

## **Development of Cost Factors and Loadings**



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Factors and loadings are utilized by Verizon to develop the costs of providing UNEs and services. They are based upon relationships that are developed from forward-looking economic data. The discussion on factors and loadings has been divided into the following sections: (A) investment loadings; (B) capital-related annual cost factors; (C) expense-related factors and loadings; (D) adjustments to expense-related factors and loadings; and (E) labor rates.

## **1.0 Investment Loadings**

All investments used in Verizon's cost studies reflect the cost of the material investment, the cost to install the investment, and the cost of necessary support power equipment. Together, these costs make up the total cost installed, or "TCI." Verizon uses investment loading factors to translate the material-only price of an asset ("material-only investment") into the TCI for that asset. Specifically, Verizon has developed the Engineer, Furnish & Install (EF&I) and the Power loading factors to develop the TCI for assets in digital switching (Account 2212), digital circuit (Account 2232), operator systems (Account 2220) and other terminal equipment (Account 2362) accounts.

### **1.1 Engineer, Furnish & Install Investment Loading Factors**

The EF&I Loading Factors translate material-only investment into installed investment by accounting for items such as vendor engineering, Verizon engineering, transportation, warehousing, vendor installation, Verizon installation (including acceptance testing or other plant labor), and interest during construction. The factors represent the relationship between these items and material-only investment in the digital switching, digital circuit, operator systems and other terminal equipment accounts.

The EF&I factors are developed using data contained within the company's Detailed Continuing Property Record (DCPR) database (for former Bell Atlantic [fBA] jurisdictions) and the Central Office Equipment Property (COEP) database (for former GTE [fGTE] jurisdictions). Data from the two most recent, complete calendar years for which records are available are used to calculate the factors. To calculate the factor for each plant account, the value of the total installed investment for equipment placed during this time period is divided by the value of the total material-only investment for the same equipment in the same years. Data covering all the fGTE jurisdictions and all the fBA jurisdictions from the two-year period is used for each plant account in order to minimize anomalies that might be present in a specific market or in a specific year with respect to a particular type of equipment.

### **1.2 Power Loading Factor**

The Power Loading Factor represents the relationship between the investment in power equipment necessary to run installed central office equipment and facilities and the installed investment in the equipment itself. One factor is used for central office digital switch, digital circuit, and operator systems investment. Data representing the two most recent, complete calendar years for which records are available in the DCPR and the COEP database are used to calculate the factor. To calculate the factor, the value of installed central office power equipment placed in the two relevant calendar years is divided by the value of installed central office

equipment placed in the same years. Power investments associated with collocation are removed from the factor so that collocation-specific power costs are not included in the cost of other services. As with the EF&I Factors, the Power Factor is also developed using regional ( $f_{GTE}$  or  $f_{BA}$ ) data covering the relevant two-year period in order to minimize anomalies that might be present in a specific market or in a specific year with respect to a particular type of equipment.

## **2.0 Capital and Property Tax Factors**

Verizon uses Capital and Property Tax Factors to calculate capital-related costs for investment used in cost studies. The Capital and Property Tax Factors are based on the following components: depreciation; deferred taxes; return to debt; return to equity; income tax; and property tax.

Depreciation is straight-line depreciation as defined by Generally Accepted Accounting Principles (GAAP). The initial investment less the GAAP depreciation and the deferred taxes becomes the investor supplied capital, or the amount that Verizon needs to obtain from creditors and/or from stockholders for that year. Based on the cost of money, the bondholders and stockholders demand a return on their investment. The return to debt and equity and the appropriate capital structure are computed in a separate study outside of VzCost. The amount returned to stockholders (equity) is subject to Corporate Federal and State Income Tax. The capital cost calculation is performed for each year of the asset life and the results are summed and annualized to become the depreciation, return, and income tax costs that determine capital factors. Verizon's Corporate Tax Department provides the applicable Property Tax factor, for each plant account, which is added to the above capital factors to become the Total Capital & Property Tax Factor for a particular plant account. The investment in a particular account is multiplied by this factor to yield the applicable capital cost for those investments on an annual basis.

## **3.0 Annual Expense-Related Factors and Loadings**

Annual expense factors and loadings are used to translate Total Cost Installed (TCI) into recurring annual costs for UNEs and services; two of the loadings are also used to develop the final non-recurring costs for the identified labor expenses related to the provisioning of UNEs and services. Annual expense factors and loadings are ratios that represent relationships between a subset of costs and (1) their associated plant account investments, (2) relevant expenses, or (3) associated revenues.

In the case of network-related expense-to-investment (E/I) factors, costs that are incurred for specific plant accounts are directly attributed only to investments in those accounts, while costs that are not specific to a plant account are spread proportionally across all affected revenue-producing plant accounts. In expense-to-expense (E/E) loadings – i.e., the Marketing Loading, the Other Marketing Support Loading, and the Common Overhead Loading -- expenses are spread proportionally over all relevant expenses. Similarly, the calculations for the expense-to-revenue (E/R) loading – the Gross Revenue Loading -- spread revenue-driven expenses over revenues that are associated with those expenses. This approach ensures that forward-looking cost calculations for each network element or service reflects cost-causative principles to the

greatest extent possible and that non-account specific costs are reasonably reflected in the costs of the various network elements or services.

Verizon uses a “cost pool methodology” to develop factors and loadings in the VzCost system. Verizon has established cost pools in order to assign costs to network elements or services in a cost-causative manner. These cost pools may be network-related, line of business-related, or common in nature. The network cost pools are based on the different types of network investment, such as aerial copper cable, buried fiber cable, switch, or transmission. Data that have been assigned to network cost pools are used to calculate the Network E/I Factors. Expenses such as marketing and the cost of support equipment are assigned to the line of business cost pools (*i.e.*, Consumer, Enterprise, and Carrier/CLEC) and are used to calculate the Marketing and Other Marketing Support E/E Loadings. Expenses such as executive, human resources, or legal are assigned to the common cost pool and are used to calculate the Common Overhead E/E loading. The expense and investment account data are adjusted (see Section D below for details) and are mapped to cost pools based on functionality. When a one-to-one mapping between an account and a cost pool does not exist, special studies are used to map the account data to the appropriate cost pools.

### **3.1 Network Expense-to-Investment Factors**

Network Expense-to-Investment Factors are used in recurring cost studies. They are developed in VzCost using the network cost pools described above. The cost pool methodology develops forward-looking expenses for each network equipment type and divides them by the corresponding forward-looking investments for the same network equipment type to calculate E/I factors. These Network E/I Factors include the costs of network repairs, maintenance, testing, moves, engineering, network administration, methods, and support. The factors are applied to TCI to develop recurring annual network costs.

In developing the Network Expense Factors, Verizon first considers the General Ledger annual expense and investment data, by account, for the jurisdiction under study. In addition to the General Ledger expense data, capital carrying costs (*i.e.*, depreciation, return, income tax, property tax) associated with general support facilities (*e.g.*, land, buildings, general purpose computers, and vehicles) are calculated and considered as expense in the development of the E/I ratios. Next, the expense, capital carrying cost, and investment data are adjusted to make them appropriate for use in forward-looking recurring cost studies. Adjustments to expense and investment are discussed in detail below in the section titled Adjustments to Expense-Related Factors and Loadings.

The next step in the Network Factor development is to map the forward-looking expense and investment data to cost pools. As explained above, Verizon has established network-related, line of business-related, and common cost pools to be used in the development of factors and loadings in order to assign costs in a cost-causative manner. Each network cost pool is based on a different type of network investment, such as aerial copper, buried fiber, switch, or transmission. Data that have been assigned to network cost pools are used to calculate the Network E/I Factors. The adjusted expense and investment account data are mapped to cost pools based on functionality.

Finally, the forward-looking operating and general support expenses assigned to each of the network equipment cost pools are totaled and then divided by the corresponding forward-looking investment to develop the Network Expense-to-Investment Factor.

### **3.2 RTU Expense-to-Investment Factor**

Right-to-Use (RTU) fees are the software costs that equipment manufacturers charge Verizon for the operation of and/or feature functionality associated with their equipment. In 1998 the American Institute of Certified Public Accountants (AICPA) issued Statement of Position SOP 98-1, which recommended changes in the requirements for capitalization of software. Prior to SOP 98-1, only RTU fees associated with the initial purchase of the switch and certain software that added new functionality to an existing switch or other network-related equipment were capitalized; all other RTU costs associated with adding software to an existing switch or network-related equipment were treated as expense. Based on SOP 98-1, since January 1999, Verizon capitalizes *all* switch and other network-related software costs and books them to the Intangible Asset Account 2690. All the capitalized software costs are amortized over the life of such software. The only software costs that are recovered separately are software costs that are incurred specifically to fix a problem in previously installed software; these software fixes are treated as expenses in the year incurred and are recovered in the Network Factors.

To recover these capitalized software cost, Verizon has developed an RTU E/I Factor. This factor is developed outside of VzCost, and is loaded into a data table within the system for use in VzCost-generated recurring cost studies. This factor is based on the ratio of annual RTU software costs to total investment associated with either switching or digital circuit equipment. The software costs are calculated as an amortization over the life of such software, based on actual expenditures over a planning cycle. The RTU factor is applied to appropriate investments throughout Verizon's cost studies. Collocation investments are removed from the factor's investment denominator, since the factor is not used in collocation studies.

### **3.3 Marketing Loading**

The Marketing E/E Loading includes the cost of product management, sales, customer services, and product advertising. The Marketing E/E Loading is developed in VzCost using the line-of-business cost pools described above. As with the Network Factors, the expenses are adjusted to make them forward-looking before they are used in the calculation of the E/E loading. The Marketing Loading is calculated by taking the total forward-looking costs of product management, sales, customer services, and product advertising that have been assigned to the marketing cost pools and dividing them by total company expenses, less non-recurring (NRC), marketing, other marketing support, and common expenses. NRC expenses are excluded from the denominator because the Marketing Loading is applied to recurring costs only – it is not used in NRC studies. Marketing, other marketing support and common costs are also excluded from the denominator because the recurring costs to which the Marketing Loading is applied do not include these non-network type costs.

### **3.4 Other Marketing Support Loading**

The Other Marketing Support E/E Loading includes the costs of shared land and buildings, information management, furniture, office equipment and other support equipment costs associated with product management, sales, customer services, and product advertising. This loading is also developed in VzCost using the cost pool methodology. Expenses are adjusted to make them forward-looking before they are used in the calculation of the E/E loading (see Section D below for details). The Other Marketing Support Loading is calculated by taking the costs of shared land and buildings, information management, furniture, office equipment and other support equipment costs associated with product management, sales, customer services, and product advertising, and dividing them by the total of all company expenses less NRC, other marketing support, and common expenses. NRC expenses are excluded from the denominator because the Other Marketing Support Loading is applied to recurring costs only. To make the factor consistent with its application, other marketing support and common costs are also excluded from the denominator because these costs have not yet been calculated at the point in the cost studies where the Other Marketing Support Loading is applied. The Other Marketing Support Loading is applied to recurring costs, including marketing costs that were developed through the application of the Marketing Loading.

### **3.5 Common Overhead Loading**

The Common Overhead (COH) Loading includes expenses incurred in connection with General and Administration (G&A) functions, including executive, planning, general accounting and finance, external relations, human resources, legal, regulatory, and any associated General Support Facility costs.

The COH Loading is calculated in VzCost, using adjusted, forward-looking expenses. The COH loading represents the ratio of common overhead expenses to total company expenses less the common overhead expenses. The Common Overhead Loading is applied to recurring costs, including marketing and other marketing support costs; this loading is also applied to NRC costs. Because the loading factor is not applied to common costs, these costs are excluded from the denominator when the factor is developed. In this manner, the common overhead expenses are appropriately assigned to all categories of network elements and services including non-recurring network elements and services.

### **3.6 Gross Revenue Loading**

The Gross Revenue Loading (GRL) is developed to account for the revenue-driven expenses associated with regulatory assessments, uncollectibles, and gross receipts tax. These expenses are associated with the level of revenue that Verizon actually receives. The GRL is developed outside of VzCost and loaded into a data table for use in both recurring and non-recurring cost studies. The GRL is made up of three individual components: (1) the regulatory assessment component, (2) the uncollectibles component, and (3) the gross receipts tax component. The regulatory assessment component is calculated by dividing regulatory commission assessments by total jurisdictional revenues. The uncollectibles component is calculated by dividing the retail, UNE or access uncollectibles by the total retail, UNE or access revenues depending on

what data is relevant. Where applicable, a gross receipts tax component of the GRL is applied to individual services or UNEs, based on a jurisdiction's specific tax code. The gross receipts tax component is based on the jurisdiction's statutory tax rate. All applicable Gross Revenue Loading components are applied, via a gross-up formula, to arrive at total unit costs.

#### **4.0 Adjustments to Expense-Related factors and Loadings**

Expense-related factors and loadings are developed using annual expense, investment, and revenue data for the most recent year for which complete data is available. This data is called "base-year" financial data. To make the factors and loadings forward-looking and appropriate for use in TELRIC (and, where appropriate, TSLRIC) studies, adjustments are made to the base-year expense and investment data before they are used in the ratios. These adjustments are categorized as follows: (1) non-recurring expense adjustment; (2) avoidance of retail-related costs; (3) forward-looking and normalization adjustments; (4) product-specific adjustments; (5) inflation/productivity adjustments (where used); (6) denominator-specific forward-looking calibration adjustment; and (7) other miscellaneous adjustments. These adjustments are developed as a percentage of the base-year expense or investment account affected. The percentage is then entered into a data table in VzCost, and applied against the base-year expense or investment account during the VzCost expense factor run. Factors and loadings are then calculated using adjusted, forward-looking expense and investment data.

#### **4.1 Non-Recurring Expense Adjustments**

With the exception of the Common Overhead and the Gross Revenue Loading, the expense-related factors and loadings are developed for use in *recurring* product studies. Therefore, expense accounts used in the factors that capture the cost of both recurring and non-recurring work need to be adjusted to remove the portion of costs associated with non-recurring service order work. These adjustments attain the removal of costs associated with non-recurring work from the recurring expense factors.

The adjustment for non-recurring costs is developed using non-recurring revenue as a proxy for non-recurring costs. Since the non-recurring rates are designed to recover expenses, the elimination of the base period revenues ensures that non-recurring costs are not reflected in the recurring factors, thereby avoiding double recovery.

#### **4.2 Avoidance of Retail-Related Expenses**

Direct retail costs (*i.e.*, customer-facing costs) are excluded from factors and loadings used in wholesale UNE and access studies. These costs are excluded via the application of a retail avoided cost percentage. This avoided cost percentage is determined based on an examination of affected expense accounts using special study data (*e.g.*, head-counts, accounting detail, functional data, work center data, Line of Business (LOB) data). For each expense category, Verizon determines which, if any, particular expenses are actually avoided when providing service on a wholesale rather than on a retail basis.



### 4.3 Forward-Looking and Normalization Adjustments

Normalization adjustments are applied to make the base-year expenses used in the factors more representative of future expenses. For example, extraordinary expenses incurred during the base year due to hurricanes, ice storms, or tornados in a particular state or area are not ongoing expenses that Verizon will incur in future years, and therefore they are removed from base-year expenses. Similarly, recovery costs associated with the 9/11 disaster are removed from any factors with a base year of 2001 or 2002 in the affected jurisdictions. Inflation and productivity adjustments may also be made; these are discussed separately. Other examples of normalization adjustments are:

- **Merger Savings Adjustments:** the forward-looking savings Verizon expects due to a merger.
- **Merger Cost Adjustments:** any one-time costs paid and booked in the base year for the merger effort.
- **Pension Adjustments:** include normalization of net pension credits due to unrealized expected returns on pension plan assets. These credits would accrue to Verizon pension plan participants and not to Verizon itself or its shareholders or its retail or wholesale customers. Also included are any extraordinary payments to/from the pension fund that should not be credited to expenses since these offsets are not guaranteed in future years.
- **Inter-company carrying costs (fBA jurisdictions only):** Verizon Services (VS) Companies are regulated, wholly owned subsidiaries of the operating telephone companies (OTCs). Some support investments are retained on VS Companies' books. These investments are used solely by the OTCs, hence, it is appropriate to calculate forward-looking capital costs associated with these investments as a cost of doing business. First, investment in these retained accounts is assigned to the jurisdictions. Then, a compatible expense adjustment is implemented to remove any inter-company carrying costs that have been transferred in the accounting process. In this way, Verizon is assured that carrying costs are calculated consistent with the economic theory of the cost studies but not double-counted in factor development.
- **Pole and Conduit Revenue Adjustments:** Verizon makes adjustments for the revenues received from other utilities for pole attachments and conduit rentals. The revenue offsets Verizon's cost for the portion of its pole and conduit that it rents out to other companies.
- **Expenses related to time & material, customer-provided equipment and premises inside wire** are normalized out of account 6362 (Other Terminal Expense) because these expenses have no relationship to the investments in account 2362 (the factor denominator), which includes only company-owned equipment.

- Normalization adjustments are also made for "process improvements", *e.g.*, if it is known that a major process improvement (such as a new system that will streamline work, or a new technology that will increase efficiency) will be implemented in the near future. One particular adjustment along these lines is lower copper maintenance costs to account for the replacement of old copper with new copper.

Finally, normalization considerations are also made, if necessary, for the investments (or denominators) used in developing factors. As with the expense accounts, each investment account is reviewed for any anomalies that may have occurred in a given year or in a given account.

#### **4.4 Product-Specific Expense Adjustments**

Many expense accounts, such as switching, cable and other outside plant, are associated 100% with products. Other expense accounts are **not** 100% product driven – they play a part in product delivery *and* in providing support to all products, services, and staff groups. These accounts include Computers (6124), Software Development (2690), Customer Services (6623) and Database Management (6724). In lieu of using expense factors and loadings, certain product cost studies use expense additives to cover the cost of activities booked to these dual-role expense accounts (revenue-producing and support). When this occurs, the factors need to be adjusted to remove the value of the expense additives. The adjustment is implemented by surveying all product cost analysts for product-specific costs that they include in their product studies that are not developed by using expense factors/loadings. Sometimes these product studies use only product-specific capital costs (*i.e.*, investments), sometimes they use investment costs *and* ongoing expenses (*e.g.*, collocation), and at other times they only use expenses (*e.g.*, customer care or product specific advertising). The expenses used in the factors and loadings are adjusted by applying a ratio of the appropriate product-specific costs to the affected expense accounts. This ensures that other product studies do not include these same expenses when using factors and loadings. In the simplest of terms, Verizon adjusts any costs in these support expense accounts before developing a factor to ensure there is no double-recovery of said expenses in product-specific rates. Collocation expense and investment adjustments for Land & Building accounts fall into the product-specific category, however, it should be noted that the Collocation adjustment is labeled separately in VzCost.

#### **4.5 Inflation/Productivity Considerations**

Expenses may also be adjusted to account for productivity savings that Verizon plans to achieve in its forward-looking network. Because prices are being adjusted forward to reflect savings over time, the studies with productivity also usually reflect anticipated changes in inflation. Productivity and inflation are applied to the appropriate network, marketing, other marketing support, and common expenses to account for anticipated changes in these costs over the study period.

#### **4.6 Investment/Expense Forward-Looking Calibrations**

Since factors and loadings are based on forward-looking expense numerators (after appropriate forward-looking adjustments), the denominators – investments and total company expenses – must also be made forward-looking in order for the factors/loadings to represent true relationships. For expense to investment factors, a Forward Looking Calibration (FLC) factor is developed to calibrate the investment denominator to adjust for the imbalance caused when an expense factor, which is developed using existing book investment levels, is applied to an investment level that is reduced by forward-looking adjustments to network investments. The FLC is usually developed as a ratio of total forward-looking investments used in the studies to total booked base-year network investments. The FLC is then applied in VzCost to convert base-year network investments to forward-looking network investments before using them in the denominators of the network expense factors. Where a state commission alters the forward-looking investment level built into Verizon's model, Verizon must calculate a new FLC based on those investment levels, to ensure that the ratio between book and forward-looking investment used in the factor development is accurate.

In the case of expense loadings, VzCost calibrates the total company booked expenses automatically by summing the forward-looking adjusted expenses calculated in the model for use in the denominators. That is, since all expenses are adjusted and made forward-looking in the model as a matter of course, the denominator used in the expense loadings is the sum of the forward-looking adjusted expenses and needs no further adjustment.

#### **4.7 Other Miscellaneous Adjustments**

VzCost's methodology allows for an Account Elimination (for expenses) or Technology Adjustment (for investments). Verizon may eliminate a total expense or investment account because the associated technology is obsolete or non-applicable in a specific type of cost study. For example, deployment of analog switching is not appropriate in modeling a forward-looking network, thus the corresponding accounts (both the expense and the investment) are eliminated from expense factor/loading development.

An adjustment is also made for any expense or investment that is studied on an Activity-Based Costing (ABC) basis and included in cost studies outside the standard expense factors and loadings process.<sup>1</sup> For example, directory-listing costs are developed in fGTE jurisdictions for each dial-tone line and loop based on an ABC study; therefore, Verizon ensures there is no double counting of directory expenses by removing the costs used in the directory study from the costs used in factor development. Note that in fBA jurisdictions, this is not an issue because fBA accounting separates Directory Services from the OTC books and includes them in non-regulated affiliate costs.

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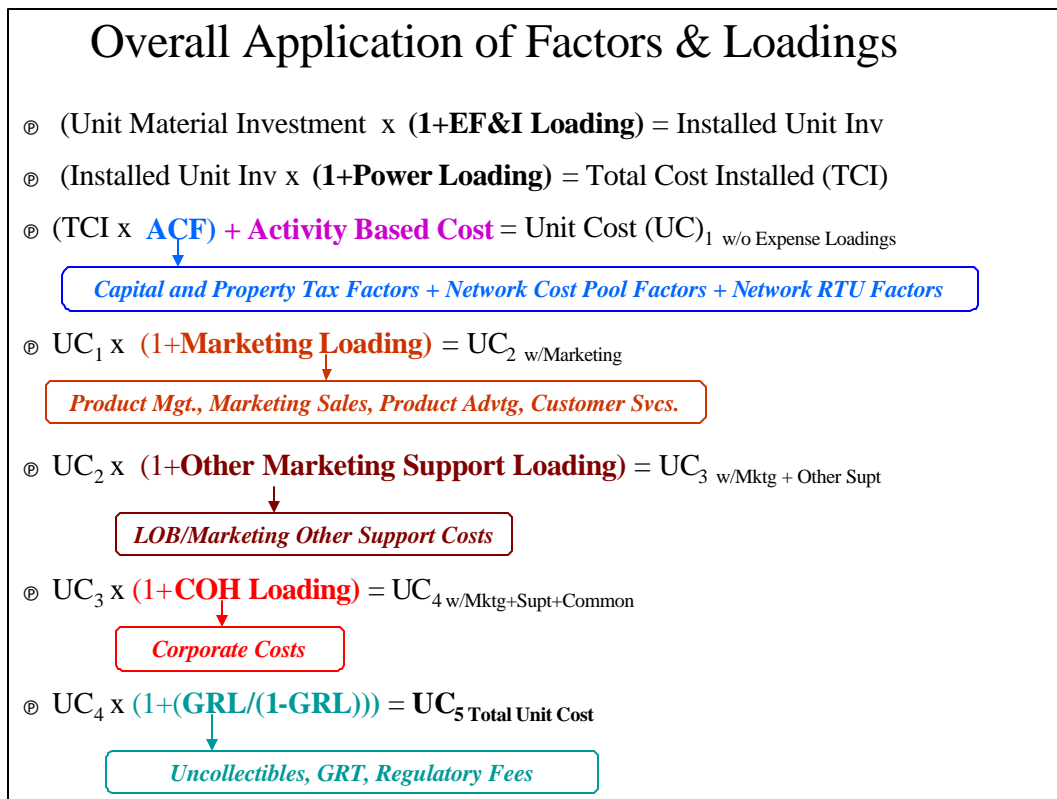
<sup>1</sup> Activity-Based Costing is a cost study method that determines cost by studying the component costs of the various activities included in a particular process.

Finally, while modeling total company investment for factor/loading development there is a need to designate investment accounts as either support investment or revenue-producing investment. Support investments include (but are not limited to) furniture, office equipment, and motor vehicles; revenue-producing investments are those directly recovered in product and UNE rates (e.g., switching, outside plant, and transmission investments). While this does not fall into the adjustment category, per se, “Percent to Support” and “Percent to Revenue-Producing” entries, per account, can be found on the Investment Adjustment data table in VzCost.

The above explanations and examples are representative of the types of major adjustments made within the expense-related factors and loadings section of VzCost.

### 5.0 Overall Application of Factors and Loadings

The diagram below shows how the factors and loadings are applied in a recurring cost study. The study begins with unit material investment and, through the sequential application of the factors and loadings, the final output of the study is total unit cost. To express unit cost on a monthly basis, results are divided by 12.



**6.0 Labor Rates**

Labor Rates used in non-recurring cost studies include the average wage and salary costs of the occupational workforce for the activities associated with the performance of their jobs and administrative and support expenses associated with those jobs. Information is obtained using data extracted from the financial records of the Company and from labor contracts. Major inputs consist of evaluated labor transactions defined by labor groups, job classes, management salary bands or job function codes. Labor loadings include basic wage and salary costs for direct clerical and supervisory support personnel, and those additional cost causative loadings, such as overtime premium, paid absence, benefits, training, motor vehicles, tools, office supplies and other employee related expenses assigned to the direct wages of the basic rates being developed. Added to the rate when appropriate are the indirect labor expenses, overtime, paid absence, benefits and miscellaneous costs associated with the support and administration below executive level that are common to multiple labor groups. Management labor rates are based on the Verizon Company Career Banding Structure. These rates include the mid-point of the base rate, the Verizon Incentive Plan targets and Benefits.

Labor rates are calculated from the most recent data available at the time of development and are trended forward using projected annual salary increases and negotiated changes in labor contracts.