U S WEST, Inc.
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1020 Nineteenth Street, NW
Washington, DC 20036
202 429-3133

Glenn Brown
Executive Director-
Public Policy

Ex Parte Presentation

March 22, 1996

William F. Caton, Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

RE: CC Docket 96-45

Dear Mr. Caton:

On March 21, 1996, Glenn Brown and Peter Copeland of U S WEST and Jim Dunbar of Sprint met with members of the Accounting and Audits Division staff to discuss the Benchmark Cost Model (BCM). Attending the meeting for the Accounting and Audits Division were: Clara Kuehn, Bill Howden, Rafi Mohammed, Mark Nadel, Gary Oddi, Jeanine Poltronieri, Jon Reel, Gary Seigel, Pam Szymczak, and Whitey Thayer.

An overview of the BCM was presented using the attached charts. In addition, a demonstration of the BCM model was made. This material is identical to the material which was used in four earlier workshops on the BCM and filed in the record of CC Docket 80-286.

In accordance with Section 1.1206(a)(2) of the Commission's rules, the original and one copy of this letter, with attachment, are being filed with your office. Due to the late conclusion of the meeting, this letter is being filed the following business day.

Acknowledgment and date of receipt of the material are requested. A duplicate copy of the letter is included for this purpose. Please contact me should you have any questions concerning this matter.

Sincerely,

Attachments

cc: Joint Board Service List
Clara Kuehn
Bill Howden
Rafi Mohammed
Mark Nadel
Gary R. Oddi
Jeanine Poltronieri
Jon Reel
Gary Seigel
Pam Szymczak
Whitey Thayer

BENCHMARK COST MODEL

WORKSHOP

NEW ORLEANS, LOUISIANA

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November 12, 1995

BENCHMARK COST MODEL

PURPOSE OF THE MODEL

- Identify High Cost CBGs
- Develop Benchmark Cost Range
  - Basic Residential Service
  - Efficient Design
  - State-of-the-Art Technology
- Model Does **Not**
  - Develop Actual or Embedded Costs
  - Include Business Lines
- Allow Evaluation of Multiple Proposals for High-Cost Support Targeting

BENCHMARK COST MODEL

CENSUS BLOCK GROUPS (CBGs)

- Defined by U.S. Bureau of the Census
- 250 - 550 Housing Costs
- Ideal Size of 400 Units

BENCHMARK COST MODEL

MONTHLY COST FOR BASIC SERVICE

- Efficient Investment
- Annual Cost Factor
- Customer Served

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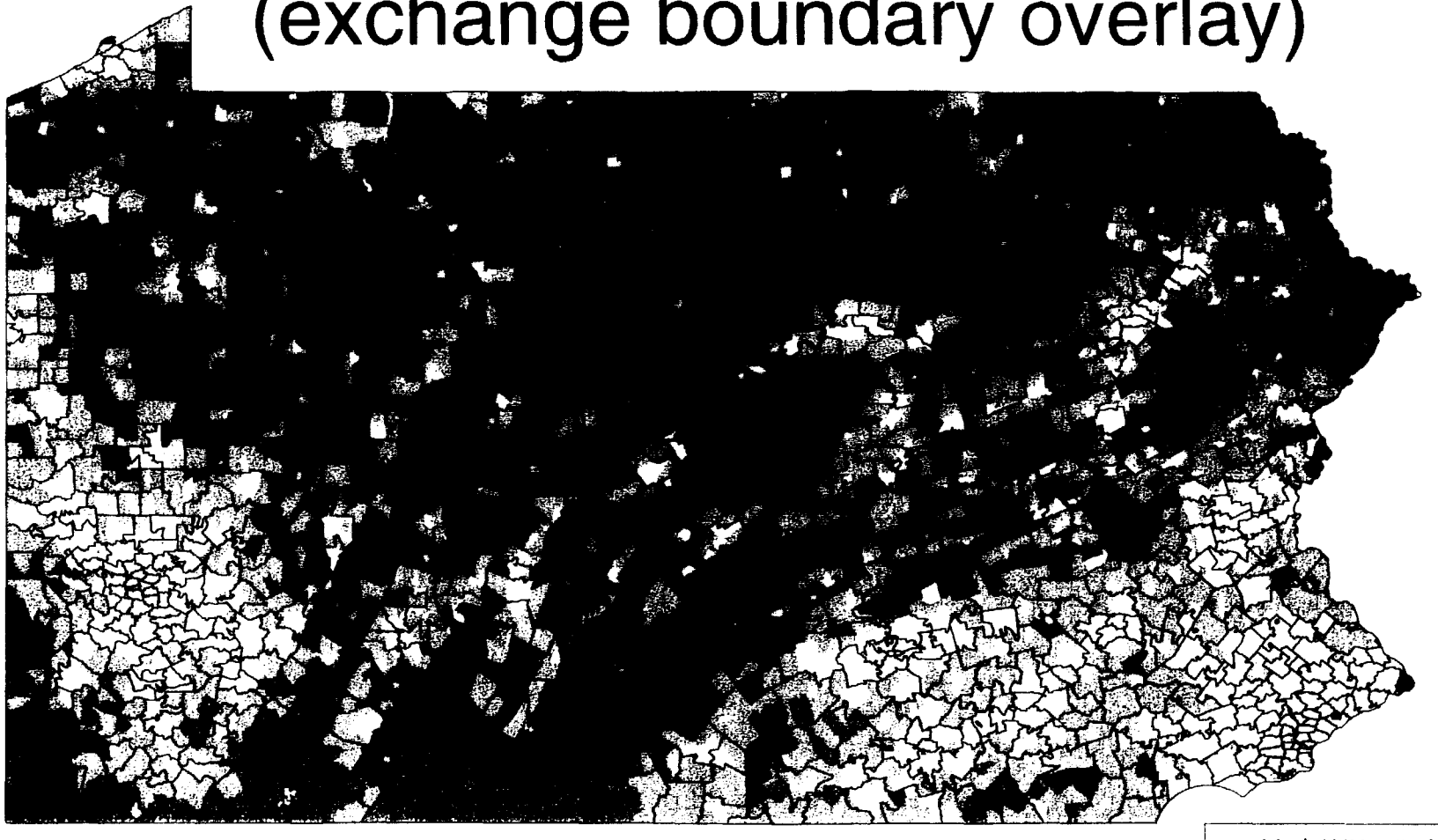
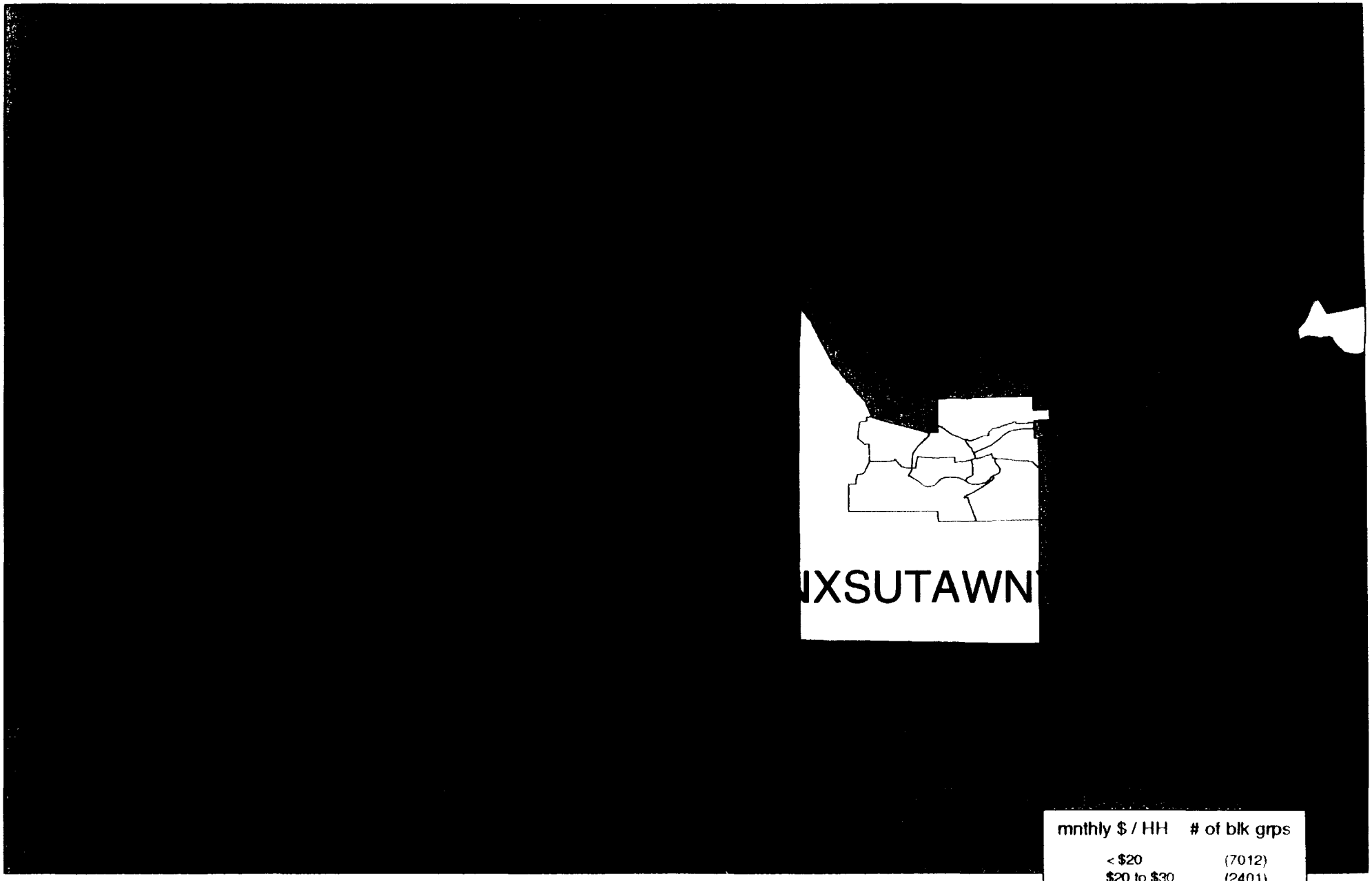
PENNSYLVANIA

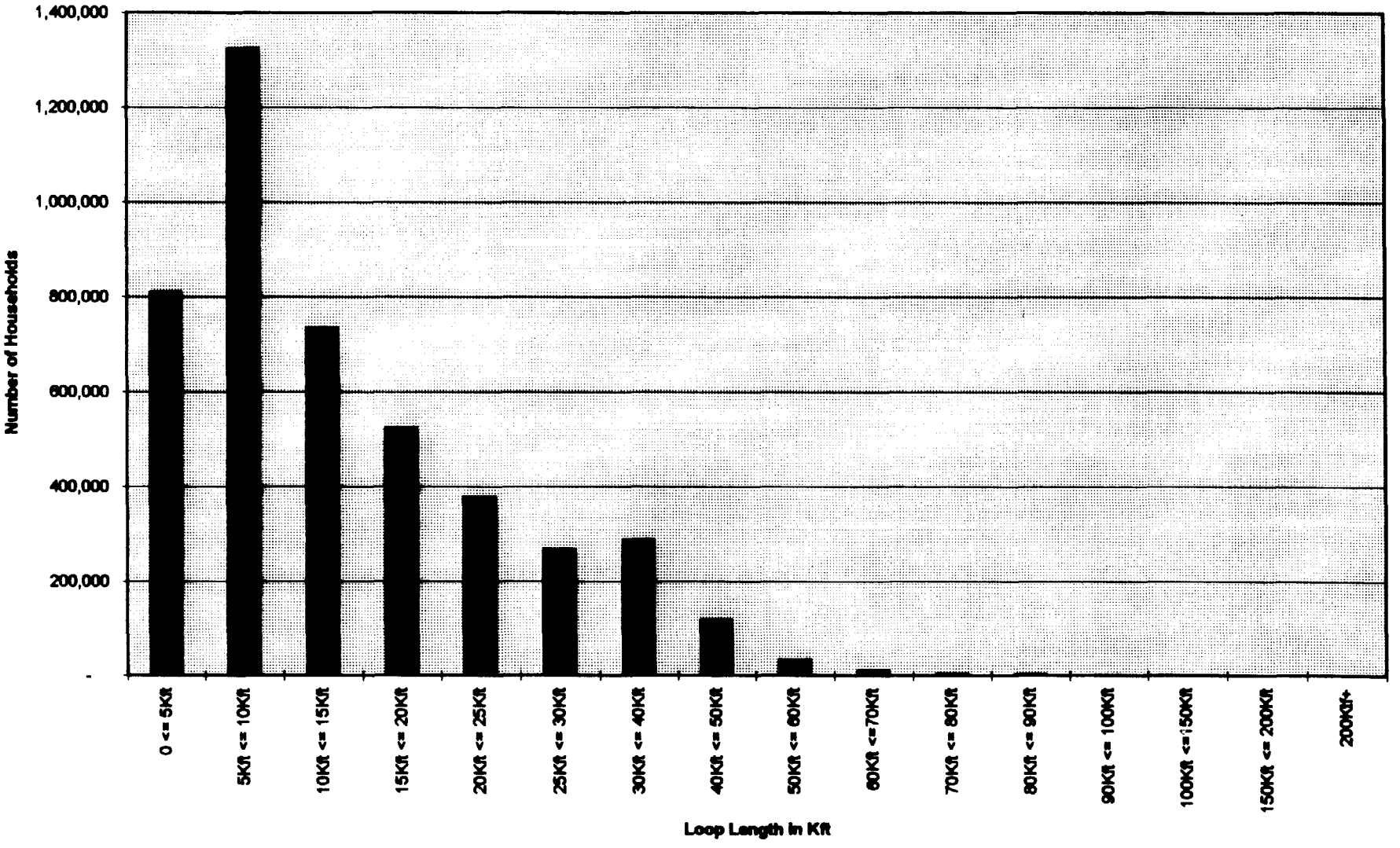
MONTHLY COST STRATIFICATION

(exchange boundary overlay)

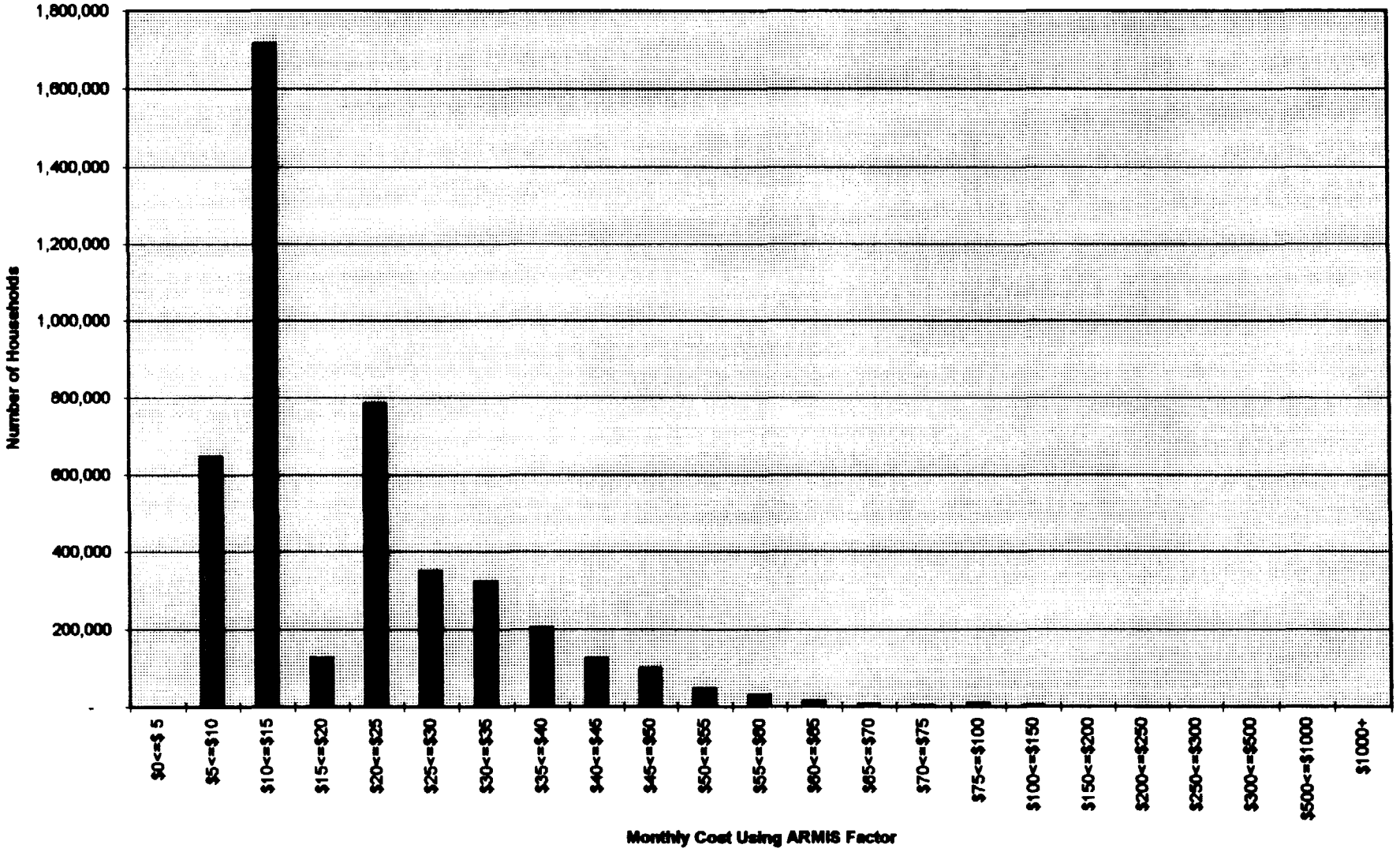



mnthly $ / HH
# of blk grps
< $20
(7012)
$20 to $30
(2401)
$30 to $40
(1246)
> $40
(1029)
exch boundaries
(0)

PA Household Distribution By Loop Length



PA Household Distribution By Residential Service Monthly Cost

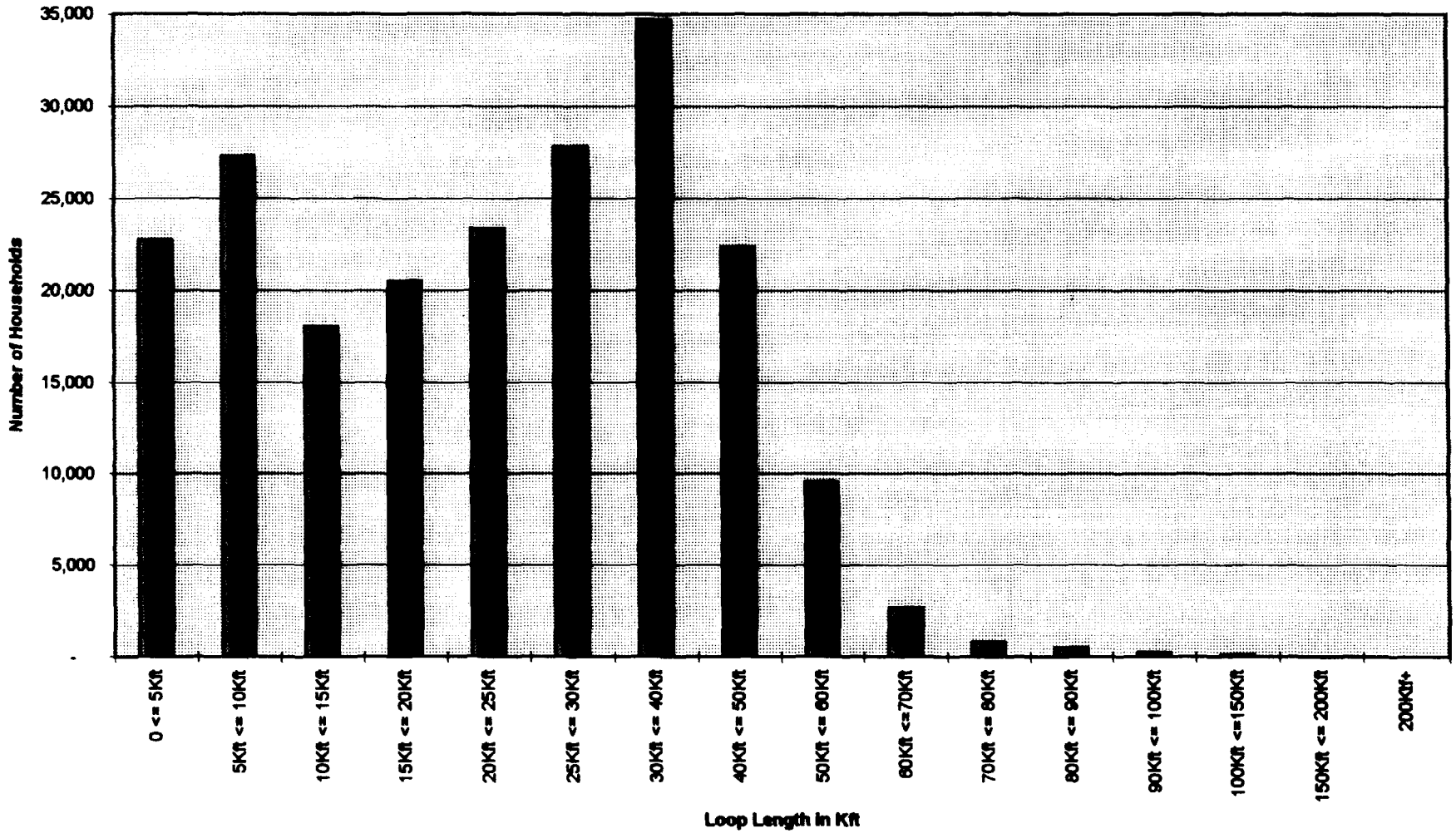


VERMONT

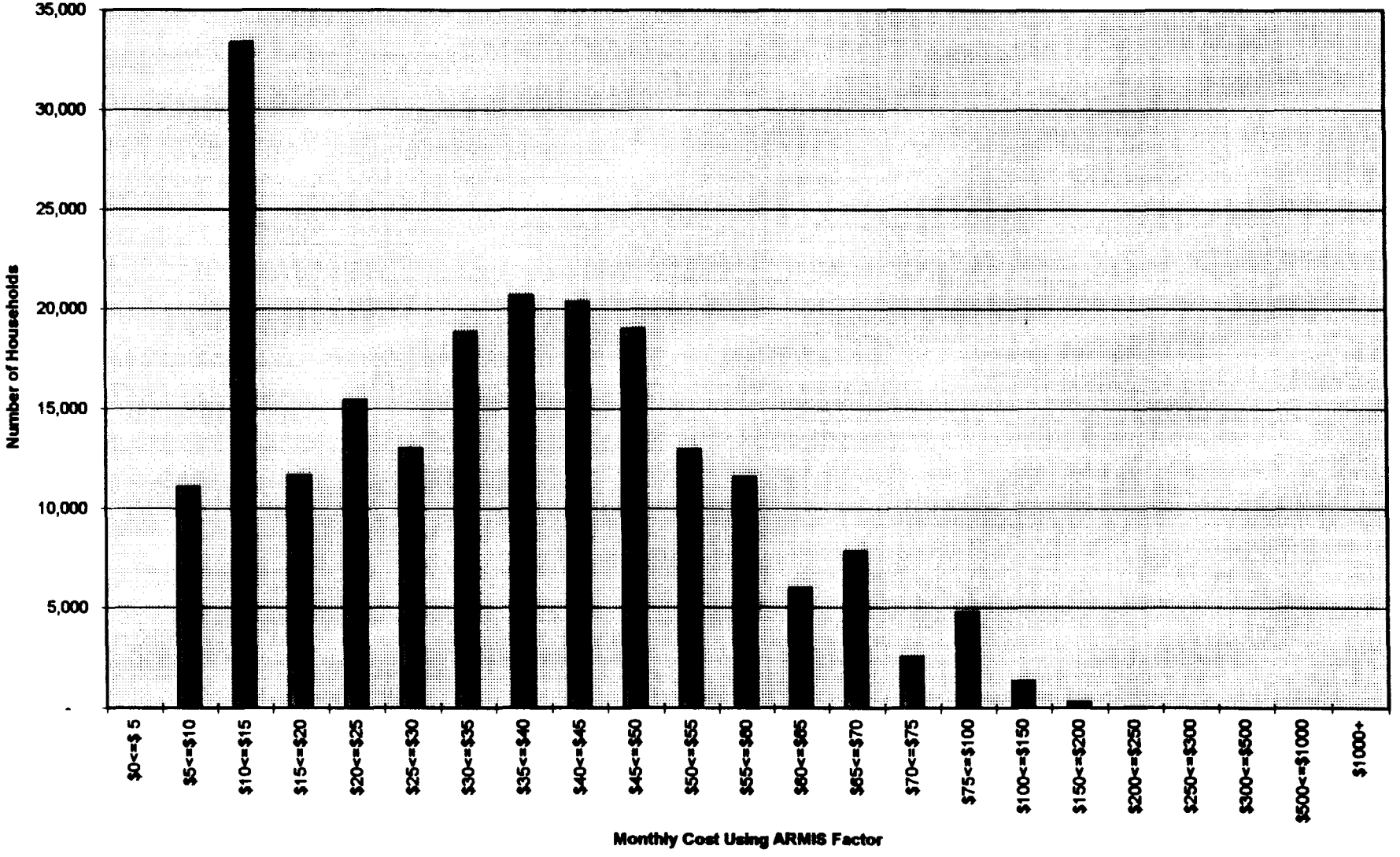
MONTHLY COST STRATIFICATION (exchange boundary overlay)

mnthly $ / HH	# of blk grps
<$20	(137)
$20 to $30	(64)
$30 to $40	(99)
>$40	(293)
exch boundaries	(0)

VT Household Distribution By Loop Length



VT Household Distribution By Residential Service Monthly Cost



BENCHMARK COST MODEL

ASSUMPTIONS: FEEDER PLANT ARCHITECTURE

- Feeder Cable Begins at CO and Generally Ends at Edge of CBG
- 4 Main Feeder Routes Leave CO, with Feeder Route Boundaries at 45º Angle From Main Route
- Cable and Fiber Feeder Systems Share Structure In Main Feeder Systems
- Main Feeder Routes are Segmented at Taper Points
- Each Feeder Segment's Cable Size Determined By Segment Capacity
- Feeder Cable Size From 100 Pair to 4200 Pair, Fiber Cable Size from 12 Strand to 144 Strand

BENCHMARK COST MODEL

ASSUMPTIONS: DISTRIBUTION PLANT ARCHITECTURE

- Households Are Evenly Distributed in CBG
- Distribution Cable Begins at Edge of CBG and Ends at Customer Premise
- 4 Equal Distribution Legs Service CBG
- Distribution Cable Size from 50 Pair to 3600 Pair

BENCHMARK COST MODEL

ASSUMPTIONS: LOOP TECHNOLOGY

- Distribution Plant - Analog Copper Technology
- Analog Copper Feeder Where Loop Length < 12,000
- Fiber Feeder For Digital Subscriber Line Carrier Where Loop Length >12,000 Ft and HH Density > 5HH/Sq. Mi.
  - Remote Terminal At Feeder Plant End
  - 4 Dedicated Fibers Per CBG, Up to 672 VG Paths
- Fiber Feeder For Digital Fiber Loop Carrier Bus Technology Where Loop Length >12,000 Ft and HH Density < 5HH/Sq. Mi.
  - Remote Terminal At Feeder Plant End
  - Minimum of 4 Fibers, Up to 672 VG Paths
  - Same 4 Fibers May Continue, Up to Capacity

BENCHMARK COST MODEL

ASSUMPTIONS: SWITCH TECHNOLOGY

- Northern Telecom DMS 100 Costs
  - Split Between Common Costs and Per Line Costs
  - Common Costs Include:
    - » Central Processor Frames
    - » Billing and Data Recording Equip and Frames
    - » Misc. Power Equip and Back Up Power
    - » Main Distribution Frame
    - » Frames For Testing
    - » Basic Software

BENCHMARK COST MODEL

ASSUMPTIONS: DENSITY

- HH/Sq.Mi. Determines Mixture of Aerial, Underground, Buried Plant
- HH/Sq.Mi. Determines Fill Factor - User Adjustable Input
- 6 Density Groupings
  - 0 < And <= 5
  - 5 < And <= 200
  - 200 < And <= 650
  - 650 < And <= 850
  - 850 < And <= 2550
  - 2550 +
- Urban CBGs (> 850 HH/Sq.Mi.) Have Higher Placement Costs Than Rural CBGs

BENCHMARK COST MODEL

ASSUMPTIONS: TERRAIN PLACEMENT COST

- Placement Depths For Copper 24"; For Fiber 36" - User Adjustable Input

- Terrain Indicators (Originate At U.S.G.S.) Include:
  - Depth to Water Table
  - Depth to Bedrock
  - Hardness of Bedrock
  - Surface Soil Texture

- If Water Table or Bedrock Within Placement Depth, Then Structure Costs Reflect Additional Construction

- Otherwise, Surface Texture Examined For Plowing Difficulty

BENCHMARK COST MODEL

ASSUMPTIONS: CABLE, FIBER, EQUIPMENT COSTS

- Prices For Cable, Fiber, Switching, & Circuit Equipment Are List Prices (Non-Volume Discount)
- Separate Discounts For Cable, Fiber, Circuit Equipment & Switching -- User Adjustable Input
- Copper Cable is 24 Gauge
- Buried Cable Armored & Filled

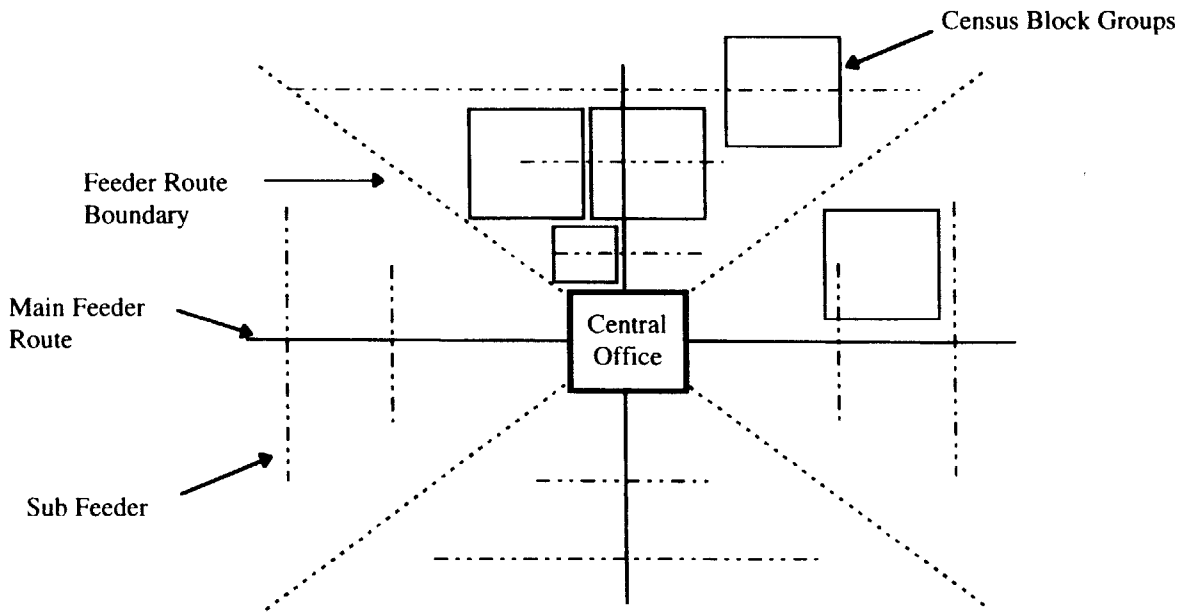
BENCHMARK COST MODEL

ASSUMPTIONS: STRUCTURE COSTS

- Def: Cost of Conduit, Innerduct, Poles etc., and Capitalized Costs of Placing Plant
- Calculated As % of Cable Costs - Based on Ratio of Cost Per Ft. to Place Plant vs. Cost Per Ft. Of Plant
- Factor Varies By Plant Type, Terrain, and Urban/Rural Setting

BENCHMARK COST MODEL

FEEDER PLANT



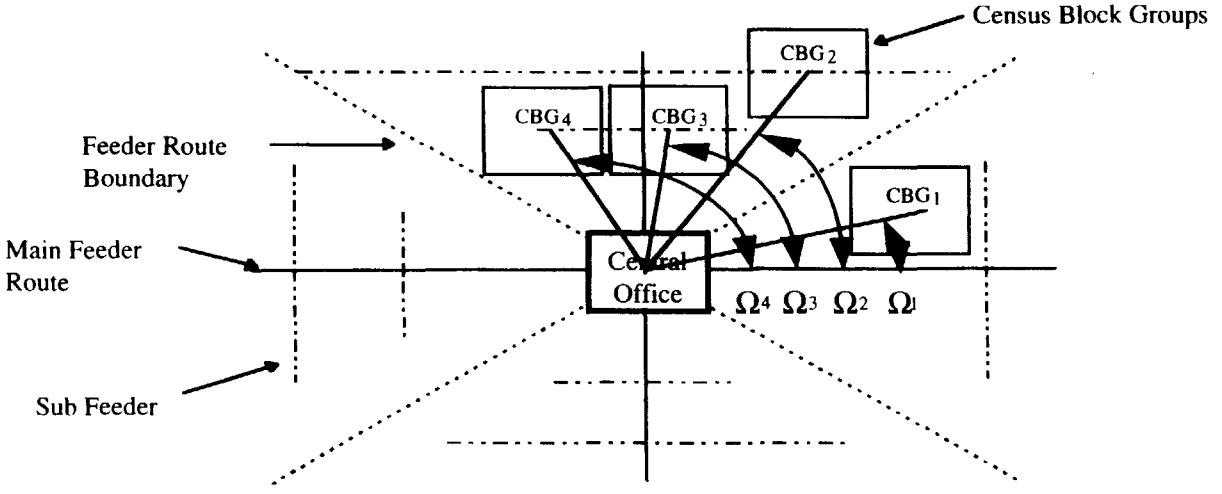
BENCHMARK COST MODEL

FEEDER & DISTRIBUTION PLANT DISTANCE

- Feeder Plant Calculations Based On Airline Distance Between CBG and Closest Central Office
- Distribution Plant Calculations Based on Size of CBGs
- Utilizes Tree and Branch Topology
- Determination of Quadrant For Feeder Plant

BENCHMARK COST MODEL

DETERMINATION OF FEEDER QUADRANT



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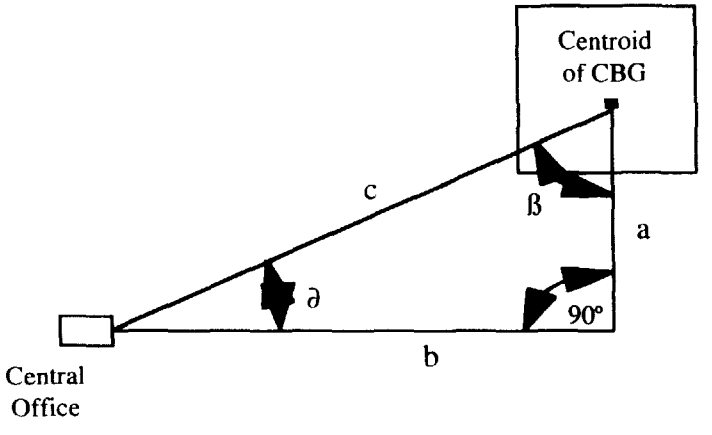
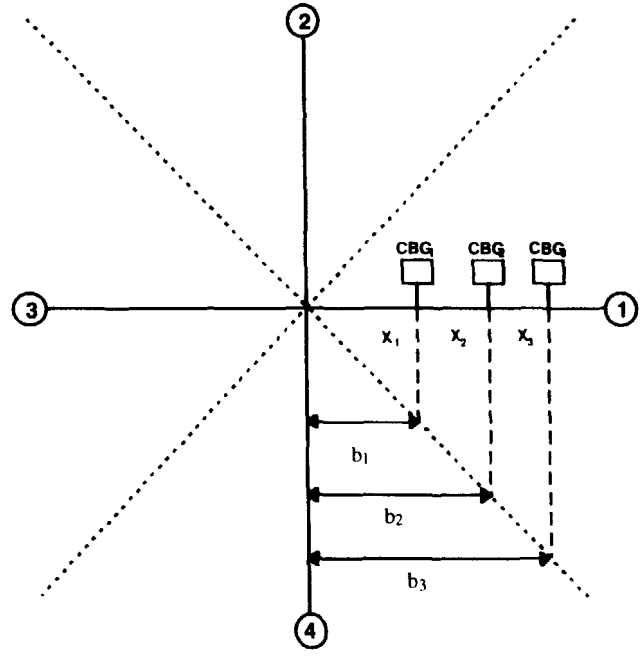
BENCHMARK COST MODEL

FEEDER DISTANCE CALCULATION



BENCHMARK COST MODEL

SHARED FEEDER DISTANCE CALCULATION



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