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May 7, 1998

RECEIVED

MAY - 7 1998

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

Dear Ms. Salas,

In accordance with Commission Rules, please be advised that on Wednesday, May 6, 1998, Alan Ciamporcero, Dean Foreman, Dennis Weller and the undersigned of GTE and Frank Murphy of Network Engineering Consulting, Inc. met with Joe Banscher, Craig Brown, Chuck Kellar, Bob Loube, and Brad Wimmer of the Common Carrier Bureau to discuss the development and use of proxy cost models and GTE's proposal for the design of the federal universal service mechanism.

Representatives of GTE demonstrated the use of GTE's USF Planning Model, a tool for estimating the effects of alternative federal high cost universal service plans, using cost estimates from BCPM 3.1, HAI 5.0 and the FCC-specified common inputs. The model enables a user to select up to three benchmarks in a custom plan and to specify the FCC funding parameters above these benchmarks. A copy of GTE's model (an Excel file) is attached on diskette.

In addition, GTE's April 27, 1998 response to a recent Bureau request on geocoding was also discussed. The attached map, depicting low geocoding rates in GTE's serving areas in Texas, was used in the discussion.

If you have any questions regarding this filing, please call me at (202) 463-5293.

Sincerely,

W. Scott Randolph
Director - Regulatory Matters

Attachment

cc: Joe Banscher
Craig Brown
Chuck Kellar
Bob Loube
Brad Wimmer

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Cost Model Platforms and the Design of the Federal USF Mechanism

GTE

6 May 1998

Dennis Weller, GTE

Francis Murphy, NECI

Cost Model Platform and the Design of the Federal USF Mechanism

- None of the cost models is accurate
- Of the platforms available to the Commission, BCPM is the only reasonable choice
- The Federal plan must be designed to achieve reasonable results even if the model is not perfect
  - Reasonableness checks for result of plan
  - Auctions as corrective mechanism

None of the Proxy Models Is Accurate

- **Results are erratic**
  - Wide variations in total, by state, by wire center, by biz/res
- **No reason to expect accuracy**
  - Incorrect cost concept
  - Limited information
  - Crude heuristics
- How can the Commission be confident that **either** of these estimates is correct?

Results All Over the Map

- Models produce wildly different results
  - **Nationwide**
    - Hai estimates 40% less support than BCPM for 20/25/40 plan
  - **By state**
    - BCPM provides 51% **less** support than HAI in Arkansas;
    - 271% **more** support in Puerto Rico
  - **By wire center**
    - The two models don't even support the same wire centers
  - **Between business and residence**
    - Percent of support between $31 and $51 that goes to business: 14% for BCPM, 4% for HAI

THE NETWORK MODELED IN HAI 5.0A CANNOT FUNCTION

- Basic Engineering Principles are Ignored
- Technology Assumptions are Not Forward-Looking
- Customers are Not in the Correct Locations
- Rural Customers Cannot Receive Advanced Services or Take Advantage of Today's Modem Speeds
- Output Does Not Compare Realistically to Reported Data
- Distribution Cable Does Not Reach Customers
- The Model Cannot Accommodate Growth or Seasonality
- Switching Assumptions are Unrealistic

THESE FLAWS ARE NOT INHERENT IN THE BCPM MODEL

THE NETWORK MODELED IN BCPM CAN FUNCTION

- BCPM Adheres to Basic Engineering Principles
- Technology Assumptions Are Forward-Looking
- Customers Are More Realistically Located
- Rural Customers Can Receive Advanced Services and Take Advantage of Today's Modem Speeds
- Compares More Reasonably to Reported Data
- Distribution Cable is Sufficient
- The Model Can Accommodate Growth and Seasonality
- Switching Assumptions are Realistic

BCPM SHOULD BE ADOPTED BY THE COMMISSION FOR USF PURPOSES

The Cost Mechanism Chosen Should Include:

- Access to the model
  - HAI contains preprocessing steps that are closed to the user
  - The limited access provided to the PNR database is problematic
- Model chosen by the Commission should be taken in-house by the staff
  - Out of sponsor's hands
  - All processes open to examination

THE COST MECHANISM CHOSEN SHOULD INCLUDE:

- **Customer Location Algorithms That Reasonably Locate Customers**
  - HAI artificially clusters customers and consequently understates distribution plant
  - Geo-coding is seriously incomplete in HAI
  - Geo-coded data that is available is discarded
  - The HAI cluster design methodology does not adhere to standard engineering designs
  - Non geo-coded customers should be evenly distributed throughout <u>all</u> roads in the CB not just the periphery
- **BCPM More Reasonably Locates Customers Than the HAI Model**
  - BCPM places customers on appropriate roads

THE COST MECHANISM CHOSEN SHOULD INCLUDE:

- **Sufficient Distribution Cable to Reach Customers**
  - Cursory review of PNR data indicates distribution plant is insufficient in the lowest density zones where USF funding will most likely be required
- **Preliminary Analysis Performed by Sprint for GTE Contel in Nevada**
  - HAI under builds a minimum 27 of 46 clusters in the 0-5 density zone
  - HAI under builds a minimum 14 of 49 clusters in the 6-100 density zone
  - A sample of the Nevada Contel clusters depicts a minimum shortfall of 193,751 feet of a total of 492,344

THE COST MECHANISM CHOSEN SHOULD INCLUDE:

- **Output That Compares Realistically To Reported Data**

Telephone Plant In Service
(% Modeled to ARMIS Actuals)

	Oregon	Texas
HAI	61%	75%
BCPM	92%	87%

Total Operating Expenses
(% Modeled to ARMIS Actuals)

	Oregon	Texas
HAI	47%	52%
BCPM	86%	79%

Note: Data is based on default runs

THE COST MECHANISM CHOSEN SHOULD INCLUDE:

- **A Forward-looking Network That Supports Required Services**
  - Copper-based T1 DLC modeled by HAI is not forward-looking
  - Compliance with CSA standards is a must for costs to be accurate
    - 18,000 foot copper loops modeled by HAI will prohibit the offering of advanced services
    - HAI's preprocessing steps do not conform to CSA standards
- **BCPM Adheres to Network Design Standards and Models a Forward-looking Network That Can Provide Advanced Services**
- **HAI Fails to Model a Forward-looking Network That Can Provide Advanced Services and Consequently Understates Costs**

THE COST MECHANISM CHOSEN SHOULD INCLUDE:

- **A Network Built To All Customer Locations In Order To Meet Service Delivery Standards**
  - HAI builds plant to only "in-service" locations which is unrealistic
  - HAI does not provide sufficient pairs per living unit
  - The mechanism must be capable of taking into account "warm dial-tone" requirements
  - The network must be built to adequate engineering standards in order support current service intervals and levels of service quality
    - < 1% blocking during the busiest hours of the 10 busiest days
    - New service requests and change orders must be processed promptly
    - Repair service provided in timely manner
- **BCPM's Network Is Able to Comply With Current Standards, HAI's Network Cannot and As a Result Understates USF Costs**

THE COST MECHANISM CHOSEN SHOULD INCLUDE SUFFICIENT STRUCTURE:

- **HAI Does Not Provide Structure Costs for Aerial Cable in the Two Highest Density Zones Causing It to Understate Costs**
- **Structure Costs in the Two Highest Density Zones**
  - A review of 3 communities whose CBGs are predominantly in the two highest density zones was conducted
  - HAI does not provide any aerial distribution structure costs for the top two density zones in these three communities because it effectively assumes all high rise dwellings
  - These communities have high percentages of single and small multi-family dwellings (67% - 86%)
  - These communities are served by aerial cable and drops in the distribution plant
- **BCPM Correctly Provides Structure Costs for Aerial Cable in the Highest Density Zones**

THE COST MECHANISM CHOSEN SHOULD INCLUDE:

- **Sufficient Trunks for the Network to Operate**
  - HAI consistently models significantly less trunks than found in GTE's network
    - In most states only 25-30% of GTE's trunks are modeled by HAI
  - The HAI Model ignores basic trunk engineering principles
    - Seasonality, modularity, assumed usage per trunk
- **Conformance To Standard Engineering Practices**
  - Model must recognize the indivisibility of certain network components
    - Line and Trunk Modules (e.g. line module = 640 lines)
    - GR-303 Interface Groups
  - Switch engineering standards must be followed

THE COST MECHANISM CHOSEN SHOULD INCLUDE:

- **The Ability to Unbundle Fiber Loops From Integrated Digital Loop Carrier (IDLC)**
- **BCPM Includes Necessary Investment to Unbundle Loops From IDLC**
- **HAI Does Not Include the Investment to Unbundle Loops from IDLC**

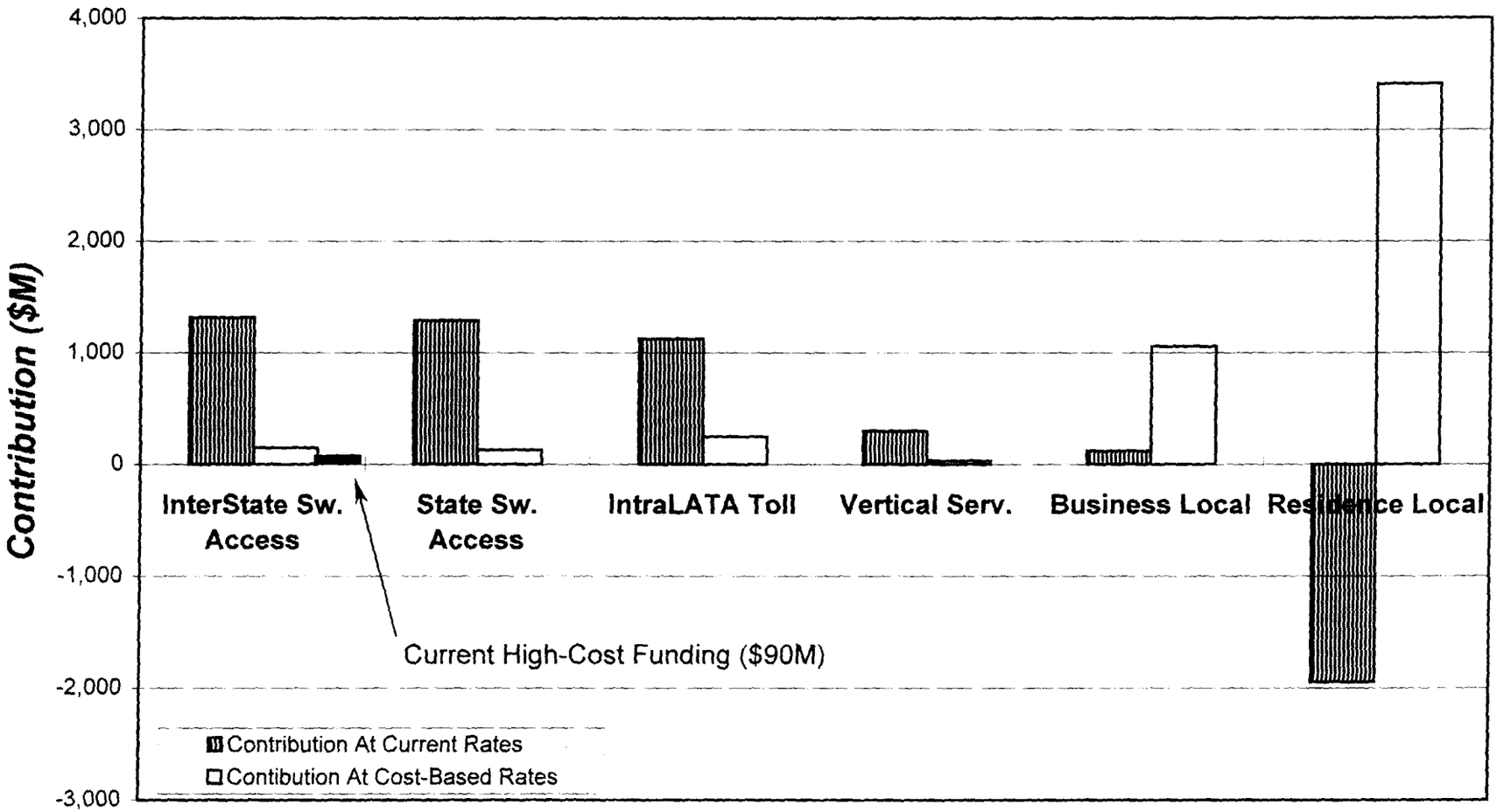
Plan Results Should be Reasonable

- Cost model <u>will</u> be wrong
- Plan should be designed with this in mind
- Results should make sense, even if the model doesn't
  - Commission should ensure that plan meets reasonable objectives
  - Model should not be vehicle for changing the basis of regulation

Methods for ensuring plan results are reasonable

- Checks for reasonableness of results:
  - **Is support sufficient to replace existing implicit support**?
    - $6.3 Billion in interstate rates alone
    - Is plan sending reasonable amount to states?
  - **What would revenue be if ILEC output were all sold at estimated cost level?**
    - Does model implicitly set new revenue level?
- **What would an efficient firm bid?**
    - Auctions would serve as corrective mechanism for support

GTE Contribution ($M) By Service At Cost-Based Rates



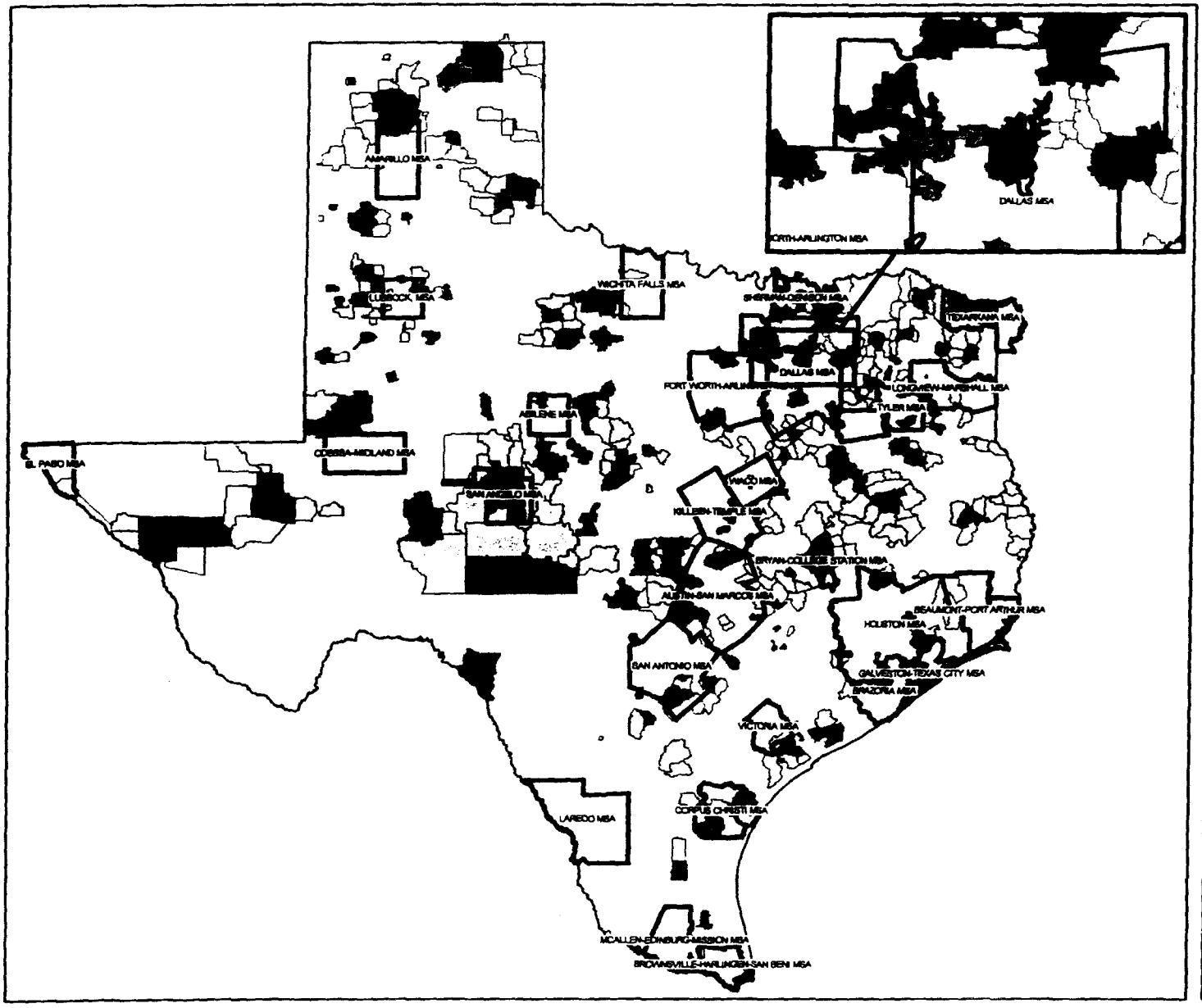
Issues To Be Addressed By Federal Fund

- Replace implicit support from interstate access -- $ 6.3 B
- Provide support for states with high costs, limited revenue --- $? B
- Maintain current level of Federal high cost funding --- $212 M

ATTACHMENT V

TEXAS GEOCODING MATCH RATES

COLOR CODED BY MATCH RATE PERCENTAGE



Layers

- TXWIRE:gte_total
- TXSTATE:States
- TX_MSA:MSAs

ADDR_GEO_

.00 to	.10
.10 to	.50
.50 to	.80
.80 to	1.00

MATCH RATE PERCENTAGE

Miles

0 100 200

Attachment A

DOCUMENT OFF-LINE

This page has been substituted for one of the following:

o An oversize page or document (such as a map) which was too large to be scanned into the RIPS system.

o Microfilm, microform, certain photographs or videotape.

✓ Other materials which, for one reason or another, could not be scanned into the RIPS system.

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One diskette.