STATE OF NEW HAMPSHIRE

PUBLIC UTILITIES COMMISSION

In the matter of

Kearsarge Telephone Company
Wilton Telephone Company
Hollis Telephone Company
Merrimack County Telephone Company

Docket No. DT 07-027

DIRECT TESTIMONY

OF

Pradip K. Chattopadhyay
Assistant Director, Telecom Division

October 12, 2007

Q. Please state your name, business address and occupation.

A. My name is Pradip K. Chattopadhyay. My business address is 21 South Fruit Street, Suite 10, Concord, New Hampshire. I am employed as the Assistant Director, Telecommunications Division for the New Hampshire Public Utilities Commission ("Commission").

Q. Please describe your formal education and professional experience.

A. I have a Ph.D. in Economics from the University of Washington, Seattle, which I earned in 1997. I have also taken courses in Energy Planning and Static Optimization with applications to Energy planning from Ohio State University in 2001-02. I have taught several classes at the University of Washington in Microeconomics, Macroeconomics, Managerial Economics, Applied Microeconomics, and Public Sector Economics as an instructor, and was a teaching assistant for several graduate and undergraduate courses in Microeconomics and Macroeconomics while pursuing my Ph.D. at the University of Washington. I am currently an Adjunct Faculty member at the Southern New Hampshire University, where I teach Managerial Economics, Money & Banking, Microeconomics and Macroeconomics.

From March 1998 to October 1999, I was a Consultant (at the Senior Economist level) with the National Council of Applied Economic Research, New Delhi, India. From November 1999 to August 2001, I was the Economist at the Uttar Pradesh Electricity Regulatory Commission (UPERC) in India, and advised UPERC on tariff issues. From September 2001 to June 2002, I worked at the National Regulatory Research Institute, Columbus, Ohio as a Graduate Research Associate while pursuing advanced courses in Energy Planning in the City and Regional Planning Program at Ohio State University. From June 2002 to July 2002, I worked at the World Bank, Washington D.C. as a short-term consultant/intern with its Energy and Water Division.

I joined the New Hampshire Public Utilities Commission in August 2002 in the capacity of a Utility Analyst III, and was employed in that capacity until January 2007. My responsibilities at NHPUC as an analyst were in electric utility issues including analyzing

and advising the Commission on rate design, cost of capital issues, wholesale market issues, and other regional matters. I briefly worked at the Massachusetts Department of Telecommunications and Energy (later reorganized into Department of Public Utilities (MA-DPU)) starting January 2007 as an Economist. At MA-DPU, I represented the staff and examined gas demand estimation and forecasting, decoupling issues, environmental remediation matters, etc.

Q. Have you previously provided testimony before this Commission?

A. Yes. I provided testimony on rate-design matters before the Commission in Docket No. DE 03-200, which was about delivery rates for retail customers of Public Service of New Hampshire (PSNH). I have also provided testimony on cost of capital in Docket No. DE 06-028, which was also about PSNH's delivery rates.

Q. What is the purpose of your testimony?

A. The purpose of this testimony is to analyze whether wireless or broadband alternatives in the Hollis & Wilton exchanges are competitive or not.

Q. Why is it necessary to analyze whether wireless or broadband alternatives are competitive in Hollis & Wilton?

A. Staff witness Josie Gage has determined that wireless and broadband service is available to the majority of customers in the Hollis & Wilton exchanges. The statute, RSA 374:3b under which the petition was filed, requires at subsection III (a) of RSA 374:3-b that the Commission shall approve the alternative regulation plan if it finds that "[c]ompetitive wireline, wireless, or broadband service is available to a majority of the retail customers in each of the exchanges served by such small incumbent local exchange carrier". RSA 374:3-b defines small ILECs as ILECs serving fewer than 25,000 access lines. As TDS has an exclusive franchise for wireline service in its territory, it suffices to analyze only whether wireless or broadband alternatives in the Hollis & Wilton exchanges are competitive or not.

Q. Does availability of wireless or broadband services mean that the services are competitive?

A. No. Wireless or broadband services may be available in an exchange, but their availability does not necessarily mean they are competitive with basic local service. Whether the market for basic local service is competitive or not, depends on what we mean by "competitive". The statute which is the basis for the docket does not define "competitive."

Q. Why is it important to determine whether alternative services are competitive?

A. Subection III (a) of RSA 374:3-b requires that the Commission find that *"[c]ompetitive* wireline, wireless, or broadband service is available to a majority of the retail customers in each of the exchanges served by such small incumbent local exchange carrier". The Commission must determine what is meant by "competitive" to determine whether RSA 374:3-b III(a) is satisfied, which is one of the prerequisites to the approval of the alternative regulation requested by the Company.

Q. The statute does not specify explicitly with which ILEC services the alternatives compete. In staff's view which ILEC retail service should be the subject of competition analysis?

A. The staff recommends that the service of interest should be basic local service. A local exchange carrier (LEC) is required to make such service available to all customers within its franchise area. Such a treatment is not accorded to any other service. Regulatory relief offered by the statute allows the ILEC to be regulated like a CLEC, which by definition competes for basic local service. This prominence suggests that the expectation is that market power will be constrained without price regulation. If it can be demonstrated that the majority of retail customers of basic local service have competitive alternatives in each exchange, price deregulation will not be to the detriment of local exchange customers.

Q. Does staff have a recommendation on how to determine whether or not the available wireless or broadband service is competitive with basic local service?

A. Yes. In staff's view whether or not the market for basic local service is actually competitive would require understanding how retail customers respond to the change in price of basic local service. While wireless and broadband service may be increasingly available, whether or not basic local service has competitive alternatives, is a question about whether or not in the current environment, price deregulation (with caps or not) would expose a retail customer to unconstrained prices or whether a customer is able to sufficiently substitute away from the ILEC service, to counter any market power that the ILEC may have. How retail customers actually substitute between basic local service and alternatives can ideally be gauged from their observed reaction to changes in the price of basic local service. Such an investigation is the essence of competition analysis.

Q. What is staff's understanding of the Company's position on the significance of the word "competitive" in the statute?

A. As staff understands it, the company's position is that the legislature has already concluded that wireless and broadband services are competitive alternatives to basic local service provided by a small ILEC, and therefore a determination as to whether or not alternatives are competitive is unnecessary. According to the company, the statute only requires that the Commission determine whether alternatives are available to the majority of retail customers in each of the exchanges served by TDS. The Company's position is captured in a response to a data request.

"Given that the General Court has already determined that wireline, wireless and broadband service competes with an ILEC, the only finding necessary by the NHPUC is to determine that the majority (greater than 50%) of retail (i.e., residential and business) customers have available to them a choice of a wireless, wireline or a broadband provider. Mr. Reed's testimony, supporting documents and responses to these data requests shows that this criterion has been met." *Company Responses To Staff Set 1 Data Requests, STAFF 1-81*

Q. Do you agree with that interpretation?

A. No.

Q. Why do you disagree with that interpretation?

A. As documented in *2005 New Hampshire Laws Ch. 263 (H.B. 194),* "[t]he general court finds that the growth of unregulated wireless and broadband telecommunications services has provided consumers alternatives to traditional telephone utility services." However, the general court has not concluded whether these services have provided competitive alternatives to retail customers. If the general court had indeed found that, it would have said so explicitly, in which case it would not have included in the statute a requirement that the Commission find that "[*c*]*ompetitive* wireline, wireless or broadband services is available to a majority of the retail customers in each of the exchanges served by such small incumbent local exchange carrier" before the Commission approves an alternative regulation plan for the small ILEC in question. Also, while the legislature has found that "incumbent local exchange carriers face competition from services that are not regulated" (See 263:2, *2005 New Hampshire Laws Ch. 263 (H.B. 194)*), it has not determined whether wireline, wireless or broadband are competitively available to all retail customers in jurisdictions where such ILECs face competition from services. It is possible that while alternative services compete with the incumbent's retail service in a service area, some customers in that service area may nevertheless find that those alternatives are not competitively available, as the customer is unable to sufficiently substitute away from the incumbent's service to constrain market power.

Q. Has the Company demonstrated that competitive wireline, wireless or broadband service is available to the majority of customers in each exchange?

A. No. In staff's opinion, the Company incorrectly presumes that the General Court has already determined that all wireless and broadband alternatives are *competitively* available to a customer whenever either or both of these alternatives are available to such a customer. TDS, therefore, only attempts to prove that wireless or broadband alternatives are available to the majority of the customers in its service territory. First, staff finds that the Company's analysis of whether wireless or broadband alternatives are available to the majority of customers in each of the exchanges served by TDS is deficient. Second, even if such services are available to a majority of customers in each exchange, without a careful examination of whether such availability is competitive or not, we cannot address the specific finding required by subsection III (a) of RSA 374:3-b.

Q. Staff indicates that the key question about whether availability of wireless or broadband service is competitive with basic local service or not, is whether market power is constrained under a deregulated price for basic local service. How does staff propose to answer this question?

A. To determine whether or not market power would be constrained if prices were deregulated, it is vital to examine whether or not a price increase for the product/service leads to an adequate enough substitution away from the product/service in question, that the company would yield lower net revenue, everything else held the same. This determination requires measuring the price elasticity of demand for basic local service to demonstrate whether the market is sufficiently competitive to defer to deregulated pricing. I will discuss this condition in greater detail later.

Q. Please explain price elasticity of demand for a product/service.

A. Price elasticity of demand is defined as the ratio of the percentage change in quantity demanded to the percentage change in price of the product/service, everything else held the same. Since an increase in the price of a product/service leads to a decrease in the quantity demanded of a product, the price elasticity of demand is negative. Also if the quantity demanded changes in absolute terms by a greater percentage than the percentage change in price, the price elasticity is greater than one. If the quantity demanded changes in absolute terms by a lesser percentage than the percentage change in price, the price elasticity of demand is less than one.

Q. How can an estimate of the price elasticity of demand for basic local service show that deregulating the price will discourage market power?

A. It can be shown that if the price elasticity of demand for basic local service is sufficiently greater than one, the decrease in the quantity demanded for basic local service would be proportionately more than the increase in the price of basic local service, and despite some incremental cost savings, will render a price increase ineffective as net revenue is adversely impacted, discouraging any exercise of market power (see Appendix 1 for a formal proof). Succinctly, this can be represented as

$$|e|>1/((1-(c/P)), \quad (1)$$

where e is the price elasticity of demand, c is the per unit incremental cost, and P is the product's price. Showing that the inequality (1) holds, would be a reasonable testimonial to the existence of competition in the market for basic local service.

Q. Can you provide an intuitive explanation for the above condition?

A. Yes. Intuitively, in response to a percentage increase in price, market power is ineffective, if the percentage decrease in quantity demanded not only negates the percentage change in price, but also negates the savings on account of incremental costs, which in effect implies that the price elasticity of demand cut-off must be greater than one. I will for convenience from here on denote the right hand side of (1) as the critical price elasticity of demand.

Q. Has the Company provided estimates of price elasticities of demand for basic local service for each of the exchanges?

A. No. The Company indicated that the Petitioners do not have such estimates. Further, the Company refused to estimate price elasticity of demand when asked by staff (see Company's Supplemental Response to Staff 1-6, Attachment 1).

Q. Why is it important to have estimates of the price elasticity of demand for basic local service?

A. It is important to estimate the price elasticity of demand for basic local service to determine whether available alternatives to basic local service, i.e. wireless and broadband services, are competitive. In order to do this, it is necessary to examine whether inequality (1) is true or not in the case of the ILEC's basic local service, which necessitates having estimates for price elasticity of demand for basic local service. A sufficiently high price elasticity of demand will demonstrate that customer migration caused by price increases would reduce revenue sufficiently to discourage exercise of market power and that competitive alternatives are available to the ILEC's retail customers.

Q. Has the staff conducted any estimation of price elasticity of demand for basic local service for the exchanges served by TDS?

A. Yes. Since we have found that only Hollis and Wilton (which are single-exchange companies), have passed the test that the majority of retail customers have wireless or broadband service available in each exchange, the staff has econometrically estimated the price elasticities of residential demand for basic local service for Hollis and Wilton respectively, to determine whether the available services are competitive for the majority of customers in those exchanges.

Q. Please describe the empirical approach behind the estimations.

A. For an apposite exchange, we modeled several regressions using monthly data that explain the residential demand for basic local service, measured in number of connections, as dependent on the real price per connection of basic local service (calculated as the ratio of price of residential basic service access lines and the Consumer Price Index (CPI)), and other control variables, i.e. NH wide unemployment rate (as a proxy for the state of the economy[1]), a normalized price index for wireless service (available at the national level) as a proxy for the price of wireless service, which according to TDS is a substitute for basic local service, and a trend variable. The regressions we used are based on log-linear and linear Ordinary Least Squares (OLS) estimation approaches. Denoting the dependent variable as DV, the independent variable as IV and the errors are ε, the general form for all of the regressions is $DV = \underline{constant} + \underline{coefficient_1}*IV_1 + \underline{coefficient_2}*IV_2+\ldots+\underline{coefficient_n}*IV_n+ \varepsilon$, where there are n independent variables in the model.

The dependent variable and the independent variables for individual regressions are identified in Appendix H for Hollis and Appendix W for Wilton. These regressions were conducted using STATA, a widely used statistical package. To ensure that regressions were econometrically sound, I also checked for autocorrelation in errors, using the Durbin Watson test and autocorrelation graphs, and for heteroskedasticity in errors using the Breusch-Pagan test. As autocorrelation in errors was detected in all of the traditional

[1] Since we could not obtain monthly data on NH's State Domestic Product, we have used the NH wide employment rate, which is available monthly.

OLS estimations, we corrected for autocorrelation using the Prais Winsten approach in all of the estimations. The Prais Winsten approach is a reasonably effective way of correcting for autocorrelation in errors when the sample is modestly sized. Also, for our regressions, we have used data from two periods; January 2004 to June 2007 and Dec 2004 to June 2007 to run separate regressions for some of the models. This was primarily done to balance the needs for a sufficiently sized data set and the importance of using contemporary data given the evolving nature of telecommunications services.

Q. Please explain why you chose the aforementioned empirical approach for the estimation of price elasticities of demand?

A. The Company was unable to provide estimates of price elasticities of demand for basic local service even for one exchange or for that matter even at the company level. In the context of this docket, my approach fills an important void to permit the necessary analysis of competition. While one can use other econometric approaches to such estimations, given the data limitations, my approach is a reasonable one. TDS was unable to provide adequate exchange level or even aggregated monthly numbers of basic local service access lines for all customers (See Company's Supplemental Responses to Staff 2-2, 2-3 and 2-4, Attachment 2). Monthly data was also unavailable for exchange specific wireless pricing and some measure of economic activity. In order to analyze specific realities at an exchange level, in the absence of exchange-specific data, I relied on national and state level proxies to capture some of the unavailable variables. My approach produces a range of estimates for the price elasticity of residential demand for basic local service, that can be used to determine whether wireless or broadband alternatives are competitive or not for the majority of the customers in the exchanges studied. The objective behind these estimations is not to precisely estimate price elasticities of demand, but absent specific evidence from the company, to check whether it can be said with enough confidence that market power concerns are not real for the majority of the customers in each studied exchange.

Q. Why were the monthly data on the numbers of residential basic local service access lines not available?

A. Staff asked the Company to provide such data but the Company was only able to provide *year-end* data for 2004, 2005 and 2006, and year to date through August 2007 (See Company's Supplemental Responses to STAFF Set 2 Data Requests, STAFF 2-2, STAFF 2-3 and STAFF 2-4).

Q. Since the Company did not provide the monthly data for the actual number of basic local service access lines, residential or otherwise, how did you derive the monthly data on the number of residential basic local service access lines?

A. The Company provides the monthly total number of access lines (residential plus business) on NHPUC Form ILEC-21 – which reports the number of customer trouble reports per 100 access lines, filed with the Commission each month. To derive the number of residential lines from the monthly total, we used the Company's responses to staff data requests 2-2, 2-3 and 2-4, which indicated that the numbers of residential basic access lines were 75.36%, 75.32%, and 74.66% of the total number of access lines at year-end respectively for 2004, 2005 and 2006 for Wilton. The numbers of residential basic access lines were 80.79%, 80.37%, and 79.96% of the total number of access lines at year-end respectively for 2004, 2005, and 2006 for Hollis. As these percentages for the respective exchanges do not vary much over the two years, we have interpolated and extrapolated percentages to derive the series for residential basic service access lines. We first calculated the uniform per-month change in the percentage points, based on the year-end percentages for 2004 and 2006. For example, for Hollis, the shares of residential customers in total access lines, as indicated above, were 80.79 percent at year end 2004 and 79.96 percent at year end 2006. The difference in the percentages is (79.96 -80.79), i.e. -0.83, which when divided by 24 (the number of months over that period), yields approximately -.03 for the per-month uniform percentage points' change. This per-month change in the percentage points was applied both backwards (in which case it is 0.03 percentage points' change per month), and forward (in which case it is -0.03 percentage points' change per month) around Dec. 2004, to yield a series for the monthly percentages for the period January 2004 to June 2007. The same approach was also applied to Wilton. The relevant series for the monthly percentages were then multiplied by the monthly total access lines for January 2004 to June 2007 for the respective

exchanges and rounded to the nearest integer, to yield 42 observations on residential demand for basic local service, measured in number of access lines. Because the company was unable to provide the necessary data, we were compelled and have relied on these series to conduct our analysis. This approximation is reasonable as we find that the percentages, noted above, have not varied significantly over two years.

Q. Why did you derive the above series only for residential customers?

A. The price of basic local service, a key explanatory variable in our analysis, is significantly different for residential and business customers. It is generally not appropriate to work with the total number of basic service lines and model the impact of a weighted price on it. Using a weighted price based on residential and business customers' respective shares would compromise the exogeneity of an important explanatory variable (price of basic local service), which is not desirable for my proposed econometric approach. It is however reasonable to postulate that the residential demand for basic local service is influenced by the residential price and the business demand for basic local service is influenced by the business price. To conduct a study of these relationships, it is important to have the number of access lines separately for residential and business customers. In the context of the statute though, since residential customers form a majority of the retail customers, if it is demonstrated that the price elasticity of residential demand for basic local service in an exchange is greater than the critical price elasticity of demand, it can be reasonably concluded that the market is competitive for the majority of retail customers. In the contrary, if it is found that the price elasticity of residential demand for basic local service in an exchange is less than the critical price elasticity of demand, we can conclude that the market for basic local service is not competitive for the majority of the customers in the exchange. It therefore suffices as well as is, expedient to restrict the analysis to residential customers only.

Q. Please summarize your empirical findings.

A. The empirical findings are summarized in Appendix H and Appendix W for Hollis and Wilton respectively. I have reported the results for several regressions for both Hollis and Wilton.

Q. Please explain how you interpret the empirical findings that you have reported in Appendices H and W.

A. While I discuss the findings separately for Hollis and Wilton below, it is helpful to describe the nature of the output that is depicted in Appendices H and W. A quick look at one of the models in Appendix H would therefore be helpful. Let's discuss Model H1. This model postulates a linear relationship between the logarithm of the residential basic local service access lines and the logarithm of the real residential price for basic local service, normalized wireless price index, NH wide unemployment rate, and a trend variable (time). The model also includes an intercept term. The unexplained deviations are captured by the error term. Based on economic reasoning, demand for basic local service is negatively related to the price of basic local service and unemployment rate (as a proxy for economic "downturn"), and is positively related to the price of wireless service, if basic local service is a substitute for wireless service.

Based on an Ordinary Least Squares (OLS) econometric construct, data on the indicated variables are used to estimate the coefficients associated with the independent variables by minimizing the sum of squares of errors. As the classical OLS modeling assumes that the error terms are randomly distributed with zero mean and a constant variance regardless of the observations, if these assumptions are violated because errors are autocorrelated and/or exhibit heteroskedasticity, corrections for such violations are necessary. We therefore tested for both autocorrelation and heteroskedasticity in errors. As it turns out for Model H1, tests for autocorrelation indicated that error terms are positively correlated when the traditional OLS approach is applied. We therefore had to correct for autocorrelation in the error terms. Using STATA and applying Prais Winsten correction for autocorrelation in errors, we find that the estimates for the intercept and coefficients associated with the logarithm of the real residential price for basic local service, normalized wireless price index, NH wide unemployment rate, and the trend variables were respectively 8.63, -0.38, 0.005, -.008 and -0.003. These numbers are reported in columns 3, 5, 6, 8 and 10 respectively in the row associated with Model H1. The t values and probabilities that these t values will be exceeded in absolute terms are

also reported for the respective intercept/coefficients. A look at these numbers will be useful when we discuss the results for the exchanges individually below. For example, if the t value (in Column 6) is so high that the probability that this value will be exceeded is less than five percent, i.e. less than 0.05, it is said that the estimate of the coefficient is statistically significant at 5 percent. Typically the lower the level of significance, the better the statistical result is. 5 and 10 percent levels of significance are often used as the cut-off to consider whether the coefficient's estimate is statistically reliable or not. Column 12 indicates the period from which the monthly data was used for the regression; in the case of Model H1 it is January 2004 to June 2007.

It is very important to point out that in the context of this docket, the ultimate objective behind these regressions is to get a measure for the relationship between the real price of basic local service and the quantity demanded of basic local service (number of access lines). The estimates of the coefficient associated with the real price for basic local service will be used to derive estimates of the price elasticity of demand for basic local service, which will throw light on the issue of whether market power is constrained, as expected in a competitive market, in the studied exchanges. It is therefore the estimates under columns 4 or 5 that we will discuss the most.

Q. Please explain how the estimates of coefficients are associated with the real price of basic local service used to derive the estimates of the price elasticity of demand?

A. For the models H1-H4, W1-W4, W7 and W8, the logarithm of the number of residential basic local service access lines is regressed on the logarithm of the price of the product (and other control variables). For these models, the post-regression estimates for the coefficient associated with the price of residential basic local service are themselves estimates of the price elasticity of demand for residential basic local service.

For models H5, H6, W5 and W6, the number of residential basic service access lines is directly regressed on the real price of residential basic local service (and other control variables). For these models, the post-regression estimates for the coefficient associated with the real price level for residential basic local service must be multiplied by the ratio

of the level of price (at which the elasticity is being measured) to the fitted number of residential basic local service access lines to determine the price elasticity of demand. An example would be helpful for such models. Let's consider Model H5. It produces an estimate of -174.2 for the coefficient associated with the independent variable "realrhprice", which is the real price of residential basic local service in Hollis. At the real price for residential basic local service (i.e. 7), wireless price (wlp), unemployment rate (uerate) and the trend variable time for June 2007, the fitted demand for residential local service is 2380 access lines. Since the price elasticity of demand is the estimate of the coefficient associated with "realrhprice," i.e. -174.2, multiplied by the ratio of the real price of residential basic local service to the fitted demand for residential local service, i.e. (7/2380), the estimate for the price elasticity of demand is -174.2 multiplied by (7/2380), which yields -0.51. It is important to observe that the price elasticity of demand for residential basic local service for such models will vary positively with the price of residential basic local service.

Q. Briefly discuss the empirical findings for Hollis.

A. While we have used data for January 2004 to June 2007 for models H1, H2 and H5, as the telecommunications industry is evolving relatively fast, we have also used a shorter but more recent period, i.e. December 2004 to June 2007, for our analysis, which is reported in models H3, H4 and H6 (See Appendix H). For all models specific to Hollis, we find that the coefficients associated with the price of basic local service, price of wireless, and unemployment rate are all of the sign that is predicted by economic reasoning. Also, the price for basic local service is statistically significant at the 5 percent level for all six regressions. The unemployment rate variable is statistically significant at 5 percent (also at the 1 percent level) for all of the models. The wireless price variable is significant at the 5 percent level for one of the regressions (H5) and at the 10 percent level for Models H1, H2 and H6.

With respect to the price variable, in models where the logarithm of real price of basic local service is used as an explanatory variable, we find that the estimates of the coefficients range between -0.38 and -0.44. We also observe that these estimates did not

vary much regardless of whether we used the more recent period or the entire period January 2004 to June 2007, even though the estimates for the coefficient were slightly higher for the "more recent" models compared to the other ones. In the two models H5 and H6, the estimates for the coefficient associated with the price of basic local service are respectively -174.2 and -189.1. Again, the estimate for the "more recent" model is higher compared to the other model.

Q. Briefly discuss the empirical findings for Wilton.

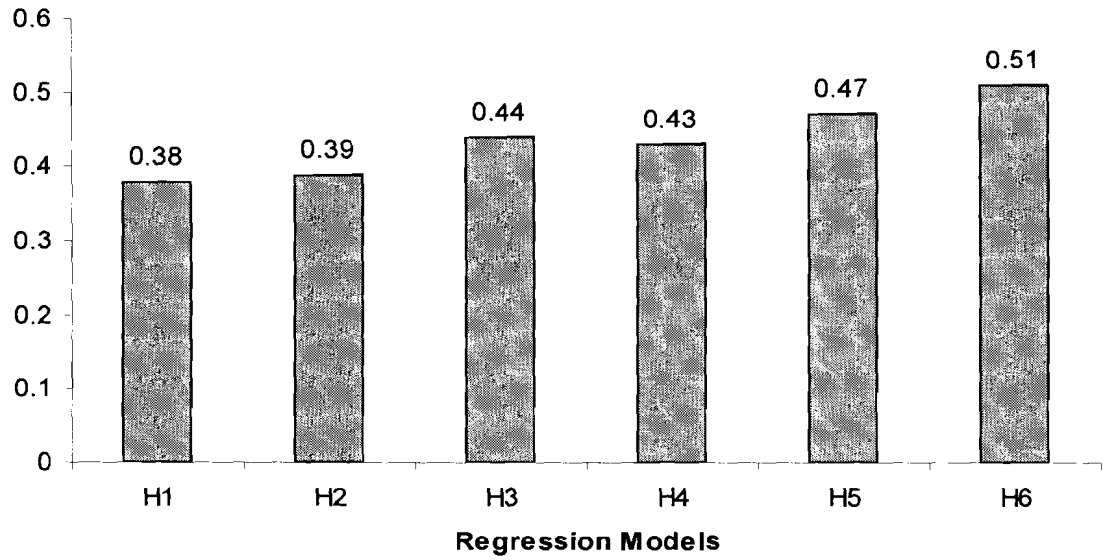
A. We have used data for January 2004 to June 2007 for models W1 and W2 and data for December 2004 to June 2007 for models W3-W8 (See Appendix W). We find that the coefficients associated with the price of basic local service, price of wireless, and unemployment rate are all of the sign as predicted by economic reasoning. The price for basic local service is statistically significant at the10 percent level for Models W6, W7, and W8 (Three other models, i.e. W3, W4, W5, produce estimates for the price of basic local service, which are statistically significant at slightly higher than the 10 percent level). Since the coefficient associated with the unemployment rate variable was found to be highly statistically insignificant in models W1-W5, we excluded unemployment rate from the list of independent variables to get models W6, W7 and W8. The wireless price variable is significant at the 5 percent level for six of the eight regressions.

Since Models W1 and W2 produce statistically insignificant results for all of the key economic variables (price of basic local service, price of wireless service, and unemployment rate), we restrict our analysis of the basic local service's price to the other six models, which all use the data set with only the more recent observations. In models where the logarithm of real price of basic local service is used as an explanatory variable, we find that the estimates of the coefficients range between -0.42 and -0.44. In the two models where the real price is directly used as an explanatory variable, the two estimates for the coefficient associated with the price of basic local service are -344.2 and -347.9. The estimates were very similar regardless of whether we model unemployment rate as an explanatory variable or not.

Q. Based on the empirical findings for Hollis, please report the estimates for the price elasticity of residential demand for basic local service.

A. For Models H1-H4, where the logarithm of the number of residential basic service access lines is regressed on the logarithm of the real residential price of basic local service, the estimates for price elasticity of residential demand for basic local service for the Hollis exchange are respectively -0.38, -0.39, -0.44 and -0.43. For Models H5 and H6, where the number of residential basic service access lines is regressed on the real residential price of basic local service, we use the data from June 2007, to respectively yield,-0.47 and -0.51 as estimates for price elasticity of residential demand for basic local service in the Hollis exchange (See Figure H).

Figure H: Estimates of |Price Elasticity| of residential demand for basic local service in Hollis



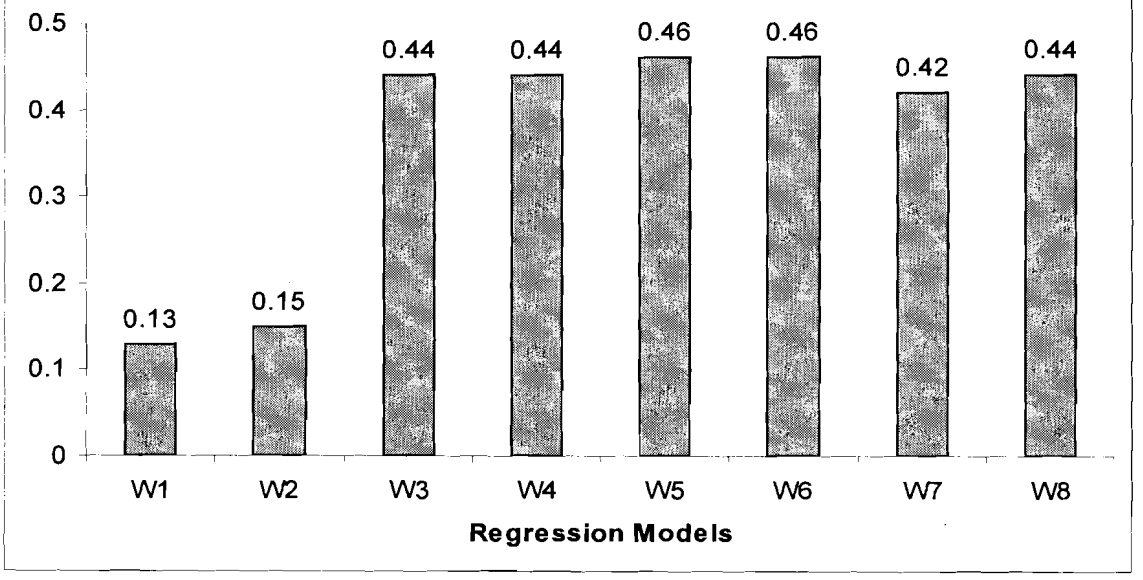
While staff had queried TDS about the actual rates of return on equity on the intrastate business segment for each of the four TDS companies, the Company did not make them available (See Company response to Staff 1-1, Attachment 3). The presumption therefore should be that the current price for basic local service yields a reasonable return. Nevertheless, it is useful to hypothesize that if a $2.50 increase in the price per access lines is needed to allow a reasonable return, what would happen to the price elasticity of residential demand for basic local service in Hollis. Using data from June 07 for the other independent variables and plugging in the updated number for the nominal price,

we find that Models H5 and H6 respectively yield -0.60 and -0.66 as estimates for price elasticity of residential demand for basic local service in the Hollis exchange in the hypothetical scenario.

Q. Based on the empirical findings for Wilton, please report the estimates for the price elasticity of residential demand for basic local service.

A. Based on Models W3, W4, W7 and W8, which are log-linear, the estimates for price elasticity of residential demand for basic local service for the Wilton exchange are respectively -0.442, -0.44, -0.42 and -0.437. Using the data from June 2007, both Models W5 and W6 (which are linear models) yield - 0.46 as price elasticities of residential demand for basic local service for the Wilton exchange (See Figure W). Again, if we hypothesize that a $2.50 increase in the price per access lines is needed to allow a reasonable return on equity, and see what that means for the price elasticity of residential demand for basic local service, using data from June 07 for the other independent variables and plugging in the updated number for the nominal price, we find that Models W5 and W6 yield -0.76 and -0.77 respectively as estimates for price elasticity of residential demand for basic local service in Wilton.

Figure W: Estimates of |Price Elasticity| of residential demand for basic local service in Wilton



Q. In view of the findings above, do you find that competitive alternatives are available to the majority of retail customers in Wilton or Hollis?

A. No. As described above, whether competitive alternatives are available to a customer or not can be gauged from whether $|e|>1/((1-(c/P))$ or not.[2] Even if we assume that the incremental cost savings associated with the disconnection of an access line is zero, the critical price elasticity is 1. In response to the query on the estimate for the incremental cost savings associated with the loss of a basic local service connection, TDS indicated that no such estimates have been prepared (See Company's Supplemental Response to STAFF Set 2 Data Requests, STAFF 2-1, Attachment 4). TDS however indicates that "the only portion of the customer's service not requiring maintenance would be the specific service wire from the customer's service pole to the house and the Network Interface Device on the side of this house," which suggests that even if the incremental cost savings are insignificant, there are some savings. It is therefore reasonable to state that the critical price elasticity for our purpose is at least slightly higher than 1. Based on the empirical results from the models we have investigated, we obtain estimates for price elasticity of residential demand for basic local service that are all comfortably less than one for both Wilton and Hollis. As residential customers form a majority of retail customers in both exchanges, based on the analysis described above, staff concludes that competitive alternatives are *not* available to the majority of retail customers in either the Wilton or Hollis exchanges.

Q. Would you please summarize your testimony?

A. TDS did not provide specific evidence that competitive wireline, wireless or broadband service is available to the majority of customers in each exchange. Rather, the company provided a conglomeration of general information which relied considerably on TDS' provision of DSL to demonstrate alternatives are available. The statute requires an exchange specific analysis. Because the company did not provide a precise exchange specific analysis excluding TDS DSL, staff endeavored to determine whether alternative services were available in each exchange (See direct testimony of Josie Gage) and where alternatives were available in each exchange, whether they were competitively available

[2] e is the price elasticity of demand, c is the per unit incremental cost, and P is the product's price.

to the retail customers. TDS did not attempt to prove whether the alternatives were competitively available to the majority of the customers in any of the exchanges.

Based on my analysis of the price elasticity of residential demand for basic local service for the Hollis and Wilton exchanges, there is no proof that the alternative services are competitively available to the majority of the customers. RSA 378:3-b III (a) requires a finding that wireline, wireless or broadband service are competitively available to the majority of the retail customers. Despite availability of alternatives, TDS' market power is not likely to be constrained for the majority of retail customers in the Hollis and Wilton exchanges. Most of the customers will not be afforded the protection contemplated by the statute if TDS prices are deregulated. Staff therefore recommends the Commission deny TDS' proposal.

Q. Does that conclude your testimony?

A. Yes, it does.

Appendix 1:

Let quantity demanded of a product be Q, and the price of that product is P.

Assume that the percentage increase in price is x percent which leads to a y percentage decrease in the quantity demanded of that product.

Assume that the incremental cost of producing one unit of the product is c.

It follows that the savings in incremental cost due to the y percentage decrease in the quantity demanded of the product is c times y times Q.

The change in sales revenue therefore is

$(1+x)$ time $(1-y)$ time PQ *less* PQ

The change in net revenue therefore is

$\Delta NR = (1+x)(1-y)PQ - PQ - cyQ$

ΔNR is negative if a price increase renders market power ineffective.

The proportional change in net revenue would be negative if

$(\Delta NR/PQ) = (1+x)(1-y) - 1 - (cy/P)$ is negative. i.e.

$$(1+x)(1-y) - 1 - (cy/P) < 0 \qquad (1)$$

which reduces to

$$x - y - xy < (cy/P) \qquad (2)$$

Dividing through by x and rearranging, we get

$$1 - (y/x) < y + (c/P)(y/x) \qquad (3)$$

Noting that $-(y/x)$ is the absolute level of price elasticity of demand, i.e. $|e|$, we get

$$(1-(c/P))\,|e| > 1 - y \qquad (4)$$

Since price elasticity is measured for infinitesimally small changes in prices (and therefore quantity; i.e. $y \rightarrow 0$), (4) reduces to

$$|e| > 1/((1-(c/P)) \qquad (5)$$

Comment: It follows from (5) that when c is relatively insignificant compared to P (i.e. fixed costs dominate the provision of product/service), the condition collapses to $|e|>1$. For most regulated products, fixed costs are relatively high compared to the incremental costs, but in most cases incremental costs are not insignificant. More likely therefore the cut-off for the level of price elasticity of demand is higher than 1.

Appendix H: Summary of Statistical Results for HOLLIS											
Models	Dependent Variable	Independent Variables									
1	2	3	4	5	6	7	8	9	10	11	12
		constant	realrhprice	lrealrhprice	wlp	lwlp	uerate	luerate	time	Comments	Data set
Model H1 (R-squared →1)	lrhal	**8.63** (t = 43.23) [0.000]	-	**-0.3807** (t = -2.87) [0.007]	**0.0051** (t = 1.76) [0.086]	-	**-0.0084** (t = -4.16) [0.000]	-	**-0.0037** (-18.34) [0.000]	Corrected for autocorrelation in errors using Prais Winsten approach	Jan 04 to June 07
Model H2 (R-squared →1)	lrhal	**8.2** (t = 42.83) [0.000]	-	**-0.3928** (t = -2.82) [0.008]	-	**0.1817** (t = 1.78) [0.084]	-	**-0.0297** (t = -4.12) [0.000]	**-0.0037** (t = -18.14) [0.000]	Corrected for autocorrelation in errors using Prais Winsten approach	Jan 04 to June 07
Model H3 (R-squared →1)	lrhal	**8.71** (t = 36.64) [0.000]	-	**-0.438** (t = -2.46) [0.021]	**0.0064** (t = 1.46) [0.155]	-	**-0.008** (t = -3.81) [0.001]	-	**-0.0038** (t = -19.04) [0.000]	Corrected for autocorrelation in errors using Prais Winsten approach	Dec 04 to June 07
Model H4 (R-squared →1)	lrhal	**8.19** (t = 34.45) [0.000]	-	**-0.4253** (t = -2.27) [0.032]	-	**0.2035** (t = 1.33) [0.195]	-	**-0.0275** (t = -3.70) [0.001]	**-0.0038** (t = -18.61) [0.000]	Corrected for autocorrelation in errors using Prais Winsten approach	Dec 04 to June 07
Model H5 (R-squared = 0.9992)	rhal	**3657.09** (t = 17.16) [0.000]	**-174.2** (t = -3.53) [0.001]		**21.51** (t = 2.72) [0.010]	-	**-21.65** (t = -4.03) [0.000]	-	**-10.14** (-19.08) [0.000]	Corrected for autocorrelation in errors using Prais Winsten approach	Jan 04 to June 07
Model H6 (R-squared = 0.9995)	rhal	**3689.83** (t = 16.45) [0.000]	**-189.1** (t = -2.70) [0.012]		**23.93** (t = 1.89) [0.071]	-	**-20.99** (t = -3.66) [0.001]	-	**-10.29** (-18.59) [0.000]	Corrected for autocorrelation in errors using Prais Winsten approach	Dec 04 to June 07

The numbers in bold are the coefficient estimates. The numbers in the (.) brackets are the t statistics, and in the [.] brackets are the levels for probability>|t|.

Description of Variables

rhal	number of residential access lines in Hollis
lrhal	logarithm of number of residential access lines in Hollis
realrhprice	real residential price per basic service access line in Hollis ((Residential price divided by CPI-All Urban Consumers)*100)
lrealrhprice	logarithm of realrhprice
wlp	(CPI-Wireless Service divided by CPI - All Urban Consumers)*100
lwlp	logarithm of wlp
	CPI data source: Bureau of Labor Statistics. CPI-wireless service: series ID: CUUR0000SEED03, CPI-All Urban: series ID: CUUR0000SA0
uerate	unemployment rate in NH; Source: http://www.nhes.state.nh.us/elmi/econanalys.htm
time	series of integers 1-42

APPENDIX W: Summary of Statistical Results for WILTON											
Models	**Dependent Variable**	**Independent Variables**									
1	2	3	4	5	6	7	8	9	10	11	12
		constant	realrwprice	lrealrwprice	wlp	lwlp	uerate	luerate	time	Comments	Data set
Model W1 (R-squared →1)	lrwal	**7.93** (t = 44.79) [0.000]	-	**-0.126** (t = -0.56) [0.58]	**0.005** (t = 0.93) [0.36]	-	**-0.003** (t = -0.93) [0.360]	-	**-0.003** (-7.10) [0.000]	Corrected for autocorrelation in errors using Prais Winsten approach	Jan 04 to June 07
Model W2 (R-squared →1)	lrwal	**7.47** (t = 17.26) [0.000]	-	**-0.147** (t = -0.63) [0.531]	-	**0.186** (t = 1.01) [0.317]	-	**-0.009** (t = -0.81) [0.426]	**-0.003** (t = -7.05) [0.000]	Corrected for autocorrelation in errors using Prais Winsten approach	Jan 04 to June 07
Model W3 (R-squared →1)	lrwal	**7.96** (t = 47.5) [0.000]	-	**-0.442** (t = -1.68) [0.106]	**0.016** (t = 2.37) [0.025]	-	**-0.0004** (t = -0.13) [0.896]	-	**-0.003** (t = -9.27) [0.000]	Corrected for autocorrelation in errors using Prais Winsten approach	Dec 04 to June 07
Model W4 (R-squared →1)	lrwal	**6.7** (t = 12.95) [0.000]	-	**-0.44** (t = -1.60) [0.122]	-	**0.513** (t = 2.22) [0.035]	-	**→0** (t = -0.03) [0.973]	**-0.003** (t = -9.06) [0.000]	Corrected for autocorrelation in errors using Prais Winsten approach	Dec 04 to June 07
Model W5 (R-squared = 0.999)	rwal	**2568.79** (t = 7.65) [0.000]	**-344.2** (t = -1.62) [0.117]		**41.95** (t = 2.29) [0.031]	-	**-0.2** (t = -0.02) [0.981]	-	**-7.74** (-8.63) [0.000]	Corrected for autocorrelation in errors using Prais Winsten approach	Dec 04 to June 07
Model W6 (R-squared = 0.999)	rwal	**2581.83** (t = 8.55) [0.000]	**-347.87** (t = -1.85) [0.076]		**41.99** (t = 2.50) [0.019]	-	-	-	**-7.86** (-9.19) [0.000]	Corrected for autocorrelation in errors using Prais Winsten approach	Dec 04 to June 07
Model W7 (R-squared →1)	lrwal	**7.95** (t = 53.58) [0.000]	-	**-0.42** (t = -1.79) [0.085]	**0.015** (t = 2.45) [0.021]	-	-	-	**-0.003** (t = -9.66) [0.000]	Corrected for autocorrelation in errors using Prais Winsten approach	Dec 04 to June 07
Model W8 (R-squared →1)	lrwal	**6.7** (t = 13.57) [0.000]	-	**-0.437** (t = -1.76) [0.089]	-	**0.51** (t = 2.39) [0.024]	-	-	**-0.003** (t = -9.26) [0.000]	Corrected for autocorrelation in errors using Prais Winsten approach	Dec 04 to June 07

The numbers in bold are the coefficient estimates. The numbers in the (.) brackets are the t statistics, and in the [.] brackets are the levels for probability>|t|.

Description of Variables

rwal	number of residential access lines in Wilton
lrwal	logarithm of number of residential access lines in Wilton
realrwprice	real residential price per basic service access line in Wilton ((Residential price divided by CPI-All Urban Consumers)*100)
lrealrwprice	logarithm of realrwprice
wlp	(CPI-Wireless Service divided by CPI - All Urban Consumers)*100
lwlp	logarithm of wlp
	CPI data source: Bureau of Labor Statistics. CPI-wireless service: series ID: CUUR0000SEED03, CPI-All Urban: series ID: CUUR0000SA0
uerate	unemployment rate in NH; Source: http://www.nhes.state.nh.us/elmi/econanalys.htm
time	series of integers 1-42

Kearsarge Telephone Company
Wilton Telephone Company
Hollis Telephone Company
Merrimack County Telephone Company
Docket No. DT 07-027
Company Responses
To Staff Set 1 Data Requests
September 4, 2007
Supplemental Response Dated October 5, 2007

STAFF 1-6: Reed Testimony, Page 3, line 30. Have you estimated the price elasticities of demand for TDS-provided basic local service in each of the exchanges served by TDS?

a. If yes, please report those price elasticities of demand.
b. If not, please estimate the requested price elasticities of demand and report them.

Response:

No. Petitioners do not have such an estimate.

Supplemental Response:

Petitioners have not estimated the price elasticity of demand for TDS-provided basic local service, the cross price elasticity between the TDS' basis local service and competitors' wireless, the cross price elasticity between TDS' basic local service and competitors' broadband service, or the cross price elasticity between TDS' basic local service and the companies' DSL service.

As demonstrated within the Petitioner's testimony and responses to data requests, the Petitioners are facing significant loss in access lines, minutes of use and revenue despite the fact that there have been no increases in rates in most cases since 2000 (see responses to STAFF 1-97 and 1-99). This is a result of the Petitioners facing competition from competitors utilizing alternative technologies and bundles of products that do not allow exact service by service comparisons, but which nevertheless provide competitive choices for the majority of the Petitioners' customers in each exchange. The Petitioners find that these and other factors discussed within the Petitioners' testimony render price elasticity models moot and therefore the Petitioners have not completed any such studies. In addition, RSA 374:3-b does not require any such models or studies be prepared.

Michael C. Reed is responsible for this response.

Kearsarge Telephone Company
Wilton Telephone Company
Hollis Telephone Company
Merrimack County Telephone Company
Docket No. DT 07-027
Company Responses
To STAFF Set 2 Data Requests
September 26, 2007
Supplemental Response Dated October 5, 2007

STAFF 2-2: Reed Testimony: Please provide monthly data on the number of access lines with basic local service for the period Jan. 2004 to August 2007 for each TDS exchange (also provide an electronic copy of this data).

Response:

The Petitioners object to Staff Data Request 2-2 on the grounds that the data request is overbroad and unduly burdensome. The information requested is not maintained in the monthly format requested in the ordinary course of business and would need to be re-created manually at substantial time and expense. (Internal monthly access line information does not reconcile to annually reported information due to the inclusion of items such as official lines, test lines, ISDN circuits, etc. in the monthly figures.) Subject to and without waiving these objections, the Petitioners will provide information responsive to Staff Data Request 2-2.

Information has been compiled as of the end of each year and August 2007.

MCT Total Access Lines

Period	Total Access Lines	Period Change	Cumulative Change	Period % Change	Cumulative % Change
12/31/2004	17,792				
12/31/2005	17,458	(334)	(334)	-1.88%	-1.88%
12/31/2006	16,891	(567)	(901)	-3.25%	-5.06%
08/31/2007	16,314	(577)	(1478)	-3.42%	-8.31%

Kearsarge Total Access Lines

Period	Total Access Lines	Period Change	Cumulative Change	Period % Change	Cumulative % Change
12/31/2004	10,429				
12/31/2005	10,223	(206)	(206)	-1.98%	-1.98%
12/31/2006	9,966	(257)	(463)	-2.51%	-4.44%
08/31/2007	9,387	(579)	(1042)	-5.81%	-9.99%

STAFF 2-2 Response Continued, Page 2:

Wilton Total Access Lines

Period	Total Access Lines	Period Change	Cumulative Change	Period % Change	Cumulative % Change
12/31/2004	3,690				
12/31/2005	3,582	(108)	(108)	-2.93%	-2.93%
12/31/2006	3,484	(98)	(206)	-2.74%	-5.58%
08/31/2007	3,246	(238)	(444)	-6.83%	-12.03%

Hollis Total Access Lines

Period	Total Access Lines	Period Change	Cumulative Change	Period % Change	Cumulative % Change
12/31/2004	3,552				
12/31/2005	3,431	(121)	(121)	-3.41%	-3.41%
12/31/2006	3,318	(113)	(234)	-3.29%	-6.59%
08/31/2007	3,206	(112)	(346)	-3.38%	-9.74%

Supplemental Response:

Staff has requested additional information for monthly data by exchange if possible agreeing to take data from different sources or systems that may not be consistent with other data provided in this case.

The monthly data by exchange taken from different reporting that provides total access line data which includes official lines and lines in service for only a portion of the monthly billing cycle. In addition, the lines are not factored for equivalency ratios. Therefore, an exact match to access line data provided in testimony and other responses to data requests cannot be made. The Petitioners are also providing the original response access line data by exchange for the four periods.

See Attachments TDS 0180-0184.

Michael C. Reed is responsible for this response.

Kearsarge Telephone Company
Wilton Telephone Company
Hollis Telephone Company
Merrimack County Telephone Company
Docket No. DT 07-027
Company Responses
To STAFF Set 2 Data Requests
September 26, 2007
Supplemental Response Dated October 5, 2007

STAFF 2-3: Reed Testimony: Please provide monthly data on the number of residential access lines with basic local service for the period Jan. 2004 to August 2007 for each TDS exchange (also provide an electronic copy of this data).

Response:
The Petitioners object to Staff Data Request 2-3 on the grounds that the data request is overbroad and unduly burdensome. The information requested is not maintained in the monthly format requested in the ordinary course of business and would need to be re-created manually at substantial time and expense. (Internal monthly access line information does not reconcile to annually reported information due to the inclusion of items such as official lines, test lines, ISDN circuits, etc. in the monthly figures.) Subject to and without waiving these objections, the Petitioners will provide information responsive to Staff Data Request 2-3.

Information has been compiled as of the end of each year and August 2007.

MCT Residential Access Lines

Period	Residential Access Lines	Period Change	Cumulative Change	Period % Change	Cumulative % Change
12/31/2004	13,348				
12/31/2005	13,032	(316)	(316)	-2.37%	-2.37%
12/31/2006	12,585	(447)	(763)	-3.43%	-5.72%
08/31/2007	12,238	(347)	(1110)	-2.76%	-8.32%

Kearsarge Residential Access Lines

Period	Residential Access Lines	Period Change	Cumulative Change	Period % Change	Cumulative % Change
12/31/2004	7,413				
12/31/2005	7,239	(174)	(174)	-2.35%	-2.35%
12/31/2006	6,995	(244)	(418)	-3.37%	-5.64%
08/31/2007	6,818	(177)	(595)	-2.53%	-8.03%

STAFF 2-3 Response Continued, Page 2:

Wilton Residential Access Lines

Period	Residential Access Lines	Period Change	Cumulative Change	Period % Change	Cumulative % Change
12/31/2004	2,701				
12/31/2005	2,589	(112)	(112)	-4.15%	-4.15%
12/31/2006	2,489	(100)	(212)	-3.86%	-7.85%
08/31/2007	2,420	(69)	(281)	-2.77%	-10.40%

Hollis Residential Access Lines

Period	Residential Access Lines	Period Change	Cumulative Change	Period % Change	Cumulative % Change
12/31/2004	2,869				
12/31/2005	2,756	(113)	(113)	-3.94%	-3.94%
12/31/2006	2,645	(111)	(224)	-4.03%	-7.81%
08/31/2007	2,599	(46)	(270)	-1.74%	-9.41%

Supplemental Response:

Please see supplemental response to Staff 2-2.

Michael C. Reed is responsible for this response.

Kearsarge Telephone Company
Wilton Telephone Company
Hollis Telephone Company
Merrimack County Telephone Company
Docket No. DT 07-027
Company Responses
To STAFF Set 2 Data Requests
September 26, 2007
Supplemental Response Dated October 5, 2007

STAFF 2-4: Reed Testimony: Please provide monthly data on the number of business access lines with basic local service for the period Jan. 2004 to August 2007 for each TDS exchange (also provide an electronic copy of this data).

Response:
The Petitioners object to Staff Data Request 2-4 on the grounds that the data request is overbroad and unduly burdensome. The information requested is not maintained in the monthly format requested in the ordinary course of business and would need to be re-created manually at substantial time and expense. (Internal monthly access line information does not reconcile to annually reported information due to the inclusion of items such as official lines, test lines, ISDN circuits, etc. in the monthly figures.) Subject to and without waiving these objections, the Petitioners will provide information responsive to Staff Data Request 2-4.

Information has been compiled as of the end of each year and August 2007.

MCT Business Access Lines

Period	Business Access Lines	Period Change	Cumulative Change	Period % Change	Cumulative % Change
12/31/2004	4,444				
12/31/2005	4,426	(18)	(18)	-0.41%	-0.41%
12/31/2006	4,306	(120)	(138)	-2.71%	-3.11%
08/31/2007	4,076	(230)	(368)	-5.34%	-8.28%

Kearsarge Business Access Lines

Period	Business Access Lines	Period Change	Cumulative Change	Period % Change	Cumulative % Change
12/31/2004	3,016				
12/31/2005	2,984	(32)	(32)	-1.06%	-1.06%
12/31/2006	2,971	(13)	(45)	-0.44%	-1.49%
08/31/2007	2,569	(402)	(447)	-13.53%	-14.82%

STAFF 2-4 Response Continued, Page 2:

Wilton Business Access Lines

Period	Business Access Lines	Period Change	Cumulative Change	Period % Change	Cumulative % Change
12/31/2004	989				
12/31/2005	993	4	4	0.40%	0.40%
12/31/2006	995	2	6	0.20%	0.61%
08/31/2007	826	(169)	(163)	-16.98%	-16.48%

Hollis Business Access Lines

Period	Business Access Lines	Period Change	Cumulative Change	Period % Change	Cumulative % Change
12/31/2004	683				
12/31/2005	675	(8)	(8)	-1.17%	-1.17%
12/31/2006	673	(2)	(10)	-0.30%	-1.46%
08/31/2007	607	(66)	(76)	-9.81%	-11.13%

Supplemental Response:

Please see supplemental response to Staff 2-3.

Michael C. Reed is responsible for this response.

SUPPLEMENTAL RESPONSE
STAFF 2-2 THROUGH STAFF 2-4

	RESIDENTIAL				BUSINESS				TOTAL			
EXCHANGE	**Dec-04**	**Dec-05**	**Dec-06**	**Aug-07**	**Dec-04**	**Dec-05**	**Dec-06**	**Aug-07**	**Dec-04**	**Dec-05**	**Dec-06**	**Aug-07**
Contoocook	2,805	2,750	2,630	2,576	877	873	829	884	3,682	3,623	3,459	3,460
Hillsborough	2,582	2,527	2,400	2,290	968	946	948	880	3,550	3,473	3,348	3,170
Warner	1,273	1,246	1,214	1,184	564	582	571	377	1,837	1,828	1,785	1,561
Sutton	679	672	657	642	220	195	213	209	899	867	870	851
Bradford	1,575	1,544	1,528	1,518	379	341	302	302	1,954	1,885	1,830	1,820
Henniker	1,757	1,695	1,610	1,559	895	916	874	873	2,652	2,611	2,484	2,432
Antrim	1,929	1,868	1,831	1,766	410	429	427	416	2,339	2,297	2,258	2,182
Melvin Village	748	730	715	703	131	144	142	135	879	874	857	838
Total MCT	13,348	13,032	12,585	12,238	4,444	4,426	4,306	4,076	17,792	17,458	16,891	16,314
New London	2,808	2,721	2,626	2,572	1,730	1,708	1,680	1,337	4,538	4,429	4,306	3,909
Andover	1,055	1,050	993	972	275	282	282	294	1,330	1,332	1,275	1,266
Boscawen	788	761	731	713	277	250	283	281	1,065	1,011	1,014	994
Salisbury	913	907	893	866	132	133	130	128	1,045	1,040	1,023	994
Chichester	1,347	1,311	1,271	1,234	464	472	459	399	1,811	1,783	1,730	1,633
Meriden	502	489	481	461	138	139	137	130	640	628	618	591
Total Kearsarge	7,413	7,239	6,995	6,818	3,016	2,984	2,971	2,569	10,429	10,223	9,966	9,387
Wilton	2,701	2,589	2,489	2,420	989	993	995	826	3,690	3,582	3,484	3,246
Hollis	2,869	2,756	2,645	2,599	683	675	673	607	3,552	3,431	3,318	3,206

SUPPLEMENTAL RESPONSE STAFF 2-2
MONTHLY TOTAL ACCESS LINE COUNT BY EXCHANGE

2004	TOTAL ACCESS LINES											
EXCHANGE	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
Antrim	2,372	2,374	2,375	2,369	2,370	2,401	2,408	2,417	2,397	2,391	2,387	2,377
Bradford	1,928	1,930	1,933	1,925	1,926	1,944	1,942	1,943	1,939	1,929	1,928	1,922
Contoocook	3,720	3,710	3,680	3,664	3,672	3,701	3,723	3,719	3,704	3,678	3,694	3,649
Henniker	2,685	2,683	2,682	2,687	2,678	2,672	2,645	2,635	2,628	2,617	2,596	2,577
Hillsborough	3,584	3,601	3,610	3,622	3,621	3,627	3,633	3,630	3,622	3,625	3,610	3,609
Melvin Village	932	929	922	924	925	942	942	940	943	927	924	915
Sutton	873	867	866	869	903	908	915	918	917	916	915	909
Warner	1,691	1,676	1,673	1,682	1,685	1,692	1,687	1,681	1,689	1,691	1,690	1,689
Andover	1,364	1,352	1,358	1,358	1,351	1,375	1,380	1,383	1,359	1,352	1,347	1,339
Boscawen	1,106	1,104	1,099	1,091	1,088	1,091	1,102	1,100	1,099	1,099	1,092	1,093
New London	4,199	4,197	4,193	4,192	4,216	4,200	4,213	4,228	4,208	4,363	4,211	4,202
Salisbury	1,091	1,090	1,091	1,087	1,086	1,081	1,082	1,077	1,074	1,073	1,074	1,072
Chichester	1,853	1,851	1,843	1,834	1,832	1,830	1,834	1,834	1,827	1,819	1,814	1,809
Meriden	642	644	644	641	639	635	632	629	628	626	620	619
Hollis	3,636	3,626	3,626	3,625	3,613	3,606	3,613	3,606	3,577	3,561	3,559	3,551
Wilton	3,638	3,626	3,618	3,609	3,591	3,618	3,607	3,604	3,611	3,590	3,590	3,584

SUPPLEMENTAL RESPONSE STAFF 2-2
MONTHLY TOTAL ACCESS LINE COUNT BY EXCHANGE

2005	TOTAL ACCESS LINES											
EXCHANGE	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
Antrim	2,370	2,373	2,371	2,380	2,361	2,351	2,351	2,338	2,349	2,339	2,341	2,342
Bradford	1,928	1,926	1,923	1,923	1,920	1,928	1,920	1,914	1,904	1,892	1,882	1,872
Contoocook	3,627	3,623	3,656	3,651	3,661	3,653	3,644	3,669	3,660	3,609	3,614	3,595
Henniker	2,570	2,569	2,571	2,571	2,567	2,563	2,572	2,573	2,573	2,569	2,586	2,558
Hillsborough	3,582	3,584	3,586	3,587	3,587	3,597	3,588	3,578	3,569	3,547	3,542	3,529
Melvin Village	910	912	907	909	912	919	920	921	917	908	906	906
Sutton	902	904	903	902	908	921	913	912	906	899	872	876
Warner	1,687	1,669	1,669	1,670	1,671	1,669	1,661	1,665	1,668	1,666	1,680	1,677
Andover	1,335	1,334	1,330	1,326	1,334	1,368	1,362	1,366	1,373	1,351	1,351	1,345
Boscawen	1,095	1,091	1,092	1,093	1,086	1,101	1,096	1,099	1,075	1,080	1,049	1,038
New London	4,197	4,185	4,184	4,162	4,139	4,125	4,074	4,068	4,063	4,070	4,060	4,051
Salisbury	1,077	1,068	1,068	1,070	1,066	1,060	1,052	1,053	1,057	1,068	1,064	1,067
Chichester	1,805	1,798	1,800	1,794	1,776	1,771	1,775	1,774	1,762	1,776	1,764	1,770
Meriden	616	613	611	607	614	612	609	610	608	614	611	609
Hollis	3,535	3,523	3,524	3,527	3,506	3,489	3,463	3,459	3,453	3,434	3,429	3,429
Wilton	3,578	3,566	3,565	3,550	3,544	3,516	3,474	3,457	3,444	3,449	3,439	3,437

SUPPLEMENTAL RESPONSE STAFF 2-2
MONTHLY TOTAL ACCESS LINE COUNT BY EXCHANGE

2006	TOTAL ACCESS LINES											
EXCHANGE	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
Antrim	2,334	2,328	2,325	2,323	2,336	2,333	2,333	2,313	2,317	2,303	2,292	2,282
Bradford	1,867	1,872	1,866	1,856	1,855	1,862	1,853	1,852	1,846	1,829	1,835	1,833
Contoocook	3,586	3,578	3,562	3,571	3,565	3,555	3,548	3,521	3,528	3,498	3,474	3,473
Henniker	2,553	2,550	2,544	2,536	2,532	2,520	2,510	2,501	2,494	2,487	2,482	2,436
Hillsborough	3,507	3,489	3,470	3,465	3,449	3,462	3,427	3,434	3,423	3,415	3,408	3,398
Melvin Village	905	898	895	892	892	894	895	901	895	890	881	881
Sutton	880	873	873	872	873	869	866	864	853	853	860	854
Warner	1,678	1,672	1,661	1,654	1,660	1,656	1,652	1,642	1,640	1,625	1,636	1,632
Andover	1,339	1,340	1,327	1,318	1,315	1,327	1,325	1,319	1,294	1,296	1,291	1,284
Boscawen	1,035	1,042	1,041	1,039	1,041	1,043	1,036	1,035	1,026	1,025	1,034	1,016
New London	4,033	4,024	4,007	4,012	3,995	3,995	4,007	3,995	3,972	3,952	3,932	3,925
Salisbury	1,065	1,066	1,060	1,055	1,060	1,058	1,052	1,051	1,047	1,048	1,047	1,046
Chichester	1,773	1,764	1,751	1,745	1,745	1,749	1,755	1,734	1,724	1,722	1,710	1,709
Meriden	611	608	608	603	601	598	595	597	604	603	602	599
Hollis	3,415	3,399	3,400	3,397	3,396	3,392	3,373	3,367	3,350	3,333	3,312	3,308
Wilton	3,424	3,413	3,402	3,402	3,390	3,372	3,367	3,356	3,341	3,337	3,341	3,334

SUPPLEMENTAL RESPONSE STAFF 2-2
MONTHLY TOTAL ACCESS LINE COUNT BY EXCHANGE

2007	TOTAL ACCESS LINES							
EXCHANGE	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**
Antrim	2,277	2,276	2,274	2,270	2,252	2,250	2,238	2,214
Bradford	1,832	1,826	1,824	1,818	1,825	1,832	1,828	1,827
Contoocook	3,457	3,458	3,451	3,433	3,428	3,420	3,417	3,412
Henniker	2,422	2,414	2,412	2,409	2,397	2,360	2,349	2,346
Hillsborough	3,372	3,366	3,355	3,345	3,151	3,117	3,094	3,078
Melvin Village	878	874	869	865	873	847	839	836
Sutton	854	848	847	844	844	847	844	838
Warner	1,625	1,623	1,620	1,623	1,619	1,600	1,591	1,580
Andover	1,281	1,275	1,274	1,272	1,270	1,274	1,285	1,276
Boscawen	1,025	1,023	1,022	1,015	1,008	995	998	993
New London	3,895	3,882	3,851	3,832	3,834	3,832	3,832	3,812
Salisbury	1,045	1,039	1,041	1,036	1,027	1,021	1,021	1,022
Chichester	1,694	1,689	1,689	1,684	1,677	1,667	1,670	1,653
Meriden	598	598	596	593	595	590	580	573
Hollis	3,295	3,286	3,274	3,260	3,254	3,251	3,238	3,233
Wilton	3,312	3,304	3,288	3,292	3,291	3,263	3,243	3,235

Kearsarge Telephone Company
Wilton Telephone Company
Hollis Telephone Company
Merrimack County Telephone Company
Docket No. DT 07-027
Company Responses
To Staff Set 1 Data Requests
September 4, 2007

STAFF 1-1: Reed Testimony, Page 2, line 26. Please report the actual rates of return on equity on the intrastate segment of business for each of the four TDS companies for the years 2000-06.

Response:

The Petitioners object to Staff Data Request 1-1 on the grounds that it is vague, overbroad in scope and time, unduly burdensome and not reasonably calculated to lead to the discovery of admissible evidence. In addition, the Petitioners object to Staff Data Request 1-1 on the ground that RSA 374:3-b does not require an analysis of the rate of return on equity as demanded by the data request and such analysis is not among the elements specified within RSA 374:3-b (III).

Kearsarge Telephone Company
Wilton Telephone Company
Hollis Telephone Company
Merrimack County Telephone Company
Docket No. DT 07-027
Company Responses
To Staff Set 2 Data Requests
September 26, 2007
Supplemental Response Dated October 5, 2007

STAFF 2-1: Reed Testimony: Attachments A-D. Please provide estimates of the incremental cost savings associated with the loss of a basic local service connection for business and residential customers respectively for each of the TDS companies.

Response:

The Petitioners object to Staff Data Request 2-1 on the grounds that the data request is unduly burdensome and requires creation of evidence that does not exist. Subject to and without waiving these objections, the Petitioners will provide information responsive to Staff Data Request 2-1.

No incremental cost savings estimates have been prepared on the loss of a basic local service connection. However, it should be noted that the central office equipment, cable, poles, and outside plant electronics will still be in place, and must still be maintained. The systems for billing, maintenance, accounting, etc. will all remain in place. Service and maintenance employees and systems will still remain in place, although as losses of customers and lines increase, fewer personnel will be required. The only portion of the customer's service not requiring maintenance would be the specific service wire from the customer's serving pole to the house and the Network Interface Device on the side of the house.

Supplemental Response:

The Petitioners do not have any additional information responsive to STAFF 2-1.

Michael C. Reed is responsible for this response.