Area, including those within the DRCs. Additionally, approximately 250 I&M management personnel are employed in the Market Area organization. For much of this area, the Market Area is responsible for Special Services as well as plain old telephone service (POTS).

- The Liberty Market Area’s geographic area includes the New York City boroughs of Manhattan, Brooklyn, and Staten Island. While relatively small in terms of geographic size, this service area is responsible for providing service to almost [redacted] million access lines. The Market Area is headed by a Market Area President, to whom three I&M Directors report. (There are also two CXM Directors for this Market Area, which will be discussed in *Section VII-B*.) In addition to the field forces, the Market Area contains four DRCs and includes 61 central office entities. An additional organizational difference for the Liberty Market Area exists in that the Market Area President also serves as the President of Empire City Subway.
- The Island Metro Market Area’s geographic area includes the New York City boroughs of Bronx and Queens as well as both of the counties that comprise Long Island. The Market Area is headed by a Market Area President, who has four director-level I&M organizations reporting directly to him. (As in the other Market Areas, there is a Director for CXM, a topic that will be discussed in *Section VII-B*.) Each of the I&M Directors maintains a DRC. The Market Area serves almost [redacted] million access lines but, with the recent reorganization, holds no responsibility for Special Services, this responsibility having been transferred to the Network Services Group. Island Metro is comprised of four districts—Bronx, Queens, Nassau, and Suffolk—with a Director in charge of each one. Four Dispatch Resource Centers exist, one for each of the I&M districts. The Market Area includes 75 central office entities, which range in size from quite small ([redacted]) to quite large ([redacted]).

Each Market Area is organized as shown in *Exhibit VII-3*, *Exhibit VII-4*, and *Exhibit VII-5*.

Exhibit VII-3

CAPITAL MARKET AREA ORGANIZATION

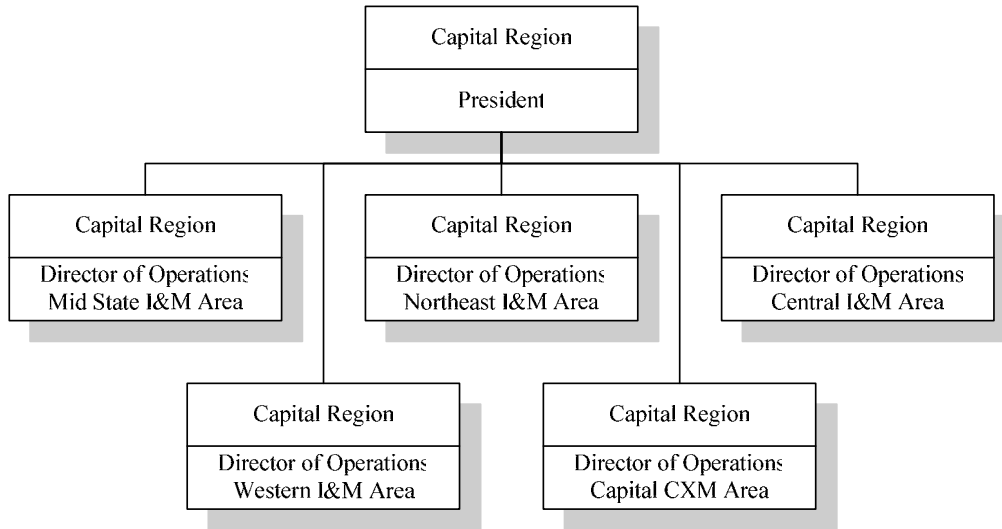
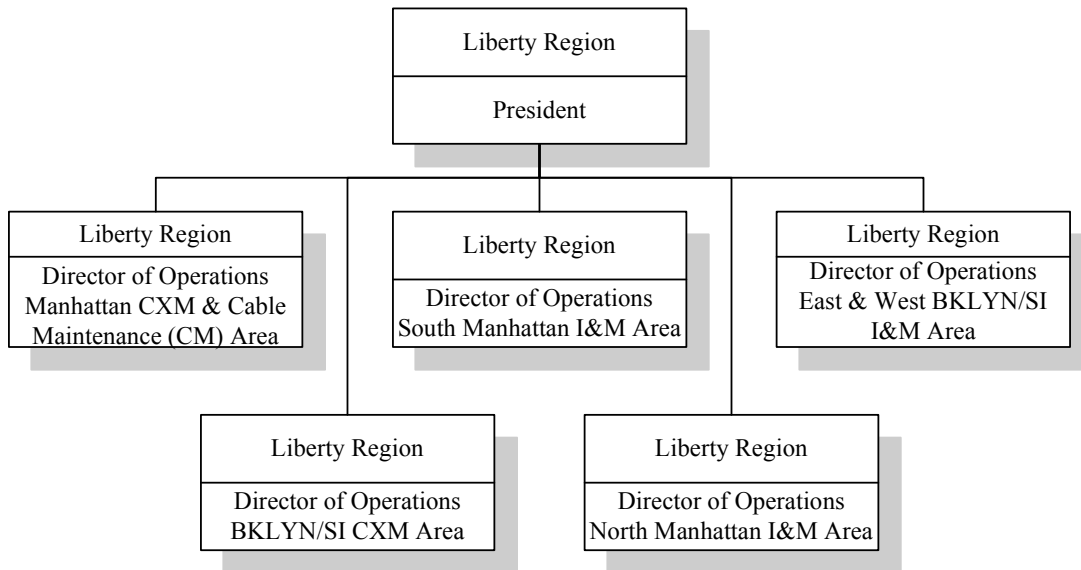


Exhibit VII-4

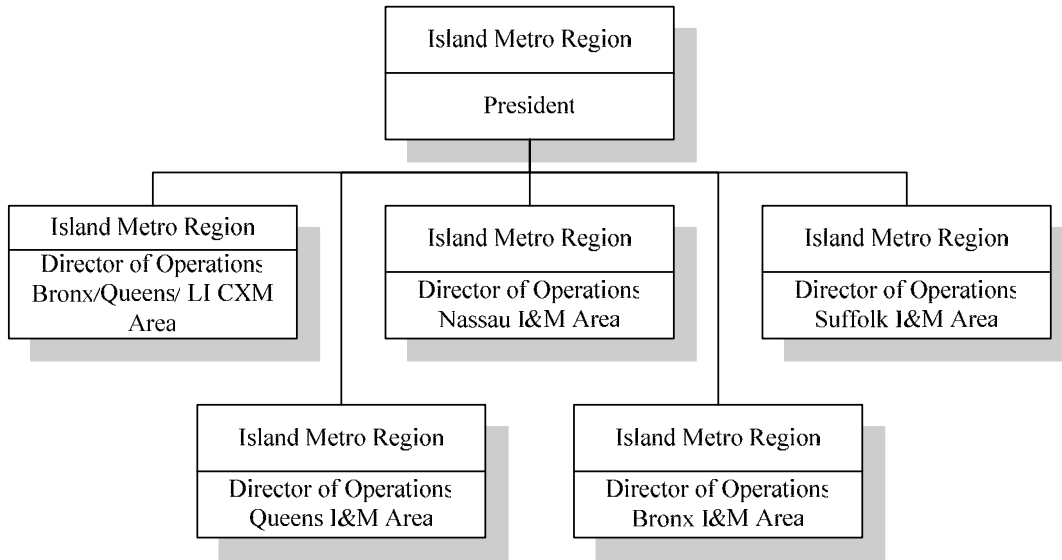
LIBERTY MARKET AREA ORGANIZATION



Note: The Director of Operations for BKLYN/SI CXM also has the Cable Maintenance (CM) Area.

Exhibit VII-5

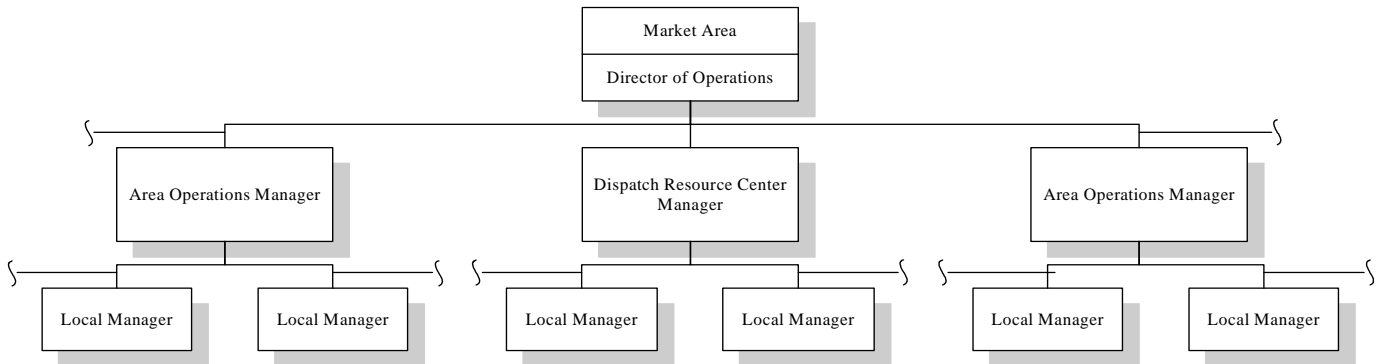
ISLAND METRO MARKET AREA ORGANIZATION



Each Market Area’s individual area is typically organized as shown on *Exhibit VII-6*.

Exhibit VII-6

TYPICAL AREA ORGANIZATION



Within most service areas of Verizon NY’s service territory, the I&M organization is comprised of four types of employees:

- The Installation and Repair (I&R) group holds responsibility for installation and repair of service to the end-user customer. The expectation is that this group will perform service for either an installation or a customer trouble that is located in accessible plant, at least as far as they are trained to do. In practice, however, these technicians typically work from the serving terminal to the network interface device (NID) or some other point of demarcation. Trouble conditions that cannot be corrected in this manner are handled via a “pair swap” to a good facility or by handing the condition off to Cable Maintenance for completion. In those situations when the customer chooses to subscribe to an inside wiring maintenance plan or agrees to time and material charges, thereby giving Verizon NY the responsibility for service repair to the customer premise equipment (CPE), the technician will work on the customer side of the demarcation. I&R technicians are usually provided vans and are equipped with telephony equipment, such as the Sidekick test set. However, in Manhattan, the technicians maintain walking routes because of the difficulty involved with parking and garaging vehicles.
- The Cable Maintenance (CM) group holds responsibility for the repair of customer troubles that are found to be related to non-accessible telephone cable. Non-accessible means the cable is entrenched in the underground portion of the plant or, in the case of an aerial plant, would require opening of the cable’s sheath. However, given the hand-off situation noted in the preceding paragraph, in many cases the CM technician is clearing trouble conditions in accessible plant. It should be noted that in some rural areas, the I&R and CM groups are merged, at least to some extent, by the use of Universal Technicians. Universal Technicians are dually capable in that they can handle both the I&R and CM work portions. The presence of a Universal Technician increases the likelihood that the trouble will be corrected rather than simply handed-off, although the propensity for “pair swaps” still exists. These technicians are equipped with a bucket or high cube truck and with more sophisticated equipment, such as the Dynatel 965 and the Sidekick test sets.
- Notwithstanding the types of technicians noted above (as determined by their job qualification in the Work Force Administration – Dispatch Out (WFA-DO) dispatch system), there are only two job classifications for Field Technicians (FTs) as defined by the union contract:
 - **Field Technicians** – This classification accounts for the vast majority of FTs within the I&M organization. FTs that are classified as “Field Technicians” can be Specials Technicians, I&R Technicians, Universal Technicians, or Cable Maintenance technicians. No matter their title, however, all have the same job classification under the union contract.

- *Technical Training Associates (TTAs)* – This classification is reserved for Verizon NY employees who apply for and are accepted into the Technical Training Program. Under the terms of the program, employees work toward a college degree in a telecommunications-related field of study, part of which is done during their regular working hours. Because of the self-improvement efforts they put forth, TTAs are paid at a slightly higher hourly wage rate.
- The Dispatch Resource Center is responsible for monitoring the installation and repair load and for dispatching the appropriate FT to handle the required work. The DRC also coordinates the handling of, and response to, New York Public Service Commission (NYPSC) complaints that fall within the I&M area. In addition, the DRC responds to escalations from other organizations. The DRC Manager, in coordination with the field Area Operations Managers (AOMs), will typically make the final decision on the use of overtime by the field and/or the borrowing of technicians from Construction.
- The Special Services group is responsible for the installation and repair of both complex business services and advanced technologies. In some of the rural service areas (e.g., Capital Market Area) that DCI consultants visited, where there are small volumes of Special Services to be worked, the Special Services FTs are included under the Cable Maintenance group. In the New York City metropolitan area, the Special Services groups have recently been transferred from the Enterprise organization to the Network Services Group. These groups are not part of the Market Area organization but report instead to a VP of Field Operations, who holds responsibility for Special Services for the Eastern seaboard (with certain exceptions as noted under the Capital Market Area above).

In the field, the associates report to first-level managers known as Local Managers or Foremen. Each Local Manager has a span of control that is targeted to include no more than about 15 Field Technicians. An exception to this rule occurs in temporary situations, where the Local Manager is covering a larger territory, pending the assignment of another Local Manager. The Local Managers are responsible for supervising their assigned technicians, for assisting them while in the field, for training and encouraging them to improve their safety, quantity, and quality of work, and for coordinating with the DRC on dispatched work to ensure it is completed in a timely manner. As an aid in the identification of training and development needs, the Local Managers are also responsible for performing monthly quality and safety inspections and for providing feedback to their assigned technicians. While the Local Managers have traditionally played both supervisory and administrative roles, plans are underway, with current appointments being made, to create global positioning system (GPS) analyst positions for each of the Field AOMs and GPS Administrators under each I&M Director. One of the objectives is that these positions will provide support to the supervisory managers, thereby allowing them to spend much more of their time in the field working with their associates.

In the DRC, the Local Managers who are charged with supervisory duties perform similar functions to those discussed for outside supervisors. However, within the center two different roles exist, with a number of managers performing specialized functions, such as administration (supporting the supervisors with tracking of absences, scheduling shifts

and vacations, etc.), handling of New York Public Service Commission complaints, monitoring of service orders, training, and performance of quality analysis.

It is the responsibility of the second-level AOMs to manage the overall work in their assigned geographic service territory. This task is generally accomplished through monitoring of the area's overall performance and via close management of their assigned first-level managers. In general, the AOMs' primary-assigned priorities include the achievement of both their established budgets and their customer service targets as well as the improvement of productivity.

The I&M Directors and AOMs are measured against service results that include the Verizon Incentive Plan (VIP) Retail Service Quality Plan in New York, the Customer Care Index (CCI) scores, and human resource results, which include safety, training (number of days per employee each year), and absenteeism. Cost measures include expense performance against budget, overtime used, number of repair and installation dispatches against budget, and productivity accomplishments against forecast. Quality of work measures include repeat reports for customer trouble reports, trouble reports returned as no access, "I" Reports for installations, repair and installation rework (non-productive dispatches), and pair swaps.

Staffing Levels

Staffing levels in the I&M organization have shown an overall decrease between December 2000 and March 2004, as shown in *Exhibit VII-7*.

Exhibit VII-7

APPROXIMATE I&M STAFFING LEVELS

[redacted]

To determine the projected I&M staffing levels in each of the service territory areas, the Verizon NY budgeting group forecasts the dispatch load and productivity levels. The staffing numbers are then presented to the Market Area Presidents and a consensus is reached on the final number of personnel. At the same time, targets are also set for overtime. The AOM coordinates with the DRC for decisions concerning the use of overtime hours by the I&M group.

In an effort to reduce the requirement for borrowing FTs from the CXM group in the summer of 2004, it was announced in April 2004 that approximately 250 summer temporary employees would be hired. The intention is that these temporary employees will participate in a two-week training (boot camp) session that will teach them the basic I&R concepts. Following this training, these employees will ride along with an experienced FT. They will then be assigned to handle simple installation jobs, thereby freeing up experienced FTs for more complex I&R jobs.

Business Processes**Dispatch Function**

The Dispatch Resource Centers are responsible for monitoring and managing the demand load for installation and repair. The DRC uses the Work Force Administration – Dispatch Out (WFA-DO) system for the assignment of work to Field Technicians. The main priorities of the DRCs are to consistently achieve the VIP targets and to ensure parity of service for wholesale versus retail customers. The DRC employs a Dynamic Dispatch System that sorts through the system's active jobs and assigns the next job in the geographic proximity with the highest priority to the next available FT who has attributes qualifying him/her for that job. The DRC may also bulk load some portion of the installation dispatches so that when the technician picks up assignments in the morning, he/she is presented with his/her work for the day or a major portion thereof.

The quantity of dynamic dispatches versus those that are bulk loaded is constantly changing, based on the load, the mix of installs and troubles, and the time of day. The DRCs use the Verizon dispatch priority matrix when setting up the order of dispatches. The Verizon Priority Dispatch Matrix is embedded in the WFA-DO weighting tables and calculates the order in which trouble reports and installation jobs are dispatched. Under the dispatch matrix, competitive local exchange carriers (CLECs), or wholesale customers, are treated the same as retail customers to ensure that parity with retail is maintained. As an integral part of managing the load and internal/external measurements (including customer satisfaction), the DRCs have the overall responsibility for clock management, including changing the installation intervals and the repair appointment clocks. Normally, under average repair and installation loads, business repair is kept on a five-hour “rolling clock,” usually somewhere between 11:00 A.M. and 1:00 P.M., depending on the workload and workforce available. Residential repair requests received after that point in time will be “rolled,” or scheduled for the next workday.

While the dispatched installation load remains the major focus area for the DRC, they also test non-premise visit (NPV) orders that flow through to completion without a dispatch. If the order tests with a trouble condition, the DRC attempts to contact the customer on the same day as the due date to schedule an installation dispatch. If the customer reports trouble after the order completes, the order is dispatched as a trouble report.

Craft Access Terminals

The I&M FTs use units called Craft Access Terminals (CATs) to communicate with the DRC for the purposes of closing out jobs and picking up new work assignments. The units that are currently in use were manufactured by Melard Technologies, Inc., which is now out of business. The FTs use a dialup connection to the Integrated Field Access System (IFAS), which provides an interface to the dispatch system, test systems, and other systems that allow the technician to perform various work functions without human assistance. The standard work procedure states that the IFAS is to be accessed from the customer network interface device (NID) where the work is being performed or, when that is not a possibility, the nearest cross box or other network access.

Service Excellence Plan

In an effort to improve productivity and quality of work, Verizon NY implemented the Service Excellence Plan (SEP) in July 2001. The SEP is a union-management “bargained-for” plan that sets standards for both the quality and quantity of work performed by the FT. The initial standards were established as the averages attained by each work group for the period spanning January 1, 2001 through June 30, 2001. It was intended that the standards would be periodically revised to reflect alternate periods, but they were not actually adjusted until October 2003. While the Local Managers are held to the SEP guidelines as minimum performance levels for their FTs, they also have separate productivity targets, which are established for each garage. These manager-specific targets are generally higher than the levels prescribed in the SEP. The Local

Managers hold responsibility for the SEP's administration. During interviews conducted by DCI, Verizon managers often noted an administrative burden associated with the SEP.

The SEP was implemented for the purpose of improving the service delivery of every employee in the Verizon NY I&M organization. Its stated intention was:

“Through the utilization of a comprehensive and effective set of employee standards that improve operating efficiency and are consistent with the needs and expectations of our customers, Verizon can meet these goals and increase employment security. The process is designed to align performance with customer expectations through continuous performance improvement and career development.”

It was designed to achieve the following:

“The SEP is an objective evaluation of all employees based on appropriate statistical measurements and direct observations of the employee's work. It is intended to ensure that all employees meet standards of satisfactory quality and productivity performance for providing customer service expectations.”

Quality of work is defined as including: “the completeness, neatness, accuracy, and acceptability of work performed by the employee compared to expected results.” Productivity is defined as the quantity of work performed and “includes the amount of acceptable work completed within a given timeframe as compared to expected results.”

In those cases when an employee does not meet the established performance or quality standards, a Performance Improvement Plan (PIP) is developed to assist the subject employee in improving his/her performance. Employees who do not make their productivity or rework targets under SEP are assigned to a series of “steps” (starting with a discussion and progressing through termination), depending on the number of violations the employee has over a given period of time.

Global Positioning System

Verizon NY has installed global positioning system (GPS) transmitters in each of the I&M vehicles. Access to such a system provides Local Managers with real-time and historical information on the location of each vehicle, its travel history, and the amount of time that was spent at each location. Utilization of the data from the system was initially inconsistent and ineffective in many locations, so the position of a GPS Analyst has been, or is being, established for each AOM. The GPS Analyst holds responsibility for monitoring and analyzing each FT's accumulated GPS data. Upon identification of a potential problem, this data is transmitted to the appropriate Local Manager for further investigation and action, if required. The GPS data is also available to first-level managers in the DRCs and to field managers on a real-time basis but is not currently being employed for dispatching purposes.

Competitive Market Performance System (CMPS)

The Competitive Market Performance System (CMPS) is a Web-based system that accumulates and reports the daily, weekly, and monthly productivity and quality of Verizon NY I&M FTs. The reports are produced by merging data from the Work Force Administration – Dispatch Out (WFA-DO) and Common Time Labor Reporting (CTLR) systems with the Automated Work Assignment System (AWAS) and the Reporting and Distribution Module (RDM) of Verizon’s payroll system. Each of the reports represents a count of I&M dispatches, completions, hours, I-codes, and originating repeaters. I&M managers have the ability to access and download this data using the Verizon Intranet. The CMPS generates daily, weekly, and monthly standardized reports, in addition to its ad hoc reporting capabilities. It is the stated responsibility of all I&M Local Managers to review the work performance of each FT and to give that employee the appropriate feedback. The system also has the capability of providing “rolled up” reports at any level of management as requested by the user.

FTs record their daily activities and their job completion details in a manner that varies according to Market Area. For example:

- Most FTs across the service territory record their job completions by using a CAT, although in Ithaca, because of continuing electrical and mechanical problems with the CATs, the FTs record the data directly into the IFAS through computer terminals located in the garage.
- In some areas, FTs fill out daily Route Sheet forms or daily timesheets in hardcopy (in addition to entering the data in their CATs), which contain the details of the jobs performed using information taken from their CATs. Some FTs are also required to complete a hardcopy “Customer Call Back Sheet” for each dispatch.
- In most areas, the FTs fill out Work Authorization/Completion Acknowledgement forms in hardcopy (also called running sheets) in addition to entering the data in their CATs. The format and layout of these sheets were found to vary across the state, although the relevant Service Delivery Method and Procedure Release (Doc. No. 200100199-MDP, Issue Date: 8/31/2001) attempted to standardize all information on one form. It was stated that these duplicative forms were used because the CAT’s automated linkage to the billing system does not always function properly. As a result, the manual forms are used as backups by the Local Managers to ensure that they have the proper data on work completions, particularly in those situations in which the work is billable.

Customer Communication

In an effort to improve and increase the level of communication between the FTs and customers, Verizon has implemented a “Five Points of Customer Contact” program. This program’s intent is to standardize the process of communication between the FT and the customer through the establishment of specific process steps, which are defined to include the following:

1. Call the customer in advance.
2. See the customer first when arriving at the site.
3. Keep the customer informed of progress every 90 minutes.
4. Advise the customer when the work is complete and explain to him/her what was done to correct the problem.
5. Call back to confirm that the work done has satisfied the customer’s requirements.

Safety

The Local Managers are generally responsible for the administration of the safety program. The standard practice is to have weekly morning “tailgate” meetings in each garage, with follow-up on individual technicians when the Local Manager is in the field. In addition to local topics covered in the weekly meetings, Verizon Corporate Safety sends out lesson plans once per month for review at the regularly scheduled meetings.

In response to some informal feedback from DCI to the management of Verizon NY during the course of the audit, the company has responded by assigning a district-level safety champion in each Market Area to ensure that the safety program is being followed.

Quality

The Local Managers are also responsible for performing quality reviews on the work completed by their assigned FTs as well as on work that is still in progress. The Local Managers are required to perform the equivalent of one quality inspection per FT per month. Some reviews of operations are conducted by the Market Area Operations Staffs (previously called ROSs). Although they report organizationally to the Northeast Region Senior Vice President, ROSs support each Market Area. In addition, during March 2003, an Operations Analysis Team (OAT) comprised of peer reviewers from throughout Verizon conducted an in-depth analysis of the Island Metro Market Area.

NETWORK CONSTRUCTION

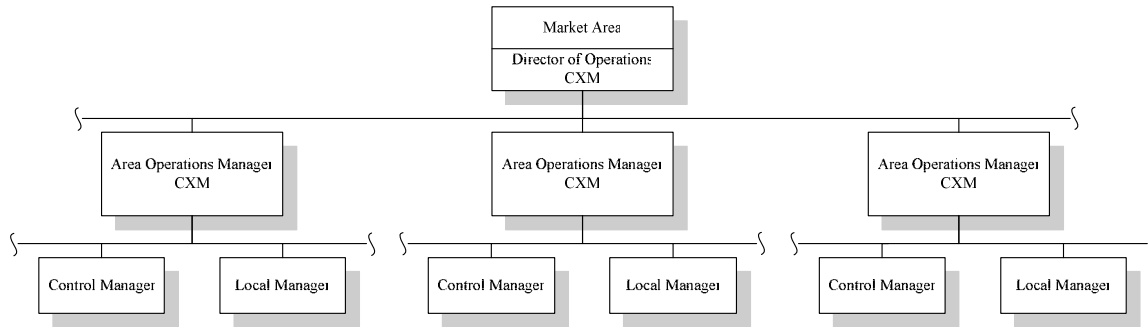
The Construction organization at Verizon New York is generally referred to as the CXM group, with CXM being the acronym for Capital, Removal, and Maintenance. The CXM organization's primary-assigned responsibility is the placement and splicing of aerial, underground, and buried cable throughout the Verizon NY service territory. The group also holds responsibility for Proactive Cable Maintenance (PCM), air pressure build out and maintenance, and equipment installation and turn-up in controlled environmental vaults (CEVs) and at digital loop carrier (DLC) sites.

Organizational Structure

The CXM organization is included in the Market Area organization structure as discussed in the I&M section above. In both the Capital and Island Metro Market Areas, a Director-CXM exists who reports directly to his/her respective Market Area President. In the Liberty Market Area, a Director-CXM for Brooklyn/Staten Island and a Director-CXM/CM for Manhattan exist, both of whom also have Market-Area-wide responsibility for cable maintenance. Both positions report directly to the Market Area President.

The CXM organization is shown for each Market Area as outlined in *Exhibit VII-3*, *Exhibit VII-4*, and *Exhibit VII-5*. The typical director-level construction organization is as shown in *Exhibit VII-8*, with the appropriate number of AOM second levels to support the geography covered. Generally, there is one Construction Control Center that reports to the Director, but in Manhattan there are currently two centers (Manhattan North and South) with plans to consolidate them into one center.

Exhibit VII-8

CXM AREA ORGANIZATION

The CXM first-level managers are known as Local Managers or Foremen. Each Local Manager has a span of control that averages about 12 to 15 Field Technicians. An exception occurs in the case of temporary situations, where the Local Manager is covering a larger territory while a vacant position is being filled. The Local Managers are responsible for assigning jobs to crews and for monitoring the progress and quality of the jobs through completion. Each Local Manager is responsible for performing inspections on 200 quality units per month. To determine the correctness of the jobs and any special requirements that might be needed, the Local Managers perform pre-surveys, to the maximum extent possible, on the larger jobs.

The CXM Field Technicians are generally divided into three functional areas:

- Linemen, who are responsible for the placement of both copper and fiber optic cable
- Splicers, who are responsible for the splicing of both copper and fiber optic cable that has been placed
- The Proact Group, which is responsible for shooting troubles based on PREDICTOR patterns, tone and marking, replacing batteries in remote locations, replacing dryers, monitoring dryer alarms, shooting cable troubles, and fixing air leaks

In addition, some areas of Verizon NY have two additional functional groups, depending on the requirements of the geographical territory. Some areas have a Mechanized Loop Testing (MLT) group, which is responsible for ensuring that units in the central office and remotes can be remotely tested. Additionally, some areas have a power group that performs battery replacements in remotes and other equipment. In the past, the CXM groups across the state were charged with the responsibility of the Data Validation and Reporting System (DAVAR) program's performance. This program focuses on the recovery of defective copper pairs and on records correction in the Loop Facility Assignment Control System (LFACS) with the intention of avoiding addition to the cable plant, striving instead to recover the plant that is already deployed.

In general, each of the linemen and splicers are assigned their own bucket trucks. It was stated by the CXM managers that this situation renders the Field Technicians more effective and efficient.

The CXM Directors and AOMs are measured against capital and expense budget accomplishment key measurements for these positions. The budgets at the director level are approximately [redacted]. Service results are also considered in these measurements and include the New York VIP and the Customer Care Index (CCI). Activities that are focused on achieving satisfactory customer service results include Proactive Maintenance (e.g., air pressure, battery replacements, etc.) and Service Improvement activities (e.g., cable and cross box replacements). Human resource results, which include safety, training (number of days per employee each year), and absenteeism are tracked. Traditional Construction metrics are tracked as well to include overage jobs and estimates, rush work, cable on hand over 45 days (9% objective), and productivity measurements. Overage materials (other than cable) on hand are not tracked. Terminals which have greater than 100 pair are tracked.

Staffing Levels

Staffing levels in the CXM organization have shown an overall decrease between December 2000 and March 2004, as shown in *Exhibit VII-9*.

Exhibit VII-9

CXM STAFFING LEVELS

[redacted]

Business Processes**Backlog and Rush Work**

Routine jobs are defined as those under \$50,000 and estimates are defined as authorizations over \$50,000. Overage jobs are defined as those over six months old, to which Construction has charged time. Overage estimates are defined similarly, except they become overage after twelve months rather than six. The status of overage jobs by Market Area, or the backlog, is shown in *Exhibit VII-10*.

Exhibit VII-10**BACKLOG WORK**

[redacted]

DCI generally found that more than 50% of the Market Areas' jobs are received as rush work. Such jobs include the installation of T1s for customer service demands and splicing for businesses that are upgrading their service. Also, all held orders are designated as rush. (Held orders are defined as orders that are on an internal hold because of a lack of available facilities.) *Exhibit VII-11* shows the average number of jobs issued per month by Market Area during 2003. It also illustrates the percentage of rush work for the years 2000 through 2003.

Exhibit VII-11**PERCENTAGE RUSH JOBS**

[redacted]

Job Prioritization

In general, the priority ranking for projects in all three Market Areas was similar, with Market Area differences based on local conditions and requirements. In general, the overall priority listing for CXM projects was found to be as follows:

- High Capacity (Hi-Caps) DS-1, DS-3, and above Special Service circuits
- Held for cable—regular orders
- Municipal/NYS Department of Transportation (DOT) road jobs (depends on the project's schedule)
- PCM program (small, focused jobs to maintain the OSP)
- VIP jobs/estimates (larger authorizations, known as rehab, to maintain the OSP)

Job Scheduling

The Scheduling Engineer is the Engineering organization's single point of contact (SPOC) for job-scheduling activities, while a Control Manager from the Construction Control Center performs this function for Construction. Scheduling meetings are held every month to review the accomplishments of the previous month and to set the schedule for the forthcoming month. Attendees include the Scheduling Engineer, the Control Manager, and as many of the Local Managers as can attend. All work to be done during the upcoming month is put on the schedule, with allowance hours for rush work because so much of the work is classified as rush. Priorities change during the month and conference calls are held to "tune up" the schedule. The Control Manager works with the Local Managers to move the technicians to the "hottest" jobs. While the Control Manager has some input on the priority of the jobs to be worked, the Scheduling Engineer is the "tiebreaker."

Tracking Work In Progress

Most of the AOMs receive a weekly spreadsheet from Engineering which shows the Hi-Cap jobs that are scheduled for installation for each day of the week. The spreadsheet generally highlights the jobs that are due on that day, in addition to the jobs that have missed their assigned date of installation and "turn-up."

The CXM Local Managers fill out Foreman's Daily Diary Reports (except in the Liberty Market Area), which report on a daily detailed basis all the work that has been accomplished by each of their crews. These documents allow the AOM to monitor the progress on ongoing projects. The AOM also receives a daily Morning Force Report from the Construction Control Center. This report details the workforce that is available for work on each day as well as the number of craft that are assigned to each type of job.

The CXM Local Managers also use the Engineering and Construction Record Information System (ECRIS) to track job progress on their assigned projects, as they do not have a computerized project management system for tracking the daily progress of major projects. ECRIS does not provide project completion progress data for the project in total, but rather only for the incremental individual work packages that comprise the project.

Engineering Responsibilities and Record Updates

The Engineering group is responsible for the design of the authorizations that are given to the CXM group for completion. The Engineering group is also responsible for the pre-inspection of the work area (for larger authorities) prior to the job being designed and for the production of as-built drawings after completion. In those situations where design changes were necessitated by field conditions, this function becomes especially important to ensure that the records reflect what is actually in the field.

The process for maintaining and updating the OSP plats starts with matching the latest copy of the print (including any revisions) against the ECRIS As-Built Reconciliation Report to compare material types and quantities. The New York Class of Plant

(NYCOP) Report, the reconciled print, and the ECRIS As-Built Reconciliation Report are then sent to Engineering for final posting by the drafting group. If any discrepancies are encountered in final posting, the package is returned to Engineering and/or CXM for resolution. When the final posted, reconciled print package is completed, the job event status in ECRIS is updated from “Reconciled” to “Closed.”

The Verizon NY engineering plats are generally available electronically, but these drawings are only scanned images of the original hardcopy drawings rather than the more versatile CAD drawings. The CXM field forces have electronic access to the existing engineering plats, but none of the areas that were investigated had the ability to print full-size drawings on a plotter. (Plat printers are available in the Liberty/Brooklyn area and two have been ordered for Manhattan.) Therefore, it was frequently observed that the CXM groups had to cut and paste letter-size pieces of the plat together to get a quick field copy. Most groups also had access to the existing plats as paper copies, but these drawings were described as frequently being out-of-date.

Productivity

The daily, weekly, and monthly productivity of the CXM crews has historically been measured by ECRIS, which provides monthly productivity data down to the individual Field Technician level. The CXM group uses ECRIS to charge time and material as well as to build and complete jobs. The Engineering group uses it to design, reconcile, and close out work.

ECRIS has a specified number of work units assigned for each task and the productivity of the individual Field Technicians is rated against this. For ECRIS, the productivity standard is 80% plus or minus 10%; therefore, a rating above 90% would be judged as “exceeded,” while a rating below 70% would be deemed as “improvement needed.” ECRIS is still used for timesheet purposes and for monitoring the monthly productivity of the individual Field Technicians. Furthermore, its data is used to populate the new Construction Activity Measurement System (CAMS).

Currently, the CXM group is using CAMS to track productivity at the Director, AOM, and Local Manager levels. CAMS is a data repository that compiles data from three source systems, specifically the Construction Management Application (CMA), ECRIS, and the Resource Allocation Management System (RAMS). Individual Field Technician time is charged against Outside Plant Construction Work Orders that specify the work to be done. CAMS tracks CXM productivity on a widgets-installed/tasks-accomplished per hour basis. When the CXM group started working with CAMS in 2002, a baseline was established based on historical data from ECRIS. For the year 2003, the standard was increased above the originally established historical baseline by 5–10%. The CAMS results are summarized in monthly and annual OSP Construction Productivity Reports from the technician level to Verizon-wide.

The CXM managers can only get crew and individual productivity data from CAMS on a monthly basis after the end of each month. CAMS tracks historical data by Local

Manager crew group and can be adjusted for productivity improvements for the forthcoming year. The system contains seven points of measurement:

- Sheath feet of copper/coax cable placed per hour
- Sheath feet of fiber cable placed per hour
- Hours per pole placed
- Fibers joined per hour
- Copper pairs joined per hour
- Rewire pairs
- Transfer pairs

Construction Productivity is a comparison of the total number of hours charged by CXM Field Technicians to the completed work operations or activities. The productivity calculation is the total number of hours charged divided by the number of work items on those work operations and activities. CAMS does not include any work that may be completed by outside contractors.

For 2004, a 5% improvement target has been set, with objectives as noted: copper placing—12 sheath feet per hour; fiber placing—27 sheath feet per hour; pole placing—18 hours per pole; copper splicing—19 pairs joined per hour; fiber splicing—3.5 fibers joined per hour. For daily management, each crew is given an expectation of the hours and work to be done for that day. At the end of each day, the Local Manager expects to see either that the crew has accomplished the work to the level assigned or that they have a valid reason as to why the stated goals were not achieved.

The CXM Field Technicians are not bound by the Service Excellence Plan (SEP) as are I&M Field Technicians. Therefore, the CXM managers rely on ECRIS and CAMS to rate the productivity of their Field Technicians. Also, there is no GPS in the majority of the CXM vehicles, and in those in which it is installed, the data is generally not used by the managers. Rather, the Local Managers generally use the following disciplinary categories, which are based on non-adherence to the basic work rules rather than productivity statistics:

- Verbal warning
- Written warning
- Time off without pay
- Dismissal

CXM Loaning

Because of the inability to handle the workload that has been experienced in the I&M organization since 2002, the practice of loaning CXM Field Technicians to I&M, as a means of helping to address the workload, was significantly increased during and after 2002. The number of CXM Field Technicians who are on loan varies, based on Market Area and time of the year, with upstate New York and summer being the heaviest user and season.

The type of I&M work that the loaned CXM Field Technicians perform also varies from area to area, with some areas requiring them to perform only repair work and other areas charging them only with installation work. The loaned CXM Field Technicians are not equipped with Craft Access Terminals as the I&M Field Technicians are. Therefore, they must generally get their job assignments via a bulk dispatch in the morning from the WFA printer or they must call into the DRC for an assignment. Job completions are called into the DRC for closing out.

Training

Initial training is available for all key positions and is generally provided by Workforce Development. Subsequent training is generally done on-the-job by supervisors or vendors working hands-on with the Field Technicians. The Local Managers stated that they will set up their own training sessions when there are no formal training options available. Classes are offered at various Verizon training centers located in key business centers, but the class selection is generally limited. The Training and Education Development System (TEDS) database contains detailed class information and schedules on the availability of training sessions by location. Supervisors can register employees for all classes offered by the training organization either online or by calling a central registration number.

Quality

The Local Managers are responsible for performing quality reviews, not only on the work completed by their assigned crews but on the work in progress as well. Conformance testing is performed by the Field Technician, and end-to-end testing is conducted on fiber. When throws are done, the counts are scanned by the center and recorded by the Field Technician. Sheath continuity as well as bonding and grounding are all checked as part of the quality review. This organization also has a Manhole Quality Checklist that is used on all projects that involve working in a manhole.

Local Managers are held responsible for inspecting project work in progress. In those cases in which they find an issue, the Local Managers discuss the matters with the involved Field Technicians to resolve the issues. They also advise the Field Technicians on the proper way of doing things. In so doing, they use Verizon "Construction Quality Standards."

Local Managers also perform semi-annual peer reviews of other service areas under the Quality Plan. Such inspections are performed as a means of obtaining a good cross-

section of the quality standards from someone who is not in the direct reporting organization. Some staff reviews have been conducted by the ROS as well. In addition, the Operations Analysis Team (OAT) reviewed the CXM operations for the Island Metro Market Area during March 2003.

Safety

The safety program's administration generally falls under the responsibility of the Local Managers. The standard practice is to have weekly morning "tailgate" meetings in each garage. These sessions are held to cover standard safety topics or other topics that are of particular interest because of recent problems or conditions. Field safety inspections are also the responsibility of the Local Manager, who is charged with performing one safety inspection per Field Technician each month.

NETWORK DESIGN AND OUTSIDE PLANT ENGINEERING

Verizon's day-to-day deployment of technology (provisioning) is addressed as part of this work plan area. The deployment of digital (central office) switching systems, fiber cable, and digital loop technology is changing the traditional relationships between the Network Engineering and the Installation and Maintenance functions. The design of the network and related facilities should be based on the cost, features, compatibility, security, maintenance capabilities, and ability to provide desired grades of service.

Verizon New York's outside plant infrastructure includes metallic cable, fiber cable, digital loop carriers, and multiplex equipment that connect customer premises to telephone central offices. This infrastructure also includes structures such as poles and conduit that support the physical attachment and routing of cable and wire. Collectively, the infrastructure should be designed and installed to economically provide a high level of service and service reliability. With respect to the designing and provisioning of network facilities, Verizon New York's practices and procedures should be coordinated with customer satisfaction goals. Additionally, the interrelationships between the evolving worlds of inside plant (ISP) and outside plant require increased coordination and are an important design consideration.

The overall network plan must seek to ensure the efficient and productive use of company and network resources. As such, Verizon New York should have developed reasonable plans for the company's plant expansion and modernization programs.

Network Design of Central Office and Interoffice Facilities

Network Design Engineering Overview

Network Design Engineering encompasses central office (CO) and interoffice facilities (IOF), infrastructure improvement, cost reduction, and new technology deployment and integration. Capital budget development and monitoring of expenditures throughout the year are integral to these responsibilities. Engineering responsibilities include increasing capital efficiency, process improvement, network performance assessment, enhancing

infrastructure utilization, and meeting specialized requirements of broadband service customers.

Network Design Engineering and Network Planning are closely intertwined. Organizationally, a “fine line” divides planning and engineering functions within the Design Engineering group. In fact, some engineering functions are performed under the aegis of a “planning” title and vice versa. [redacted]

Network Design Engineering for New York State conducts: IOF planning; power, space, and frame planning; switch and multiplex (MPX) planning; and design engineering for the equipment to be installed in the field. A Director of Network Design holds responsibility for all of New York and reports to the VP of Network Engineering and Planning for New York and New England. The VP, in turn, reports to Verizon’s Senior Vice President (SVP) of Engineering and Planning.

Network Design Engineering interacts with the Director of the New Services and Technology Support (NSTS) organization, who also reports to the SVP’s organization (also covered in the *Network Planning Section*), and holds responsibility for infusing new transport system, local access, and data networking into the core network. A related NSTS activity is the development of Engineering guidelines to facilitate deployment of new services and training for field operations workforces.

Key CO and IOF Design Engineering functions are summarized below:

- **IOF Planning** includes engineering of fiber optic transport rings for the core network and Synchronous Optical Network (SONET) rings for Enterprise customers. The suite of enabling transmission products encompasses Digital Cross-connect System (DCS) and dense wave division multiplexers (DWDM). This work is performed in conjunction with Customer Network Engineering (also discussed in the *Network Planning Section*), which holds overall project management responsibility for multi-node ring deployment and interfaces with the Sales organizations to assess customer requirements. In spite of low growth in network services, IOF capacity requirements have not been significantly affected to this point.
- **Switch Planning** includes Engineering support for managing switch capacity and tandem traffic and for retiring 4ESS (Electronic Switching Systems) tandems. There are 540 central office entities (COs) in New York, as currently reported on the New York VIP. These COs vary in size from a few hundred access lines to well over 50,000. Of the 540 COs, 267 are “remote” switches that are typically used to serve small wire centers. A remote switch can terminate customer access lines and provide dial tone, but it must rely on a “host” office for call-processing capability. There are 21 of these switches located in local access and transport area (LATA) 132, with the remainder in the other LATAs in Upstate New York. In addition, there are 34 tandem switches, including seven 4ESS, ten 5ESS, 14 Digital Multiplex Systems (DMS) 200, and three DMS Succession switches. The 34 tandem offices serve different functions: 18 are access switches, eight are sector tandems, and eight are TOPS tandems. (TOPS switches provide the trunk

and position terminations for operator services.) Switching capacity has not grown; however, software generic updates to switches continue, regardless of access line growth trends. To ensure the continued availability of current generic capabilities, Verizon has entered into purchase agreements with Lucent and Nortel, the switch vendors for the local COEs. The agreement for the Lucent 5ESS product calls for a three-year migration strategy to provide software generic 5E16.2 release in all switches. The Nortel agreement provides for maintenance of the most current “non-packet” generic DMS 100 product available, currently NA017 and Release 503 for the DMS 10 product.

- For large new jobs, plug-in equipment is bought directly from the vendor. The objective is to maintain a minimum of 2% capacity in an inventory of plug-ins in each CO. When new equipment is placed in service, plug-in equipment for six months of forecasted growth is generally provided.
- For ongoing operations with service orders and customer trouble reports, small numbers of plugs are ordered through the Plug-in Inventory Control System (PICS).
- Retirement of the seven 4ESS switches is a key undertaking for this organization and for field operations over the next several years. Present plans call for this vintage switch to be completely retired by 2007, based on the following schedule: two in 2004, one in 2005, and two each in 2006 and 2007.
- The 267 “remote” switches discussed above rely on a host office for call-processing capabilities. These switches are connected to their host offices by trunks known as¹ “umbilicals.” These umbilicals provide customer communication paths and signaling links for the host office to instruct the remote on actions to be taken. If a host or umbilical failure occurs, the remotes are provided with a “standalone” feature that allows them to complete calls that originate and terminate locally within the remote. The capacity of the host-remote umbilical is usage-sensitive and subject to blocking, which will interfere with the customers’ ability to place and receive calls. During 2001, an average of 39.5 umbilical groups per month experienced some degree of blocking. This statistic was improved to 11.1 in 2002 but rose somewhat to 18.1 during 2003. Because the availability of a path between the host and the remote is so important to customer service, the quantity of umbilicals provided is normally determined using extreme value engineering (EVE).

¹ For the purpose of this report we categorize the host-remote umbilicals as trunks for traffic monitoring and performance reporting purposes. From a technical viewpoint umbilicals are internal connections and not the same type of end office trunks offered by Verizon in any of its wholesale, retail or UNE tariffs.

- **Field Engineering** holds responsibility for the implementation of site-specific configurations and for the resolution of Engineering issues. Field Engineers primarily perform detailed work that is necessary for implementing IOF jobs and support Switch Planners for coordinating CO jobs. Field Engineers will also assess the COs with excess capacity and move plug-in capacity to another facility that needs capacity relief.
- **Trunk Capacity Management** holds responsibilities for reviewing “blocking reports” to ensure conformance with Public Service Commission objectives, for handling Federal Communications Commission (FCC) reporting requirements, for monitoring trunk capacity, and for coordinating 4ESS switch retirements. As of the end of 2003, this group was responsible for forecasting and servicing the numbers of trunks and trunk groups as shown in *Exhibit VII-12*.

Exhibit VII-12**TRUNK GROUPS/TRUNKS**

	Trunk Groups	Trunks
CLEC	8,768	944,000
IEC	3,763	461,000
Wireless	2,130	394,000
Independent Company	785	70,000
Verizon	17,900	1,115,000

- **Center Engineering** receives and processes orders from planners, places orders with preferred vendors, coordinates orders with the Procurement organization, and reviews bills.
- **Space and Frame Engineering** is responsible for space and frame provisioning in central offices. Congested frames are of major concern to this group, as several of the larger offices have experienced excessive jumper pile-up, to the point that technician productivity on the frame was affected and capacity was stranded in the switch. As a result, some frames have been replaced and others have been addressed through one-time teams that are dedicated to removing dead jumpers.
- **Power Engineering** is responsible for power equipment integrity, including AC/DC rectifiers, batteries, and backup generators.
- **Project Management** holds responsibility for FTTP implementation, IntelliLight Dedicated SONET Rings (IDSR) deployment, digital subscriber loop (DSL) implementation, DCS turn-up, customer SONET rings turn-up, and conversions from asynchronous to synchronous facilities.

OUTSIDE PLANT ENGINEERING

Outside Plant Engineering Overview

Three Directors of OSP Engineering & Planning for New York exist and report to the Vice President of Network Engineering and Planning Northeast, thereby matching the serving areas of the Market Area Presidents (who have I&M and Construction responsibilities). Specifically, one Director handles the Island Metro Market Area, which is comprised of Long Island, Bronx, and Queens; another handles the Capital Market Area, including all of Upstate New York, north of New York City; and the third handles the Liberty Market Area, consisting of Manhattan, Brooklyn, and Staten Island. [redacted]

Coordination with other organizations within each Market Area is accomplished through the Market Area Customer Service Team (RCST), which is chaired by the Network Operations Market Area President. Membership includes the OSP Director, the Network Design Director, and representatives from the various customer-facing organizations, Public Affairs, and Regulatory.

Primary OSP engineering functions include:

- **Facility Analysis Planning (FAP) Engineering**, with access to databases that support the volume-reduction portion of the Infrastructure Improvement Program (IIP), identifies high-cost maintenance areas and performs economic analysis on those identified. In concert with the PCM organization, FAP engineers prioritize those areas to be worked on after the jobs are issued by the Design Engineers.
- **Design Engineering** holds wide-ranging OSP responsibilities, which include engineering of large jobs and held for cable jobs, issuing jobs for PCM requirements, cable rearrangements, asset restoration jobs, resolving customer complaints and right-of-way issues, and handling complaints reported to the Public Service Commission.
- **Hi-Cap Engineering** holds responsibility for DS1, DS3, and OC-n broadband service delivery. RequestNet—the service order entry system for Hi-Cap customer network circuits—is monitored with the objective of reducing cycle time for both copper and multiplex/fiber solutions. Hi-Cap engineers address service pricing and implementation to support the Sales organizations.
- **Trunks Integrated Records Keeping System (TIRKS) Project Management** holds responsibility for requisitioning multiplex equipment in conjunction with Hi-Cap requirements and for monitoring the status of multiplex equipment. TIRKS Project Management also serves as the single point of contact (SPOC) for managing complex Hi-Cap projects.
- **Support Management** holds responsibility for Loop Facility Assignment Center (LFAC) field support, including drafting records, closing out jobs, and updating of FACS; coordination of cable throws; accommodation of DSL requirements; and third-party billing (e.g., Con Edison use of Verizon poles).

OSP Engineering and Network Operations functions are closely related. In fact, it is sometimes difficult to determine where one area of responsibility ends and the other begins, particularly for network construction-related functions.

OSP Engineering Roles and Responsibilities

The discussion of the OSP engineering roles and responsibilities is organized as follows:

- Engineering's Role In Verizon's Adaptive Engineering Program
- Hi-Cap Engineering
- OSP Fiber Engineering and Planning Tools
- Fiber in the Feeder Plant
- Unique Outside Engineering Environments in the Liberty Market Area
- Digital Added Main Line (DAML) Policies and Status
- Measurements for Monitoring Network Performance

Engineering's Role in Verizon's Adaptive Engineering Program

“Adaptive engineering” is the overarching theme in Verizon's strategy for meeting service obligations in a no-growth/low-growth environment. OSP engineering processes have been shaped by key Verizon Telecom-wide programs that are intended, as an extension of adaptive engineering, to manage capital and expense programs in the face of significant access line losses. These “adaptive engineering” programs, which govern the day-to-day engineering methods and procedures, are discussed below.

Infrastructure Improvement Program

The Infrastructure Improvement Program (IIP) is a partnership between Engineering and Network Operations. Two major initiatives exist within IIP: volume reduction—consisting of PCM and cable rehab; and Service Reliability, which includes air pressure, remote terminal (RT) battery replacement, MLT, etc. PCM focuses on small jobs that are quickly completed and thus yield a quicker payback than the cable rehab jobs, which are larger and may reach estimate-level authorizations. See *Section VII - Infrastructure Improvement Program* for a detailed discussion of the IIP.

Hi-Cap Engineering

Hi-Cap Facility Assignment Process Using RequestNet and BuildNet

RequestNet is the service order entry system for Hi-Cap services. Approximately 85–90% of all Hi-Cap work originates from RequestNet, which is the key process driver. RequestNet assesses the availability of existing capacity by means of an automated search routine. Mechanized routing of Hi-Cap service from end to end is typically achieved through RequestNet. *Exhibit VII-13* illustrates the volume of inward DS1 orders handled in New York during the 2002–2003 period. Of particular interest to this group are those orders that do not have facilities available and that must, therefore, be addressed in a timely manner to ensure the service date is met.

Exhibit VII-13

VOLUME OF INWARD DS1 ORDERS

[redacted]

In general, “RequestNet has proven highly effective.” If facilities cannot be assigned, “fallout” for manual handling occurs. Because of capacity constraints, substantial fallout can occur from the automated process—in the vicinity of 10% of orders—thereby requiring manual intervention to assign capacity. (For example, if no facilities were available, recourse would be made to electronics and copper/fiber solutions.) Possible scenarios include “false negatives,” which occur when fallout has been encountered but, in fact, a facility is available. Fallout situations are addressed by the Field Engineers. Field Engineers may decide whether or not a fiber solution should be deployed. The fallout frequency is very territory-specific, as such situations usually occur at locations where electronics or fibers have “maxed-out.” Construction tracking and project management systems are linked to RequestNet. When an order is placed, RequestNet processing ensues. If the fulfillment of the order is delayed as a result of fallout, the completion date is affected. RequestNet Coordinators then interface with the Verizon business office for retail orders, or with the Carrier Account Team Center (CATC), which deals with other telecommunication carriers that are wholesale customers of Verizon. Wholesale customers include the CLECs, long distance carriers (of which AT&T, Sprint, MCI, and Teleport are the primary customers), and Con Edison, which is also a provider of telecommunication services.

RequestNet “no complete date” responses flow into a downstream system known as “BuildNet.” The Build Request Coordination Center (BRCC) uses BuildNet to track and manage the construction work’s disparate elements and related ordering processes through to completion. Facility modification processes through BuildNet have been incorporated into the Liberty Market Area for approximately 18 months. Since that time,

the RequestNet and BuildNet scheduling tools have enhanced the ability of Construction organizations to meet completion dates.

Facility upgrades are being carefully scrutinized in the context of adaptive engineering. Previously, four T1s would trigger a fiber installation. With adaptive engineering, the trigger has been raised to seven T1s (e.g., some wireless gateway locations that require seven or eight T1s would have been previously mandated to fiber). Other factors, such as a problematic entrance conduit, can influence the decision to upgrade facilities. Such facility upgrades could prove “economically inefficient,” thereby adding time to complete the job and impacting the customer’s perception, as he or she may want service as soon as possible, regardless of the delivery system.

OSP Fiber Engineering and Planning Tools

TIRKS lacks visual mapping, thereby necessitating the use of an ad hoc fiber-mapping tool. Records associated with fiber facilities include a local design system only, which provides mapping from location to location.

- Ad hoc manual systems are involved in the creation of an end-to-end fiber-route-mapping tool or equivalent system. These tools come in the form of spreadsheets to assess and monitor localized capacity. DCI was told that every district has a different tool to do the same thing. A system known as BIS-3 is employed to monitor fiber routes and to assess utilization capacity on backbone routes.
- Problems with DS1, DS3, and above orders are addressed by a dedicated screening person through the Trunk Facility Assignment System (TFAS). Same-day multiplex route redesigns can be engineered to alleviate blockages.

Fiber Bottleneck Relief Strategies and Hi-Cap Capacity Relief

When fiber exhausts, recourse can sometimes be made to dense wave division multiplexers (DWDMs), but only if the fiber can accommodate next-generation technology. DWDM has been effectively used for capacity expansion on Hudson River crossings.

Bottleneck relief also includes going from asynchronous to synchronous technology (SONET), replacing multiplex equipment to accommodate SONET, and reclaiming fiber through replacement of connectors.

Detailed usage reports serve as the basis for anticipating facility exhaustion. Weekly meetings are held to evaluate central office building capacity and multiplex fill, and grooming is performed to enhance capacity utilization. Specific central office building requirements are addressed at that time.

Statistical samples of central office buildings and building renovation have been compiled. Hurdle rates are established capacity-driven utilization levels that, when reached; initiate action. Specifically, when either fiber or electronics reach 80% of capacity utilization, action is triggered. In practical terms, short-length loops enable

quick response time and reduced cycle time. In practice, according to several interviewees, “We always find a way to provide service.”

Fiber in the Feeder Plant

Fiber in the feeder portion of the OSP provides for more flexibility in provisioning service, especially Hi-Cap services, and generally results in a lower report rate for those customers served on this facility. *Exhibit VII-14* captures the deployment of this technology in New York by operating Market Areas.

Exhibit VII-14

FIBER DEPLOYMENT BY MARKET AREA

[redacted]

Unique Outside Plant Engineering Environments in the Liberty Market Area

Special Situations in the Manhattan Environment

Whatever congestion occurs is related to problems of “getting cable in the ground.” Bottlenecks occur because of the placement of underground cable, even for short distances. Construction must conform to Department of Transportation (DOT) constraints and Empire City Subway (ECS) requirements. According to Verizon NY management, local events, such as parades and events like the Republican National Convention, compound the problems. Holiday moratoriums (e.g., between Thanksgiving and the New Year) impose significant delays as well.

Substantial demand exists for fiber. It is often cheaper to install fiber than to retrofit a copper facility. Although capacity is “tight on fiber,” availability is generally well matched to the need. A dedicated video circuit, for example, requires one fiber per circuit. (Video engineering is a separate group that accommodates special requirements of video service providers, large businesses, and new video-service entrants into the Manhattan market.) Stranded fiber capacity is very limited.

Building Risers

Extensive use of building risers occurs in this environment. DS1 service generally can be expedited by means of a basement installation and building wire, DS3 service, however, requires fiber to the customer premises (i.e., to the floor in high-rise buildings). Serving arrangements are accommodated in new offices that are pre-wired as well as in old brownstones with no riser shafts or wiring closets. The customer is responsible for providing “the ways and means.” Coordination efforts involve the input of both building management and the customer, with three-way discussions entailed—often leading to challenging implementation and cost-sharing issues. Although “preparation work” cost is the customer’s ultimate responsibility, Verizon incurs the facility cost.

Pressure System Refurbishment

Virtually no new copper installation work exists in Manhattan. The Engineering organization continues to monitor copper utilization and to maintain copper facilities, which are protected by air pressure systems. In the course of “living with the plant we have,” the pressure system is vital. The original air-pipe system is in place; but it has been established that there is a need to change out compressors. Pressure system rehab plans are in place for improvements in West Street, 50th Street, and 56th Street central offices. These plans will entail rehabilitation or upgrading of compressors, air pipes, and equipment rooms. A dedicated overlay communications network will enable increased monitoring of pressure systems. Pressure system improvements will span a three-year timeframe, with one-third of the system being upgraded each year—methodically going through the system two wire centers at a time.

Special Conduit Arrangements

All conduit in Manhattan and the Bronx are owned by ECS (which in turn is a Verizon subsidiary). Conduit in both boroughs are rented from ECS. Any construction involving conduit additions or modification, therefore, involves ECS, which is responsible for approving and implementing such requests. Rates for conduit range from \$1.00 to \$1.20 per foot each year, and non-discriminatory pricing policies are in effect.

Distinctive Service Area Attributes In New York City Boroughs

Much of the city contains old plant, a substantial amount of which is exposed aerial cable, including high pole runs in backyard areas. The size of blocks with dense populations and the prevalence of “closed block” conditions increase the degree of difficulty of the workload relative to other areas.

Brooklyn, for example, is 80–85% residential. “Closed blocks” in residential areas, with contiguous buildings, often impose physical access limitations. This restraint requires what is termed “head-end” or “tail-end” access for construction work. As a result, the scope of work changes and right-of-way issues are encountered as a matter of course. Substantial “real-time engineering” is required, and productivity standards are substantially affected. For example, a 12-hour job could expand to a 30- to 40-hour job as a result. In practical terms, unique and varied conditions preclude upfront time

assessment of situations to be encountered. Moreover, service areas range from affluent to less affluent areas—where two-person or even three-person teams are required for the conduction of surveys and site visitation.

The Engineering Construction Report Information System (ECRIS) does not include “adders” to reflect unique demographics. Standardized price-outs are, therefore, used for budgeting purposes. As a consequence, a succession of cost overruns occurs regularly, requiring submission of supplemental authorities (greater than 15% overrun). This occurrence is somewhat mitigated as churn rates in the boroughs are low (at less than 5%), so there is some “forgiveness” in the workload relative to areas with higher churn rates.

Fiber is deployed in backbone routes supporting DLC and multiplex equipment. Typically, 216- and 432-strand fiber is deployed. Feeder routes all have copper facilities. Poles are being replaced based on predetermined schedules, including the elimination of double wood.

Digital Added Main Line Policies and Status

The procedure for Digital Added Main Lines (DAMLs) calls for their use only when providing a second line to the same customer at the same address. A Facilities Specialist determines whether a DAML is required because other options are not readily available. If a situation were encountered where an additional line was needed at the same address, a DAML might be used when a lack of alternative facilities existed.

There is no formal process for removing DAMLs, but if there were facility relief in an area served by this technology, then the expectation is that facilities would be made available to replace them. The Construction technicians are theoretically supposed to remove DAMLs and cutover the customer’s service to the new facilities. However, DAMLs are not being recovered, even when the second line they are serving is removed.

When relief is provided in an area with DAMLs, the design guidelines call for providing six months of growth, but these guidelines do not allow for the removal of the DAML units. In some cases, however, rehabilitation and growth jobs are being issued to remove DAMLs, based on reviews by the engineers to identify “hot spots.”

The status of DAML deployment is captured in the following table (*Exhibit VII-15*) as of the end of year 2003. The table also shows the unused central office DAML capacity that is available for assignment.

Exhibit VII-15

DAML DEPLOYMENT

[redacted]

As can be seen from the table above, 31,939 or approximately 42% of the working DAMLs are serving only one line and hence serve no useful purpose. DCI requested information on the trouble report rate for DAML-equipped lines, but was advised that “this information is not available” and that “...this information is not normally tracked and is only available through extensive, costly, and time-consuming programming.” However, it is also noted that of the 10.1M access lines working in New York at the end of 2003, only 0.75% of them were working on this technology.

Measurements for Monitoring Network Performance

Key service initiatives, such as the New York Verizon Incentive Plan (VIP), are reviewed weekly.

The Health of the Network (HON) Report, or Outside Plant Engineering Report, provides traditional OSP engineering metrics that are tracked monthly. The HON Report, which includes utilization of network elements and proactive performance monitoring, is a “living document” that is monitored closely. Discussion related to the area backlog reported in the HON occurs regularly to assess “what we are doing about it.” SWAT teams are formed to address high-profile issues.

Key metrics from this report are captured for each Market Area in *Exhibit VII-16* through *Exhibit VII-18* below.

Exhibit VII-16

ISLAND METRO MARKET AREA METRICS

[redacted]

Exhibit VII-17

CAPITAL MARKET AREA METRICS

[redacted]

Exhibit VII-18**LIBERTY MARKET AREA METRICS**

[redacted]

As can be seen from the above tables, facility modifications have gradually declined across the state, even as defective pairs recovered have decreased. Moreover, the percent defective feeder pairs has increased somewhat. However, as the following chart (*Exhibit VII-19*) demonstrates, while the quantity of total facility modifications is down, the vast majority of modifications are accomplished by breaking a connected through (BCT) facility. (Only two years of data are provided, as DCI was informed that earlier years were not available.)

Exhibit VII-19**FACILITY MODIFICATIONS AND BCT**

[redacted]

As can also be seen from the selected HON Report information, the number of overage estimates, overage jobs, and associated hours has increased precipitously over the four years of data presented. The percentage of Construction jobs classified as rush (rush work) has also increased dramatically within the last two years, as shown in *Exhibit VII-20* below.

Exhibit VII-20

PERCENT RUSH CONSTRUCTION JOBS

[redacted]

CENTRAL OFFICE

This section addresses the central office (CO) aspects of Verizon New York operations and maintenance. The CO is critical to meeting the service requirements of the customer base, whether wholesale or retail. Moreover, operations of the CO, especially frame coverage, can dramatically impact the efficiency and effectiveness of both the call centers and the outside technician forces. Optimization of the CO forces that results in reduced office coverage may cause sub-optimization of the supported groups, most notably the technicians in Installation and Repair for POTS and Special Services that, in many instances, are reliant on the CO to restore customer service. When access-line throws and cable transfers are involved, the productivity of the Construction (CXM) organization can also be affected, as can the efficiency of the Preventive Cable Maintenance technicians.

Proper maintenance of the CO switches, the power equipment, and the transport equipment located in the CO space is essential to reliable customer service. In general, a failure in the outside plant is more likely to affect one customer or, at most, a relatively small number of customers, even if a large cable is damaged or cut. Conversely, a failure of the switch can be catastrophic, with thousands of customers left out-of-service. Likewise, given the extensive bandwidth capacity of the transport equipment provided for interoffice facilities, a failure can result in large numbers of customer-private-line facilities (typically these facilities carry high-capacity special-service data circuits) being out-of-service. It can lead to large numbers of interoffice trunks being out of service as well. Redundancy is, of course, provided for in the hardware and software's critical elements. Large capacity interoffice transport is normally provisioned on a "ring" architecture that allows for total transfer in the event of a failure. While the redundancy and failover capability provides a high degree of assurance of continuous operation, timely and effective maintenance is required if the network is to approach the desired goal of total reliability.

Background

This section provides a general discussion of the CO deployments, Operations and Maintenance organization, and key performance measures. It also reviews some recent office failures. The intent is to assist in the understanding of the findings and recommendations that follow this section.

New York Central Office Equipment Deployments

Local-End Offices

Verizon New York has 540 local-end-office central office entities that serve approximately 10.1M customer access lines, both retail and wholesale. The local switching offices are comprised of Number 5 ESS switches, a Lucent product, and of DMS 100 and DMS 10 switches, both Nortel products. The Verizon New York organizational structure for Network Operations is divided into three Market Areas, each roughly equal in the number of access lines served, but the number of COEs varies widely. There are 61 COEs in the Liberty Market Area (Manhattan, Brooklyn, and Staten Island) and 77 in the Island Metro Market Area (Bronx, Queens, and Nassau and Suffolk Counties on Long Island). The Capital Market Area, which encompasses the remainder of the state, has 402 COEs that vary in size from a few hundred access lines served to offices with more than 50,000 access lines served.

The COEs include 267 remote switches. Remotes typically serve small concentrations of access lines, ranging from a few hundred to several thousand. (A general description of remote switch operation can be found in the *Network Design Section* of this report.) These switches are geographically dispersed as shown in *Exhibit VII-21*.

Exhibit VII-21

SUMMARY REMOTE SWITCH LOCATIONS

<u>Local Access & Transport Area (LATA)</u>	<u>Total</u>
132	21
133	36
134	64
136	71
138	28
140	47
New York State Total	267

Tandem Switches

In addition to the local switches, 34 tandem switching entities are deployed in the state. These tandems consist of seven 4ESS switches, 10 5ESS switches, 14 DMS 200s

switches, and three DMS-Succession switches. Tandem switches do not typically serve end-user customer lines but rather provide a switching function to route long distance calls onto and from the network. These switches also allow for aggregation of local traffic between local-end-office switches. This configuration, known as a high-usage and final-trunk-group arrangement, is extensively deployed as a means of gaining interoffice trunk efficiencies. Tandem switches also function as ingress and egress points to the local Class 5 switches for the incumbent local exchange carriers (ILEC) and the competitive local exchange carriers (CLEC). Of the 34 tandem switches in New York, 18 are classified as access tandems, eight are sector tandems, and eight are TOPS switches that provide the switching functions for operator-assisted calls.

Signaling System 7 (SS 7) Network

Also deployed in the state are 20 Signal Transfer Points (STPs) that are tied into the nationwide Signaling System 7 Network to provide signaling paths that are separate from the communication paths. The SS 7 Network provides call-processing functions that include call routing and supervision for calls placed via the interoffice network. The importance of this function cannot be overemphasized, because a failure of the signaling network will ensure isolation of the affected offices. Consequently, the SS 7 Network has built in redundancy at all critical points as well as diversity of the trunks between the STPs. Audits are performed to identify and correct any routing diversity violations. Maintenance and surveillance of this network is crucial for ensuring the reliability necessary to meet customer service expectations.

Transport Equipment

Transport equipment of varying complexity (depending on the size and location of the office) is installed in the COs. This equipment consists of multiplexers of various vintages to include DWDMs in some locations, digital carrier channel bank terminations, central office terminals for interfacing with remote digital loop carrier systems, DSL access multiplexers (DSLAM) for terminating DSL service, and Digital Cross-connect Systems.

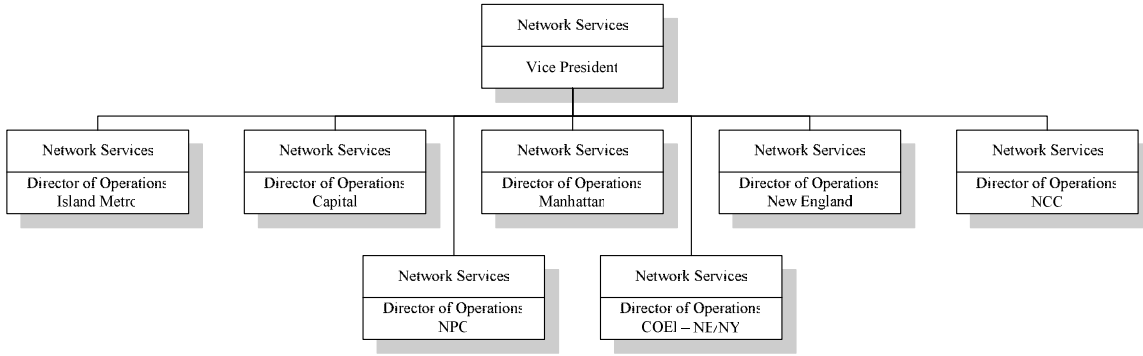
Verizon-New York Central Office Operations Organization

The organization responsible for New York State's CO operations is headed by a Vice President – Network Operations, Northeast. This position holds responsibility for the offices in New York and the New England states, all of which comprise the Northeast Market Area of Verizon. There are 4,749 employees in this organization, of which 607 hold management positions and 4,142 are associates. Of these employees, 429 management personnel and 2,484 associates were located in New York State at the end of March 2004. Reporting to the Vice President are six director-level organizations with New York responsibilities. The Directors' responsibilities are as follows: one handles the COs for Manhattan; another handles Brooklyn, the Bronx, Queens, Staten Island, Nassau, and Suffolk COs; a third handles the offices in the remainder of the state; the fourth handles the network surveillance and alarm monitoring contained in the Network Control Center (NCC); the fifth handles the Network Provisioning Center (NPC) for provisioning

statewide; and the sixth handles Central Office Equipment and Installation (COEI). The organizational structure is shown in *Exhibit VII-22*.

Exhibit VII-22

VICE PRESIDENT-NETWORK OPERATIONS, NORTHEAST



[redacted]

Exhibit VII-23

NEW YORK CO OPERATIONS STAFFING LEVELS

[redacted]

[redacted]

Exhibit VII-24

NEW YORK CO OPERATIONS EXPENSE BUDGET (\$ IN MILLIONS)

[redacted]

Functional Responsibilities—CO Operations

Routine Maintenance

This organization is responsible for the routine maintenance of the switching, power, and transport equipment located in the COE. Maintenance routines are performed at prescribed intervals to ensure that the equipment will reliably continue to perform. Detailed required routine maintenance activities are furnished by the manufacturer of the equipment. The switch equipment and the transport equipment require very little routine maintenance given the sophistication of their embedded diagnostics. The equipment will diagnose itself and provide the office or Network Operations Center (NOC) central office technician (COT) with instructions on what needs to be done to prevent service failures.

Conversely, power equipment requires regular routine maintenance activity that is more manpower-intensive. The importance of power to the reliable operation of the equipment in the COE cannot be overemphasized. Under normal operation, the equipment is powered by commercial power that is furnished by the local electric power company. In the event of a power failure, the offices have emergency power equipment, which consists of batteries and emergency generators. The maintenance and testing of this emergency power equipment is prescribed in detail as to times and the activities to be performed. Because of the criticality of this equipment (an office power failure can result in the failure of the office and the customers served will be without service for some time because getting the office back online is a rather lengthy process), its upkeep is assigned to specialist organizations that cover a number of office locations. These groups perform all the maintenance routines to include battery readings, emergency engine runs, voltage rectifier maintenance, etc. These groups are headed by second-level managers in each of the field-director-level organizations.

Recent examples that illustrate the criticality of power reliability are the two office failures that occurred during the August 2003 power blackout. The 56th Street office [redacted] failed because one of the three emergency engines pumped fuel for the other two. Under the heavy and sustained load in the heat, the fuel-pumping engine failed and caused the other two engines to stop because of a lack of fuel. With the failure of the engines, the CO batteries ran down, resulting in the failure of the office. At the 50th Street office [redacted], there were three switches and three emergency engines. The primary cause of the failure was attributed to heavy, sustained load in the heat. Since then, both offices have been equipped with two new diesel turbine generators, each of sufficient size that one could carry the office. The remaining offices have been thoroughly reviewed for possible problems, assuming the most catastrophic of conditions. In addition, five truck-mounted 800 KW units have been purchased that can be readily moved to any location requiring them.

Surveillance and Alarm Handling

In addition to the routine maintenance described above, the CO forces respond to alarms in the office and those that are referred to them by the NOC. When equipment in an office detects a trouble, or a likely trouble condition, it will provide an alarm indication,

depending on the severity of the failure. Alarms are typically audible and visual in the office itself but are also monitored, referred, tracked, and analyzed by the NOC, a 24/7 operation. The NOC will make call-outs for unmanned offices and those with no “after-hours coverage,” depending on the severity of the condition. Power alarms are called to the power control center and a power technician(s) is dispatched. The established process requires a call to be placed on any alarm other than one on an individual circuit. There is one NOC located on Long Island that performs this function for New York operations. A backup capability is provided by the NOC that covers the remainder of the Northeast geographic area.

Provisioning and Maintenance of Customer Service

The CO organization also plays a significant role in the provisioning and maintenance of end-user customer service. To provision dial tone (DT) and calling capabilities, customer access lines are cross-connected on a distributing frame in the CO to connect the outside plant facility to the originating equipment (OE) of the switch. Customer lines that are equipped with high-speed data access (DSL) as well as voice are provisioned similarly but are cross-connected to additional equipment, the DSL Access Multiplexer (DSLAM), which provides access to the data network. This work is delivered to the CO via the Work Force Administration – Dispatch In (WFA-DI) system in response to service orders generated by the customer contact groups. Likewise, customer trouble reports that are tested to likely be attributable to a trouble condition in the CO are routed via WFA-DI from the call-receipt centers to the appropriate office. A WFA-DI Center in each of the field directors’ organizations monitors the dispatches and provides reports and follow-up. A timely and quality response to this work is essential to good customer service. In addition, by providing test assistance and making wiring changes, the CO supports the outside I&R technicians (POTS and Special Services) to provision and maintain customer service. If the CO forces are not timely in their responses to requests for assistance, customer service delays will occur as will negative impacts on I&R productivity.

The CO forces also play a vital role in the provisioning and maintenance of Special Services and interoffice trunks. As noted earlier, transmission equipment located in the COs is extensive and complex, consisting of multiplexers, Digital Cross-connect Systems, and the terminating equipment used for high-capacity (DS1 and above) services and circuits. Interoffice facilities that use this equipment must be timely and accurately provisioned and maintained so that interoffice trunks and Special Services can be provisioned as requested. Special Services, from the voice-grade DS0-level circuit to those provisioned on the most complex fiber-ring technology, must be completed on time and as designed to ensure customer service needs are met. Timely provisioning and maintenance of IOF trunks is essential if call blockages in the network are to be avoided.

Frame Operations

The distributing frame is considered the point of interface between the inside and outside forces and is a key part of the CO operation. Depending on the size of the office and the amount of frame work to be done, dedicated frame attendants may be provided or the frame may be covered by the COT(s) assigned to the office. In some remote locations,

CO personnel handle multiple offices, visiting them on a scheduled basis unless an emergency occurs. The outside technicians can access these offices and perform their own frame work by using a temporary arrangement that is made permanent by the assigned CO personnel when they visit the office. Locations exist where frame congestion has been identified as a significant problem, thereby delaying work in the office and contributing to customer service problems. Discipline on disconnected service to remove dead jumpers and additional jumpers, required DSL service, and service for the CLECs have all contributed to this condition. In some very severe cases, the frame has been replaced, and in other locations, a dedicated group has been put in temporarily to remove disconnected jumpers.

CO Effect on the New York Verizon Incentive Plan (VIP)

While the CO can affect all the measurements in the VIP to some degree, the primary ones that are affected are the customer trouble report rate (CTRR), PSC complaints, and the Outliers. The annual CTRR accomplishment at the New York Company level (objective ≤ 3.34) has historically been more greatly affected by the OSP than the CO. To illustrate, disposition codes 5 and 8 indicate a CO-caused trouble condition. A review of CTRR for the years 2000 through 2003 reveals that these two codes combined contributed 13.4% of the total CTRR in 2000, 14.8% in 2001 and 2002, and 13.5% in 2003.

Similarly, the number of PSC complaints attributable to the CO has been relatively low. A comparison of the number of PSC complaints charged against Network Services, which includes CO operations, the NOC, the Recent Change Memory Administration Center (RCMAC), and other CO-related entities, to the total received for the years 2000 through 2003 was made. This analysis revealed that the percentage of complaints contributed by Network Services was 3.2% in 2000, 3.8% in 2001, 7.7% in 2002, and 7.4% in 2003.

Outliers were reviewed as well to determine the relative importance of the CO on this measurement. CO performance can affect seven of the eight categories included in the outliers, the sole exception being answer performance. Those categories that are most affected include the monthly objective of 85% of the COs with the CTRR at or below 3.34, individual COs with a CTRR at or below 5.54, and network trunk blocking. An outlier miss translates into a Service Inquiry Report (SIR) that is defined as an objective missed in both the current month and any two of the previous four months. There is a SIR objective for each of the VIP plan years (PYs), with the eight categories aggregated for the year and measured against the objective. For plan year one, there were 165 SIRs against an objective of 175. The noted categories that are most affected by the CO contributed seven of the 165. For plan year two, there were 198 SIRs (adjusted) against an objective of 138. The categories most affected by the CO contributed 12 (adjusted) of the 198.

INFRASTRUCTURE IMPROVEMENT PROGRAM

The Infrastructure Improvement Program is a very important contributor to providing reliable customer service. The most significant function of this program is to provide funding for the replacement of poor-performing outside plant that cannot be repaired. This program is key to reducing the volatility in trouble report receipt due to wet weather.

Two major initiatives comprise the IIP. The first, trouble report volume reduction, focuses on improving poor-performing outside plant, either through maintenance or plant replacement. Volume reduction is broken down into two parts: PCM and cable rehabilitation. The second initiative included in the IIP focuses on service reliability equipment and consists of improvement to air pressure systems, remote terminal battery replacement, MLT, DLC surveillance, and cross box replacement.

Prior to GTE Merger

The PCM/cable rehab portion of the IIP has taken various approaches in recent years and continues to change. Prior to the merger with GTE, NYNEX/Bell Atlantic had a process in place that focused on the service reliability part of the IIP. Outside plant improvements to reduce report rates and to improve service volume reduction were driven by the engineers and focused on larger plant-replacement-type jobs, with estimate-level authorizations as the norm.

Post GTE Merger

At the time of the merger, a review of this program was conducted to compare GTE's cost-effectiveness and trouble report reduction accomplishments with those in NYNEX/Bell Atlantic. Based on the results achieved in GTE, which were comparatively very good, it was decided that the GTE approach was the more productive and required less capital investment. The GTE approach provided for plant replacement with very small, focused, quick payback construction jobs. As a result, almost all the monies available for this work were put into the PCM process, which was field-driven (cable maintenance) as opposed to engineer-driven and exclusively "small job."

2003 Program

Funding Increase

The almost exclusive focus on PCM work by maintenance operations resulted in a \$56M backlog in cable rehab estimate-level work (some of the estimates were open for over two years). To a degree, this rehab backlog was addressed in 2003. [redacted]

The IIP approach for each Market Area is described below.

- **Island Metro Market Area 2003** – An aggressive strategy on PCM was instituted to “fix” the infrastructure. This program was measured by the number of dispatches saved, with a target of 29,000 to be saved in 2003. [redacted] Work in this Market Area has since become very focused. Only small jobs are issued with PCM totally controlled by the Market Area Operations organization. The Field Maintenance organization identifies the bad plant locations they believe are major contributors to cable (code 4) customer trouble reports. The Proactive Preventive Maintenance (PPM) group in Construction takes these bad plant replacement requests and coordinates with the FAP Engineer, who performs a broad-gauge cost and economic analysis and issues a job to authorize the work if the required payback is achieved. This is the only role Engineering plays in this process. Large rehab estimates are no longer issued, while those that are still open as part of the backlog are being worked on as forces become available.
- **Capital Market Area 2003** – For the PCM portion of this program, the Market Area President and the field managers wield discretion as to when and where to spend the capital. During 2003, this Market Area had approximately [redacted] for PCM. The process begins in the field, with the identification of a location where proactive work appears to be warranted. This information is then provided to the Dispatch Resource Center (DRC), where the information is put into a system called Maronda, a Lotus Notes database that allows the field to communicate with the engineers. (This Market Area differed from the other two in 2003 in that they did not have a Proactive Preventive Maintenance Center but rather handled this function through their Dispatch Resource Centers (DRCs). DCI was advised that such a PPM Center has been reinstated in 2004.) From this input, the engineer performs the analysis to quantify both the impact and the payback. A job is issued by the engineer, with the priority set for getting it completed. PREDICTOR² is also used as part of the PCM program. A work ticket is made up, based on potential troubles identified by the system, and is dispatched to a Cable Maintenance technician. However, this approach is almost always a maintenance “fix” as opposed to the capital improvement noted above.
- **Liberty Market Area (late 2003 and early 2004)** – The PCM program in this Market Area is being driven by Network Operations Analyzers, who are reviewing code 4 reports by tracking units. Under the review process, when a location shows potential for needing a “fix,” it is sent to the field for checking. If it is determined that work is needed and that such work would likely prove economical, the proposed solution is referred to the Facility Analysis Planning (FAP) Engineer to perform a broad-gauge cost and economic analysis and to have a job order issued to authorize the work. Not all “fixes” require an Engineering Work Order (EWO). Those that don’t are handled as maintenance fixes. Also, analysis is done to determine where F1 pair changes are being made and the

² / PREDICTOR is a system that makes tests on working subscriber lines and identifies those with voltage indicators that could result in a future trouble condition. These indicators are patterned to particular cables and locations for preventive maintenance work. PREDICTOR is the only system that gives indications of potential customer trouble conditions before the customer is aware of them. Verizon New York thus has the opportunity to repair the condition or a routine maintenance dispatch, thereby avoiding a customer service outage and a demand dispatch.

complements are run through PREDICTOR to identify access line insulation test (ALIT) indicators. From these indicators of defective pairs and potential customer reports, packages are sent out to cable repair for a “maintenance fix.” Such a solution could include repairing a cracked sheath, repairing a splice, drying out a splice, etc. If it is determined in the field that the necessary “fix” is greater than anticipated, the package is returned to the FAP Engineer for the analysis noted above. There, an authorization is issued to cover the work if the economics warrant. The analyzers handle the coordination meetings, perform the follow-up on job status, and provide tracking after the work is completed to verify that the condition has been corrected. The intent is to complete 70% of the trouble report reduction work by July 1 for maximum impact on the summer load.

Summary of expenditures by Market Area

[redacted]

Exhibit VII-25

IIP EXPENDITURES BY MARKET AREA

[redacted]

Current 2004 Status

As can be seen in the preceding section, each of the New York Market Areas has had a different approach to the PCM program and cable rehab. However, as will be discussed below, the deployment of the Proactive Preventive Maintenance Tool (PPMT) provides an opportunity for a more uniform approach, but one that can still be tailored to accommodate the unique geography contained in each of the Market Areas. To handle the backlog of cable rehab, a plan has been developed to review the work remaining, to reprioritize it, to re-engineer it where necessary, and to close it out. The intent is to do the work that needs to be done and to close out the jobs that are no longer required.

[redacted]

Exhibit VII-26

BACKLOG OF REHAB WORK

[redacted]

[redacted]

2004 PCM Process—Current

The PCM process that is to be followed is flowcharted on *Exhibits VII-1-3*. There are three (3) sources of inputs to the PCM process: systems generated (*Exhibit VII-27*, Incorporate from IR 97), PCM support group identified (*Exhibit VII-28*, See IR 97), or from identification of a problem by a field technician (*Exhibit VII-29*, See IR 97).

Exhibit VII-27

PCM PROCESS SYSTEM GENERATED WORK PACKAGE

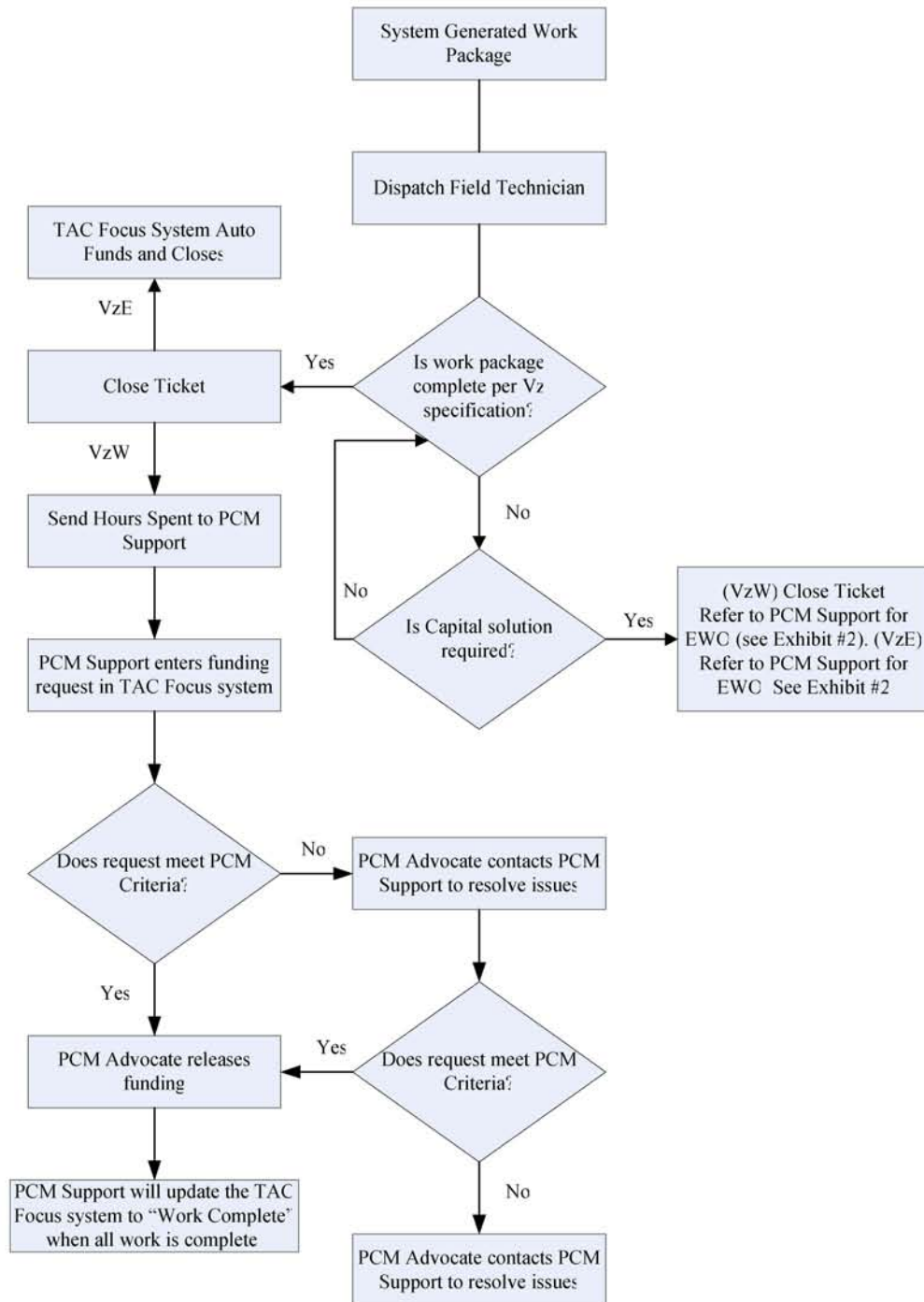


Exhibit VII-28

PCM PROCESS CAPITAL SYSTEM GENERATED WORK PACKAGE

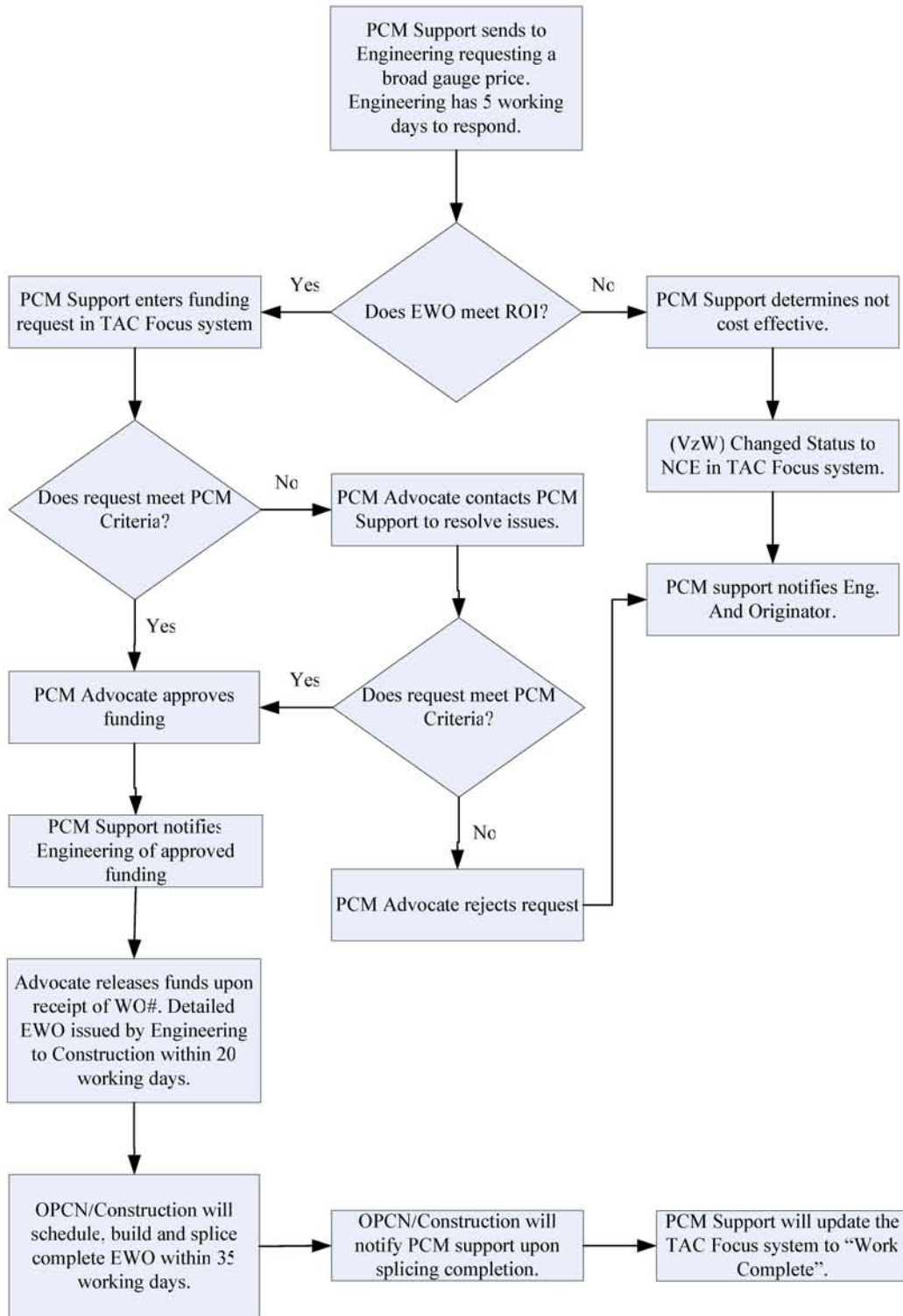
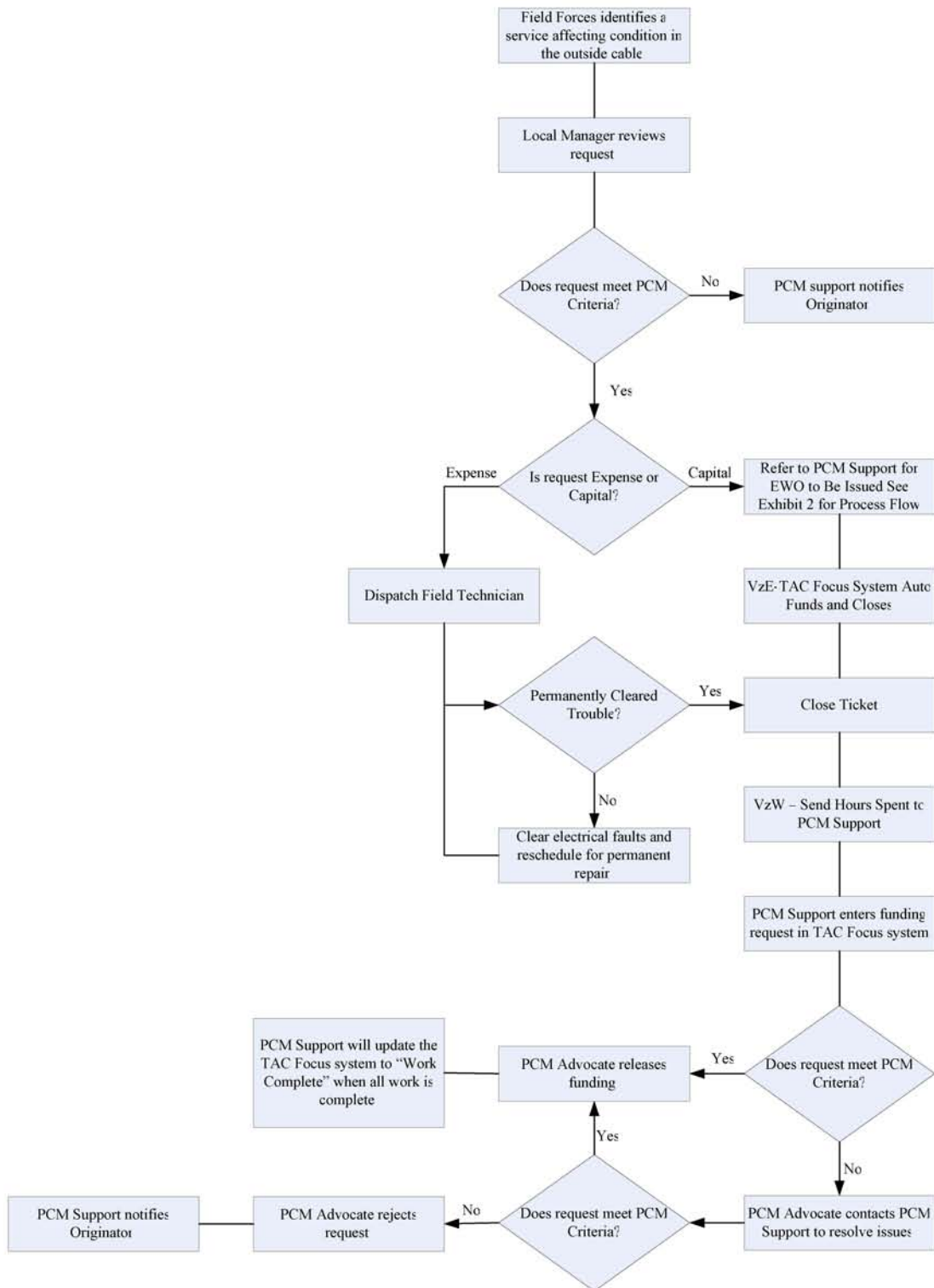


Exhibit VII-29

PCM PROCESS FIELD IDENTIFIED WORK PACKAGE



The Key Indicators of Outside Plant Performance**Volume Reduction Report 470**

The Network Operations organization uses the PPMT – OSP – IIP Volume Reduction Report 470 – Trouble Detail. The PPM process results are also tracked on the National Operations Scorecard. Other Outside Plant Performance results that are tracked on the scorecard include: Dispatches – Maintenance, Initial OSP Cable Trouble Report Rate (code 4), and Net Defective Feeder Pairs Added.

[redacted]

Exhibit VII-30

CODE 4 REPORT RATE

[redacted]

[redacted]

Exhibit VII-31

MAINTENANCE DISPATCHES (000)

[redacted]

[redacted]

Exhibit VII-32

PERCENT DEFECTIVE PAIRS
(HEALTH OF THE NETWORK REPORT)

[redacted]

2004 PCM Process—Post PPMT (Proactive Preventive Maintenance Tool)

In the May–June 2004 timeframe in New York, Verizon is introducing a new tool for analyzing outside plant problems called the Proactive Preventive Maintenance Tool. PPMT is an analyzing tool that is Web-based and that uses outside plant surveillance and tracking applications to identify defective outside plant facilities. PPMT creates two types of work packages: Proactive Work Packages (systems-initiated and created daily, based on the receipt of ALIT results) and Preventive Work Packages (systems-initiated and created using customer trouble history). PPMT uses logic that is built into its system to qualify these packages by twenty weighted components. In so doing, the tool determines a priority ranking. All PCM work will be initiated, funded, tracked, and monitored using the PPMT application.

B - FINDINGS

Network Performance

Finding VII-1 The Inability To Meet OOS>24 Hours And SA>48 Hours Service Objectives Is Attributable To Both The Customer Trouble Load Volatility And The Inability To Clear The Resulting Peak Repair Trouble Load.

The most significant of the contributing factors affecting Verizon's inability to meet this measurement is the trouble load volatility. When the customer-reported troubles are received at a rate higher than the DRC can dispatch them, the average trouble clearing time will exceed the 24/48-hour objective. When the condition of the outside plant is inadequate, rainy or stormy weather will cause these types of increased trouble loads. If this type of weather occurs with enough frequency, then the average clearing time for the month will exceed the objective for OOS>24 hours and SA>48 hours.

DCI obtained the 2003 trouble data for analysis. *Exhibit VII-33* displays the results of this analysis. It shows that for each installation and maintenance center (IMC), the number of business days in 2003 for which the 6:00 A.M. trouble load was more than 20% greater than its daily mean (up to > 100% by 10% increments). *Exhibit VII-33* shows that across the 35 centers there were 2,657 days, or an average 76 business days per center, where the actual daily 6:00 A.M. trouble load exceeded the mean trouble load by 20%. It also shows that there were 1,440 business days, or an average 41 business days per center, where the trouble load exceeded the mean by 50%.

Since the I&R force is sized to handle the daily average trouble load and a normal number of installation orders, trouble loads that are 20% or more above the mean generally exceed the ability of the repair force to handle the OOS>24 and SA>48, including overtime. Meeting the VIP objectives for these measurements is extremely difficult with this kind of variability in received work load as demonstrated by *Exhibit VII-33*.

A joint study conducted in the fall of 2003 by Verizon Labs and the New York Network Operations staff in the Island Metro Market Area found that the correlation coefficient between the Mean Time To Repair (MTTR) and trouble volume is 0.81. As volumes increase and become disproportionate to the average load, MTTR is severely impacted.

Exhibit VII-33**6:00 A.M. TROUBLE LOAD PER BUSINESS DAY**

[redacted]

DCI analyzed the average total trouble load per month on hand at 6:00 A.M. and compared it to the Mean Time to Repair for all troubles and OOS>24 hours. *Exhibit VII-34* shows the results of this analysis for each of the Market Areas for 2003. Because of some data-mapping problems, Island Metro and Liberty provided data only through September.

Exhibit VII-34

6:00 A.M. TROUBLE LOAD/BUSINESS DAY CORRELATION**Capital Market Area**

Month	Trouble Load at 6 A.M./Bus. Day	MTTR	%OOS > 24 Hours
January	5,181	27:46	21.34%
February	6,939	36:30	30.19%
March	8,194	42:48	33.11%
April	8,007	34:22	26.81%
May	6,323	23:57	20.04%
June	7,800	28:56	26.21%
July	8,651	32:06	26.19%
August	12,344	41:24	33.86%
September	12,668	54:38	34.82%
October	9,516	38:07	29.62%
November	9,155	38:39	30.56%
December	6,539	27:11	22.14%

Island Metro Market Area

January	6,543	29:21	22.63%
February	8,529	38:04	26.68%
March	11,523	51:01	37.12%
April	11,166	51:27	36.74%
May	8,163	31:44	23.84%
June	14,952	56:33	33.12%
July	14,513	54:05	29.92%
August	14,603	46:13	33.86%
September	12,736	43:42	31.91%

Liberty Market Area

January	6,591	21:43	18.41%
February	7,839	22:21	19.55%
March	7,869	22:04	19.44%
April	7,220	22:47	18.58%
May	7,049	22:57	18.95%
June	9,064	25:31	22.25%
July	8,684	25:27	23.20%
August	12,699	29:51	28.17%
September	10,000	25:17	22.16%

The Island Metro Market Area shows considerable volatility of the 6:00 A.M. load with corresponding increases for MTTR and %OOS>24 hours. The June 2003 ten-inch rain is reflected in the significant increase in the daily load. The Capital Market Area shows significant variability but not as much as Island Metro. Liberty has the least variation with the exception of August 2003, which can be attributed to the blackout.

DCI calculated the correlation coefficients between the average total trouble load per month on hand at 6:00 A.M. and compared it to the Mean Time to Repair for all troubles and OOS>24 hours. The correlation coefficient for each Market Area between the 6:00 A.M. trouble load, MTTR, and OOS>24 hours is shown in *Exhibit VII-35*.

Exhibit VII-35

CORRELATION OF LOAD AND MTTR

Market Area	Dispatch Load at 6:00 A.M./Calendar Day Correlated with MTTR	Dispatch Load at 6:00 A.M./Business Day Correlated with OOS>24 Hours
Capital	0.856	0.788
Island Metro	0.805	0.621
Liberty	0.935	0.910

These exhibits demonstrate that with an increase in daily trouble load, the MTTR and the OOS>24 hours will increase correspondingly.

Finding VII-2 The Infrastructure Improvement Program (IIP) For Outside Plant Capital Was Under-Funded For 2003 And 2004.

The main driver of the load volatility discussed in *Finding VII-1* is the load spikes from disposition code 4 outside plant trouble reports. DCI obtained the Verizon New York 2003 Data Mart customer trouble data for analysis. DCI analyzed the receipt of disposition code 4 outside plant troubles by day and compared it to the mean incoming code 4 trouble load. *Exhibit VII-36* displays the results of this analysis. For each IMC, it shows the number of weekdays (out of 251) in which the number of code 4 outside plant troubles received was more than 20% above its daily mean (up to >100% by 10% increments). The table shows that across the 35 IMC reporting entities, there were 1,924 days, or an average of 55 days per IMC, where the actual daily code 4s exceeded the mean code 4s by 20% or more. Furthermore, there were 877 days, or an average of 25 days per IMC, where the code 4s exceeded the mean by 50% or more. On the extreme high end, there were 346 days across all the IMCs where the code 4 load spiked and exceeded the mean by 100%.

Exhibit VII-36

EXTREME TROUBLE DAYS

[redacted]

A study of OOS>24 hours in the fall of 2003 in Island Metro by Verizon Laboratories and Verizon NY staff found significant rain effect spikes in some Capital and Island Metro locations. Although Liberty is affected by rain, additional rainfall within Island Metro has a more severe effect than in Liberty. In Island Metro the study determined that an inch of rain would increase ticket volume by 26%. A field analysis in Island Metro of 219 troubles found that 54%, or 119 troubles, were caused by degradation of outside plant. Eighty of the 119 were cable troubles, of which the largest cause was water in plastic insulated cable (PIC) (eight in buried cable; there were four with jobs in progress). One of the recommendations made as a result of the study was to request additional IIP funding for 2004.

In another study of Island Metro conducted in the spring of 2003 by an Operations Analysis Team (OAT) of Verizon managers from outside New York, similar findings were reported. Some quotes from this study are included in the following text:

“The report stated that everyone in all areas found that the outside plant was in bad shape. Money has been spent on the capital program in the past, but there was still a considerable amount of lead cable throughout all areas.”

One writer of the report expressed the opinion that the Maintenance Trouble Load was obviously the problem. He commented that if the load were down, the current force/load strategy would be unnecessary. Construction would be back to doing PCM and Proact would be performing air pressure, PREDICTOR, and DLC maintenance. The load had become somewhat of a self-fulfilling prophecy. Unless measures are taken to reduce the load and keep it down, the vicious cycle will never end. Blaming the weather is futile. It is a virtual surety that there will be heavy rains in April and May as well as thunderstorms in July and August, and there may even be a hurricane in October. The point he expressed was that the weather will continue and the plant must stand up to it to a greater degree.

Exhibit VII-37 provides the Infrastructure Improvement Program expenditures for 2001–2003 and budgeted expenditures for 2004.

Exhibit VII-37

INFRASTRUCTURE IMPROVEMENT PROGRAM EXPENDITURES/BUDGET (\$ MILLIONS)

[redacted]

Exhibit VII-37 shows that IIP Capital expenditures have been significantly reduced in the period between the 2001 level and the budgeted level for 2004. Verizon NY has pointed out that the stabilization category was mostly for growth locations where the fill rates were very high and, as a result, the report rate would rise significantly. Growth relief for these locations was provided as plant stabilization money from the IIP funding rather than the growth category of the Capital budget. With the drop-off in growth, the stabilization category is now no longer funded.

The rehab category is also being phased out, as this category included funding for total plant replacement of all serving areas. The only increase of consequence in the IIP is in Proactive Cable Maintenance (PCM), which is for replacement of only the section of outside plant that is defective (e.g., a buried section of air core PIC cable and a small amount for air pressure and battery replacement). *Exhibit VII-38* contains indicators of trends in outside plant performance for each Market Area.

Exhibit VII-38

OUTSIDE PLANT PERFORMANCE INDICATORS

[redacted]

Exhibit VII-38 indicates a trend of deteriorating outside plant. Disposition code 4/ outside plant troubles increased in 2003, while defective pairs have significantly increased every year.

When discussing the need for increased funding for IIP, Verizon NY cites its report rate and states that it is within the 3.34 target required by the VIP. The objective average report rate across the state that is required by the VIP does not reveal the problem; rather, it is the volatility and spiking of the trouble reports received that are the culprits, as shown in the *Exhibit VII-38*.

In responding to DCI's concerns about IIP funding, Verizon NY stated that the IIP investment in New York is adequate to maintain good service. It was justified by Verizon NY on the basis that it was meeting the NYPSC specified VIP Customer Trouble Report Rate (CTRR) of 3.34. The data presented demonstrates that meeting the VIP average CTRR does not address the OOS>24 and SA>48 service and operations problems.

The Verizon NY response indicates a lack of coordination between the functional Network Engineering organization and the Network Operations organization. The Network Expense budget was overspent by 42.2% in 2003. Moreover, the number of SIR misses for the OOS>24 hours metric increased from 83 during the VIP PY 1 to 122 during PY 2. In addition, the number of SIR misses for SA>48 increased from 42 in PY 1 to 51 in PY 2. Of the 198 SIRs in PY 2, 173 of the total number (or 87.4%) fell into these two categories. (Refer to *Chapter IV – Performance Statistics and Analysis* for more detailed information.)

Other consequences included the Construction operations, which were significantly disrupted by loaning workforce to meet the repair load. Verizon NY cites the unanticipated extraordinary rainfall that occurred in 2003, poor productivity, and various actions in anticipation of an August 2003 labor strike as the sources of the problem. A review of rainfall in several locations indicates that it was significantly above average during a one-month occurrence that took place in June. Other than that, it would not appear that rainfall was extraordinary for the state, with the exception of Albany. Problems with rainfall are indicative of outside plant problems. Furthermore, a review of productivity for the months of June, July, and August 2003 (repair and installation jobs per eight hours) indicate these months were generally above the yearly average.

The outside plant performance indicators along with the two studies referenced above all indicate that the trouble load spike problem, as shown in *Exhibit VII-36* above, is mostly centered in the outside plant. This trouble load volatility pattern totally disrupts operations. To try to meet the OOS>24 hours objective and the SA>48 hours objective requires excessive overtime rates for both the I&R and Cable Maintenance technicians, requires that technicians be pulled from Construction, and necessitates the extension of installation dispatch intervals.

In addition to meeting the VIP service objectives, expense payback from increased IIP capital is certainly justified. DCI found no indication that the Long Island studies' references to the OOS>24 problems were considered in establishing the IIP budget. The business cases for IIP expenditures provided no indication of consideration for the operations problems that have been experienced in Verizon NY. In fact, IIP funding levels appear to be based more on what is left over in the capital budget after growth and FTTP are funded than on what the optimum IIP budget is.

The IIP business cases reviewed were inconsistent and not specific to New York conditions. One business case for the Northeast Area (including New York) used approximately [redacted]

DCI believes a business case should have been performed for Verizon NY operations that are specifically focused on PCM for the areas with the more volatile trouble report problems, as identified in *Exhibit VII-36*. The business case should have considered the actual operations conditions in New York, including actual productivity for I&R and Cable Maintenance technicians and the double dispatch handoff rates. DCI would calculate the expense savings per code 4 saved at closer to [redacted] The capital requirement for a trouble saved needs to be restudied by Verizon NY as experience is gained in using the new Proactive Preventive Maintenance Tool (PPMT).

The evidence suggests that the IIP budget reduction from [redacted] Outside plant is contributing significantly to the OOS>24 hours and the SA>48 hours and without improving the performance of the outside plant, these failures will continue even with only average amounts of rainfall. Outside plant performance indicators and studies point to outside plant as being in need of improvement.

Finding VII-3 The PCM Process Is Inconsistent Across The Market Areas And Is In Need Of Improvement.

The process for identifying and performing PCM work is as follows. The I&R and/or Cable Maintenance Field Technicians are responsible for identifying work in the field that is a potential project for the PCM program. They are to transmit this information to their Local Manager, who is to enter this data into the Maronda database.

The Maronda database is a Lotus Notes database that was created in the 1998–1999 timeframe to manage the maintenance request process workflow and to create a central location for maintenance requests. The database was initially created to provide a means for coordinating the defective outside plant replacement process among OSP operations personnel, the Facility Analyst, the Design Engineering Center, and the Construction Control Center. It was also designed to facilitate the completion of the maintenance request forms by automatically populating certain fields, by sending automatic email notifications through Lotus Notes, and by providing an economic impact analysis based on the input of the Facility Analyst.

There are Proactive Cable Maintenance – Single Point of Contact (PCM-SPOC) positions established in each of the three Market Areas that receive these requests for capital work from the I&R or Cable Maintenance forces in the field or that get a PREDICTOR package from the Loop Expert System (LES). This information is forwarded to the FAP Engineering group for analysis, and if the economic payback hurdle can be achieved through completion, a PCM job is designed and issued to the CXM organization to perform the work. Completed jobs are tracked by the PCM-SPOC to ensure that the anticipated dispatch reductions are achieved. It is intended that PCM jobs should be completed within 35 days.

A weak point in the PCM process is that in most of the areas that were reviewed, there was no formalized direct linkage (either paper or electronic) between the Field Technician and the I&M Local Manager who is responsible for turning the potential job over to the Engineering group. Rather, this information transfer is done on an informal

basis, as there are no standardized forms. This methodology introduces the possibility for errors and omissions in the process.

In interviews with Market Area operations management across the state, DCI found that a considerable number of inconsistent Proactive Cable Maintenance (PCM) processes existed across the three Market Areas. For example, the Capital Market Area does not have a Proactive Maintenance Center (PMC). Plans were to implement such a center in 2004. The Liberty Market Area was revamping its PCM program along the lines of the PCM process in Boston.

In the Long Island study that was performed in the spring of 2003, the review team found that PREDICTOR and other analysis tools were not being used. Repair volume reduction could be accomplished by increased use of analysis and the PREDICTOR tools.

The PCM process was described as field (Cable Maintenance)-driven, as maintenance problems are identified by Cable Maintenance technicians while they work on outside plant problems. This approach is based on what the repairman sees and believes to be the problem as opposed to an analysis-driven identification that is based on customer trouble reports and PREDICTOR patterns.

DCI believes that the PCM trouble reduction process can be improved significantly with proper use of analysis tools, such as the new PPMT.

Finding VII-4 The Construction Backlog Is Not Accurately Tracked.

The backlog is primarily comprised of overage jobs and estimates. Overage work is defined as estimate level authorizations (over \$50K) that are over 12-months-old and jobs that are over six-months-old, where some degree of construction has begun. Three groups of authorizations are entailed: growth (to address increases in lines); municipal (planned at the request or direction of municipalities); and service improvement (to address service-related issues).

[redacted]

Exhibit VII-39

OVERAGE ESTIMATES AND JOBS PENDING WORKLOAD

[redacted]

Judging from the number of estimates and jobs and the associated pending hours involved, the workload required to clear the backlog appeared is significant.

DCI raised concern about the increase in backlog and the plans to reduce it. Verizon NY advised that the Pending Hours and Pending Workload Months as reported in the HON Report were not really backlog in work. Of the [redacted] hours of work reported as backlog in April 2004, only [redacted] hours were approved work that had been released to Construction. The "Other" [redacted] hours were exploratory work, or project work, that was not budgeted and did not represent work on hand for Construction. Exactly how much of the [redacted] hours of approved work is backlog is not known.

DCI made several different information requests for construction backlog information during the course of the project. DCI experienced difficulty reconciling these responses in a comparable manner. Construction backlog information reported in various data sources referenced by Verizon personnel all used different definitions of construction backlog.

Considering the difficulty in responding to the questions and the data request, DCI finds that Verizon NY evidently does not track overage jobs and estimates accurately. Indications from the trends of jobs and estimates are that overage has become excessive. Finally, because an accurate measurement could not be obtained but has continued to spiral upward in all the information reviewed, the backlog is evidently not considered by Engineering to be important and, therefore, is deemed as not needing to be managed.

Finding VII-5 The Construction Backlog Is Excessive And Is Adversely Affecting Network Operations.

Verizon management advised that an objective amount of pending Construction work would be “six months of specific work in hand and three months of routine.” The backlog of work identified by any of the various reports furnished in *Finding 1* far exceeds this objective.

One indicator of backlog effect is the trend of Construction rush work. [redacted]

Exhibit VII-40

ESCALATING INCIDENCE OF RUSH WORK INCURRED THROUGHOUT NEW YORK STATE

[redacted]

As can be seen in the above exhibit, the percentage of Construction hours classified as “rush” work has increased significantly during the 2000 through 2003 period. Rush jobs adversely impact Construction operations and productivity. This negativity occurs because of the set-up and tear-down time associated with moving technicians from uncompleted work to address the newest priority. (See *Finding 1 – Construction Productivity*).

Rush job designations, slated for completion in less than 30 days, are determined by Engineering directives. Presumably, these designations are to be incurred on an “exception basis;” but with rush jobs exceeding 50% for a period of two years, “the exception has become the rule.”

Verizon NY attributes the increase in rush jobs to customer expectations for Hi-Cap service, yet effective procedures for implementing Hi-Cap service have been established by means of RequestNet and BuildNet capabilities. [redacted]

Exhibit VII-41

HI-CAPACITY ORDERS AND AVAILABILITY OF FACILITIES

[redacted]

[redacted]

Exhibit VII-42**PERCENT RUSH WORK AND BACKLOG FOR NEW YORK STATE**

[redacted]

Correlation coefficients were calculated between Percent Rush Work and Overage Estimates and Jobs, and Percent Rush Work and Pending Workload over the period spanning 2000 through 2003. The results are provided in *Exhibit VII-43*.

Exhibit VII-43**CORRELATION OF PERCENT RUSH JOBS WITH BACKLOG IN NEW YORK STATE**

Correlation of Total Overage Estimates and Jobs with Percent Rush Work	0.883
Correlation of Pending Workload – Months with Percent Rush Work	0.939

Regardless of causal relationships, which may be difficult to discern, the increase in rush jobs and the increasing backlog are effectively in lock step. This finding is indicative of an increasing level of “pressure” on the system as a whole.

There are other Network Operations issues with the backlog. [redacted]

Many additional problems exist with overage jobs and estimates. There may be open or taped splices that are susceptible to wet weather conditions. Cable Maintenance and I&M technicians may utilize some of the completed cable portion of a job. Because these jobs have not been put in the Loop Facility Assignment Control System (LFACS) records, the customer service record will be in error, thereby making a future trouble very difficult to locate. When the job is completed and entered into the LFACS, unless the working pairs are statused correctly, the record errors will continue for trouble reports but will now also cause assignment problems on installation orders. Moreover, additional jobs that are engineered in this plant area will further compound the problems.

In a study of Network Operation problems in Long Island Metro in the spring of 2003, the following comments were reported:

“On Long Island, there are incomplete work orders and estimates that are over three years old. The cable has been placed but splicing is not completed. In some cases, Repair Technicians are using these facilities, one pair at a time, to restore service. In the Bronx and Queens, there are approximately 12 Litespan cabinets that have been placed and fully equipped but not put in service. The customers are still working in the old facilities and Technicians are continuing to repair them.”

The Construction backlog is the responsibility of Network Engineering. When discussing the backlog with Verizon Network Engineering, the overall approach was described as follows:

- Verizon NY will only work those overage growth jobs that it has determined, based on a review, are critical to provide service. A review of the “overage” growth jobs resulted in the cancellation or postponement of some jobs, as they are no longer required. “Overage” growth jobs that are still required have been funded and are included in the 2004 Capital Program for Verizon NY. Verizon NY will continue to monitor the remaining overage jobs to determine if they should be cancelled or postponed.
- As for overage municipal jobs, the “backlog” exists for reasons beyond Verizon NY’s control. For example, municipalities may request or direct Verizon NY to perform construction and, thereafter, lose funding for the project and never follow through. These overage jobs will only be worked if or when the roadblocks are removed or, in time, will be cancelled.
- Approximately [redacted] work attributable to capital investment. Network Engineering has conducted a thorough review of the overage service improvement jobs. During the review, a number of jobs were revised or cancelled in light of updated trouble data and current access line gain information. The remaining jobs were prioritized and will be addressed as part of the 2004 IIP budget.

Another operational consideration that indicates backlog concerns is the observed condition of Verizon pole lines and technician comments concerning irregular plant conditions. In the ride-alongs, DCI observed many instances of double poles not transferred, poles broken and not replaced, and other poor pole line conditions. Of additional concern is the apparent unsafe conditions indicated by some of these observations. During the ride-alongs, DCI noted many locations where drops, or 6- and 12-pair cable, had been placed to bypass sections of bad plant. Technicians reported that they had turned in irregular plant condition forms, or T-zone forms, on bad plant conditions many times in the past, but they were not responded to. They, therefore, have stopped turning in forms to correct bad plant conditions. These observations further indicate that Construction is overwhelmed with the backlog and rush work and is unable to respond to bad plant conditions. Of note is the fact that most of this backlog of work, in terms of backlog hours, is not contained in the various backlog reports.

Regardless, as evidenced in the various reports discussed in *Finding VII-2*, the trend of this work—which collectively constitutes “the backlog” within each District, and for the State as a whole—generally either has been increasing dramatically or has stabilized at near-peak levels. This would indicate that Engineering is not really concerned about overage work and its related effects on Network Operations. Because growth has stopped, jobs and estimates that have been started have been left uncompleted. On one hand, the current backlog is being tracked in the high-profile HON Report and, on the other hand, is being downplayed as “misleading” and not capturing the substance of high-priority Construction program work. In practical terms, the backlog cannot be effectively managed until this situation is rectified. Estimates and jobs continue to be issued by Engineering and rush work constitutes over 50% of all work. This finding, along with the task of building the FTTP network, will make it difficult to reduce the backlog of open jobs and estimates.

Workforce Management

Finding VII-6 Installation And Maintenance (I&M) Low Productivity Exacerbates The Ability To Clear Customer Trouble Reports In A Timely Fashion.

In DCI interviews, Verizon NY management consistently identified Verizon NY’s low productivity as the principal problem in the failure to achieve the VIP objectives for OOS>24 and SA>48. They pointed out that Verizon NY had the lowest productivity of all of the Verizon operating areas.

The following *Exhibit VII-44* provides a comparison among the other Verizon geographies and the New York Market Areas for both repair and installation, based on jobs per eight-hour day.

Exhibit VII-44**COMPARISON IN JOBS PER EIGHT-HOUR DAY**

[redacted]

As can be seen in *Exhibit VII-44*, the productivity attained by the Verizon NY Market Areas since 2000 has consistently fallen below other Verizon properties for both repair and installation. This poor performance relative to their peers has kept the New York Market Areas ranked at the lowest achievement levels throughout the period reviewed, with the exception of Island Metro, which is above New Jersey for repair in 2000 and above New England and New Jersey for installation in 2002 and 2003. However, as can be seen in *Exhibit VII-45*, the New York Market Areas have shown improvement since 2000.

Exhibit VII-45**NEW YORK JOBS PER EIGHT-HOUR DAY IMPROVEMENT**

[redacted]

While the percentage of improvement over the three years is significant in some instances, the low base from which the figures started still places the Verizon NY Market Areas in the lowest performance levels relative to their peers. Moreover, for the most part, their peers also experienced improvements during the period reviewed, thereby allowing them to maintain their relative position.

A higher productivity rate is important to OOS>24 because it allows the DRCs to clear the trouble load on a timelier basis. For example, a technician who clears 5.0 troubles in eight hours will, on average, clear an additional trouble at 20% overtime. However, a technician who clears 3.0 troubles in eight hours will, on average, clear only 0.6 more troubles at 20% overtime. Consequently, a DRC with higher technician productivity and a trouble load that is 20% above average can clear it with 20% overtime, whereas a DRC with field forces that are at the lower productivity rate cannot.

To date, Verizon NY's primary mechanism for addressing productivity has been the Service Excellence Plan (SEP). A formal improvement program, the SEP, dated July 9, 2001, was introduced in Verizon NY during the last half of 2001. The SEP is a "bargained for" plan that sets standards for both quality and quantity of work performed by I&R technicians. SEP was bargained to an impasse and implemented without the Union's full acceptance.

The SEP has gotten mixed reviews from both management and associates since its inception. It is viewed as not being timely enough to provide meaningful information to the technicians and as also somewhat paperwork intensive. The plan has provided for varying and confusing objectives. This inconsistency is seen as being a detriment to consistent enforcement and use. Furthermore, the perception by associates exists that the plan will drive ever-increasing performance levels as the base period for the averages is changed to reflect more current periods.

The SEP has not been successful in achieving the productivity improvement that Verizon NY management believes is needed. Consequently, Verizon NY has changed its approach and is considering two alternatives that are being trialed as supplements to the plan. The first of these trials is called Suffolk Operations Progress (SOP). This plan is described in detail in *Section IX – Best Practices* of this report. In summary, it provides for a Global Positioning System (GPS) Analyst and a Resource Manager at the Area Operations Manager level. These positions are designed to free up the Local Managers so that they can spend maximum time in the field working with their technicians. In addition, daily feedback is provided on each associate's accomplishments for the preceding day. The second objective is being accomplished in concert with a Communications Workers of America (CWA) union local and involves suspension of the SEP while the trial is underway. Results are furnished to the union on a weekly basis and are being posted in the garages. While very early, improvements have been noted for both productivity and quality.

DCI agrees that the productivity in New York is too low. The SEP, as utilized by Verizon NY, has not been successful. Furthermore, based on current productivity levels, the productivity base is so low that a SEP approach will take a long time to achieve the productivity results that Verizon NY needs to improve its service levels. However, DCI also recognizes that certain roadblocks exist which have the effect of lowering productivity, as discussed in the following finding.

Finding VII-7 **Four Significant Roadblocks Have Been Identified That Contribute To The Relatively Low Productivity Performance.**

DCI conducted a number of ride-alongs with I&R and Cable Maintenance technicians. In so doing, DCI identified numerous roadblocks that are contributing to lower productivity. While other incidental roadblocks were observed, these particular four roadblocks were the most significant and are briefly discussed below.

Craft Access Terminal (CAT)

The Field Technicians use a craft access terminal (CAT) to pick up and close out work, to perform tests, and to access the systems to perform functions such as pair changes without the assistance of DRC employees. Access is provided through the Integrated Field Access System (IFAS). No wireless capability is provided, so the technicians must use a working cable pair to access the system. The predominant CAT in use in New York is manufactured by Melard Technologies, Inc., which has since gone out of business. The terminals have experienced a number of problems with battery life, and battery conditioners have been purchased in some locations to perform a “deep cycle” recharge on the batteries, which will generally allow for another several months of use. On other occasions, the terminal will lock up and require rebooting, which often includes pulling the batteries to get it functioning again. Moreover, the CAT is difficult to read in the sunlight.

If they have a dial tone, the technicians are supposed to use their CAT at the customer premise to close out and pick up a new job from the network interface device (NID). The system runs MLT on the line being closed and on the new job if it is a trouble report. Consequently, this operation generally takes from 10 to 15 minutes, although it could take longer if the system is congested. However, because of the battery problems noted above, the technicians routinely either go to a CO or back to the garage to use the CAT. This transitioning causes them to have more windshield time.

It was further noted that the CAT link to the billing system does not work properly and must be supplemented with a manual form, the Work Authorization/Completion Acknowledgement Form. Service Delivery Method and Procedure Release, Doc. No. 2001 00199-MDP, Issue Date: 08/31/2001, states there are “five forms being used as Premise Work Invoices (PWI)” in the former Bell Atlantic area. It goes on to say, “In an attempt to consolidate the number of forms being used, to reduce costs, and to standardize corporate procedures,” the new form is being introduced. The process of manually completing this form and getting the customer’s signature even if no billable work is performed or leaving a copy on a no access (along with two other manual forms that will be discussed later in this section) takes approximately 15 minutes per dispatch.

Verizon NY has stated that they do not plan to replace the current Melard units in the near future. Verizon NY explains that the company made a capital investment of over \$15 million to buy the 7,747 units that were deployed in the NY service territory in the 2001 to 2002 timeframe. As such, Verizon NY stated that a limited trial of a potential replacement unit has been initiated, but that there is no established timeframe for making a decision concerning replacement units.

Central Office Support

To be effective and efficient, a Field Technician requires timely assistance from the CO. Weekend coverage, in those situations when the majority of the outside forces are working, is not matched by CO coverage; hence, wait times can be excessive as a result of limited forces in the CO or the use of “rover” technicians who cover several offices. Lunch and break times were also seen as particular problems, as the CO technicians all tend to leave at the same time. “Frogging” cords are jumper cables that are provided in some offices (typically these are unmanned and served by rovers who might visit once or twice weekly) that allow the Field Technician to temporarily restore a customer’s service. When the FT closes out the dispatch, a maintenance change ticket is generated automatically so that the Central Office Technician (COT) can provide a permanent fix on their next scheduled visit to the office.

Uniform Work Rules

Uniform work rules were observed in one Market Area that require one-hour lunch periods to be taken “midpoint during the tour.” These rules stipulate that “technicians will obtain managers’ approval for any changes to their normal tour. Late lunches must be approved by management and noted.” Adherence to this rule in the field causes jobs to be left that could be completed in little additional time. In these cases, the FT travels for lunch, returns for the short period needed to complete the job, and then picks up a new dispatch.

Excess Paperwork

Uniform work rules were observed in one Market Area that require “proper completion and accuracy of the daily timesheet and supporting job documentation. The time report must document the time and specific work operations, the daily work schedules (1987 form), the lunch-hour time and duration, and an accurate account of lost productive time. The time report must be kept current throughout the day and must be submitted prior to the end of each and every tour.” In addition, the technicians manually complete a “Customer Call Back Sheet” using information taken from their CAT. As noted above, the manual completion of these two forms plus the Work Authorization/Completion Acknowledgement form takes 15 minutes of the technician’s time per dispatch. All of the above requirements could be incorporated into the CAT if it were properly designed.

Finding VII-8 Multiple Dispatches Caused By Handoffs And Incompletes Extend Trouble Clearing Times And Contribute To The OOS>24 And SA> 48 Hours Problem.

DCI conducted a number of ride-alongs with I&R and Cable Maintenance technicians. In so doing, an observation was made that the technicians were not completing trouble dispatches in the afternoon but rather were turning them in as incompletes for re-dispatch the next day. It was also noted that some returns to the garage occurred at times significantly before the end of tours. Recognizing the relatively small size of the ride-along sample, DCI performed a data analysis on dispatched trouble reports in the WFA dispatch system for the period of mid-March through April 24, 2004. *Exhibit VII-46* summarizes OOS dispatched troubles by time of day, percent completed that day, percent no access, and the dispatch to clear time for those troubles not completed the day of dispatch.

Exhibit VII-46

OOS DISPATCH PERCENTAGE COMPLETE

Time	Number of OOS Dispatches	% Completed on Day Dispatched.	% No Accesses	Incompletes Dispatch to Clear
7:00 A.M.–7:59 A.M.	19,409	91.49%	5.31%	59:58
8:00 A.M.–8:59 A.M.	30,250	90.96%	8.24%	59:49
9:00 A.M.–9:59 A.M.	18,293	89.38%	6.87%	51:05
10:00 A.M.–10:59 A.M.	25,806	89.28%	6.47%	49:21
11:00 A.M.–11:59 A.M.	20,654	87.63%	6.93%	51:22
12:00 P.M.–12:59 P.M.	9,196	85.36%	5.79%	45:25
1:00 P.M.–1:59 P.M.	25,027	83.55%	7.73%	42:02
2:00 P.M.–2:59 P.M.	20,864	77.14%	6.83%	39:24
3:00 P.M.–3:59 P.M.	11,941	67.76%	9.31%	33:22
4:00 P.M.–4:59 P.M.	4,671	67.82%	9.68%	32:39
5:00 P.M.–5:59 P.M.	2,485	61.85%	13.00%	28:46
6:00 P.M.–6:59 P.M.	761	50.99%	17.74%	31:42

As can be seen from this dispatch data, the observations from the technician ride-alongs are also demonstrated in this exhibit. First, the number of dispatches after 3:00 P.M. drops sharply. This dramatic dip affects the ability to dispatch OOS troubles on the same day they are received, which then jeopardizes the ability to clear them in 24 hours.

Of greater concern is that the percent of incomplete troubles increases from mid-morning but sharply increases from 2:00 P.M. to the end of the time of day that was studied.

Troubles that are not completed on the day of dispatch will have a clearing time that is greater than 24 hours. *Exhibit VII-46* provides data showing that troubles that are incomplete result in extremely long dispatch to clear times. The receipt to clear, or total OOS or SA time, would be significantly longer.

In a study performed in Island Metro in the spring of 2003, it was found that the percent of troubles cleared on the first dispatch is somewhat low in New York. As a comparison, the Operations Analysis Team (OAT) that performed the 2003 review on the Island Metro Market Area found that the four areas represented by the study team averaged 88.7% cleared on the first dispatch, while the Island Metro Market Area alone averaged 81.2% for the same period. While no accesses contribute to this difference (7.7% for Island Metro versus 2.9% for the OAT average), the team found that the handoffs by the I&R technician to Cable Maintenance and the CO are of major significance. For the period reviewed, Island Metro averaged 14.75% of installation and repair dispatches handed off, while the OAT regions average was 8.57%. The expectation is that the I&R technician will either find and repair troubles in the aerial plant or test the trouble into the underground before handing off to cable maintenance. However, the prevailing practice in New York is that I&R technicians clear from the serving terminal towards the customer premise and hand off everything else to Cable Maintenance. (In the Capital Market Area, there are some Universal Technicians who will clear troubles in accessible plant but who will not open a sheath as the Cable Maintenance technician would.) *Exhibit VII-47* captures the historical maintenance I&R technicians' handoff rates by New York Market Area for facility reasons.

Exhibit VII-47

MAINTENANCE HANDOFF RATES

Year	Liberty	Island Metro	Capital
2001	3.73%	10.11%	6.69%
2002	4.14%	11.44%	7.12%
2003	5.36%	10.05%	7.57%

Double dispatching was seen as an issue early on. Not only is this practice costly, but because of the time required to make the handoff and accomplish the second dispatch, there is also little likelihood of clearing the out-of-service trouble in less than 24 hours.

From data contained in *Exhibit VII-46*, an analysis of the OOS outside plant code 4 troubles only is shown in *Exhibit VII-48*.

Exhibit VII-48

**DISPOSITION CODE 4
OOS DISPATCHES**

Time	Number of Code 4 OOS Dispatches	% Completed on day dispatched.	% No Accesses	Incompletes Dispatch to Clear
7:00 A.M.–7:59 A.M.	8,511	87.56%	1.54%	56:29
8:00 A.M.–8:59 A.M.	12,888	86.19%	2.03%	59:41
9:00 A.M.–9:59 A.M.	7,751	82.91%	1.84%	51:18
10:00 A.M.–10:59 A.M.	11,019	84.06%	1.85%	49:06
11:00 A.M.–11:59 A.M.	8,646	81.40%	2.01%	48:24
12:00 P.M.–12:59 P.M.	4,000	78.80%	1.68%	46:09
1:00 P.M.–1:59 P.M.	10,433	76.23%	2.88%	43:03
2:00 P.M.–2:59 P.M.	8,678	88.81%	2.54%	40:03
3:00 P.M.–3:59 P.M.	4,838	61.33%	3.87%	36:00
4:00 P.M.–4:59 P.M.	2,033	62.62%	4.08%	35:16
5:00 P.M.–5:59 P.M.	983	56.46%	6.10%	29:43
6:00 P.M.–6:59 P.M.	300	46.67%	8.00%	32:39

Exhibit VII-48 shows that percent completes on the day of dispatch for code 4s is lower than OOS dispatches in the preceding *Exhibit VII-47*. This difference is the result of troubles being handed off by the I&R technician to a Cable Maintenance technician to clear. The long dispatch to clear times for the incompletes (or handoffs) show that these types of troubles will far exceed the receipt to clear objective of 24 hours. Another trend observed is the drop-off in dispatches and higher incomplete rates later in the afternoon. Also, there is an upward trend in no accesses, which is unexplained, as code 4 troubles are outside plant troubles and access is not required.

A similar analysis for Disposition code 3 troubles is provided in *Exhibit VII-49* below. Because code 3 trouble conditions occur between the NID and the serving terminal, these troubles should be cleared by I&R technicians without handoffs and should be cleared in a timely fashion.

Exhibit VII-49

**DISPOSITION CODE 3
OOS DISPATCHES**

Time	Number of Code 3 OOS Dispatches	% Completed on day dispatched.	% No Accesses	Incompletes Dispatch to Clear
7:00 A.M.–7:59 A.M.	5,143	95.84%	3.11%	70:26
8:00 A.M.–8:59 A.M.	7,708	95.84%	4.00%	59:22
9:00 A.M.–9:59 A.M.	4,697	95.88%	3.17%	50:43
10:00 A.M.–10:59 A.M.	8,920	95.38%	3.05%	51:32
11:00 A.M.–11:59 A.M.	5,537	94.58%	2.87%	60:47
12:00 P.M.–12:59 P.M.	2,810	93.07%	3.03%	48:21
1:00 P.M.–1:59 P.M.	7,035	91.33%	3.61%	46:32
2:00 P.M.–2:59 P.M.	5,909	85.95%	4.10%	46:41
3:00 P.M.–3:59 P.M.	3,312	76.51%	4.95%	37:40
4:00 P.M.–4:59 P.M.	1,295	78.61%	5.95%	39:00
5:00 P.M.–5:59 P.M.	720	72.92%	8.47%	40:31
6:00 P.M.–6:59 P.M.	174	63.22%	7.47%	34:52

Exhibit VII-49 shows similar trends to the other tables in that dispatches and completions are lower in the afternoon. The incompletes should not be occurring for code 3 troubles, as these troubles are those that are designated for the I&R technician to clear.

Finding VII-9 Test Sets Are Inconsistently Deployed And Usage Of Those Deployed Is Not Maximized.

In the Operations Analysis Team (OAT) review of Island Metro it was found that KS meters were being used in the majority of I&R groups and few Side Kicks (less than 10% for I&R technicians) were reported. Furthermore, DCI found that the Batavia FTs don't have Side Kick testing units; rather, most of them are using KS meters. In a ride-along, it was noted that the technician did not have a Side Kick but rather had a 965 and a breakdown set. He used a KS meter when shooting cable troubles. Furthermore, DCI was told that the training for the Side Kicks was not very well conducted nor was it comprehensive, and consequently, most technicians do not know how to use the Side Kick properly to take advantage of all its functionality.

Finding VII-10 **All COs In New York Are Not Equipped With The Direct Access Test Units (Datus), And Where Equipped, The Outside Technicians Are Not Making Maximum Utilization Of The Equipment.**

The DATU equipment allows the outside technician to perform a number of tests on a working line without the assistance of CO personnel, thereby reducing wait times while also improving productivity and customer service. “DATU is not available in many Long Island Central Offices.” For the total state, there are 267 offices with DATU equipment, but there are 540 central office entities in Verizon NY per the New York VIP report. A replacement for this equipment, Frame Responder, is physically installed in every Liberty Market Area CO “that has a digital switch. All units are physically installed; none has been fully programmed and turned-up for operation and/or is currently being used by National Operations.” The Science & Technology Project Manager, COMPASS, and local forces are starting to visit each office.”

Usage of the DATU equipment by the outside forces is also of concern, which could be a function of two factors: the DATU equipment has not been kept up-to-date, thus making it unable to test certain lines; or the technician prefers to utilize CO personnel rather than the equipment. Information was reviewed for an AOM group that indicated inconsistent usage (see *Finding 1 – Best Practices* for details).

Finding VII-11 **Global Positioning System (GPS) Units Were Deployed On The Vehicles Of I&R And Cable Maintenance Technicians During 2002 And Were Completed In 2003; However, Follow-Up And Usage Of The System Did Not Fully Use Its Capabilities.**

“AOMs felt it (GPS) was being used but not to its potential. Local Managers generally reported using it but reports did not substantiate it.” In one work center, “50% of Cable Maintenance vehicles (including the shop steward’s) were not equipped.” “GPS is in but it is not being formally used—target date for this of 3/1/04.”

Finding VII-12 **The Deployment And Use Of Cell Phones And Other Methods Of Communication For Use By The FTs In The Field Is Not Standardized Across The Verizon NY Service Territory And Is A Source Of Inefficiency On The Part Of The FTs.**

Across the Verizon NY service territory, there is a great variation in the use of cell phones for communicating with the various I&M FTs. For example, in the Syracuse area, each of the I&M FTs has a pager and a cell phone. In the Utica area, as of the time of the interviews (February 2004), cell phones had been purchased but had not been distributed to the FTs, as decisions as to the service plans to be used had not been finalized. In most other areas of the Verizon NY service territory, the FTs do not have company cell phones; rather, they have pagers and some use their personal cell phones for work purposes. In many areas, the Special Services FTs are the only ones to have cell

phones. Significant variation was found across the Verizon NY service territory, with no standardization or guidelines being followed.

Finding VII-13 When Construction Technicians Are Loaned To The Demand Load To Work Customer Service Orders Or Trouble Reports, They Are Not Measured For Quality And Quantity While Working I&M.

DCI requested productivity levels for the CXM Field Technicians who were loaned to the I&M force, as well as seven- and thirty-day repeat report percentages. It was noted that this information “cannot be provided as CMPS measures productivity by obtaining/merging CLTR hours data and WFA-DO completion data. CMPS does capture the completions via WFA-DO. CXM technicians are credited with completions but not charged with hours.” However, the Operations Analysis Team March 2003 review of the Island Metro Market Area noted the following: “When their technicians are loaned to repair, there are CMPS reports for productivity but only two work centers were observed that had these numbers posted and evidence that it was shared with the technicians. When CXM technicians are in the load, they are not being used efficiently.” “They are not using Sidekicks to test. No district has craft access terminals, so all dispatches are manual.”

Finding VII-14 The Quality Of Work Has Shown No Improvement In One Of The New York Market Areas (Capital), While It Has Deteriorated In The Other Two (Liberty And Island Metro).

Exhibit VII-50, Exhibit VII-51, and Exhibit VII-52 demonstrate the status of I&R quality in the three New York Market Areas by examining four quality measures: (1) Repair Rework – Percent Non-Productive Dispatches, (2) Installation Rework – Percent Non-Productive Dispatches, (3) Consumer – Percent 30-Day Repeat Reports, and (4) Consumer-7-Day I Codes.

Exhibit VII-50

CAPITAL MARKET AREA QUALITY

Capital Market Area	2001	2002	2003
Repair Rework – % Non-Productive Dispatch	12.1%	11.5%	10.9%
Installation Rework – Non-Productive Dispatch	5.0	4.7	4.9
Consumer – % 30-Day Repeaters	19.69%	19.37%	20.07%
Consumer – 7-Day I Codes	2.32	2.40	2.64

Exhibit VII-51

LIBERTY MARKET AREA QUALITY

Liberty Market Area	2001	2002	2003
Repair Rework – % Non-Productive Dispatch	24.3%	25.7%	28.4%
Installation Rework – Non-Productive Dispatch	6.3	6.6	7.2
Consumer – % 30-Day Repeaters	25.02%	25.33%	27.76%
Consumer – 7-Day I Codes	2.76	2.84	2.92

Exhibit VII-52

ISLAND METRO MARKET AREA QUALITY

Island Metro Market Area	2001	2002	2003
Repair Rework – % Non-Productive Dispatch	15.4%	17.5%	18.4%
Installation Rework – Non-Productive Dispatch	6.2	6.1	7.2
Consumer – % 30-Day Repeaters	21.38%	21.74%	23.03%
Consumer – 7-Day I Codes	2.45	2.53	2.60

As previously stated, the SEP sets standards for both quantity and quality. As stated in the SEP employee performance will be addressed when such performance does not meet the standards of satisfactory performance expectations in quality and productivity (quantity of work). Quality includes the completeness, neatness, accuracy, and acceptability of work performed by the employee in comparison to expected results. It should also include the four principles of quality: meet the requirements, manage by prevention, produce error-free work, and measure by cost of quality. “The process is designed to align performance with customer expectations through continuous improvement and career development.” “Quality will be measured against the standards of satisfactory performance for the number of errors of defects per unit of work (e.g., repair repeaters, I codes, etc.)” While a great deal of attention has been given the SEP’s quantity of work aspects, as can be seen, the plan was intended to address quality issues as well. However, as noted in *Exhibit VII-50*, *Exhibit VII-51*, and *Exhibit VII-52* above and despite the plan’s stated objective of continuous improvement, overall quality has worsened from 2001 through 2003.

From March 11, 2003 through April 2, 2003, an Operations Analysis Team (OAT) conducted an analysis of Island Metro operations with the following observation: “Over 100 quality inspections were observed. There were few deviations noted. This did not make sense given the rework results. Those deviations that were noted were non-critical in nature and....” In addition, for January 2003 and January 2004, an analysis was made

of the first-level observations on Field Technicians (FT) in one second-level group. *Exhibit VII-53* provides a summary of the information.

Exhibit VII-53

FIRST-LEVEL OBSERVATIONS

	Observations (OBS)	Critical Deviation Opportunities	Other Deviation Opportunities	Critical Scored	Other Scored	FTs with Multiple OBS
01/03	73	771	1,010	5	6	2
01/04	66	669	1,068	7	14	2

With rework at the levels shown, the deviations scored appear extremely low for both months in both “critical” and “other” categories. Furthermore, only two technicians in each month had more than one observation performed on their work and none of them had a deviation scored on any of the observations.

DCI requested copies of compliance/staff reviews conducted in 2003. A review of those received, which were all for the Island Metro Market Area, indicates that quality reviews are being done as required by the first-level managers, but the reviews indicate a very high compliance rate with little follow-up on deviation-identified technicians. Action items from the reviews call for additional reviews of technicians with high rework rates. The reviews also appear to focus on the Customer Contact and Callback Procedures, which were shown as a critical finding in all four manager groups that were reviewed. Other areas of traditional quality metrics do not appear to have this same level of scrutiny. In the Liberty Market Area there is a concern that quality reviews are not rigorous enough, and the plan is to bring in several independent quality inspectors who are relatively recent ex-employees. Their duties will include identification of bad plant conditions while in the field and verification that technician work was done correctly. Their findings will be compared with first-level quality inspections.

Volume Reduction

Finding VII-15 Unbundled Network Element Platforms (UNE-Ps) Are Being Dispatched Unnecessarily.

DCI ride-alongs identified many situations where the Field Technicians were being dispatched to provision a new cable pair for a customer who was moving to another CLEC. In fact, the first ride-along on day one of the ride-alongs was just such a dispatch. The Field Technicians indicated that it had been a standard practice to provision a new pair instead of reassigning the old pair—a change that can be made in the central office and that would not require a Field Technician dispatch. The actual reasoning behind this practice was not clear to the Field Technicians.

Interviews with first-level managers also confirmed that, in many cases, Field Technicians were being dispatched to provision a new cable pair each time a customer moved from one CLEC to another. In some instances, they estimated that anywhere from 30–70% of the installation load was such CLEC-to-CLEC churn. Although unclear as to the exact reason why the previous cable pair could not be used, it was the first-level manager's impression that technicians were being dispatched because the previous CLEC would not turn over the original pair for the subsequent CLEC. Therefore, the only way for Verizon NY to resolve the issue was to order a field dispatch and provision a new cable pair.

The above situation was observed on several different occasions in the Capital Market Area. However, an individual associate in one of the Island Metro DRCs had developed an internal program to scrub those CLEC-to-CLEC dispatch requests from the load by directly contacting the individual CLEC and reacquiring the original cable pair for use. These CLEC-to-CLEC changes were then made in the central office without the need for a field dispatch. This DRC was effectively removing 30 field dispatches a day from the workload, or the equivalent of 15 technicians at the current level of Field Technician productivity.

Finding VII-16 BCTs Are Not Being Restored To Reduce Installation Visits.

While the quantity of total facility modifications needed for provisioning new service is down, the vast majority are accomplished by breaking a connected through (BCT) facility. *Exhibit VII-54* provides the data for New York.

Exhibit VII-54

FACILITY MODIFICATIONS BY BREAKING CONNECTED THROUGH (BCT) FACILITIES

Facility Modifications	2002		2003	
	Total	BCT	Total	BCT
Island Metro	55,656	42,676	53,586	38,906
Capital	50,922	40,401	47,660	37,940
Liberty	57,150	42,676	53,586	38,906
New York State	163,728	125,753	154,832	115,752

BCTs now account for approximately three-quarters of all facility modifications. Connected through (CT) facilities are those that are left in place on a service disconnect such that when a later request for service is made at the same location, service can be connected without a technician dispatch.

The consequence of a BCT is that facilities are broken and used for another location and are no longer in place. A request for service at the original service location then requires

an installation visit. In the past, CTs were retained with dial tone for both protection and the capability of the customer to access 911 or the business office. Currently, dial tone is no longer left on the CT pair and Network Engineering does not have a program to restore BCTs. Furthermore, installation visits as a result of BCTs are not analyzed to identify locations where restoral would be cost-effective, such as in high-churn environments (apartment houses, nursing homes, etc.). The consequence for Network Operations is additional installation dispatches in the dispatch load.

Finding VII-17 Data Validation And Reporting (DAVAR) Cable Pair Recovery Testing Has Decreased Significantly While The Number Of Defective Pairs Added To The Network Has Increased Significantly.

The number and percentage of defective pairs by Market Area is shown in *Exhibit VII-55*. As evidenced by this data, there has been a pronounced increase in the number of defective pairs over the period spanning the years 2000 through 2003.

Exhibit VII-55

EXTENT OF DEFECTIVE PAIRS BY MARKET AREA

YEAR	2000	2001	2002	2003
Island Metro Market Area				
Defective Pairs Added	37,510	45,290	55,032	56,334
% Defective Feeder Pairs	12.4%	12.9%	13.7%	14.6%
Capital Market Area				
Defective Pairs Added	24,146	26,324	40,863	57,177
% Defective Feeder Pairs	8.6%	8.9%	9.4%	10.3%
Liberty Market Area				
Defective Pairs Added	52,769	75,644	65,332	86,000
% Defective Feeder Pairs	11.7%	12.7%	13.4%	14.3%

This defective pair increase has been accompanied by a decrease in the use of Data Validation and Reporting (DAVAR) pair testing, which is driven by Engineering directives. The extent of DAVAR testing is displayed in *Exhibit VII-56*.

Exhibit VII-56

DAVAR PAIR TESTING AND PAIRS RECOVERED BY MARKET AREA

YEAR	2000	2001	2002	2003
Island Metro Market Area				
DAVAR Pairs Tested	484,508	623,314	558,590	475,287
DAVAR Pairs Recovered	15,977	23,892	26,411	29,147
Capital Market Area				
DAVAR Pairs Tested	1,066,746	1,577,324	1,040,244	227,087
DAVAR Pairs Recovered	29,966	35,909	26,833	7,295
Liberty Market Area				
DAVAR Pairs Tested	288,252	324,640	527,000	232,489
DAVAR Pairs Recovered	5,424	9,110	22,695	5,112

Verizon NY has not recently performed a formal evaluation of the viability and/or effectiveness of the company's defective-pair recovery program. There is a strong likelihood that the pronounced drop off in DAVAR testing, as reflected in the HON Report, is a contributing factor to the increase in defective pairs

Finding VII-18 **Digital Loop Carrier (DLC) Systems Have A Low Percentage Of Testability, Which Will Increase The Likelihood Of A Dispatch On Customer Trouble Reports From The Customers Served By Them.**

Trouble reports that cannot be tested will almost certainly be dispatched because normal test okay (T-OK) and SCRUBBER procedures cannot be applied. For all troubles received during 2003, Verizon NY dispatched on 56.1% of them. DCI requested historical testability information for both copper-served customers and those served by DLC. This information is shown in *Exhibit VII-57*. The data shows excellent testability for copper plant, but the DLC test results are somewhat low.

Exhibit VII-57

PERCENT TESTABILITY

	Percent Testability-Copper			
	2000	2001	2002	2003 (Nov)
Capital	97.78%	98.15%	97.67%	97.25%
Island Metro	98.15%	97.77%	98.19%	97.85%
Liberty	98.60%	97.84%	98.08%	98.50%
New York	98.20%	97.97%	98.00%	97.92%

	Percent Testability—DLC			
	2000	2001	2002	2003 (Nov)
Capital	75.44%	76.38%	73.75%	74.93%
Island Metro	75.60%	75.92%	74.17%	78.82%
Liberty	79.96%	81.73%	80.07%	81.49%
New York	76.83%	78.29%	76.16%	78.29%

To the extent that DLC testability can be improved, there is an opportunity to reduce the number of wasted dispatches. Moreover, the trouble conditions that are dispatched can be more appropriately identified as requiring an inside (central office) or outside (I&M) dispatch. To better understand the magnitude of the opportunity, data regarding the number of MLT made on DLC systems by region and in total for Verizon NY is shown in *Exhibit VII-58*.

Exhibit VII-58

NUMBER OF DLC TESTS

	2000	2001	2002	2003 (Nov)
Capital	330,419	321,254	304,790	321,328
Island Metro	308,570	313,916	282,511	295,461
Liberty	268,947	303,832	269,735	267,796
New York Total	907,936	939,002	857,036	884,585

As indicated in *Exhibit VII-57*, the testability is only 78.29%, which would mean that in 2003 YTD 192,043 tests were unsuccessful. All of these may not result in a dispatch, but many will.

DCI determined that during 2003, 13 central offices were worked on for overall improvement of testability in the Island Metro Market Area. This undertaking, called the Mechanized Loop Test (MLT) "Testability Project," was a joint effort by the MLT group

and the Island Metro Proactive Preventive Maintenance Center (PPMC). When the MLT group completed their work at a CO, the PPMC assessed the testability levels and assumed the responsibility for ongoing diagnosis and maintenance. *Exhibit VII-59* shows the testability for the selected offices before (October 2002) and after (December 2003) the work was done. The testability percentages shown are totals, although DCI requested that the information be broken down between copper and fiber. We were advised that “there is no differentiation between copper/fiber. It is a total test result for a COE.”

Exhibit VII-59

TOTAL PERCENT TESTABILITY

[redacted]

As can be seen, some offices have shown improvement, while others have actually deteriorated after the “COEs were upgraded and the MLT “Testability Project” was completed. When the rates drop, the situation is investigated. These numbers fluctuate every week; however, the objective is to maintain a significantly high benchmark level once the COE is complete.”

Finding VII-19 Overall Test Results Indicate A High Success Rate, But There Are Individual Offices That Need Attention.

Verizon NY has deployed a test access and analysis system called DELPHI. This system provides a front end to the various users (generally FTs and the DRC staff) of the MLT equipment, thereby taking requests from the user community and acting as a throttle to stop overflows of requests. Test data is provided on the needs of the users, with the FTs receiving raw test data and the Central Office Technicians (COTs) in the COs being given a higher level of test data results.

The DELPHI system also provides information to indicate the success of reaching the needed test equipment. As can be seen in *Exhibit VII-60*, the overall success rate is very good.

Exhibit VII-60**DELPHI TEST RESULTS**

	Total Requests	Successful Tests	% Successful Tests
January 2004	2,395,275	2,289,321	96%
February 2004	2,473,265	2,349,580	95%
March 2004 (3 weeks)	1,736,410	1,654,215	95%

However, a review of the supporting data reveals a number of locations with successful test results that are much lower than the average. *Exhibit VII-61* provides a sample of five locations for the period for which data was furnished.

Exhibit VII-61**PERCENT UNSUCCESSFUL TESTS—SELECTED LOCATIONS**

Location	Jan 04	Feb 04	Mar 04 (week 1)	Mar 04 (week 2)	Mar 04 (week 3)
212352	27.06%	12.84%	4.89%	11.80%	6.48%
212353	9.88%	11.34%	11.76%	5.33%	27.7%0
212357	49.65%	32.04%	34.78%	30.00%	19.35%
212383	35.66%	32.74%	48.00%	20.51%	39.47%
212429	83.47%	12.00%	0.00%	0.00%	50.00%

Numerous other examples could be taken from the data furnished, but DCI believes those in *Exhibit VII-61* are illustrative and indicate poor test access over relatively extended periods of time.

Other**Finding VII-20 Many Non-Dispatched OOS Troubles Are Exceeding The OOS Cleared In 24 Hours Objective.**

DCI analyzed the non-dispatched OOS troubles and those greater than 24 hours. The results are provided in the *Exhibit VII-62*.

Exhibit VII-62

NON-DISPATCHED OOS TROUBLES

	All Codes % Non-Dispatch OOS	TOTAL OOS Non- Dispatch Troubles	TOTAL OOS>24 % Non- Dispatch	Total OOS>24 Non-Dispatch Troubles	Receipt To Clear OOS>24 Non- Dispatch Troubles
State	13.20%	353,760	9.20%	90,802	68:54
Capital	15.02%	124,308	9.14%	30,016	63:52
Island Metro	12.20%	112,206	8.71%	34,575	81:27
Liberty	12.58%	117,328	10.03%	26,239	56:12

Exhibit VII-62 shows that for 2003, there were 90,802 OOS>24 hours or 9.20% of the total OOS>24 hour troubles were non-dispatched troubles. DCI is of the opinion that non-dispatched troubles should not take longer than 24 hours to close.

Finding VII-21 An Inconsistent Level Of Compliance With Established Verizon NY Safety Regulations And Procedures Was Observed On The Part Of The I&M And Construction (CXM) Field Technicians.

During the course of ride-alongs, DCI consultants were very surprised by the lack of conformity demonstrated by Field Technicians in regard to safety precautions and accident prevention practices. While in most utilities such safety procedures are regularly complied with by the field operations employees, this was not observed to be the case for many of the randomly selected ride-alongs with FTs. Significant departures from the standard procedures were noted in the following areas:

- Non-placement of orange safety cones around parked vehicles
- Non-use of emergency flashers and strobe lights on parked service vehicles
- Non-use of hard hats
- Failure to check poles and other apparatus for foreign voltage
- Improperly securing ladders to poles with straps
- Failure to test poles for potentially rotted bases to determine if they were safe to climb

In most utilities, strict compliance with basic safety procedures is the topic of constant training and review by the field managers. Such consistent managerial attention, along with the imposition of strident disciplinary measures as required, generally sends a strong

signal to the field forces that safety procedures are to be complied with on an absolutely mandatory basis.

It is reasonable to conclude that this lack of attention to safety procedures at Verizon NY is primarily the result of two circumstances, those being:

- The low morale and poor attitudes of the field operations associates toward Verizon NY and the resulting lack of regard for the established policies of the company.
- A lack of proper emphasis on the part of management toward safety concerns in general. This would include a lack of reinforcement and training by the Local Managers in regard to compliance with established safety procedures. It would also include Verizon NY management's seeming lack of attention to resolving potential safety problems, such as unsafe and unclimbable poles and rotted or missing cross box balconies, with OSP facilities. (Refer to *Finding VII-22.*)

Finding VII-22 Numerous Examples Of Deteriorated And Unsafe OSP Facilities Were Cited By Verizon NY Field Technicians And Were Observed By DCI Consultants In The Course Of The Ride-Alongs.

At most of the utilities that DCI consultants have had experience with in the past, the safety of the Field Technicians and the general public was an utmost corporate priority. However, based on the field observations of DCI consultants, this is not necessarily the case at Verizon NY. DCI consultants observed numerous serious potential safety situations with Verizon NY OSP facilities in the field, many of which were related to the following:

- Red-tagged (identified as unsafe) poles that had not been replaced
- Poles that were leaning significantly
- Poles that were improperly supported at the base (because of rotted wood or temporary supports)
- Double wood poles
- Rotted or missing cross box balconies

In addition to the actual observations, numerous references were made by Field Technicians across the state to other similar existing safety hazards. Moreover, photographs taken by representatives of the unions in various locations showed numerous examples of safety hazard situations. Each of these situations could potentially present a safety threat to Verizon NY Field Technicians or the public, and yet they have been allowed to exist, many apparently for multiple years. This is a serious situation that must be addressed as soon as possible.

In addition to the general safety concerns, these safety hazards present impediments to productivity. For example, in the case of unclimbable poles or rotted cross box balconies, the responding I&R Field Technician must contact the Cable Maintenance group to dispatch a bucket truck to provide a lift up to the area in which the work must be done. This process results in significant delays for the I&R FT while he/she waits for the Cable Maintenance vehicle to respond. Additionally, this provision of assistance disrupts the work of the Cable Maintenance crew, who must interrupt their assigned work, travel to the new job site to provide assistance, and then return to the original job site and remobilize. Such situations result in a significant amount of non-productive time and a reduction in the productivity of both the I&R and CM FTs.

Finding VII-23 The Use Of Remote Garaging For FTs Is Not Standardized Across The Verizon NY Service Territory, Despite The Fact That It Could Prove To Be Beneficial In Certain Circumstances.

Many utilities, particularly those that provide service to rural areas, have found that remote garaging can be an effective way in which to gain productivity from their field forces. Under such a program, FTs would park their vehicles overnight either at their homes or at a utility facility (a CO, for example). While not applicable to all situations, remote garaging is an effective strategy when the FT's assigned service territory is located a distance from the utility garage and a significant amount of time is spent each day driving from garage to service territory and back again. It is particularly effective in those situations where the FT lives in or near their assigned service area. To fulfill insurance or security requirements, the vehicles are usually parked at a fenced-in utility facility, such as a CO, thereby lowering the chance of vandalism or theft. In most cases, the FT would be required to come into the garage at least one morning per week for the purposes of attending safety meetings, being updated on any new equipment or procedures, and restocking their truck's material inventory. Job assignments are generally picked up through remote printers or fax machines (at home or in a CO, for example) or through a CAT-type device.

In the ride-alongs in the Verizon NY service territory, the use of remote garaging was not consistent, with some areas allowing it but most not taking advantage of it. At the same time, several situations were observed where the FT lived in or near the service area to which he/she was assigned and that area was remote from the garage. In two such cases that were observed, the FT spent over one hour each day just driving back and forth to the job site from the garage each day. In both situations, a CO was centrally located to the assigned service territory.

Finding VII-24 **DCI Consultants Were Informed Of Purchasing Freezes That Were Instituted On The Acquisition Of New Tools And Equipment At The End Of 2002 And 2003 Because Of Budgetary Restrictions. Such Freezes Led To Shortages Of Necessary Tools And Equipment For The FTs.**

These purchasing freezes and their resultant effects were frequently cited by FTs in the ride-alongs that were performed across the state. These tool and equipment shortages caused problems for the FTs, especially in relation to getting new batteries for the CATs and hand tools. Such occurrences would certainly have a negative impact on FT productivity. Additionally, as purchasing freezes have become an expected annual event at this point, it would be anticipated that some of the FTs would begin to stockpile tools and supplies in advance of the fiscal year-end to avoid future problems. Such hoarding would likely only serve to exacerbate the problem in future years.

Finding VII-25 **The Garage Storerooms Do Not Have An Automated Inventory System To Assist Them In Stocking The Required Materials And Supplies.**

Rather, the inventory control function is handled on a manual basis with frequent physical counts and visual checking for items that are out of stock or low. This method of inventory control, beyond being very inefficient, leads to an increased opportunity for stock-out situations to occur, thereby potentially impeding the ability of the FTs to perform their assigned tasks and reducing their productivity.

Finding VII-26 **The OSP Location Drawings And Plats Are Frequently Inaccurate And Out-Of-Date, Making Them Less Valuable As A Tool For The Field Forces.**

Numerous FTs cited the fact that the OSP drawings and plats are not accurate in relation to what is actually in place in the field. According to their information, this situation exists primarily because the field modifications or additions have been put into place in the field, but the drawings have not been updated.

A parallel problem lies in the fact that the sets of drawings that exist in the field, either in the garages or COs or on the trucks, are frequently not the latest set of drawings that exists. During the course of ride-alongs, DCI consultants observed several specific situations where the engineering drawings being used for reference purposes were inaccurate. Such situations can serve to hurt the productivity and effectiveness of the FTs because of a lack of a valid point of reference as to the facilities that are in place. Rather, the FTs have to do research in the field to determine what facilities are actually in place.

Additionally, while all areas that were observed had electronic access to the existing engineering plats, none had the ability to print them on a plotter. Therefore, it was frequently observed that the CXM groups had to cut and paste letter-size pieces of the plat together to get a quick field copy.

Finding VII-27 The Practice Of Loaning CXM FTs To The I&R Group Has Significantly Impacted The Ability Of The CXM Group To Perform Its Assigned Work Tasks And, Therefore, Has Had A Negative Impact On The Ability Of The Group To Work Down Its Backlog Level.

Because of the heavy workload that has been experienced in the I&M organization since 2002, the practice of loaning CXM FTs to I&M to help address the workload has been established. The number of CXM FTs that are on loan varies based on Market Area and time of the year, with upstate New York and summer being the heaviest user and season. Interviews with CXM managers across the Verizon NY service territory revealed the following situations:

- In the Syracuse area, for the previous two weeks (as of February 2004), CXM had been loaning 14 to 18 FTs per day to I&M. At that time, the CXM group had experienced only one week since November 2003 in which they did not loan FTs to I&M. The CXM managers stated that they sometimes know how many FTs they will have a few days in advance, but frequently, they do not find out until the morning of the loan, thereby making scheduling difficult.
- In the Western (Buffalo) area for 2003, 28% of Western's budgeted hours were loaned out to I&M (out of a total of approximately 50,000 hours). For 2004 through February, the percent loaned was running at only 8%, primarily because of a lack of weather-related trouble. Most of their loans were to areas in the Western region, but they had also loaned frequently to the Central area. The CXM managers in the Western area generally find out in the early afternoon how many of their FTs will be available to perform CXM tasks for the next day. Because of the CXM workload and commitment dates, they are sometimes unable to provide all of the personnel that are requested by I&M, so there is a negotiation process involved.
- In Utica, for the three months prior to February 2004, the CXM group had 30% to 35% of their group on loan to I&M. The CXM managers generally find out at 2:00 P.M. of the previous day what they will have in terms of available CXM crew for the next day. They have experienced many days when the entire CXM crew has been loaned out, with the situation being at its worst in the summer of 2003 because of the rain that was experienced. The CXM AOM for the area makes the decision on which jobs are to be completed and which are to be put on hold.
- In Watertown as of February 2004, CXM had been losing half of their group for the previous month because of loans to the I&M group.

- In Westchester, the CXM AOM has a daily phone call to talk about how many FTs are required for loan on the next day. The AOM can primarily determine only where the FTs are to come from (which of the CXM groups). The AOM can protest the request for loaners through his/her Director. All of the Westchester CXM FTs have some I&M training but it is minimal and was generally received through on-the-job training. As of March 2004, they were scheduled to loan out 15 to 20 FTs per day.

Exhibit VII-63 shows the number of hours that the CXM Field Technicians were loaned out in each of the three Market Areas for 2003 and the first quarter of 2004.

Exhibit VII-63

NUMBER OF CXM HOURS LOANED OUT TO I&M

[redacted]

The supervision of the transferred CXM FTs varies from area to area. In the case of Westchester, for example, the CXM foremen go with the craft to supervise them and the AOM gets reports on their performance through 1987 reports. While in the Western New York area, the loaned CXM FTs are supervised by the first-level I&M Local Managers.

The type of work that the loaned CXM FTs perform also varies from area to area, with some areas having them perform only repair work and others areas having them perform only installation work. The loaned CXM FTs are not equipped with CATs like the I&M FTs are, and therefore, they generally get their jobs via a bulk dispatch in the morning from the WFA printer or they call into the DRC for an assignment.

Finding VII-28 “Estimated Hours Are Populated On Each Work Order But Are Not Accurate.”

The OAT review conducted in the Island Metro Market Area found that the estimated Construction hours provided by the Engineering group were not accurate. They determined there was a lack of communication between organizations and recommended the following activities:

Conduct meetings with Engineering to improve the accuracy of the estimated hours required to complete work orders. Then, monitor the differences to hold people accountable. Control Managers and Local Managers need to ensure print/field conditions and Field Work Plans are correct and consistent. No one seems to review and perform a comparison of Standard Time Increment (STI) estimate hours with total hours charged. For example:

- Estimated hours 7.37 – Time charged 227 hours
- Recon-regular 4 drops: Estimated hours 2.63 – Time charged 44 hours.” (STI estimate hours are assigned the various job functions when the job or estimate authority is engineered.)

Interviews with managers of the Construction group in other areas of the Verizon NY service territory also identified the existence of such inaccuracies in the estimated Construction hours provided by the Engineering group.

Finding VII-29 **Productivity For The Verizon NY CXM Organization Is Low In Comparison To Verizon In Total, Verizon New England, And Verizon New Jersey.**

Historical productivity data was provided from the Engineering and Construction Record Information System (ECRIS) for each Market Area from 2000 through 2002. A summary of these metrics is shown in *Exhibit VII-64*.

Exhibit VII-64

VERIZON NY CXM PRODUCTIVITY BY MARKET AREA

[redacted]

The completed productive objective hours represent the total number of objective hours completed by the “core” technicians, while the total actual hours worked represent the total number of actual hours worked by the “core” technicians. Task performance is calculated by dividing the objective hours associated with a particular work operation by the actual hours worked to complete that work operation. As noted in *Section VII-A*, acceptable performance for this metric has been considered 80%, plus or minus 10%. Thus, 90% or higher performance would be considered as having “exceeded” the objective, while a 70% or lower performance score would be classified as “needs improvement.” As can be seen from *Exhibit VII-64*, historical productivity performance, as measured by ECRIS, has been essentially at or below the 80% objective, with the exception of the Capital Market Area for two years.

A new system, the Construction Activity Measurement System (CAMS), has been deployed and was used for productivity measurements during 2003. Work was done to standardize measurements at a work-unit level, so a Market-Area-to-Market-Area comparison can be made, although the preferred use of the measurement tool is to compare a Market Area against itself as a means of assessing progress. *Exhibit VII-65* provides a comparison of the New York Market Areas to Verizon in total, Verizon New England, and Verizon New Jersey for the seven metrics measured by CAMS. Data for 2002 is shown, although the measurements were not officially put into use until 2003.

Exhibit VII-65

VERIZON CXM CAMS DATA COMPARISON FOR 2002

[redacted]

The information presented in *Exhibit VII-65* indicates low levels of CXM productivity in the Verizon NY Market Areas. DCI recognizes that geographic differences, mix of plant, amount of rush work, and other factors not under the control of the Verizon NY CXM organization can contribute to these results. However, there are many functions that should be fairly comparable, such as copper pairs joined and fibers joined. The CXM productivity for the Verizon NY Market Areas is low compared to Verizon averages and to the other Market Areas.

Verizon NY commented that CAMS was intended to measure productivity at the Field Technician level, but as presently deployed, it is more accurate at the Local Manager level. Because there is so much variability with each job, the measurements are not felt to be statistically-valid at the associate level. Productivity measurements are monitored at the first level but are really considered “accurate” at the AOM level. One Market Area is using CAMS at the Director, AOM, and Local Manager levels, but at the technician level, they are using ECRIS. At the technician level, each FT is given an expectation of the hours and work for the day. Upon completion of the work day, the expected work should be completed or a very good explanation should be given as to why it was not. DCI believes that measurements that are only considered valid at the Local Manager level, or at the second and third levels of management in some instances, will not provide the focus at the associate level that is necessary to make the improvements needed for the Verizon NY Market Areas.

Finding VII-30 **While The Service Excellence Plan (SEP) Is In Place For I&M Quality And Quantity Measurements, There Is No Defined Plan For Measuring The Productivity And Quality Of The Work Performed By Construction Associates.**

Objectives are set for productivity improvements at the Local Manager level and above for the various CXM metrics, but these objectives are not translated into accomplishments for the technicians. Quality reviews for January 2003 and January 2004 were obtained for one Local Manager group in each AOM group in a New York Market Area. Seven reviews were furnished for each year. A total of 2,312 quality units were covered by these reviews, with a total of six class “A” and 31 class “B” defects noted. (Class “A” defects are weighted by two and, thus, are more serious than class “B” defects.) While the forms for the reviews provided for class “A” and “B” defects, they did not define what was acceptable or less-than-acceptable performance, although the “Quality Index” on all of them was above 96% with one exception. (While most reviews involved 100 to 200 quality units, the one exception noted involved only six quality units.)

Reviews are conducted by the Remote Operations Staff (ROS) on the field Construction organizations. DCI requested copies of compliance/staff reviews that were conducted in 2003 and was furnished four for one Market Area that were performed from January through June 2003. In addition, DCI was furnished three Mini-Quality Assurance Operational Reviews that were performed on the CXM organization for one Market Area during May and June 2003, one of which was a duplication of those furnished as part of the compliance/staff review request. All reviews furnished have standards for compliance rating as follows:

- Yes (100%)
- Partial (<30% error rate)
- No (>30% error rate)

The form used for these reviews provides for eight activities to be reviewed, four of which have to do with proper time reporting and the correct use of forms. For the six staff reviews furnished, there were 104 activities reviewed on 18 jobs, with 94 activities in compliance. Of the 10 reviewed activities not in compliance, only one involved a problem with the physical work that had been done, with the remainder being associated with time reporting and paperwork activities. The plan calls for the Local Managers to provide a corrective plan within 30 days for all items found to be in non-compliance.

The SEP states in part: “Based on customer service expectations, quality and productivity for Field Technicians will be measured against the following standards of satisfactory performance:

- Jobs or other measurable work units completed per eight hours (e. g., repair jobs, installation jobs, *pairs joined, cable feet placed, pairs transferred, poles placed, etc.*) (emphasis added)
- Number of errors or defects per unit of work (e.g., repair repeaters, I codes, *defects on Construction Quality Inspections, etc.*)”, (emphasis added)

As can be seen from the emphasis-added portions above, the SEP strongly infers that the standards apply to Construction work as well as I&M. However, the plan is not used for the CXM organization. Based on the quality reviews discussed above and the objective setting for productivity improvements, it is unclear what constitutes acceptable accomplishments for either quality or quantity in this area of Verizon NY’s operation.

Finding VII-31 Processes To Enhance Construction Productivity And Quality Are Not Being Aggressively Pursued.

A method for placing fiber optic cable, called “fiber blowing” or “fiber jetting,” has been in general use in the industry for several years. This technique, when properly used, has been shown to be able to produce improvements in fiber-placing productivity of approximately 35%. *Exhibit VII-66* shows the amount of fiber placed by Verizon NY using this technique during 2003 and illustrates this figure as a percent of the total fiber placements. The exhibit demonstrates the very low percentage of fiber that is being placed via this technique, which can enhance productivity in this vital work area. DCI recognizes that Verizon NY is predominantly aerial plant, but use of this technique to the maximum extent possible will improve fiber-placing metrics.

Exhibit VII-66

FIBER PLACED VERSUS FIBER JETTED FOR 2003

[redacted]

The Cable Transfer Administration Plan (CTAP) was reviewed. The copy furnished to DCI, 1998-00740-OSP, included revisions dated July 8, 1999. With the lack of growth, there are fewer transfers to be made, but opportunities exist to improve Construction productivity as well as that of all involved organizations.

Finding VII-32 There Is A Lack Of Coordination Between The Engineering And Construction Organizations.

A Verizon NY manager commented as follows concerning coordination with Engineering: "To the extent possible, jobs are pre-surveyed by reviewing the engineering design and field checking it. Necessary changes are made and submitted to the Engineering group for revisions. Such revisions are now much more common than they used to be." Furthermore, posting of as-builts takes a long time; consequently, new designs have problems because they are based on incorrect information. The CXM group winds up having to perform frequent field modifications to the prints, primarily because of the inaccuracy of the existing records. These comments indicate a lack of coordination and cooperation between the Engineering and Construction organizations.

Finding VII-33 Verizon NY Does Not Track The Trunk Augment Status For Competitive Local Exchange Carriers (CLECs), IECs, And Wireless Wholesale Customers.

In an attempt to understand the trunk augmentation situation in New York, DCI requested the number of trunk groups pending augmentation for CLECs, IECs, and wireless wholesale customers at the end of each month for 2003 and 2004. The response indicated that the requested information "is not readily available and cannot be obtained without conducting a costly, time-consuming special study that would be unduly burdensome."

A follow-up request was made that stated that DCI assumes "'readily available' means that Verizon NY does not track the information. If that is the case, please provide information on how Verizon NY manages and follows up on the required augmentation orders. How does Verizon NY ensure that trunk orders are addressed in a timely manner and that they can track and demonstrate such activity through a report-tracking process?"

In response, Verizon NY noted that orders are received from the referenced wholesale customers “to establish new trunk groups or to augment existing trunk groups. Verizon NY also issues orders to CLECs to augment our one-way ‘reciprocal’ trunk groups only.” The response further noted that the responsibility for monitoring and managing the capacity on orders from the wholesale customers is theirs, while Verizon NY likewise holds responsibility for those it originates. In other words, Verizon NY does not track trunk orders from wholesale customers.

In response, Verizon NY also noted that “Verizon assigns dates for all work steps, including due dates, and provisions the augments according to these dates.” On-time provisioning results are reported monthly, via parity reports for CLEC trunks and through operations performance tracking for IEC and wireless trunks. “The objective is 95% on-time completion for all wholesale trunking.”

Finding VII-34 Digital Added Main Lines (DAMLs), Which Are Intended Only To Be Used As A Means Of Providing A Second Line “For The Same Customer At The Same Address,” Are Not Being Removed And Excessive DAMLS Are Serving Single (Or Zero) Lines.

DAMLs are not being recovered, even when the second line they are serving is removed, nor is there an overall plan to remove them at this time. The status of DAML deployment as of the end of year 2003 is shown in *Exhibit VII-67*. This table also shows the unused central office (CO) DAML capacity that is available for assignment.

Exhibit VII-67

STATUS OF DAMLS AT THE END OF 2003

[redacted]

As evidenced in this exhibit, approximately 42% of the working DAMLs are serving only one line and are therefore not serving their intended purpose. The only conditions under which DAMLs are removed because of Engineering relief projects are where the serving facilities are replaced with fiber or Digital Loop Carrier. There is no policy or program to remove DAMLs when they are no longer required.

The decision to remove DAMLs that are no longer needed should be based on service and related economics. In an information request to provide information on trouble rates for lines served by DAMLs, Verizon NY advised that this information was not available and could not be obtained. Furthermore, “no accurate line count for DAML services lines exists” and “no accurate trouble count for DAML services lines exists.”

Finding VII-35 **Pair Swaps By Technicians To Clear Customer Trouble Are Excessive And Adding To Operations Costs.**

Pair Swaps to clear trouble reports instead of repairing the defective cable pair are excessive and contributing to the overall cost of New York operations. Verizon NY routinely uses pair swaps to clear cable troubles. This practice adds to the defective repair rate, which will eventually require capital to correct by adding facilities, or a pair recovery program that will add to expenses. In the interim, after all good pairs have been used and are exhausted, hand offs to cable maintenance will be increased as described in Finding VII-8.

In the OAT review done on the Island Metro Market Area in 2003, it was noted that the cable pair swaps for that Market Area was 33%, while the OAT average was 19.1%. (There were 13.8% defective pairs for the Market Area, while the OAT average was at 8.0%.) *Exhibit VII-68*, *Exhibit VII-69*, and *Exhibit VII-70* provide historical information on pair swaps for the Verizon NY Market Areas. Where data is available, the total is shown with a breakdown for I&R and Cable Maintenance. (The Universal Technicians in the Capital Market Area and an inability to identify Cable Maintenance Technicians in Manhattan prevent breaking out the data for those areas.)

Exhibit VII-68

ISLAND METRO PAIR SWAPS

[redacted]

Exhibit VII-69**LIBERTY PAIR SWAPS**

[redacted]

Exhibit VII-70**CAPITAL MARKET AREA PAIR SWAPS**

[redacted]

The pair swap situation is to some extent worse than the measurements shown above indicate. One situation pointed out in the OAT review in Long Island noted instances where because of the Construction backlog cable had been placed but splicing was not completed. In some cases, repair technicians are using these under construction facilities, one pair at a time, to restore service. In addition, "maintenance splicers (sic)" were not repairing the cable trouble; they were restoring service by swapping pairs between sections of cable, thus creating additional problems. Because the facilities in the first scenario are not completed, they are not yet in the records, so the practice noted will compound over time as the records become more and more outdated. Further, swapping pairs between sections, whether completed or not, will cause additional record problems. It was also noted that pairs crossed with battery are being swapped. Not fixing the problem creates a much larger problem in the future. The trouble reports will increase over time.

Finding VII-36 The DRC's And Field Forces Do Not Have Preplanned Work And Lack Coordination To Ensure Efficient Utilization Of The FTs During Periods Of Low Demand.

There was much wasted time on DCI ride alongs. On one ride along the return on the first dispatch was unnecessary. The third dispatch should have been a flow through order and was unnecessary. The fourth dispatch was already completed. There was evidently a shortage of work and no plans to utilize the technicians. On the day after, on another ride along, a specific follow-up was requested from Verizon management about the first dispatch of the afternoon, which appeared to be unnecessary. Feedback received later indicated the DRC was running out of work and made some dispatches to check on dial tone, as well as opening futures.” (Futures are troubles or orders that are appointed for service the next day or beyond, and thus the likelihood of a no access is greatly increased when they are dispatched before they are due.)

Moreover, DCI determined that some DRCs were reluctant to issue routine tickets to cover this kind of work activity. Several interviews referenced the inability to get routine tickets from the DRCs to perform plant and network maintenance during periods of low demand work volumes. This condition was also observed by DCI during the course of ride alongs with FTs.

C - RECOMMENDATIONS

Recommendation VII-1 Reevaluate IIP Spending Levels Based On Area-Specific Information. (Refer To Finding VII-1 And Finding VII-2.)

Verizon NY should significantly increase its IIP PCM expenditures in New York. The IMC reporting entities with a high number of occurrences of incoming trouble load of over 50% above the mean should be addressed first. The number of code 4 troubles that exceeded the threshold of 50% over the mean daily load was 194,332 for 2003. DCI believes this figure should be the starting target for PCM expenditures. At 300 capital dollars per trouble saved, this would equate to an IIP program of about \$60 million (IIP is currently funded at approximately \$32 million).

DCI agrees that rehabilitation, which is defined by Verizon NY as replacing all the plant in a tracking unit, is not cost-effective. DCI supports the use of a more targeted replacement approach to PCM. Furthermore, Verizon NY has not had a consistent approach to analysis and prioritization for the expenditure of the funds available. The introduction of the PPMT in June 2004 will provide an enhanced analysis capability and an opportunity to develop consistency in the applications across the state. This new tool provides Verizon NY with the analysis tool required to focus the PCM program on the outside plant that is in need of replacement.

As Verizon NY gains experience with the PPMT, it should refine its capital investment per dispatched trouble saved. This strategy, along with a focus on the volatile trouble report locations, should allow Verizon NY to substantially reduce the problems with OOS>24 hours and, at the same time, to substantially improve Network Operations at a considerable net expense reduction.

DCI recommends that a much more refined business case be developed for Verizon NY. This business case should include a study of the volatile report rate areas identified in *Exhibit VII-36* above. The capital cost per trouble saved should be adjusted to take into account the better analysis and targeting of bad outside plant that the PPMT provides. The cost per dispatch should take into account the actual operations for each Market Area, including the actual productivity, the trouble incomplete and handoff rates, and the repeat report rates.

Recommendation VII-2 Develop A Best Practice Approach For The Implementation Of PPMT In All Market Areas. (Refer To Finding VII-3.)

Verizon NY has just implemented a new Proactive Preventive Maintenance Tool (PPMT) that should supplement the existing process. PPMT is a Web-based access plant surveillance application that is intended to identify defective outside plant or facilities, to create the resultant work packages for the resolution of identified problems, and to track the results of same. Work packages are defined as groupings of electrical faults,

defective pairs, alarms, financial data, and closed customer trouble reports that are utilized by the field forces to investigate and resolve identified defective OSP issues. PPMT uses built-in logic to qualify these work packages, based on an assessment of 20 weighted components, to determine a priority ranking. After PPMT has been fully implemented, all PCM work will be initiated, funded, tracked, and monitored using the PPMT application. PPMT creates two types of work packages, specifically:

- Proactive work packages are system initiated and are created on a daily basis using the results derived from standardized testing routines
- Preventive work packages are also system initiated and are created using customer trouble history data

PPMT users can also create preventive work packages that are not system initiated. These preventive work packages are created from information that is gathered from sources other than routine results, such as field-identified OSP issues. These work packages are grouped and prioritized using the same logic as proactive work packages. These packages require funding request and approval in the PPMT system prior to dispatching.

With the introduction of the PPMT, beginning in the June 2004 timeframe, Verizon NY should develop a uniform approach in all Market Areas for the PCM process. There should be a best practice approach to developing the best process for PPMT utilization. This process should then be introduced in each Market Area with required compliance. It should also include procedures that would provide:

- Processes that utilize PREDICTOR and include analysis of customer trouble report history (full utilization of PPMT capability) for the identification of problems in outside plant on a real-time basis
- Processes for Field Technicians to evaluate and test the plant as a means of accurately identifying all of the physical problems
- Evaluation procedures for making proper economic replacement versus repair decisions
- Establishment of objectives for the accomplishments of both the Operations and Engineering organizations
- Tracking processes for the results of maintenance and replacement fixes or jobs
- Staff follow-up of implementation

Recommendation VII-3 Accurately Identify And Track The Construction Backlog. (Refer To Finding VII-4.)

On one hand, the current backlog is being tracked in the high-profile HON Report and, on the other hand, it is being downplayed as “misleading” and not capturing the substance of high-priority Construction program infrastructure improvement program (IIP) work. In practical terms, the backlog cannot be effectively managed until this

situation is rectified. The “collective backlog” should be sorted out by Engineering, and a definitive analysis should be performed to differentiate among the backlog work as to determine the actual backlog. It should then be further categorized by growth, municipal and plant improvement at the HON Report level. Overage estimates and jobs should be revisited at specified intervals and refreshed or expunged.

Recommendation VII-4 Manage And Reduce The Construction Backlog To Optimum Levels As A Top Engineering Objective. (Refer To Finding VII-5.)

The optimum amount of work on hand should be determined and goals should be set with defined timelines for reaching the optimum. Hours for both Construction and Engineering should be dedicated to the reduction, and the results should be tracked, with actions taken if goals are not achieved. The “collective backlog” should be sorted out by Engineering, and a definitive analysis should be performed to differentiate true backlog jobs from those in the system for other purposes. These jobs should then be categorized appropriately at the HON Report level.

In addition, an in-depth analysis is needed to assess the root cause of the increase in rush jobs, including an assessment of the relationship between rush jobs and the backlog. This assessment should be used to prioritize the completions of overage backlog work.

Furthermore, technician reporting of irregular plant conditions utilizing “T-zone,” etc. should be reestablished. The identified unsafe plant and temporization work should be prioritized and completed on a scheduled basis. A process to feed back completions that will provide reinforcement for reporting these plant conditions to technicians should be established.

Recommendation VII-5 Investigate The Use Of The Outside Consultant Approach To Improving Productivity And Quality As Discussed In Section IX-A – Best Practices—Industry. (Refer To Finding VII-6.)

The main problem with the SEP and alternate approaches that Verizon NY is using lies in establishing productivity standards. That is, standards that establish the length of time to complete dispatched tasks assigned to technicians.

Two alternatives are discussed at length in *Chapter VIII – Best Practices*. The first, “I&R and Cable Maintenance Measurements,” involves the use of an outside industrial engineering company to conduct detailed time and motion studies that would become the basis for the standards used in the measurement plan which should eliminate the concerns of management and the unions. The second, “An Alternative Approach to I&R Measurement” would use existing databases to develop such standards.

Significant improvement is needed to get Verizon NY’s performance in line with the rest of Verizon. The use of the outside company consultant alternative has achieved excellent results in other companies. This approach will ensure statistically-valid standards, it will

be more likely to capture what is “possible,” and it will also identify and quantify roadblocks.

Recommendation VII-6 Institute Steps To Address Each Of The Identified Roadblocks. (Refer To Finding VII-7.)

Craft Access Terminal (CAT)

The CAT replacement plan needs to be a top priority and deployment of the new terminals must be begun as soon as practical. The battery problems must be addressed in the interim by widely deploying the battery conditioners as noted above. The need for “deep cycling” of the batteries must be communicated as well, as this requirement does not seem to be widely understood. Training to accomplish this procedure will also be necessary. Wireless CAT terminals and a printing device in each vehicle should also be considered as part of the replacement plan.

Central Office

For manned COs, an in-depth review should be made of the break- and lunch-time policies and of the adherence thereto. Furthermore, upper management must address the coordination requirements to ensure that a proper balance is achieved when the outside forces are working at high-force levels on the weekend and during evening hours, especially during periods of daylight savings time. The “frogging cord” procedure needs to be introduced for all unmanned COs to include those with no weekend coverage.

Work Standards

Review all work rules at the Market Area, district, and Area Operations Manager level. Eliminate or modify work rules that are adversely impacting the quantity or quality of work. In addition, an overall approach to this effort could lead to more uniform approaches across the state that would be considered best practices.

Paperwork

Manual completion of forms by the technician is not only time-consuming but it is duplicative of information contained in the systems. Eliminate this activity as part of the review of the above-noted work rules. If system changes are identified as part of this review, accomplish them as quickly as possible.

Recommendation VII-7 Initiate Steps To Minimize Incompletes And The Two-Tier Dispatch Process. (Refer To Finding VII-8.)

To reduce incompletes, set up the DRCs to monitor dispatches with “high time,” with referral by the DRC to appropriate field management for follow-up. Furthermore, include the monitoring of the end-of-tour activities in the GPS analyst’s responsibilities to ensure appropriate actions are being taken. The Local Managers can utilize this data, along with data from the WFA, to identify their technicians who are experiencing excessive dispatch time and incompletes. Detailed analysis will provide the information

needed to develop corrective measures. The AOMs and Directors must assume the responsibility to ensure that these actions are implemented and that follow-up with the technician is accomplished.

Minimize the technician practice of a two-tier (I&M to Cable Maintenance) dispatch system and hold the I&R technician accountable for clearing troubles in accessible plant. In the Island Metro OAT review, it was noted that: “Within the Field Technician job classification, there appears to be a two-tier system: Repair Technicians and Cable or Splicers.” When a Repair Technician is dispatched on a trouble and it shows to the cable, he/she is told to look for spares and swap. He/she then clears any trouble condition that exists on the drop and the network interface device (NID), if necessary. In the event that there are no spares available, he/she gets a no spares check from FACS and returns the job for “Cable.” This process is the driver of the multiple dispatch problem.

The two-tier system must be minimized. To accomplish this, the job qualifications need to be completely reviewed for all FTs and corrected where appropriate. Where a training need is identified, implement training to enable the I&R technician to clear troubles in accessible plant. After these steps are accomplished, technicians must be tracked and held accountable. Lastly, consider expanding the use of the Universal Technician concept within the Capital Marketing Area and introducing the position into the other two Marketing Areas.

Recommendation VII-8 Establish And Implement Uniform Standards On Test Sets. (Refer To Finding VII-9.)

Because the Side Kick is the test set of choice, conduct an inventory to determine the exact status of deployment to all customer-facing technicians. Upon completion, immediately deploy the test sets to the FTs who do not have them. Furthermore, revisit training in the proper use of the test set for all FTs to include test set certification. Upon completion of deployment and retraining, the KS meters should all be taken up.

Recommendation VII-9 Implement A Program To Get Maximum Benefits Out Of DATU. (Refer To Finding VII-10.)

Review all offices that are not equipped with DATU for the economic viability of equipping them. For those offices that are equipped, verify that the equipment is working properly in all of them. Specifically address offices with relatively low usage to determine if the equipment is not working properly or if the technicians are inconsistent in their usage. Develop reports that will identify at the FT level when the system is used and that will focus on those with no usage or very low usage. Develop and conduct training of all technicians on the use of DATU.

Recommendation VII-10 Initiate Steps To Achieve Full Benefits Of The GPS Implementation. (Refer To Finding VII-11.)

Appointment of GPS Analyzers has been started in a number of locations to develop actionable information from the GPS data that is available every day. These positions

should be made effective at the AOM level across the state as quickly as possible. Furthermore, a garage-by-garage review should be made to ensure that all appropriate vehicles are equipped with the GPS units and that the supporting databases are totally accurate.

The intermediate goal for the use of GPS should be the dispatching of technicians. DCI understands that such a project is underway – Project 2003-12 WFA-DO GPS Integration referenced in *Exhibit VIII-1*. Program 2004-2, Service Assurance Business Intelligence Toolkit (SABIT)-GPS enhancements, should be completed and deployed as quickly as possible, with timely training provided to the GPS Analyzers to ensure that they are able to completely use the added capabilities.

Recommendation VII-11 **Revise And Standardize The Verizon NY Policy In Relation To Cell Phones For The FTs To Better Serve Their Communications Requirements. (Refer To Finding VII-12.)**

Verizon NY senior management needs to undertake a company-wide review of the policy related to the provision of communication devices for the FTs. The ability of the FTs to communicate efficiently with their managers, the DRCs, the various centers, each other, and the customers is a critical factor in their ability to perform their assigned jobs in an effective manner. Considering the state of wireless communications technology, it would certainly seem that this would be the most effective solution to the FT's communication requirements. DCI consultants, in the course of ride-alongs, observed that the FTs who had cell phones were much more efficient in their work because of their ability to immediately communicate with other entities. It should be noted that some of the cell phones that were observed in use by the FTs were their own personal cell phones. This fact alone makes a rather strong statement as to how important the FTs consider a cell phone to be. While cell phones certainly present some opportunities for abuse, this can be limited by the intelligent design of the cell phone provision program. Whatever decision is made in relation to this important issue should be standardized for the company as a whole.

Recommendation VII-12 **Enhance The Systems To Capture CXM Technicians' Hours When They Are Loaned To The Demand Load To Allow For Productivity Measurement Calculations To Be Performed And To Obtain Metrics For Quality Assessment. (Refer To Finding VII-13.)**

To determine the overall effectiveness of the practice of loaning CXM technicians to work in the demand load, both the quality and quantity of their work needs to be measured. Furthermore, performance measurements for individual technicians are important in the identification of those that should not be loaned because the results indicate they are neither productive nor effective in terms of repeat reports or installation reports (rework).

Recommendation VII-13 Implement A Program To Address Declining Quality Trends With More Focused Staff And More External Reviews Being Conducted. (Refer To Finding VII-14.)

Ineffective dispatches that result in rework are very expensive. Improvement in this area should be given just as much attention as improvement in productivity. To accomplish this goal, it is recommended that staff reviews in this area be intensified. Such intensification can be accomplished by using the staff in an oversight role, with management reviewers coming from the Market Area being reviewed, from other Market Areas in New York, or from areas outside New York. As an alternative, to achieve a greater staff impact, the Remote Operation Staffs (ROS) for the three New York Market Areas can be combined to conduct a review and follow-up in each Market Area. Furthermore, Verizon NY should expand the above-noted Liberty Market Area plan to the remainder of the state. In addition, the Area Managers and the Directors must follow up on the quality inspections by the Local Managers to ensure that they are being performed as scheduled, that they are indeed addressing quality issues that cause rework (all reviewed technicians are not in 100% compliance), and that follow-up is accomplished for noted deviations. Furthermore, the technicians with high rework rates should be identified and quality reviews should be increased for them as a means of determining causes so that appropriate corrective measures can be taken.

Recommendation VII-14 Develop A Program To Recover Facilities From CLECS Instead Of Dispatching. (Refer To Finding VII-15.)

The situation in the Island Metro dispatch center was identified as a “best practice.” Verizon NY personnel were made aware of this situation during the course of the review and they initiated a project to address these dispatches. DCI’s review had only identified one DRC that was scrubbing the CLEC-to-CLEC dispatch loads, but there are 10 other DRCs in Verizon NY. However, it was clear from our ride-alongs that not all DRCs were scrubbing the CLEC-to-CLEC loads. The cost savings—resources that could be better used in responding to trouble load to meet OOS >24 and SA >48 objectives—if not all DRCs are scrubbing the load, could be enormous. The Island Metro DRC that is scrubbing the load is saving Verizon NY roughly \$3,000,000 per year (using \$100,000/Field Technician/year times 30 Field Technicians = \$3,000,000) that could be better used in the trouble load. In essence, each DRC that is not scrubbing the load could be costing Verizon NY \$3,000,000 in unnecessary expenses. Verizon NY should report on the results of their project to implement the Island Metro DRC program throughout the Verizon NY DRCs.

Recommendation VII-15 Establish Engineering Programs To Restore BCTs In Service Areas With High Churn Rates. (Refer To Finding VII-16.)

Policies regarding BCTs should be reestablished so that Engineering can have clear-cut directives on overseeing facility modifications. At a minimum, the impact of BCTs in high-churn areas should be assessed. Special studies of selected service areas should be

performed to assess the nature and extent of issues being created by permissive BCT practices. Furthermore, reestablishment of the practice of leaving dial tone on connected through facilities should be undertaken. Dial tone protects the pair from unauthorized use by technicians and helps maintain its integrity. Given the loss of lines in recent years, adequate central office capacity for dial tone should be readily available to support such a program.

Recommendation VII-16 **Implement A Strategic Initiative By The Engineering Group To Redress Defective Pair Problems Within The Context Of The Infrastructure Improvement Program. (Refer To Finding VII-17.)**

Engineering is primarily responsible for spearheading the pair recovery program, for which DAVAR testing is a primary tool. Judging from the spiraling numbers of defective pairs, these programs appear to have become insufficient and inconsistent. Engineering should overhaul the management of the IIP defective-pair recovery element and establish appropriate procedures to get the program “back on track.”

Recommendation VII-17 **Initiate A Focused Effort To Provide Clearly Defined Responsibilities And Objectives To Address The Issue Of Testability For DLC. (Refer To Finding VII-18.)**

To that end, Verizon NY has determined that there is a lack of solidly written methods and procedures that define responsibility for improving and maintaining DLC testability. A member of the Remote Operations Staff has been appointed to co-lead a cross-functional team to address this issue. While DCI thinks it is essential to address the technical issues with clearly defined solutions and timeframes, we consider just as important the development of tracking reports at the CO level that can differentiate test results by copper, copper-fed DLC, and fiber-fed DLC. Furthermore, achieving and maintaining the objectives should be made a part of the responsible individual’s appraisal.

Recommendation VII-18 **Include The Data Presented In Finding VII-19 As Part Of The Review Performed By The Cross-Functional Team, As Noted In Recommendation VII-17. (Refer To Finding VII-19.)**

An objective for the percent successful test results at the level of analysis provided by the DELPHI report should be established and responsibility should be assigned for ongoing analysis and timely follow-up to ensure that the problems are corrected.

Recommendation VII-19 **Eliminate Non-Dispatched Troubles >24 Hours. (Refer To Finding VII-29.)**

Analyze non-dispatched troubles OOS>24 hours for causes and take appropriate action to eliminate.

Recommendation VII-20 Implement And Place Strong Emphasis On The Safety Program Across The Company To Drive Compliance Of All FTs With Established Verizon NY Safety-Related Procedures. (Refer To Finding VII-21.)

DCI understands that Verizon NY has already taken action on this recommendation. The level of acceptance of a corporate safety program is often the direct result of the amount of emphasis that upper-level and local management place on compliance with the established programs. Perceptions of a lack of support for (or lack of emphasis on) such safety programs can lead to a disregard by at least some of the employees for the included procedures in such programs.

The first step in resolving this identified problem at Verizon NY is for senior management to place a renewed and very strong emphasis on the importance of all employees following the established safety programs in an extremely rigid manner. Local Managers should be instructed to drive this emphasis home to the field forces through enhanced safety training programs and strengthened monitoring and enforcement. The designation of specific management employees as being responsible for the design and implementation of such renewed safety programs on a garage- or-area-wide basis would serve to facilitate the effort. Strict disciplinary action should be clearly identified, defined, and imposed on those employees who were found to be violating the procedures as a signal to the FTs that these safety procedures are mandatory in all cases.

The second step in rectifying this situation would be for Verizon NY management to address and resolve the problems, in the most expeditious manner possible, with those OSP facilities and equipment that have been identified as safety hazards. As part of this process, management should dedicate the necessary funding and employee resources to the effort and should instruct the responsible Verizon NY organizations that the repair and resolution of these facilities is of the highest priority for the company. Such an effort, along with the resulting elimination of identified safety problems and the accompanying visible improvements in the general safety status of the OSP facilities, would serve to send another strong message to the field forces that safety is of primary concern to both Verizon NY and its management.

Recommendation VII-21 Implement The Necessary Steps To Resolve The Identified Problems With OSP Facilities In As Expeditious A Manner As Possible. (Refer To Finding VII-22.)

Such an action can be expected to provide multiple benefits for Verizon NY. First, potential injuries and disability situations for both employees and the public can be avoided. Second, productivity would be enhanced, as employees would spend less time calling for assistance or repairs. Third, the establishment of such a program to address these standing safety issues would send a clear message to the employees that Verizon NY is initiating a new and much stronger emphasis on overall safety within the company.

As part of this, senior management should dedicate the necessary funding and employee resources to the effort and should instruct the responsible Verizon NY organizations that the repair and resolution of these facilities is of the highest priority for the company.

Recommendation VII-22 Initiate A Study To Evaluate The Costs And Benefits Of Allowing The Use Of Remote Garaging In Selected Areas Of The Service Territory And Develop A Standardized Policy To Guide The Implementation Of Such A Program. (Refer To Finding VII-23.)

While remote garaging will certainly not be beneficial in many areas of the Verizon NY footprint (such as urban areas), it may very possibly be beneficial in some of the very rural areas, such as those that comprise much of the Capital Market Area. Numerous other utilities have found this form of vehicle storage and dispatch to be effective in increasing the productivity of their field forces through the reduction of windshield time. It also is generally viewed as favorable by the employees who are allowed to use it and can certainly cut down on response times in emergency situations. If the study reveals that remote garaging would be a beneficial program for Verizon NY, a standardized company-wide policy concerning its implementation should be developed to provide guidance to the field managers and to ensure equitable application across the service territory.

Recommendation VII-23 Review The Current Status Of And Methodology For Determining The Tool And Equipment (Including Safety Equipment) Budget For Each Area To Determine If It Is Adequate To Provide The Proper Tools And Equipment To The FTs Throughout The Year. (Refer To Finding VII-24)

A lack of basic hand tools and test equipment can only be considered as being deleterious to the ability of the FTs to perform their work in an effective and quality-driven manner. This situation should be rectified and the budgets should be properly planned to allow for a sufficient supply of materials throughout the year. If it is determined that the established budgets for the past two years should have been adequate, then an investigation into the reason that shortfalls were experienced should be initiated.

Recommendation VII-24 Acquire And Implement A Basic Inventory Control Software System For Use In All Of The Primary Verizon NY I&M Storerooms. (Refer To Finding VII-25.)

Such a system need not be expensive nor complex. Rather, a basic inventory management system would be sufficient for keeping accurate track of the status of the materials in the storeroom. Additionally, such a system could provide the personnel responsible for the management of the storerooms with valuable information on such

statistics as usage patterns and inventory turns. These figures would allow them to manage and restock the storerooms in a more efficient and cost-effective manner.

Recommendation VII-25 **Institute Procedures And Practices That Will Ensure That The OSP Location Drawings And Plats That Are In The Field Are Kept Current, With Revisions Being Made And Distributed To The Field In A Timely Manner. (Refer To Finding VII-29.)**

Accurate OSP location drawings and plats are important tools in the FTs being able to efficiently perform their work in the field. This is true for both the I&M and CXM groups. Procedural steps should be formulated and implemented that will ensure that updates are added to the electronic drawings in a timely manner and that these electronic versions are available to the field forces.

However, as electronic drawings are not currently available at the job sites, procedures need to be developed and put into place that will ensure that the sets of reference drawings located in the COs and garages are updated on a regularly scheduled basis. While it is impossible to keep these sets totally up-to-date because of the many and varied locations in which they are located, they still should be updated on a regular basis.

An alternative solution to this problem of keeping the reference sets in the field updated would be to provide the larger garage locations with plotter-style printers that could be used to print out updated drawings onsite, both on a regular update basis and as required by the FTs.

Recommendation VII-26 **Properly Size The I&M Workforce To Minimize Loaning Of CXM FTs To The I&M Group On A Regular Basis. (Refer To Finding VII-27.)**

The regular loaning of CXM FTs to the I&M group has had a deleterious effect on the ability of the various CXM groups to accomplish their assigned work. Not only do they not have the personnel resources required to perform the work, but they are also unable to plan their work schedules because of the fluidity of the loaning situation. This lack of CXM work has had significant deleterious impacts on the state of the OSP plant and facilities. This negativity, in turn, has served to increase the work load for the I&M group, which then, in turn, requires more outside assistance. Obviously, this cycle needs to be broken.

Verizon NY has taken a first step toward this cycle-breaking with the hiring of 250 temporary FTs for the summer of 2004. However, this step is temporary and relatively minor in its expected impact. In addition, the management of Verizon NY needs to perform an assessment of the I&M staffing in each of the garages to determine if the current staffing levels are adequate to handle the projected load. This study should be a zero-based analysis in that it should not start with the number of people already on staff and work from that point. Rather, it should look at the projected load and assess the number of people that would be required to handle it. This number should then be

compared to the existing staffing levels. After this assessment is completed on a Verizon-NY-wide basis, decisions can be made in relation to increasing staffing in designated areas, either through hiring or internal transfers.

Recommendation VII-27 Undertake Improvements Intended To Ensure The Accuracy Of The Estimated Hours That Are Provided By The Engineering Authorizations. (Refer To Finding VII-28)

For Engineering to provide good estimates of construction hours, ongoing monitoring and coordination between the Engineering and CXM organizations is required. Reviews of selected job orders by the Construction Control Center with the engineers are clearly indicated as a means of accomplishing this. However, the Local Managers and the Construction Control Managers must also check time charged by the CXM FTs for reasonableness and perform in-depth reviews of those that appear to be out of line.

Recommendation VII-28 Enhance CAMS To The Point That It Is Considered Statistically-Valid At The Associate Level, By Both Management And The Technicians. (Refer To Finding VII-29.)

While enhancements are planned for the system for 2004, DCI did not see any that would address this situation. Moreover, the system must be able to provide timely feedback to the associate; monthly results are too extended to be effective at this level. To ensure the equality of measurement criteria, the work-unit credit for particular functions can be identified for specific geographic locations. This customization would allow for the condition of the plant, work rule requirements as imposed by local governments, and variations in engineering. An AOM group will typically serve to provide a geographic base that is consistent and equitable.

Recommendation VII-29 Implement Productivity And Quality Measurements With Clearly Defined Standards For The Construction Organization. (Refer To Finding VII-30.)

While the basis for such a plan is contained in the SEP, it may be more effective to develop a standalone plan that addresses Construction only. However, it is essential that quantifiable measurements be put in place for CXM down to the associate level and that they be carried over to management and staff reviews.

Recommendation VII-30 Make Greater Use Of Those Opportunities For CXM Productivity Enhancement Such As Fiber Jetting And Updating CTAP. (Refer To Finding VII-31.)

The above findings are illustrative of opportunities for improving Construction productivity by focusing on the work. Fiber-placing productivity can be improved by using the newest techniques and could have a particular impact in relation to the FTTP

strategic program. CTAP should be updated to a Web-based system so that coordination could be more timely and effective.

Recommendation VII-31 Undertake A Formal Improvement Process Within Verizon NY To Improve Coordination And Communication Between The Engineering And Construction Organizations. (Refer To Finding VII-32.)

To improve coordination and communication between the Engineering and Construction organizations, initiate a formal improvement process that starts at the Local Manager/Engineer level and continues up through the Director level. This process should jointly determine what needs to be done to improve Construction productivity and quality by focusing on the work itself. Items addressed need to include reducing the delays in producing as-builts, ensuring that site visits and record checks are made by engineers before the design is prepared, and seeing to it that “ease of build” is given due consideration. Such a process that fosters open, honest communications can be the foundation for the productivity and quality improvements that are needed.

Recommendation VII-32 Develop A Report That Will Provide A Status For Each Augment Request Until Wholesale Trunks Are Put In Service. (Refer To Finding VII-33)

Because “Verizon assigns dates for all work steps, including due dates, and provisions the augment according to these dates,” a report should be developed that will provide a status for each augment request throughout the process until the trunks are put in service. To ensure that Verizon is responsive to requests from wholesale customers, the report should include orders received as well as those initiated. In this way, management can assess the overall trunk augment status for the wholesale market.

Recommendation VII-33 Develop An Information Base To Assess The Service Levels Provided By DAMLs And To Determine The Best Policy On Removal. (Refer To Finding VII-34.)

The engineer’s decision to install DAMLs is predicated on their removal and redeployment when a permanent second-line option is available or if a second line is no longer required (e.g., as a result of churn). Either of these corrective measures should be taken to true up the DAML program and to eliminate the stranded plant. Alternatively, the decision criteria should be revised so that DAMLs are installed under the supposition that, once in place, they will never be removed (in practical terms). Information necessary for tracking DAML usage and performance should be developed. DAML trouble-rate performance and repeat trouble rates should be determined. If this information cannot be provided on an ongoing basis, decision support should be compiled through a special study.

Recommendation VII-34 Develop A Program To Minimize The Practice For Pair Swaps To Clear Customer Trouble Reports. (Refer To Finding VII-35.)

DCI was told that a “Stop the Swap” program was being started (second quarter, 2004) to get at this entire issue. DCI requested a copy of this program for review, but was then told that there is no formal written description of the “Stop the Swap” Program. It was noted that the Liberty Market Area started a program in February 2004 to address the “top five terminals in each district.”

A formal “Stop the Swap” program must be developed and implemented as quickly as possible. Implementation must include communication plans to the associate level and include the Union. Where the data for identification of “pair swaps” by cable technicians and I&R technicians is available, the program must provide for tracking of results and follow-up for each technician utilizing pair swaps rather than trouble clearing. The cause of the pair swapping should be identified and eliminated, whether training is required or enforcement of the process.

Recommendation VII-35 Each First Level Manager Should Have Identified, Productive Work That Can Be Done During Periods Of Light Dispatch. (Refer To Finding VII-36.)

There will be times during lightly loaded periods when the DRC will run out of demand work, or can foresee that this will likely occur. While there are a number of options to address this situation and utilize the available technicians, many of them can be very inefficient as discussed above. Based on observations by DCI, there is much routine work that can be effectively done by I&R technicians. However, to efficiently utilize the FTs for this type work, the work must be preplanned and prioritized by each Local Manager for his/her serving area. The DRC must be charged with the responsibility of coordinating with the Local Managers to move the appropriate number of FTs onto routine dispatches to handle the preplanned work. In this manner, the FTs can be productively utilized, plant conditions can be corrected, and future customer service problems can be avoided, while still meeting the current demand load.