U S WEST, Inc.
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1020 Nineteenth Street, NW
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USWEST

Glenn Brown
Executive Director-
Public Policy

September 18, 1997

RECEIVED

SEP 18 1997

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

EX PARTE
Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, NW
Room 222
Washington, DC 20554

RE: CC Docket 96-45

Dear Mr. Caton:

On September 17, 1997 Mr. James Stegeman of INDETEC International and Mr. Jim Dunbar of Sprint made a presentation to the Universal Service Joint Board Staff regarding planned enhancements in the customer location algorithm of the Benchmark Cost Proxy Model. A list of the persons attending the presentation, both in person and via teleconference is attached to this letter. Also attached is a copy of the materials used during Mr. Stegeman and Mr. Dunbar's presentation.

In accordance with Section 1.1206(a)(2) of the Commission's rules the original and one copy of this letter are being filed with your office.

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

Sincerely,

Glenn Brown

Attachments

No. of Copies rec'd 0+1
List ABCDE

Ex-Parte Presentation by Mr. James Stegeman and Mr. Jim Dunbar
September 17, 1997
Attendance List

IN PERSON:
Natalie Wales, FCC
Rowland Curry, TX PUC
Jim Stegeman, Indetec
Jim Dunbar, Sprint
Glenn Brown, U S WEST
Whit Jordan, BellSouth
Chuck Keller, FCC
Jackie McGirr-Cortti, Bell Atlantic
Bob Loube, FCC
Pamela Fusting, NTCA
Greg Ryan, Bell atlantic
John Donovan, Telecom visions, Inc.
Chris Frentrup, MCI
Mike Lieberman, AT&T
Rich Clarke, AT&T
Bill Sharkey, FCC
John Huslig, RUS
Peter Lau, Bell Atlantic
Gary Allan, RUS
Warren Hannah, Sprint
Brad Wimmer, FCC
Wade Harriman, FCC
Mark Seiler, RUS
Ira Geldziler, Bell Atlantic
Ed Barber, Bell Atlantic
Scott Randolph, GTE
David Porter, WorldCom

BY PHONE:
Charlie Bolle, SD PUC
Ann Dean, MD PSC
Barry Payne, IN Office of Consumer Counsel
Brian Roberts, CA PUC
Mike Jackson, Tom Gehen, GTE
Chris Babb, NECA

BCPM Customer Location Verification

FCC Overview

Presented by:

BellSouth, Sprint, U S West, and INDETEC International

September 17, 1997

Any Representation of data is for illustrative purposes only.

BCPM Enhanced Customer Verification

- CBG Is Not the Ideal Engineering Unit for Rural Areas nor Rural Companies
  - Too Large
  - In Algorithms ,Information is Lost in BCPM1.1 and Hatfield Due to "Squaring" of CBG Area
  - Lack of Identification of Actual Customer Location
    - Clustering
    - Empty Areas
  - General Assumptions of Customer Dispersion and Engineering Do Not Work Well in Costing Specific Areas
    - Equal Dispersion versus Clustering
    - Limited Lot Size

Any Representation of data is for illustrative purposes only.

BCPM Customer Location Verification

- Validation of Customer Location Algorithms
  - Preliminary Results for Gunnison and Hayden Colorado
    - Representation of Previous Models
    - Representation of New Wire Centers
    - Representation of Preliminary Satellite Points
    - Representation of Census Block Housing Unit Counts
    - Representation of FCC Census Block Centroids
    - Representation of BCPM Road Populated 1/200th Grids
    - Representation of BCPM Engineering

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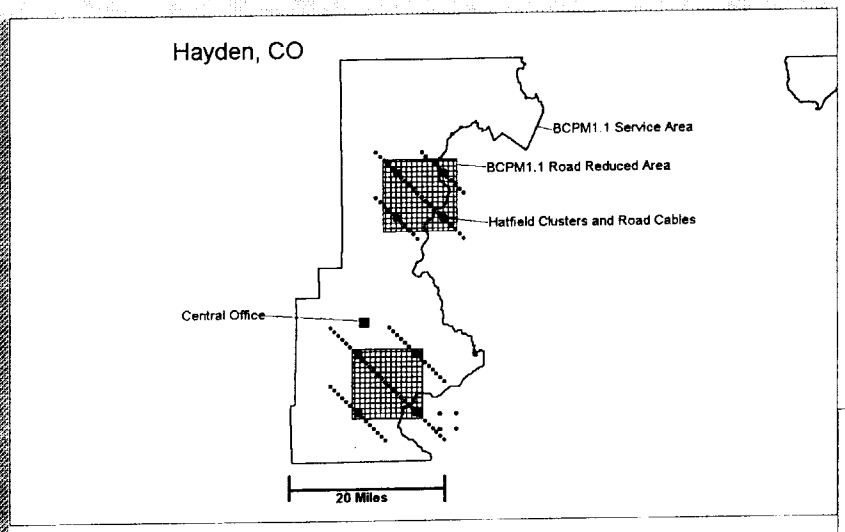
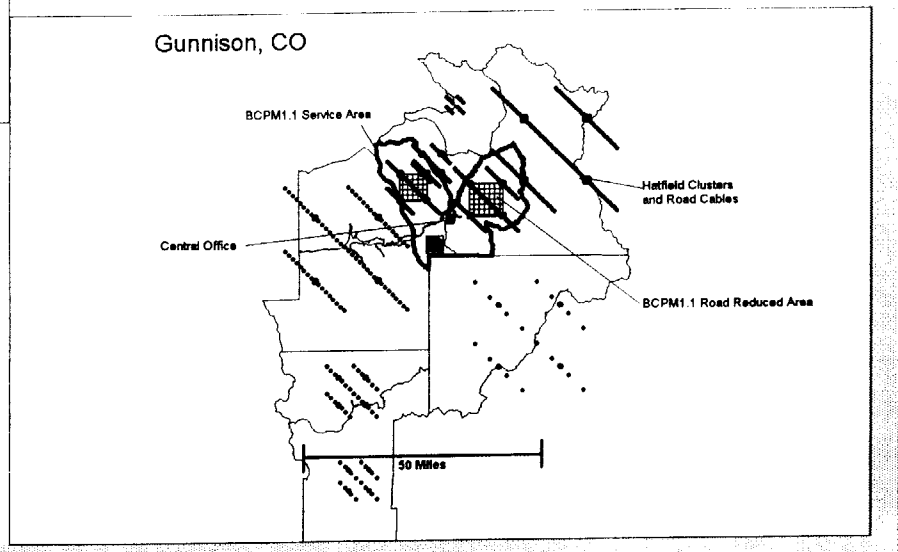
BCPM Customer Location Verification



Representation of Previous Models



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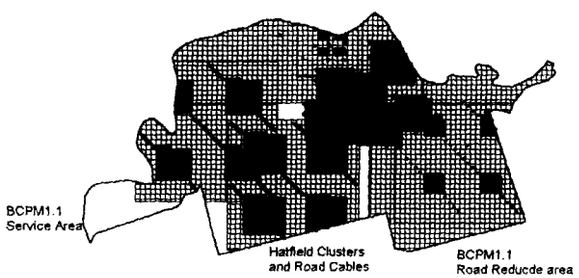
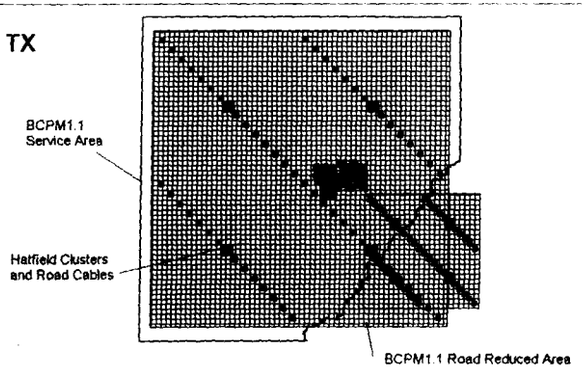
BCPM Customer Location Verification

Vernon, TX



Representation of Previous Models

Albany, TX



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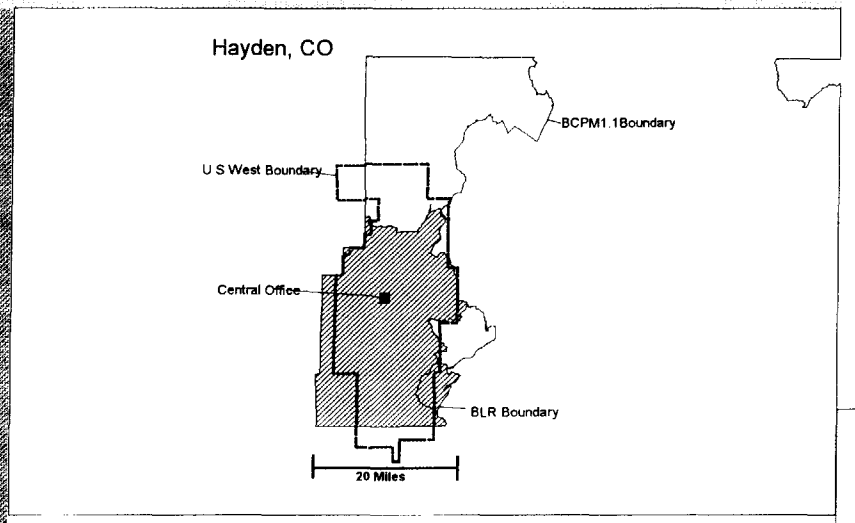
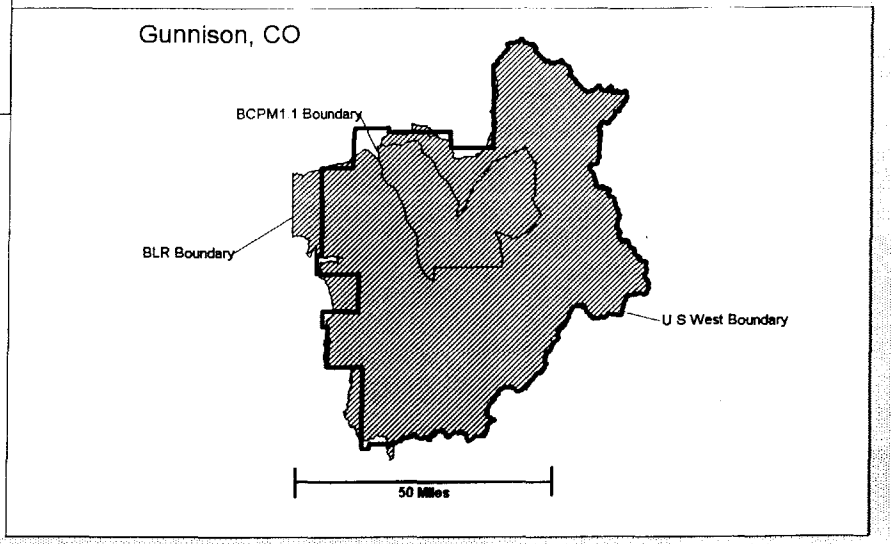
BCPM Customer Location Verification



Representation of New Wire Center Boundaries



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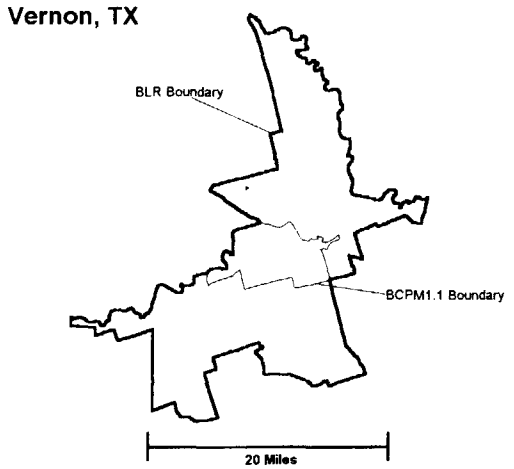
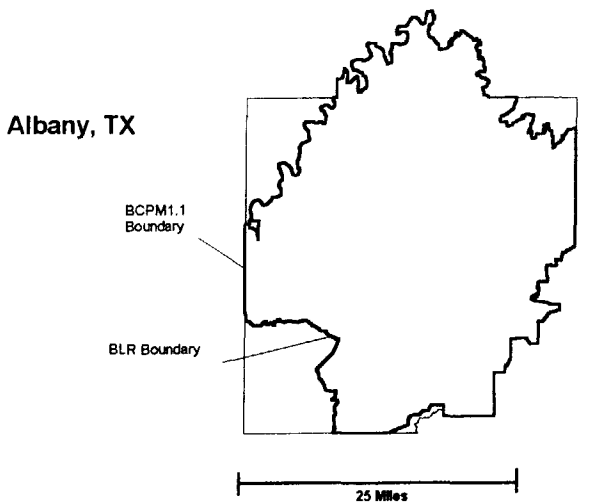
BCPM Customer Location Verification

Representation of New Wire Center Boundaries





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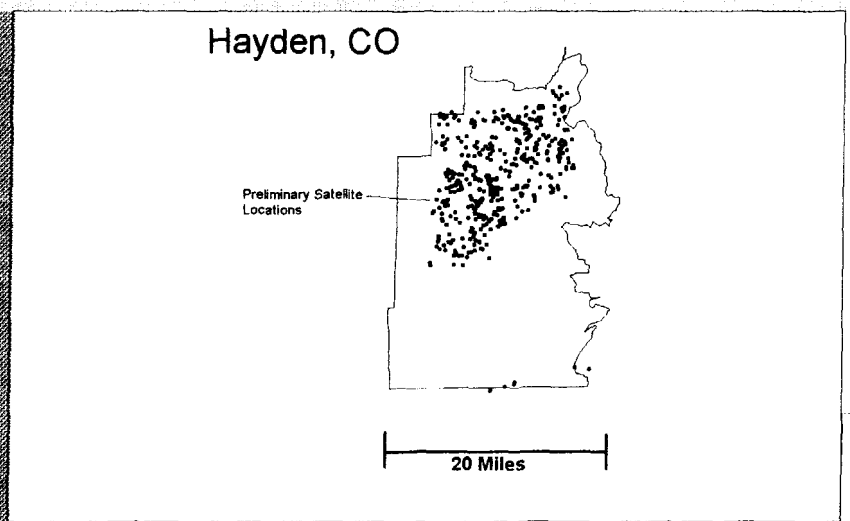
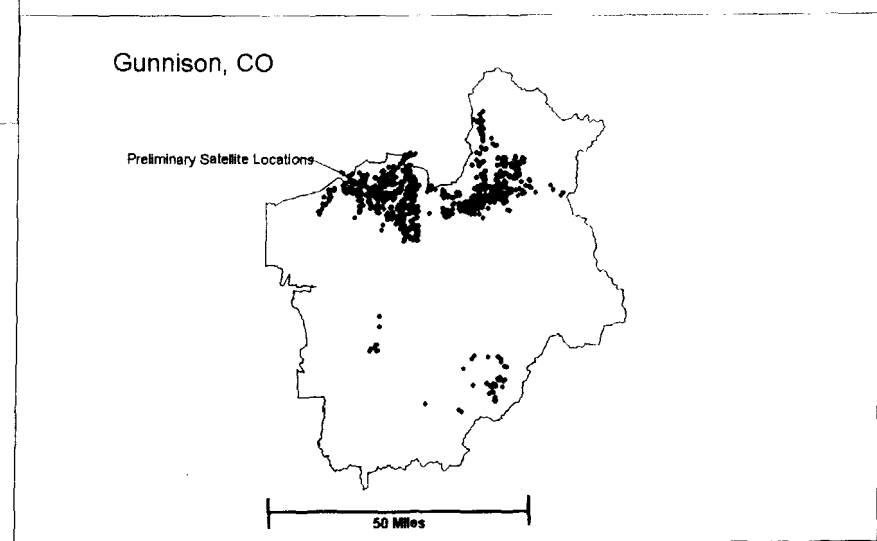
BCPM Customer Location Verification



Representation of Preliminary Satellite Geocoding



Note: This Geocoding was performed from 25M Satellite images.. While 25M works well for Flat Terrain, we found out that it does not provide enough specificity in Mountainous Areas. For these areas, 5M and 1M images would be required. However, 5M and1M images could not be obtained or evaluated in time permitted. In addition, there are cost considerations to 5M and 1M images.

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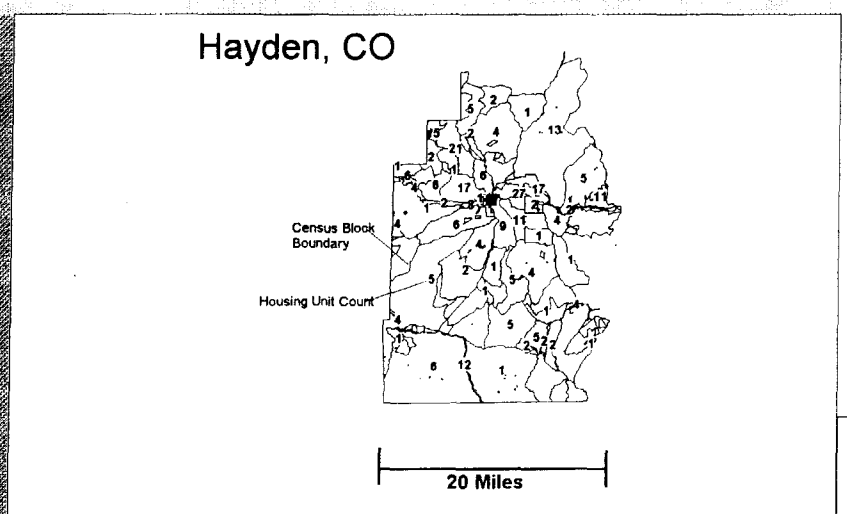
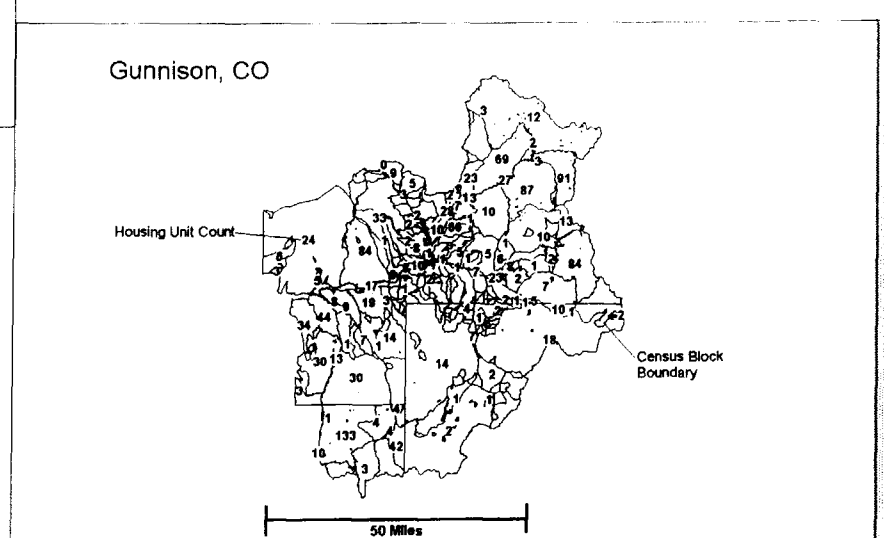
BCPM Customer Location Verification



Representation of Census Block Data

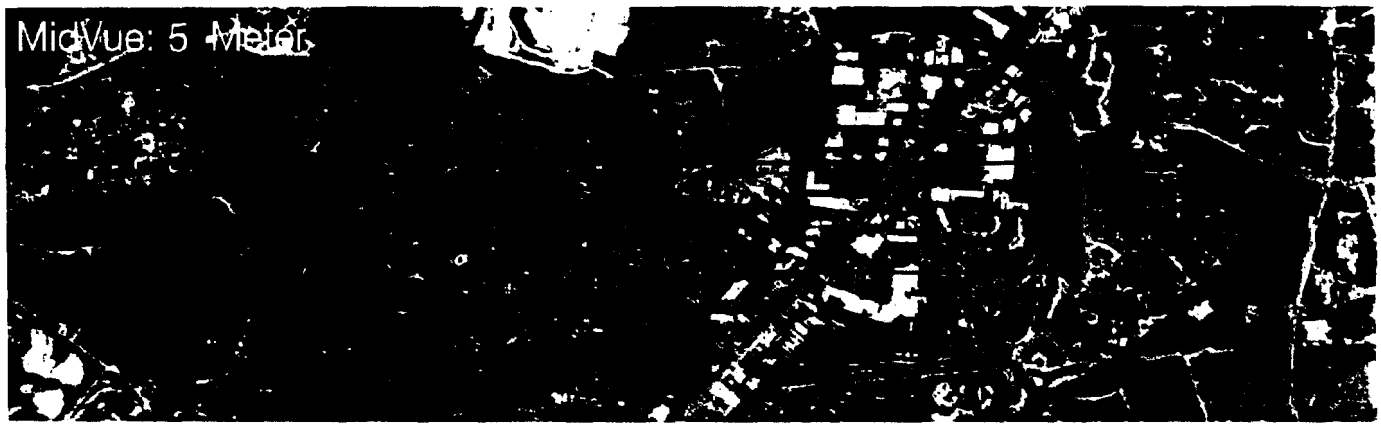


Note: In the absence of good Satellite Geocoding,, Census Blocks provide a refined level of detail of where customers are.

TRUVUE PRODUCT LINE – RALEIGH, NC

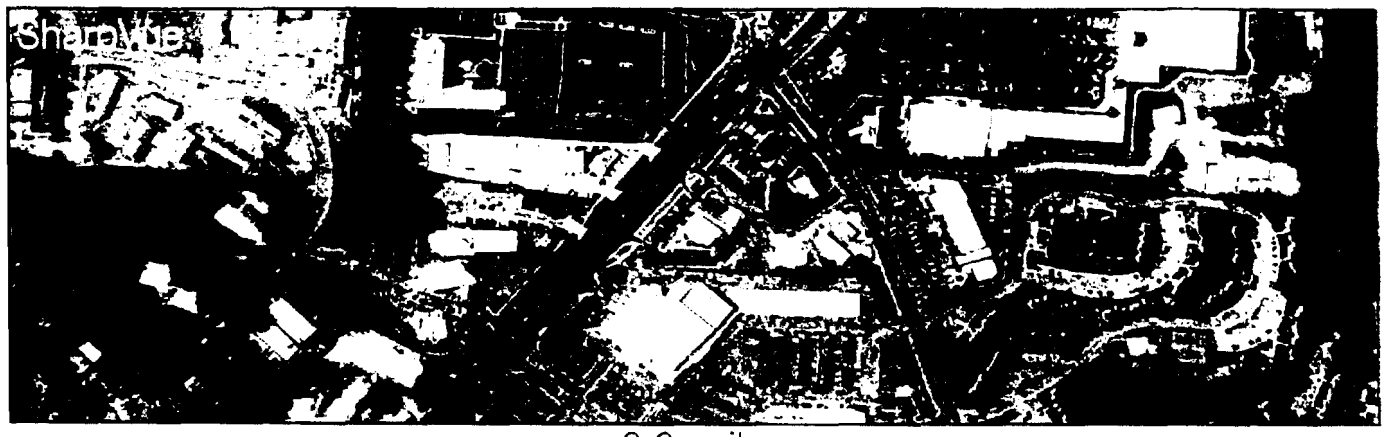
4.5 miles

15.5 miles



1 mile

3 miles



0.2 mile

0.6 mile

TRUVUE™

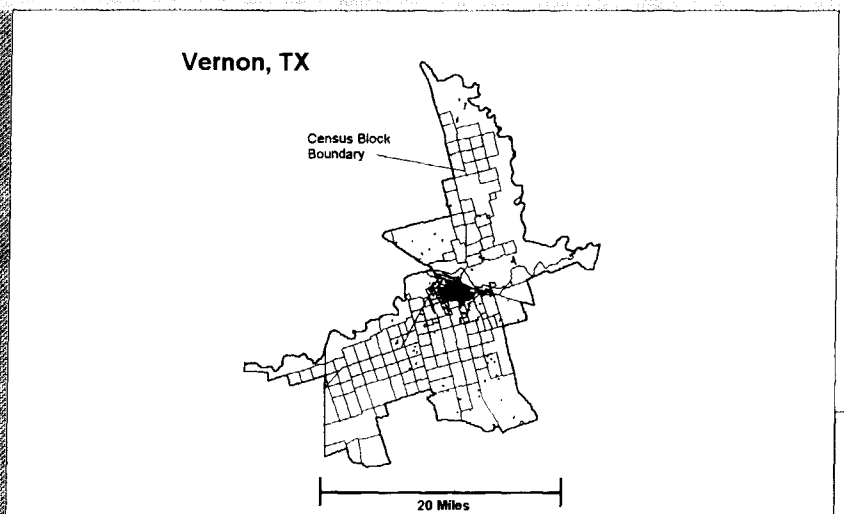
THE SUCCESSFUL POINT OF VIEW

TRIFID Corporation Archive
St. Louis, MO
(800) 320–8837

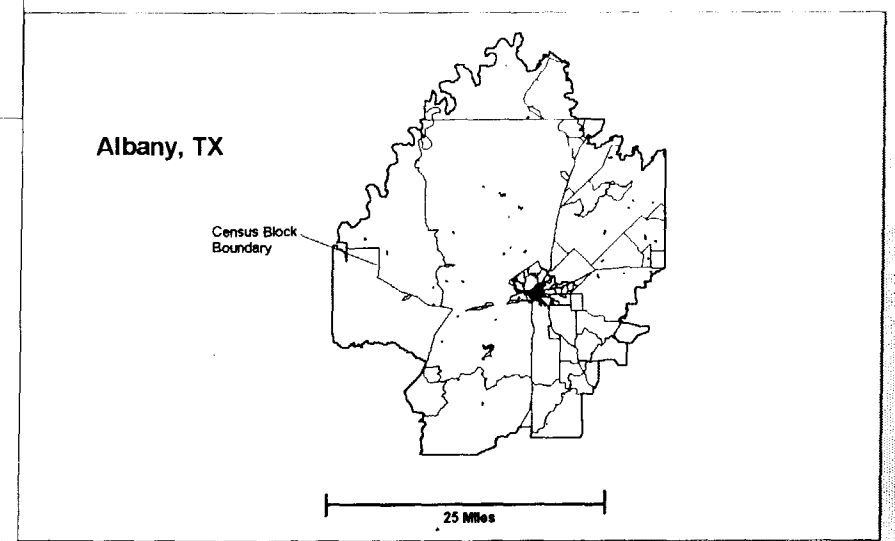
Color images – 0.9 megabyte each
Panchromatic image – 0.3 megabyte

Distance measurements are approximate.

BCPM Customer Location Verification



Representation of Census Block Data



Note: In the absence of good Satellite Geocoding,, Census Blocks provide a refined level of detail of where customers are.

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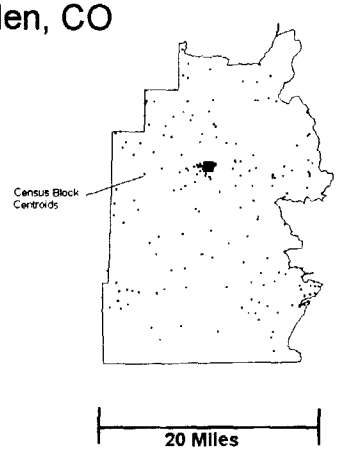
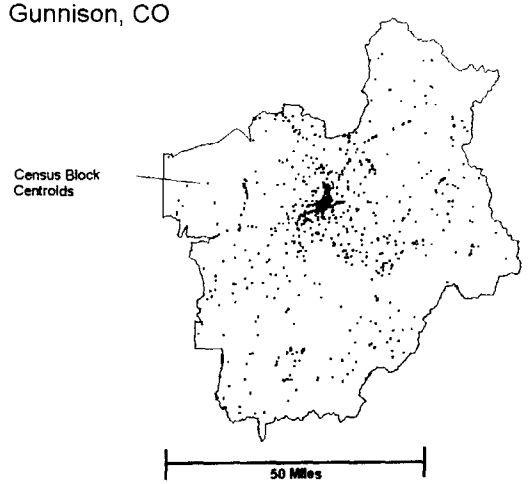
BCPM Customer Location Verification

Hayden, CO



Representation of FCC Census Block Centroids

Gunnison, CO



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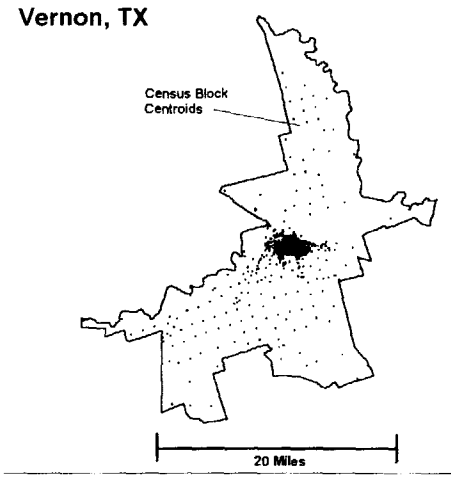
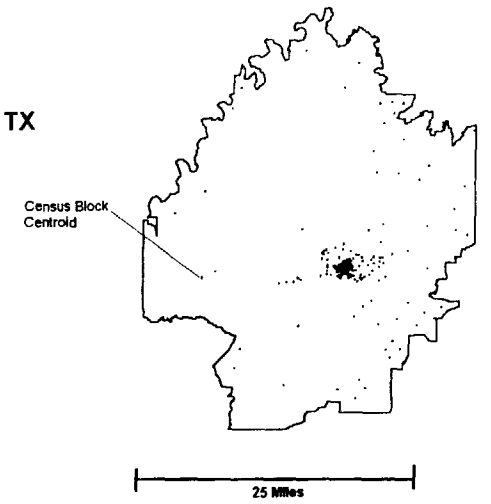
BCPM Customer Location Verification



Representation of FCC Census Block Centroids



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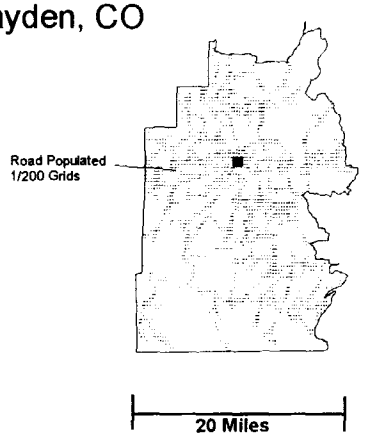
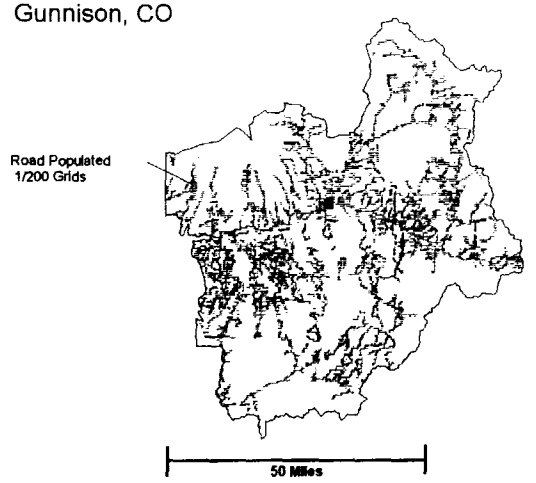
BCPM Customer Location Verification

Hayden, CO



Representation of BCPM Road Populated 1/200th Grids

Gunnison, CO



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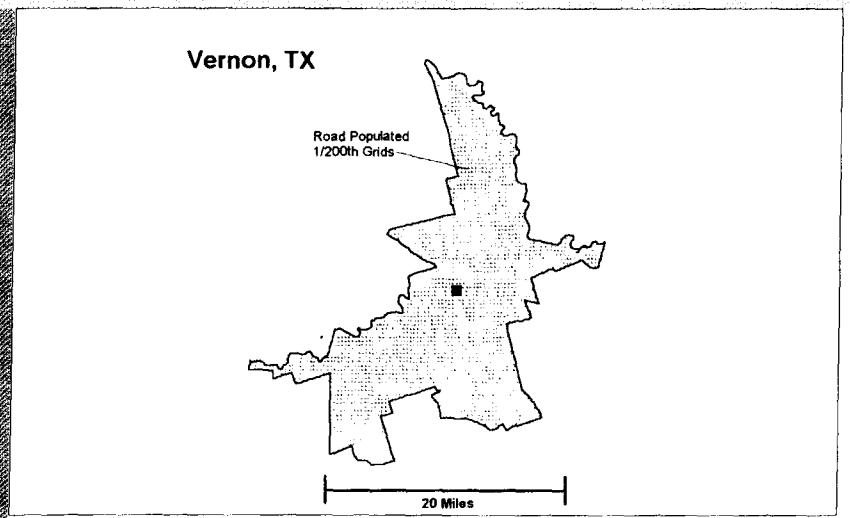
BCPM Customer Location Verification



Representation of BCPM Road Populated 1/200th Grids

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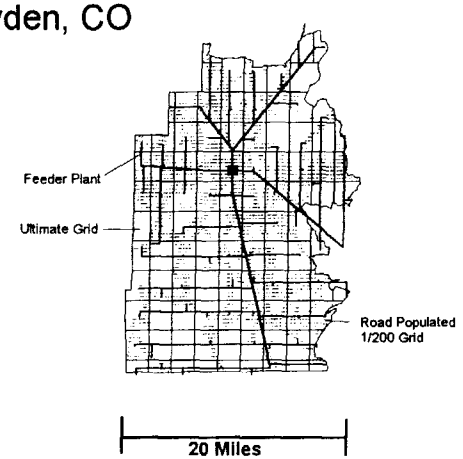
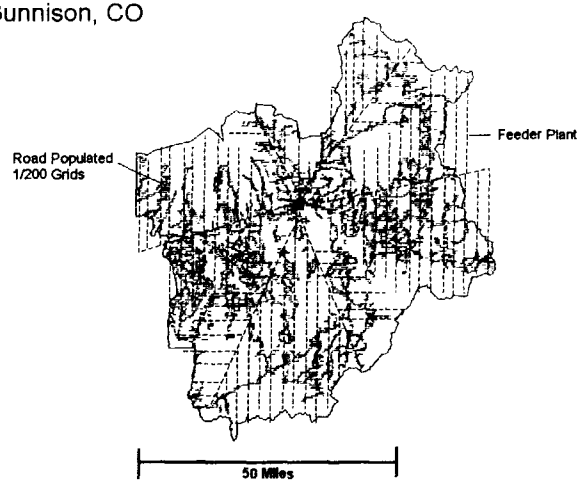
BCPM Customer Location Verification

Hayden, CO



Representation of BCPM Engineering

Gunnison, CO



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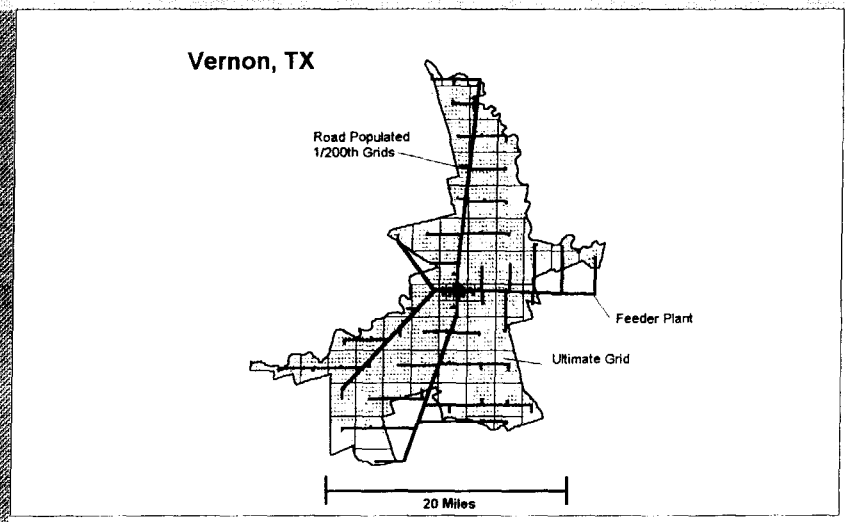
BCPM Customer Location Verification



Representation of BCPM Engineering

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BCPM Enhanced Loop Engineering

FCC Overview

Presented by:

BellSouth, Sprint, U S West, and INDETEC International

September, 17, 1997

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BCPM Enhanced Loop Engineering

- As Covered Previously, Expected Changes in BCPM Data
  - Improved Wire Center Boundaries
    - Match at the Census Block
  - Finer Level of Input Data
    - Input at the Census Block or Even Lower Level
      - Census Data for Residential Customers, Business Data, Terrain, Housing Unit Data
  - Data Is Partitioned Into Variable Size Grids
    - "Dynamic" Routine
    - Uses Finer Input Data Along With Road Network Information
  - Improved Engineering Based Upon Specific Grid Information
    - "Intelligent" Feeder Plant
    - "Floating" Quadrants for Distribution Plant

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BCPM Enhanced Loop Engineering

- Data Is Partitioned Into Variable Size Grids
  - In General, Grid Will Vary in Size to Mimic Engineering CSA/DA (Carrier Serving Area/Distribution Area) Architecture
    - In Town, the Grid Can Be As Small As ~1500Ft * 1700Ft
    - In the Rural Area, the Grid Will Increase in Size up to a Maximum Area of ~12,000Ft * 14,000Ft
    - Within the Larger Grids, Data Will Be Retained to Identify the Unique Characteristics of Each Quadrant Within the Grid
  - Permits Analyst to Depict an Efficient Network Design
    - Minimizes the Potential to Either Overbuild or Underbuild

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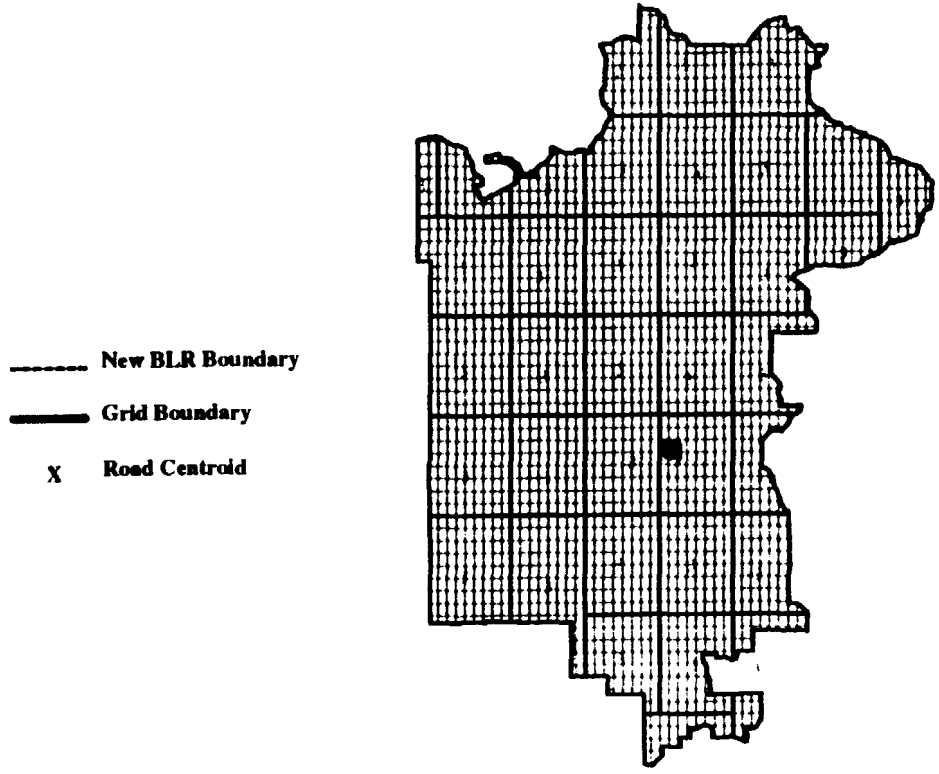
BCPM Enhanced Loop Engineering

- Variable Size Grids for Waukon, Iowa



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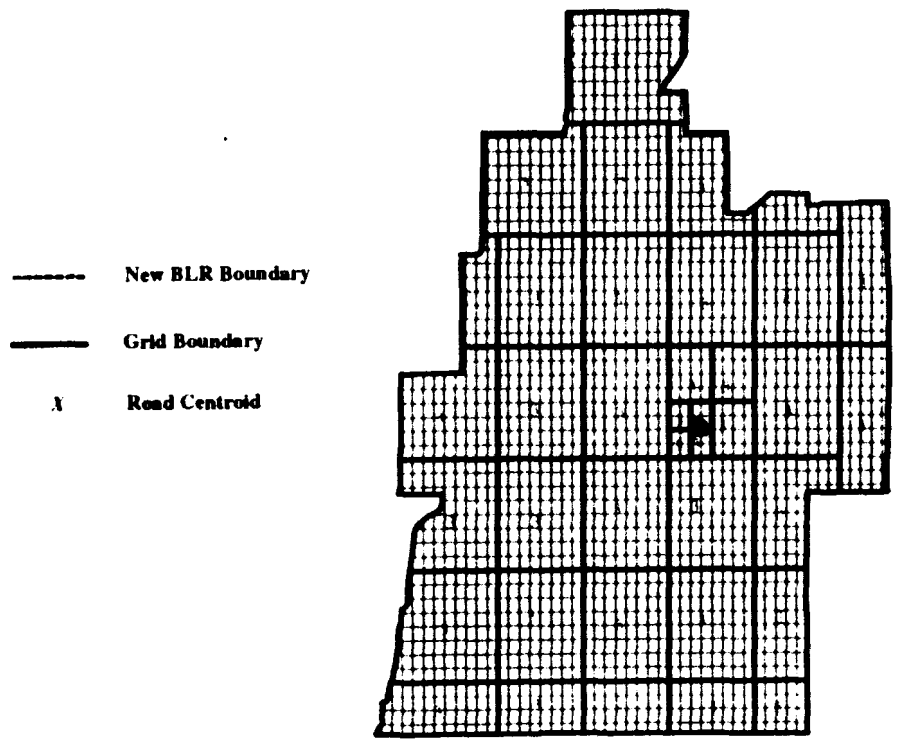
BCPM Enhanced Loop Engineering

- Variable Size Grids for Red Oak, Iowa



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BCPM Enhanced Loop Engineering

- Improved Engineering Based Upon Specific Grid Information
  - Maximum Size of Grid was developed to Limit the Length of the Copper Distribution
    - Complies With Standard Engineering Practices
      - On average, Maximum Loop Length < ~12,000 feet
      - At a Maximum for any Customer, Loop Length < ~18,000 feet
        - This Avoids the Fact That Beyond 18,000 Copper Loops Must be Loaded or Electronically Extended
      - If a Maximum Copper Distance is Selected Beyond 26 Gauge Maximum of 12,000ft, Cable Gauge is Automatically Changed to 24
    - Ensures the Designed Network will Meet Expected USF Service Specifications

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