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GTE Service Corporation

1850 M Street, N.W., Suite 1200
Washington, D.C. 20036-5801
202 463-5200
Fax: 202 463-5298

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Ms. Magalie R. Salas
Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, DC 20554

Ex Parte: Federal-State Joint Board on Universal Service, CC Docket Nos. 96-45 and 97-160 - Proxy Cost Models

In response to the Commission's Public Notice, DA 97-2372, dated November 13, 1997, proponents of proxy cost models to be used for determining universal service support submitted responses and updated models to the Commission on December 11, 1997. In addition, proponents of the Hatfield Model submitted additional data regarding geocoding. *See ex parte* presentation of AT&T dated December 24, 1997 ("AT&T *ex parte*").

Specifically, the Hatfield sponsors assert that their model accurately designs plant investment through the use of geocoding customer addresses to their actual, physical location. Further, the Hatfield sponsors claim that over 70% of all customer locations can be geocoded to point locations. For locations that cannot be geocoded, the sponsors claim that the model's surrogate method of assigning those locations to the periphery of a census block is "as least as reasonable" as the "road allocation" methodology used in the BCPM model. AT&T *ex parte* at 6-7.

For the following reasons, GTE urges the Commission not to adopt the Hatfield methodology that relies on geocoding to point locations. GTE is concerned that absent further testing and validation, use of available commercial geocoding software in the proxy cost models could result in a substantial understatement of universal service costs, particularly in rural areas.

As stated previously in comments, GTE supports the use of grid cells for the calculation of costs in any proxy model adopted. However, based on GTE's experience, geocoding does enhance the accuracy of identifying where a customer is located in larger urban areas. For example, GTE Florida has approximately 2.2 million customers and experienced a 94% "point-code" match

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rate when applying geocoding software to customer data files. Another 2% of this company's customers could be geocoded to a census block group. Altogether, 96% were identified to an exact address or CBG. This phenomenon is attributed to the dense urban Tampa Bay area in which GTE operates. Geocoding would definitely enhance universal service support calculations for such non-rural companies.

On the other hand, Contel of North Carolina showed only a 40% success rate when utilizing the very same geocoding software and procedures. Even though this company exceeds the 100,000 line rural demarcation parameter, most of its customers are located in the western part of North Carolina in the Smoky Mountains. Although classified as a non-rural company, a majority of customers for Contel of North Carolina can not be geocoded to an "exact" physical address using current geocoding software. However, another 9% of customers were identified as being located in a specific census block group. Altogether, about 51% of Contel of North Carolina customers could not be geocoded to either an exact address or a census block group.

The above example is not an isolated occurrence and affects many states in which GTE operates, including those considered to be "non-rural" for universal service purposes. Many study areas have a low point-code percentage due primarily to the rural areas in which they serve. Examples of low point-coded percentages for entities greater than 100,000 lines are: Contel of Texas at 35%, Contel Missouri at 51%, Contel of Indiana at 51%, Contel Minnesota at 54%, and Contel Alabama at 55%. The attached maps of exchanges in Contel of Texas' study area illustrate the difficulty in geocoding customers in rural areas. In several exchanges, no customers could be geocoded at all.

GTE estimates, based on a representative sampling, that a significant portion of its customers can not be geocoded. Thus, a proxy cost model which relies on point geocoding could significantly impact GTE's ability to receive adequate universal service support. Listed below is a summary of GTE's efforts to geocode its non-rural study areas:

Description	Study Areas	1998 Loops (millions)	HCF	Percent of Lines Point Code	Percent of Lines CBG Centroid
Non-Rural Study Areas:					
> 100k - 250k Lines	14	2.2	$42.1	59.15%	68.35%
> 250k - 500k Lines	4	1.8	4.1	75.54	80.83
> 500k - 850k Lines	8	5.6	2.8	77.93	83.69
> 850k lines	3	7.8	.5	90.68	92.95
GTE Network Services	29	17.4	$49.5	80.03%	84.85%

Alternatively, geocoding to a census block group instead of an exact address increases the overall percent of lines that can be geocoded from 80.03% to 84.85%. While geocoding to an exact latitude and longitude will enhance the accuracy of certain 'urban" study areas, "truly" rural study areas, under *and over* 100,000 lines, can not be successfully geocoded to either an exact address or census block group for all of its customers. Customers located on rural RFD routes are the most expensive to serve, generally require the highest level of universal service support, and make up a larger percentage of the population of customers not identified by geocoding.

The current version of the Hatfield Model does not meet the Commission's criteria that the model's underlying data and calculations be publicly available and verifiable. GTE's analysis of the Hatfield Model's input database reveals not only the model's closed nature, but also its sheer size and complexity. While GTE has not had the opportunity to review all of the databases used in the customer location process, it appears that the input database must be a product of at least twelve different data bases and five independent models or algorithms. The major inputs to the model are the result of massive pre-processing that cannot be analyzed or altered in a simple fashion. Thus, the actual Hatfield Model becomes only the "tip of the iceberg," and neither a review nor enhancements can be made to the model's database.

While the Hatfield Model's documentation leads the reader to believe that the actual customer locations are being used to model telephone loops, in actuality the clustering algorithm along with the surrogate method of assigning nongeocoded customers reverses itself and results in customer distribution not much different than that in previous versions of the model. Given that a significant number of customer locations are not geocoded at all and are assigned to surrogate points makes this "geocoding" exercise even more trivial. In contrast, GTE believes the BCPM model's approach of locating customers based on linear road distances would prove to be a more useful alternative.

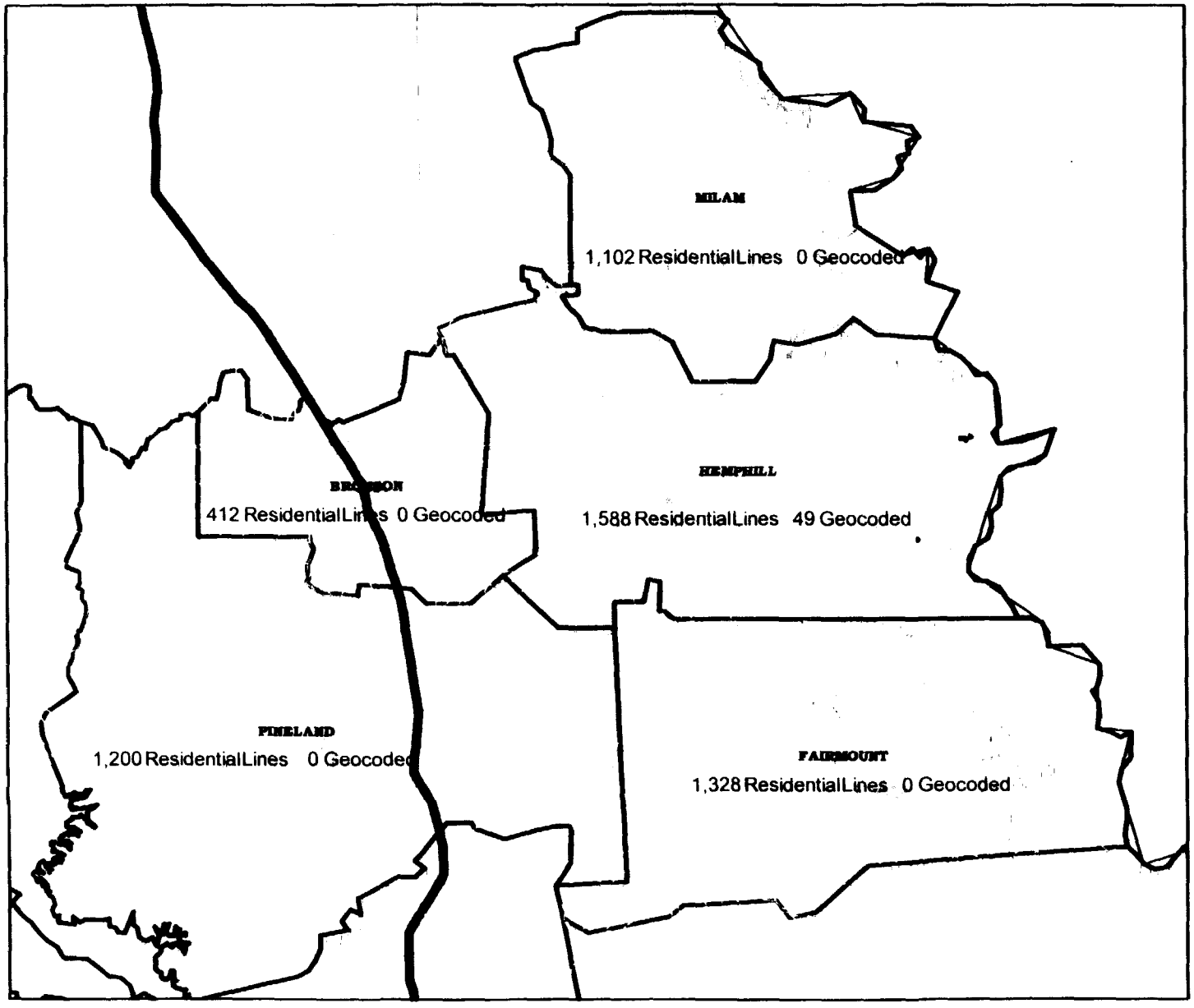
Sincerely,

W. Scott Randolph
Director - Regulatory Matters

cc: Brian Clopton
Lisa Gelb
Charles Kellar
Bob Loube
Natalie Wales

TEXAS CONTEL RESIDENTIAL CUSTOMERS (Non-Rural)

LOCATED BY LATITUDE/LONGITUDE VIA GEOCODING SOFTWARE



Layers

- TX_CNTY:Counties
- TX_STATE:States
- TXWIRE:CONTEL
- SBWTX367:Highways
- SBWTX497:Highways
- SBWTX439:Highways
- SBWTX403:Roads
- SBWTX403:Highways
- SBWTX401:Roads
- SBWTX401:Highways
- SBWTX241:Roads
- SBWTX241:Highways
- SBWTX005:Roads
- SBWTX005:Highways
- SBWTX405:Roads
- SBWTX405:Highways
- SBWTX351:Roads
- SBWTX351:Highways
- TXCLAT:Contel Res Loc

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- SBWTX401:Roads
- SBWTX401:Highways
- SBWTX241:Roads
- SBWTX241:Highways
- SBWTX005:Roads
- SBWTX005:Highways
- SBWTX405:Roads
- SBWTX405:Highways
- SBWTX351:Roads
- SBWTX351:Highways
- TXCLAT:Contel Res Loc
- SBWTX181:Roads
- SBWTX181:Highways
- SBWTX147:Roads
- SBWTX147:Highways

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