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By Hand Delivery

April 5, 2002

William F. Caton
Acting Secretary
Federal Communications Commission
Office of the Secretary
445-12th Street, SW
Washington, DC 20554

RECEIVED

APR 05 2002

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Re: **Notice of Written Ex Parte Presentation;
Application of EchoStar Communications Corporation,
General Motors Corporation and Hughes Electronics Corporation,
Transferor, and EchoStar Communications Corporation, Transferee,
For Authority to Transfer Control
CS Docket Number 01-348**

Dear Mr. Caton:

At the request of Commission staff, enclosed are an original and four copies of a "Backup Binder" incorporating data used by Dr. Paul W. MacAvoy in connection with his Declaration submitted as Exhibit I to the Petition to Deny filed by our client, the National Rural Telecommunications Cooperative, in the above-captioned matter on February 4, 2002. As requested by staff, five copies of the enclosed materials and an electronic version also are being provided to Linda Senecal, Management Analyst, Media Bureau. Two additional copies are being provided to Qualex International.

Should you have any questions or require any additional information, please feel free to contact the undersigned.

Sincerely,

Jack Richards
Jack Richards

No. of Copies rec'd 074
List ABCDE

cc: Marcia Glauberman
Linda Senecal

Enclosures

ORIGINAL

Exhibit I

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

RECEIVED

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Application of)
)
EchoStar Communications Corporation,)
General Motors Corporation,)
Hughes Electronics Corporation,)
)
Transferors)
)
and)
)
EchoStar Communications Corporation,)
)
Transferee,)
)
For Authority to Transfer Control,)

CS Dkt. No. 01-348

DECLARATION OF PAUL W. MACAVOY*

**The Effects of the Proposed EchoStar – DirecTV Merger on Competition in Direct
Broadcast Satellite Rural Markets Where Cable Is Not Available.****

BACKUP BINDER

* Williams Brothers Professor of Management Studies, School of Management, Yale University

** Declaration on Behalf of the National Rural Telecommunications Cooperative

**BACKUP BINDER FOR THE
DECLARATION OF PAUL W. MACAVOY
ON BEHALF OF THE NATIONAL RURAL TELECOMMUNICATIONS COOPERATIVE
PETITION TO DENY, FILED FEBRUARY 4, 2002**

- I. Creation of the Fourteen Regional Clusters
 - A. Cable Penetration Data
 - B. Setting the Boundaries for the Fourteen Regional Clusters
- II. Table One: Geographic Clusters That Are Not Passed by Cable
 - A. Tabulating Households
 - B. Calculating Weighted Average DBS Penetration Rate
- III. Table Three: Representative Prices and DBS Penetration Rates For the Clusters
- IV. Table Four: Regression Coefficients
 - A. Tabulating Quantity ($q_{DBS,I}$)
 - B. Tabulating Prices ($p_{DBS,I}$)
 - C. Tabulating Density and Households
 - D. Regression sample
- V. Table Five: Conjectural Variation
- VI. Table Six: DirecTV Post Merger Monopoly Prices
- VII. Table Seven: Consumer Losses from Post Merger Price Increases

I. CREATION OF THE FOURTEEN REGIONAL CLUSTERS

A. Cable Penetration Data

In order to calculate cable penetration rates for various areas of the country, I use a database jointly produced by Warren Communications News and The Janus Group entitled “MediaPrints: Cable-to-Census Block Group Translation Table, 4th Quarter 2001” (hereinafter, the “Warren data”). This database includes every Census block group that a cable operator passed according to Warren’s data in November 2001. The database also indicates whether the cable operator had upgraded to digital capability in the block group. The Census block groups in the Warren data were 1990 Census block groups, and therefore do not reflect any changes to block group definitions as a result of the 2000 Census.

I use the Warren data to produce a list of all block groups in the United States that are passed by cable. In order to exclude block groups that are only passed by wireless cable, I exclude observations in the Warren data where “wireless” appears in the cable system operator’s name or in the cable system owner’s name. I merge this cable data with data on all 1990 Census block groups from the Census CD+Maps 4.1 product from Geolytics, Inc. (hereinafter, the “Geolytics data”). The Geolytics data has geographical boundary data on every 1990 Census block group. I use the combination of Geolytics and Warren data in MapInfo to create the maps used in my declaration.

B. Setting the Boundaries for the Fourteen Regional Clusters

My objective in undertaking the following steps is to identify contiguous geographic areas that are substantially lacking in cable coverage.

I use the merged Warren-Geolytics data in MapInfo to create a map of the United States in two colors: orange for 1990 Census block groups that are passed by wireline cable service, and white for 1990 Census block groups that are not passed by wireline cable service.

I examine the map to identify large contiguous geographic areas characterized by high concentrations of non-passed 1990 Census block groups—that is, contiguous areas that contain a considerable amount of white.

I zoom in on each different contiguous area of white that I identify. For each area, I use a “select” tool in MapInfo that allows me to draw a boundary around a region and select all non-passed 1990 Census block groups within that boundary. When selecting a region, I follow the natural boundary of the white colored area as closely as possible. At the same time, I take effort to ensure that the line drawn is not erratic, and that the enclosed 1990 Census block groups constitute a “solid” region. I perform these last two steps to ensure that areas of relatively dense cable coverage are not carved out from within a region: either they are included in the region or the entire area is excluded.

Next, I zoom in and examine geographic areas of the United States typified by high population densities. This is a rational approach because it is highly likely that on the east coast, for example, a contiguous geographic area that is largely white may be small in square mileage, but nonetheless comparable to the previously bounded regions in terms of households that are not passed by cable. I follow the same procedure in selecting these conditional regions as with the other, geographically larger regions.

After having selected all potential (conditional) regions, I use MapInfo to determine the number of households in each region that are not passed by cable, per the merged Geolytics-Warren data. I reject any region that contains less than a threshold number (75,000) of non-cable

passed households, and accept the 14 remaining regional clusters as the primary United States non-cable passed clusters.

The maps in the text of my declaration include different colors for areas passed by cable and not passed by cable inside and outside the regional cluster. My maps also include DMA boundaries from Geographic Data Technology. I include Census places on the regional cluster maps if all or portions of the Census place are not passed by cable. I define a Census place as not being passed by cable if either: (1) the 1990 boundaries of the Census place contained the centroid of a 1990 Census block group not passed by cable, or (2) a 1990 Census block group not passed by cable contained the centroid of the 1990 Census place.

The maps in Appendix A are similar to the maps in the text, except that the Appendix A maps include shadings for areas passed by analog cable only. I assigned 1990 Census block groups passed by analog cable only to regional clusters by going back to MapInfo and using the same selection tool I used before. I selected block groups passed only by analog cable by drawing selection boundaries around each of the fourteen regional clusters. When drawing the selection boundaries, I made sure that they did not encompass any block groups not passed by any cable outside the regional cluster, which would have enlarged the original regional cluster.

II. TABLE ONE: GEOGRAPHIC CLUSTERS THAT ARE NOT PASSED BY CABLE

A. Tabulating Households

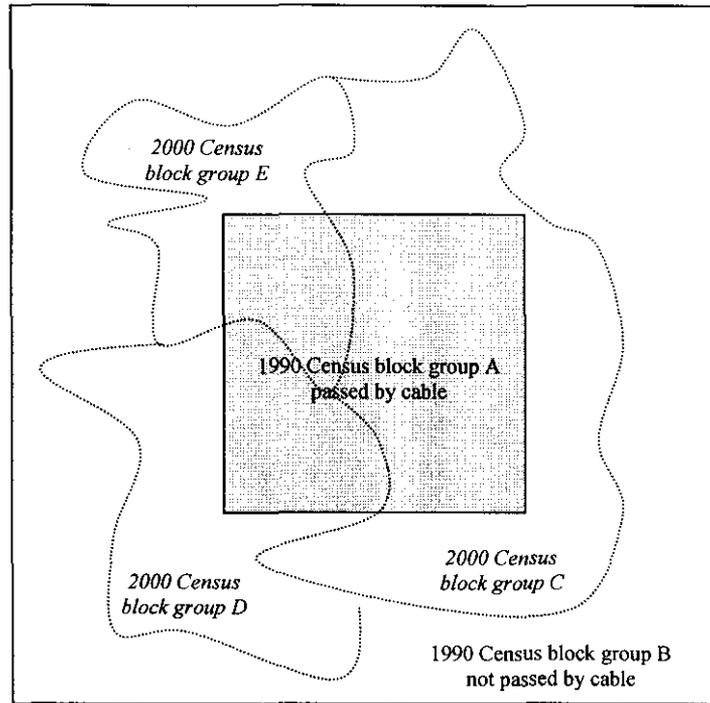
Generally, when I give the number of households in a regional cluster, the number only includes those households in block groups not passed by any cable. The one exception is in the section of my declaration that describes the fourteen regional clusters (pages 12-25), where I also give the number of households located in block groups passed by analog cable only.

The maps are representative of 1990 Census block group definitions, but my household numbers (both on the maps and in Table One) are taken from the 2000 Census. In order to use Census 2000 household data, I translate the 1990 Census block groups in the Warren data to 2000 Census block groups by using a Census database called the "1990 Tabulation Census Block to Census 2000 Tabulation Block File" (hereinafter, the "1990-2000 Census block translation file").¹ In some cases, a 1990 Census block is the same as a 2000 Census block. In other cases, a 1990 Census block may be split across multiple 2000 Census blocks, or vice versa. This database does not indicate what percentage of a 1990 Census block corresponds to a 2000 Census block. For instance, the database would not indicate that 60 percent of a 1990 Census block corresponds to one 2000 Census block, while the other 40 percent corresponds to a second 2000 Census block. The database only indicates that the 1990 Census block intersects both 2000 Census blocks.

I summarize the 1990-2000 Census block translation file on a block group level and merge the data with the Warren data. I consider any 2000 Census block group to be passed by cable if it intersects a 1990 Census block group in the Warren data. Likewise, I consider any

¹ This database, which gives the tabular relationship between 1990 Census blocks and 2000 Census blocks, is available on the Census Bureau's website at http://www.census.gov/geo/www/relate/rel_blk.html.

2000 Census block group to be passed by digital cable if it intersects a 1990 Census block group passed by digital cable in the Warren data. The following figure illustrates the methodology.



The 1990 Census block groups have solid boundaries, and the 2000 Census block groups have dashed boundaries. The 1990 Census block group “A” is passed by cable according to the Warren data. A second block group “B”, which is not passed by cable, surrounds block group A. The 1990-2000 Census block translation file tells me that 1990 Census block group A intersects 2000 Census block groups C, D, and E. However, the 1990-2000 Census block translation file does not indicate what percentages of 2000 Census block groups C, D, and E correspond to Census block group A. Therefore, I consider all the households in those 2000 Census block groups to be passed by cable. My estimates of households in areas not passed by cable are conservative given this generous assignment of households to areas passed by cable.

I then merge this database with the database of block groups with regional cluster assignments created in MapInfo either not passed by cable or passed only by analog cable. If a 2000 Census block group intersects a 1990 Census block group that is assigned to a regional cluster, and that 2000 Census block group does not also intersect a 1990 Census block group passed by cable, then I assign the 2000 Census block group to the regional cluster as a block group not passed by cable. Likewise, if a 2000 Census block group intersects a 1990 Census block group that is assigned to a regional cluster, and that 2000 Census block group does not also intersect a 1990 Census block group passed by digital cable, then I assign the 2000 Census block group to the regional cluster as a block group not passed by digital cable.

I use 100 percent population and household counts for each 2000 Census block group from the Census 2000 Summary File 1 on DVD. The total number of households not passed by any cable in each regional cluster is equal to the sum of the households for all the block groups not passed by cable assigned to that regional cluster. Likewise, the total number of households passed only by analog cable in each regional cluster is equal to the sum of the households for all the block groups passed only by analog cable assigned to that regional cluster. In the section of my declaration containing the regional cluster maps that begins on page 12, the population total for a regional cluster is the sum of the population for the block groups assigned to the regional cluster that are not passed by any cable. The population total does not include the population in block groups passed either by analog or digital cable.

B. Calculating Weighted Average DBS Penetration Rate

I begin calculating the weighted average DBS penetration rate for each regional cluster with November 2001 Nielsen Media Research data on total DBS subscribers by DMA

(hereinafter, the “Nielsen data”). Using MapInfo, I assigned each 2000 Census block group² to a DMA if the DMA boundary contained the centroid of the block group. The number of households in a DMA is equal to the sum of the households in the 2000 Census block groups assigned to the DMA. For each DMA, I calculate a DMA household penetration rate by dividing the total number of DBS subscribers in the DMA from Nielsen by the number of households in the DMA.

Next, I merge the database of 2000 Census block groups (with DMA assignments) with the database of 2000 Census block groups with household counts and regional cluster assignments described in the previous section. This results in a database 2000 Census block groups with assignments to a DMA and a regional cluster (if applicable). I sum the households in the merged database by each unique combination of regional clusters and DMA’s, which results in a database of 171 unique DMA-regional cluster combinations. I merge my DMA household penetration rate data with this database and multiply the penetration rate by the household count to calculate the estimated number of DBS subscribers in each DMA-regional cluster combination. Finally, the estimated number of DBS subscribers in a regional cluster is equal to the sum of the DBS subscribers in each DMA-regional cluster combination for that particular regional cluster. The weighted average DBS penetration rate for a regional cluster is equal to the estimated number of DBS subscribers in the regional cluster divided by the number of households in the regional cluster.

² I downloaded 2000 Census block group boundaries from the Census web site at <http://www.census.gov/geo/www/cob/bg2000.html>

DMA Household Universe Estimates: November 2001
 Cable Plus ADS (Alternate Delivery Systems)
 (The "Nielsen Data")

			TV Households							
			Nov-01							
DMA #	DMA Rank	DMA Name	Total	Cable+ ADS		Wired Cable		Total ADS	Satellite:DBS	Large Dish
				Total	Pay	Total	Pay			
662	162	Abilene-Sweetwater	113,280	97,350	49,110	72,870	32,870	26,660	23,090	1,510
525	147	Albany, GA	145,940	130,810	85,330	100,310	64,720	32,660	29,870	1,500
532	57	Albany-Schenectady-Troy	514,770	447,570	231,870	400,070	204,660	52,770	46,350	2,380
790	48	Albuquerque-Santa Fe	607,170	450,870	306,080	338,280	220,700	122,300	116,060	1,600
644	179	Alexandria, LA	81,920	73,050	43,590	58,180	32,290	17,400	14,540	940
583	208	Alpena	17,290	15,170	8,410	11,290	6,190	4,070	3,770	280
634	128	Amarillo	191,940	157,980	83,410	122,860	58,770	39,950	35,570	2,330
743	155	Anchorage	131,920	98,870	60,650	90,660	54,810	8,500	6,830	890
524	9	Atlanta	1,990,650	1,693,590	1,276,960	1,439,760	1,057,430	288,220	258,880	8,110
520	115	Augusta	233,980	201,030	119,150	168,850	97,650	35,020	33,180	1,840
635	54	Austin	555,840	432,780	277,860	363,640	219,690	70,630	68,720	700
800	130	Bakersfield	187,180	153,050	70,380	130,470	55,510	25,340	20,070	1,500
512	24	Baltimore	1,023,530	835,860	531,430	771,350	486,460	71,710	63,720	2,680
537	158	Bangor	128,930	97,810	48,040	65,670	29,040	33,640	32,540	1,010
716	95	Baton Rouge	290,380	254,030	132,340	223,930	112,850	34,650	30,420	2,230
692	136	Beaumont-Port Arthur	169,110	149,760	98,270	120,440	78,060	32,400	31,080	1,320
821	201	Bend, OR	46,660	37,670	16,880	27,770	11,440	10,330	7,720	340
756	170	Billings	97,710	76,120	43,110	52,070	29,290	24,940	21,860	1,070
746	157	Biloxi-Gulfport	130,580	119,350	62,660	99,600	50,060	21,660	17,760	630
502	156	Binghamton	131,360	120,590	62,290	99,660	49,570	22,650	21,440	1,160
630	39	Birmingham	683,830	590,030	317,050	483,410	246,510	116,110	108,320	4,680
559	149	Bluefield-Beckley-Oak Hill	141,040	133,150	72,420	102,640	51,910	33,650	31,680	1,790
757	121	Boise	219,560	146,490	81,620	95,700	49,030	52,170	39,100	710
506	6	Boston (Manchester)	2,315,700	2,005,420	1,138,540	1,909,640	1,072,820	113,240	109,890	-
736	181	Bowling Green	80,690	67,580	33,570	42,660	18,220	26,170	24,790	1,380
514	47	Buffalo	616,610	542,070	295,480	481,940	258,250	72,060	63,870	4,270
523	90	Burlington-Plattsburgh	307,670	253,910	119,380	175,810	70,030	82,690	79,090	3,310
754	193	Butte-Bozeman, MT	56,210	44,030	27,320	30,500	18,500	14,060	13,280	760
767	200	Casper-Riverton	49,710	43,770	28,480	33,700	22,020	10,730	9,900	830
637	89	Cedar Rapids-Waterloo&Dubq	317,980	259,400	145,590	217,100	121,180	45,590	42,450	2,740
648	82	Champaign&Sprngfld-Decatur	362,090	312,990	155,580	256,320	120,940	61,360	55,200	2,530
519	108	Charleston, SC	247,780	205,220	116,840	171,560	92,440	36,790	34,340	2,270
564	61	Charleston-Huntington	478,910	435,650	215,270	350,160	156,780	96,570	91,120	5,350

DMA Household Universe Estimates: November 2001
 Cable Plus ADS (Alternate Delivery Systems)
 (The "Nielsen Data")

			Nov-01							
			TV Households							
DMA #	DMA Rank	DMA Name	Total	Cable+ ADS		Wired Cable		Total ADS	Satellite:DBS	Large Dish
				Total	Pay	Total	Pay			
517	27	Charlotte	954,210	816,150	445,780	670,760	352,020	161,640	153,490	7,840
584	192	Charlottesville	56,700	49,450	22,410	36,860	14,660	13,210	9,940	340
575	86	Chattanooga	337,140	295,960	142,790	233,480	102,940	68,180	64,020	3,780
759	197	Cheyenne, WY-Scottsbluff,	51,840	46,610	28,540	39,410	23,530	8,060	7,330	730
602	3	Chicago	3,360,770	2,510,870	1,681,190	2,319,510	1,528,690	209,160	187,200	11,280
868	133	Chico-Redding	175,620	136,220	67,530	99,330	42,500	39,140	36,110	1,670
515	32	Cincinnati	836,190	646,830	338,560	546,790	275,750	107,810	98,710	3,970
598	165	Clarksburg-Weston	105,110	98,010	50,720	74,500	35,940	25,220	23,920	1,150
510	17	Cleveland	1,513,130	1,258,700	658,230	1,117,830	568,020	153,660	131,810	3,650
752	91	Colorado Springs-Pueblo	305,730	248,720	132,930	200,820	100,620	51,990	43,960	2,370
546	84	Columbia, SC	344,660	279,180	147,340	210,610	97,970	74,570	70,300	4,010
604	139	Columbia-Jefferson City	159,040	125,580	74,580	86,400	48,730	40,880	38,140	1,880
522	126	Columbus, GA	197,730	176,800	110,290	151,180	91,900	28,010	24,410	1,790
535	34	Columbus, OH	809,940	668,350	387,440	581,550	334,820	94,220	84,790	6,600
673	131	Columbus-Tupelo-West Point	183,630	157,840	97,960	105,090	63,350	55,450	49,360	2,740
600	129	Corpus Christi	188,260	158,210	109,440	130,690	88,290	30,410	20,970	800
623	7	Dallas-Ft. Worth	2,201,170	1,505,560	1,036,760	1,100,260	746,700	422,710	299,010	29,810
682	92	Davenport-R.Island-Moline	304,350	252,140	130,940	209,650	104,710	45,370	42,300	2,560
542	60	Dayton	494,960	416,540	236,760	341,950	190,950	80,900	77,000	1,400
751	18	Denver	1,381,620	1,038,460	773,050	865,420	643,400	180,940	155,310	10,230
679	70	Des Moines-Ames	404,910	312,140	187,910	246,090	148,830	71,210	63,410	2,960
505	10	Detroit	1,878,670	1,547,960	922,940	1,391,780	819,780	173,690	153,450	7,250
606	172	Dothan	94,530	85,840	49,730	66,080	35,550	21,010	18,200	1,510
676	135	Duluth-Superior	174,000	130,610	60,290	87,970	36,120	44,210	41,740	2,470
765	101	El Paso	273,120	190,180	97,000	162,410	77,340	31,360	26,420	660
565	173	Elmira	92,420	85,270	41,850	68,210	31,700	18,590	17,100	1,460
516	143	Erie	155,720	125,700	62,260	104,200	49,030	23,370	21,700	1,580
801	123	Eugene	216,450	173,970	97,630	137,940	75,700	39,130	34,800	3,040
802	195	Eureka	54,650	46,030	19,380	40,260	15,970	6,430	5,900	530
649	97	Evansville	279,190	231,470	120,460	165,980	82,230	69,120	60,200	4,390
745	203	Fairbanks	30,230	19,360	11,780	13,390	8,200	6,040	2,040	660
724	119	Fargo-Valley City	225,830	183,980	86,590	139,290	61,070	47,820	40,330	1,800
513	64	Flint-Saginaw-Bay City	453,740	382,940	176,940	317,180	138,570	69,420	58,540	4,490

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 Cable Plus ADS (Alternate Delivery Systems)
 (The "Nielsen Data")

			Nov-01	TV Households						
DMA #	DMA Rank	DMA Name	Total	Cable+ ADS		Wired Cable		Total ADS	Satellite:DBS	Large Dish
				Total	Pay	Total	Pay			
570	109	Florence-Myrtle Beach	243,780	212,270	121,170	172,320	91,930	45,790	42,440	3,350
866	55	Fresno-Visalia	524,970	352,660	175,910	271,680	123,440	85,360	77,590	2,430
571	76	Ft. Myers-Naples	384,950	342,360	153,720	295,270	121,180	54,630	46,840	1,820
670	107	Ft. Smith-Fay-Sprngdl-Rgrs	250,270	210,310	109,810	161,030	77,800	53,030	49,950	2,870
509	104	Ft. Wayne	262,000	199,950	94,860	143,930	61,340	58,440	51,440	3,340
592	164	Gainesville	107,980	97,240	46,940	72,810	31,670	25,970	21,320	1,480
798	210	Glendive	3,900	3,460	2,000	2,930	1,710	560	510	50
773	184	Grand Junction-Montrose	72,590	59,530	35,420	44,240	24,470	16,200	15,020	1,090
563	38	Grand Rapids-Kalmzoo-B.Crk	702,210	559,090	274,320	447,930	210,380	118,190	104,240	6,280
755	187	Great Falls	62,150	50,370	34,150	33,110	23,260	18,000	17,250	750
658	69	Green Bay-Appleton	406,340	308,030	147,280	248,080	112,900	63,500	58,130	3,520
518	44	Greensboro-H.Point-W.Salem	634,130	545,100	328,670	439,630	255,370	118,240	108,310	8,940
545	106	Greenville-N.Bern-Washngtn	250,780	211,030	125,310	157,230	87,050	58,330	54,800	3,400
567	36	Greenvll-Spart-Ashevl-And	771,680	639,590	342,300	482,340	240,220	164,520	156,030	7,450
647	182	Greenwood-Greenville	77,280	70,130	43,260	57,060	33,590	14,310	10,390	790
636	100	Harlingen-Wslco-Brnsvl-McA	273,370	158,430	103,900	114,970	75,190	48,730	46,330	810
566	46	Harrisburg-Lncstr-Leb-York	617,830	547,680	227,200	503,250	198,640	52,710	48,920	3,340
569	178	Harrisonburg	84,120	76,720	33,630	57,450	21,810	20,610	16,050	820
533	28	Hartford & New Haven	953,130	875,300	401,220	855,300	389,180	30,400	26,030	2,580
710	167	Hattiesburg-Laurel	101,350	86,760	46,150	55,900	23,990	32,410	30,990	1,180
766	207	Helena	23,730	18,590	11,800	14,000	8,950	4,780	4,440	340
744	72	Honolulu	398,460	371,130	196,590	356,040	185,350	16,340	3,410	920
618	11	Houston	1,831,680	1,298,080	936,420	996,890	658,900	330,700	298,070	2,650
691	83	Huntsville-Decatur (Flor)	357,110	312,880	168,470	251,070	131,430	65,940	60,540	3,370
758	166	Idaho Falls-Pocatello	104,880	82,350	43,780	53,250	28,750	30,010	17,050	1,100
527	25	Indianapolis	1,013,290	832,910	444,420	665,240	337,100	181,350	166,590	8,590
718	88	Jackson, MS	318,580	270,080	162,360	193,630	106,840	83,030	72,320	2,550
639	183	Jackson, TN	72,900	65,250	35,850	48,420	24,360	17,890	16,480	1,410
561	53	Jacksonville, Brunswick	563,510	487,120	300,530	418,350	253,200	79,660	72,460	3,550
574	96	Johnstown-Altoona	285,050	264,830	128,100	231,250	109,130	36,480	33,900	1,830
734	180	Jonesboro	81,370	72,900	40,870	54,280	28,630	19,370	16,740	1,430
603	142	Joplin-Pittsburg	155,730	121,640	66,230	83,850	41,890	39,640	32,840	2,190
747	206	Juneau, AK	23,990	21,700	9,970	18,250	7,430	3,660	3,500	160

DMA Household Universe Estimates: November 2001
 Cable Plus ADS (Alternate Delivery Systems)
 (The "Nielsen Data")

			Nov-01							
			TV Households							
DMA #	DMA Rank	DMA Name	Total	Cable+ ADS		Wired Cable		Total ADS	Satellite/DBS	Large Dish
				Total	Pay	Total	Pay			
616	31	Kansas City	849,730	685,700	398,700	560,810	307,240	134,100	123,480	4,900
557	62	Knoxville	478,190	416,080	195,960	333,250	147,260	88,970	79,920	7,260
702	127	La Crosse-Eau Claire	197,590	156,050	67,150	119,250	47,890	38,830	34,980	2,390
582	190	Lafayette, IN	57,190	51,270	19,570	42,980	15,230	8,910	7,650	500
642	124	Lafayette, LA	212,510	185,850	106,430	157,110	86,200	32,940	28,600	2,300
643	174	Lake Charles	91,480	81,220	56,890	65,180	44,990	17,720	15,360	380
551	111	Lansing	238,340	196,330	98,380	162,520	77,630	37,510	31,520	2,820
749	194	Laredo	56,080	45,490	32,740	40,600	29,080	5,910	4,270	160
839	51	Las Vegas	579,680	488,650	278,850	441,140	245,300	55,420	48,980	3,230
541	66	Lexington	435,780	386,550	192,220	292,710	133,350	102,240	96,580	3,900
558	191	Lima	56,740	50,880	23,940	41,170	20,090	10,550	3,840	510
722	102	Lincoln & Hstngs-Krny Plus	269,270	225,380	113,840	177,680	86,140	51,790	45,720	2,690
693	56	Little Rock-Pine Bluff	520,320	430,070	209,590	315,590	133,050	122,240	115,250	6,540
803	2	Los Angeles	5,303,490	3,893,610	2,316,760	3,310,680	1,908,290	685,570	612,870	33,440
529	50	Louisville	598,940	488,340	267,410	393,060	205,750	102,320	96,320	5,100
651	148	Lubbock	144,750	108,040	64,290	79,320	44,670	31,510	27,480	990
503	122	Macon	218,000	191,770	109,100	153,010	82,130	42,420	37,990	2,710
669	85	Madison	339,290	261,840	107,910	208,150	74,960	55,950	48,200	3,220
737	196	Mankato	53,050	44,030	17,790	36,820	13,850	8,230	7,200	340
553	177	Marquette	84,370	77,060	37,040	61,300	28,230	16,950	15,280	1,670
813	140	Medford-Klamath Falls	158,870	134,650	78,720	98,890	56,370	37,690	32,770	2,800
640	41	Memphis	655,210	526,340	327,910	424,360	257,960	112,280	104,630	4,890
711	185	Meridian	70,000	59,350	35,010	37,450	19,660	23,260	19,760	1,810
528	15	Miami-Ft. Lauderdale	1,549,680	1,257,410	945,320	1,173,290	873,770	110,490	83,380	-
617	33	Milwaukee	832,330	620,520	316,730	550,230	271,110	78,210	75,500	1,370
613	13	Minneapolis-St. Paul	1,573,640	1,109,330	463,160	905,040	344,000	213,140	198,540	6,810
687	152	Minot-Bismarck-Dickinson	136,060	111,560	49,760	79,190	31,100	34,270	31,290	1,270
762	169	Missoula	98,220	76,230	47,690	47,460	29,880	29,790	23,310	2,050
686	63	Mobile-Pensacola (Ft Walt)	470,720	414,440	248,510	352,780	206,720	68,070	64,590	2,870
628	134	Monroe-El Dorado	175,080	150,970	96,580	113,160	68,600	40,920	37,280	2,440
828	118	Monterey-Salinas	229,450	199,110	97,120	170,970	77,480	33,810	32,090	1,210
698	114	Montgomery (Selma)	233,980	206,370	133,050	170,170	108,440	39,280	36,740	2,360
659	30	Nashville	879,030	736,860	378,430	558,890	264,980	187,240	174,000	9,520

DMA Household Universe Estimates: November 2001
 Cable Plus ADS (Alternate Delivery Systems)
 (The "Nielsen Data")

			Nov-01	TV Households						
DMA #	DMA Rank	DMA Name	Total	Cable+ ADS		Wired Cable		Total ADS	Satellite/DBS	Large Dish
				Total	Pay	Total	Pay			
622	43	New Orleans	653,020	558,610	354,300	509,230	320,190	56,500	45,690	3,330
501	1	New York	7,301,060	6,162,100	5,129,640	5,759,080	4,783,620	490,510	372,330	16,550
544	42	Norfolk-Portsmth-Newpt Nws	654,150	573,540	376,490	517,300	337,900	65,820	60,900	2,590
740	209	North Platte	15,260	13,580	8,490	10,800	6,770	3,000	2,540	270
633	154	Odessa-Midland	132,960	118,000	67,910	96,970	52,350	24,000	18,150	1,280
650	45	Oklahoma City	623,760	507,330	309,330	417,880	248,790	94,890	77,280	3,900
652	75	Omaha	386,160	330,510	184,480	290,290	157,380	44,690	42,180	2,390
534	20	Orlando-Daytona Bch-Melbrn	1,182,420	1,045,640	506,920	885,500	406,000	177,390	139,600	6,820
631	198	Ottumwa-Kirksville	51,450	43,320	24,030	30,070	16,310	14,090	11,290	720
632	77	Paducah-C.Gird-Harbg-Mt VN	382,930	319,850	176,460	217,700	109,680	107,810	99,020	4,940
804	161	Palm Springs	119,060	113,360	63,150	105,750	57,880	10,620	9,710	450
656	159	Panama City	120,950	106,870	69,690	82,510	54,260	26,180	22,840	2,410
597	186	Parkersburg	62,840	58,390	30,160	48,620	24,100	10,710	10,000	710
675	116	Peoria-Bloomington	233,510	197,350	91,590	168,710	74,160	31,980	26,800	1,520
504	4	Philadelphia	2,801,010	2,451,650	1,767,910	2,295,790	1,658,940	175,320	132,080	2,310
753	16	Phoenix	1,536,950	1,155,320	568,330	929,180	421,330	244,370	215,410	10,190
508	21	Pittsburgh	1,148,340	1,013,930	543,710	931,310	491,400	92,520	89,000	2,560
820	23	Portland, OR	1,069,260	806,690	375,010	671,650	289,560	146,500	130,600	6,900
500	80	Portland-Auburn	372,470	325,420	139,970	284,340	114,550	45,170	43,790	1,110
552	205	Presque Isle	27,470	24,130	12,430	16,240	8,140	8,630	8,470	160
521	49	Providence-New Bedford	600,730	514,900	245,650	487,110	226,190	34,170	33,090	510
717	163	Quincy-Hannibal-Keokuk	109,880	89,030	46,260	62,680	29,210	27,690	24,530	1,590
560	29	Raleigh-Durham (Fayetteville)	939,000	779,740	425,440	614,070	307,370	185,090	172,630	11,160
764	175	Rapid City	88,500	72,870	42,010	50,900	28,130	22,700	19,870	1,240
811	110	Reno	239,840	207,180	148,350	177,690	126,780	33,750	30,470	930
556	58	Richmond-Petersburg	504,990	417,500	408,790	322,720	321,240	98,020	91,670	5,220
573	67	Roanoke-Lynchburg	422,760	360,950	207,220	263,380	139,020	104,260	95,220	6,380
538	71	Rochester, NY	400,090	330,400	199,650	289,860	173,530	45,190	42,880	1,510
611	151	Rochestr-Mason City-Austin	138,530	111,750	52,540	91,420	41,200	21,670	19,730	1,640
610	132	Rockford	176,060	146,640	71,340	118,830	53,240	30,920	28,710	990
862	19	Sacramnto-Stktn-Modesto	1,226,670	960,590	500,990	798,250	389,350	175,560	158,870	4,570
576	153	Salisbury	135,470	124,850	69,510	103,930	55,130	22,300	20,230	1,580
770	35	Salt Lake City	782,960	543,340	304,010	400,470	215,270	150,910	142,400	5,290

DMA Household Universe Estimates: November 2001
 Cable Plus ADS (Alternate Delivery Systems)
 (The "Nielsen Data")

			Nov-01	TV Households						
DMA #	DMA Rank	DMA Name	Total	Cable+ ADS		Wired Cable		Total ADS	Satellite-DBS	Large Dish
				Total	Pay	Total	Pay			
661	199	San Angelo	50,640	46,940	22,080	36,830	16,010	11,290	7,070	740
641	37	San Antonio	710,030	567,110	339,640	468,760	272,380	108,300	94,900	3,840
825	26	San Diego	975,690	866,570	431,930	819,050	402,540	59,360	50,830	2,940
807	5	San Francisco-Oak-San Jose	2,426,010	2,002,810	1,049,420	1,853,090	939,590	178,130	149,810	11,610
855	120	SantaBarbra-SanMar-SanLuOb	225,260	203,820	86,420	175,490	69,100	31,200	28,860	1,380
507	99	Savannah	273,680	240,250	143,950	198,590	115,500	48,580	45,160	3,210
819	12	Seattle-Tacoma	1,647,230	1,379,830	627,120	1,208,860	520,680	184,440	167,760	4,260
657	160	Sherman, TX-Ada, OK	119,410	102,890	59,970	65,660	34,520	39,210	28,090	1,970
612	79	Shreveport	372,490	316,330	206,610	228,610	141,640	94,910	88,120	5,690
624	144	Sioux City	154,300	127,330	61,720	96,840	42,700	33,070	28,780	2,600
725	112	Sioux Falls(Mitchell)	237,790	197,470	81,230	149,080	55,130	50,800	37,120	1,780
588	87	South Bend-Elkhart	328,710	243,160	127,170	180,400	89,850	65,850	56,380	3,800
881	78	Spokane	380,480	298,190	142,120	212,610	89,850	90,200	83,510	4,250
619	74	Springfield, MO	391,450	293,680	158,400	183,910	86,840	114,920	108,470	6,450
543	105	Springfield-Holyoke	254,020	228,750	102,560	216,450	94,440	15,450	15,050	290
638	189	St. Joseph	57,260	49,800	23,750	39,340	16,650	10,960	9,330	660
609	22	St. Louis	1,143,690	861,150	511,390	681,030	395,130	191,110	178,070	3,460
555	81	Syracuse	363,340	312,220	181,070	280,690	160,670	35,360	33,370	1,420
530	113	Tallahassee-Thomasville	236,670	208,720	133,260	159,230	99,410	53,020	47,480	4,420
539	14	Tampa-St. Pete (Sarasota)	1,568,180	1,366,600	820,330	1,201,470	713,630	186,090	158,270	6,410
581	145	Terre Haute	151,560	126,700	68,090	86,600	41,530	42,680	39,140	3,220
547	68	Toledo	418,340	339,310	167,880	285,830	135,930	57,620	52,360	2,830
605	138	Topeka	165,570	140,840	75,150	114,130	58,670	29,000	26,110	1,070
540	117	Traverse City-Cadillac	233,400	186,250	95,960	128,270	62,190	61,290	57,560	3,730
531	93	Tri-Cities, TN-VA	303,500	276,280	117,110	222,270	83,710	59,570	56,250	3,100
789	73	Tucson (Sierra Vista)	391,840	299,160	132,130	241,190	96,140	64,380	53,540	1,890
671	59	Tulsa	502,500	398,620	267,740	307,540	201,840	95,710	85,970	2,460
760	188	Twin Falls	59,800	48,240	23,850	28,360	13,090	20,490	9,570	470
709	103	Tyler-Longview(Lfkn&Ncgd)	263,690	229,870	141,730	166,030	95,730	69,970	64,190	5,460
526	168	Utica	100,930	90,710	38,290	78,180	31,040	13,620	12,840	780
626	204	Victoria	29,960	27,640	17,410	22,700	13,730	5,610	5,320	290
625	94	Waco-Temple-Bryan	298,810	254,230	130,660	194,760	91,150	63,440	45,950	2,770
511	8	Washington, DC (Hagrstwn)	2,128,430	1,746,350	1,307,380	1,504,180	1,108,890	265,320	245,350	2,630

DMA Household Universe Estimates: November 2001
 Cable Plus ADS (Alternate Delivery Systems)
 (The "Nielsen Data")

		Nov-01	TV Households							
DMA #	DMA Rank	DMA Name	Total	Cable+ ADS		Wired Cable		Total ADS	Satellite DBS	Large Dish
				Total	Pay	Total	Pay			
549	176	Watertown	84,900	75,660	45,830	60,000	35,790	16,560	15,660	810
705	137	Wausau-Rhineland	168,510	129,200	61,750	87,860	38,390	42,860	38,860	3,580
548	40	West Palm Beach-Ft. Pierce	681,100	637,000	337,100	584,850	302,910	67,000	54,870	3,510
554	150	Wheeling-Steubenville	140,660	129,640	72,540	105,670	55,970	26,400	24,950	1,450
627	141	Wichita Falls & Lawton	158,050	134,400	74,350	97,150	47,640	39,790	30,900	1,210
678	65	Wichita-Hutchinson Plus	452,770	379,020	216,570	312,150	174,740	72,990	62,800	4,980
577	52	Wilkes Barre-Scranton	567,810	517,550	237,610	458,890	198,720	65,650	60,140	5,270
550	146	Wilmington	148,180	128,360	76,900	105,540	59,110	25,510	24,190	1,040
810	125	Yakima-Pasco-RchInd-Knnwck	208,540	166,710	90,300	128,680	65,480	39,960	33,600	1,500
536	98	Youngstown	275,410	233,830	124,650	204,750	106,250	33,260	29,370	2,380
771	171	Yuma-El Centro	95,750	75,630	44,290	55,300	30,780	21,780	20,020	780
596	202	Zanesville	32,150	29,810	14,060	24,150	10,850	6,300	5,780	520
Total U.S.			105,444,330	86,277,430	51,099,350	72,958,180	42,010,250	14,628,870	12,934,390	649,500

Alternate Delivery System (ADS) refers to reception of TV programming via Satellite(DBS or Large Dish), of from satellite master antenna systems(SMATV), or from multipoint distribution systems(MDS). A household may have both wired cable and ADS, so total ADS cannot be added to Wired Cable to derive cable plus ADS.

**The 171 Unique Combinations of
Regional Clusters and DMA's**

Regional Cluster	DMA	Households in both the Regional Cluster and the DMA
Appalachian	508	12,825
Appalachian	511	8,796
Appalachian	531	21,438
Appalachian	541	52,571
Appalachian	554	9,608
Appalachian	557	20,291
Appalachian	559	30,222
Appalachian	564	103,400
Appalachian	569	1,134
Appalachian	573	11,527
Appalachian	575	16,035
Appalachian	597	11,305
Appalachian	598	26,047
Appalachian	659	34,839
Appalachian	736	392
Carolinas	517	164,452
Carolinas	518	140,128
Carolinas	519	11,615
Carolinas	524	5,776
Carolinas	531	27,778
Carolinas	544	16,705
Carolinas	545	44,814
Carolinas	546	56,102
Carolinas	550	68,481
Carolinas	556	12,354
Carolinas	557	26,308
Carolinas	560	194,422
Carolinas	567	138,768
Carolinas	570	34,368
Carolinas	573	99,339
Carolinas	575	2,237
Central Midwest	603	18,845
Central Midwest	604	17,869
Central Midwest	609	49,451
Central Midwest	616	20,251
Central Midwest	619	93,347
Central Midwest	631	864
Central Midwest	632	20,825
Central Midwest	648	275
Central Midwest	670	10,084
Central Midwest	671	3,409
Central Midwest	678	338
Central Midwest	693	27,825
Central Midwest	717	9,859
Central Midwest	734	5,318

**The 171 Unique Combinations of
Regional Clusters and DMA's**

Regional Cluster	DMA	Households in both the Regional Cluster and the DMA
Chesapeake	511	199,365
Chesapeake	512	29,456
Chesapeake	544	49,074
Chesapeake	556	24,897
Chesapeake	574	2,178
Chesapeake	576	9,191
Chesapeake	584	3,912
Gator	528	18,801
Gator	530	28,619
Gator	534	36,425
Gator	548	52,580
Gator	561	11,786
Gator	571	4,715
Gator	592	8,115
Gator	656	1,111
Gulf Coast	612	43,631
Gulf Coast	622	68,529
Gulf Coast	628	44,252
Gulf Coast	630	30,976
Gulf Coast	632	369
Gulf Coast	639	14,354
Gulf Coast	640	66,948
Gulf Coast	642	43,147
Gulf Coast	643	21,792
Gulf Coast	644	19,414
Gulf Coast	647	10,942
Gulf Coast	657	1,730
Gulf Coast	659	12,118
Gulf Coast	670	1,485
Gulf Coast	671	285
Gulf Coast	673	45,677
Gulf Coast	686	50,386
Gulf Coast	691	9,993
Gulf Coast	692	1,013
Gulf Coast	693	57,053
Gulf Coast	698	17,497
Gulf Coast	709	2,928
Gulf Coast	710	34,559
Gulf Coast	711	17,285
Gulf Coast	716	61,175
Gulf Coast	718	76,743
Gulf Coast	734	2,762
Gulf Coast	746	46,937
Hoosier	509	8,954
Hoosier	515	15,349

**The 171 Unique Combinations of
Regional Clusters and DMA's**

Regional Cluster	DMA	Households in both the Regional Cluster and the DMA
Hoosier	527	121,304
Hoosier	529	65,897
Hoosier	541	7,775
Hoosier	542	5,868
Hoosier	547	1,716
Hoosier	563	964
Hoosier	581	30,242
Hoosier	582	12,681
Hoosier	588	43,292
Hoosier	602	31,235
Hoosier	609	256
Hoosier	632	28,135
Hoosier	648	2,387
Hoosier	649	47,798
Hoosier	659	21,709
Hoosier	736	18,940
Northern Plains	613	899
Northern Plains	624	2,544
Northern Plains	687	11,348
Northern Plains	722	218
Northern Plains	724	8,126
Northern Plains	725	13,693
Northern Plains	740	795
Northern Plains	751	2,801
Northern Plains	755	1,549
Northern Plains	756	3,381
Northern Plains	759	1,977
Northern Plains	764	2,628
Northern Plains	798	235
Northwest	754	637
Northwest	756	23
Northwest	757	16,384
Northwest	758	11,042
Northwest	760	1,931
Northwest	762	519
Northwest	770	3,403
Northwest	807	2,536
Northwest	811	5,922
Northwest	813	1,893
Northwest	820	6,839
Northwest	821	8,228
Northwest	868	15,353
Northwest	881	1,363
Plains	605	8,095
Plains	616	3,166

**The 171 Unique Combinations of
Regional Clusters and DMA's**

<u>Regional Cluster</u>	<u>DMA</u>	<u>Households in both the Regional Cluster and the DMA</u>
Plains	624	2,919
Plains	652	1,497
Plains	678	20,801
Plains	722	6,873
Plains	752	616
Sierra Nevada	800	86
Sierra Nevada	803	1,303
Sierra Nevada	807	15,018
Sierra Nevada	811	15,932
Sierra Nevada	862	50,793
Sierra Nevada	866	17,391
Sierra Nevada	868	887
Native American	633	31
Native American	634	1,362
Native American	651	212
Native American	751	265
Native American	753	27,051
Native American	765	5,319
Native American	770	599
Native American	789	998
Native American	790	37,110
Upper Midwest	553	5,712
Upper Midwest	613	54,417
Upper Midwest	658	14,490
Upper Midwest	676	28,669
Upper Midwest	702	3,462
Upper Midwest	705	11,865
Upper Midwest	724	12,764
Upper New England	500	7,820
Upper New England	523	34,614
Upper New England	526	1,487
Upper New England	532	3,387
Upper New England	537	22,639
Upper New England	549	1,997
Upper New England	552	4,013
Upper New England	555	4,117

ORIGINAL

III. TABLE THREE: REPRESENTATIVE PRICES AND DBS PENETRATION RATES FOR THE CLUSTERS

The DBS penetration rates in Table Three come from the same calculations performed for Table Two.

I begin my calculations of the average monthly price of DirecTV for each regional cluster with the NRTC database of average member-earned revenue per subscriber (ARPU) for December 15, 2001, through January 13, 2002. The NRTC database has ARPU's for 256 unique member territories. The NRTC database also includes the zip codes and counties of customers in each member territory. I geocode those zip codes using MapInfo's zip code data. If a zip code does not match a zip code in MapInfo's database, I geographically assign the zip code to the centroid of the county to which it is assigned in the NRTC database. I then assign zip codes within regional clusters to the regional cluster in MapInfo to create a database of 1,993 unique member territory-zip code combinations within the fourteen regional clusters. I merge this dataset with the ARPU data and calculate the average monthly price of DirecTV for each regional cluster by taking a simple average of the ARPU's for the member territory-zip code combinations by regional cluster.