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June 1, 2001

W. Kenneth Ferree
Chief, Cable Service Bureau
Federal Communications Commission
445 12th Street, SW
Room 3C740
Washington, DC 20554

RECEIVED

JUN 1 2001

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Re: Cable System Capacity and Retransmission Consent Survey

Dear Mr. Ferree:

On behalf of Charter Communications, Inc. ("Charter"), enclosed are responses to the Commission's "Questions on Cable System Capacity and Retransmission Consent Agreements". With respect to the bandwidth allocation responses provided, Charter would like to emphasize the difficulty of predicting exact bandwidth requirements or allocations for services that are currently being developed or which will be developed over the next two to three years. The need to maintain bandwidth capacity and bandwidth allocation flexibility is absolute. The only bandwidth "certainty" is that every year there will be new services, applications and technologies demanding greater bandwidth use.

Should there be any questions regarding the information submitted herewith, please contact the undersigned counsel.

Sincerely,



Wesley R. Heppler

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Questions on Cable System Capacity and Retransmission Consent Agreements

Question 1

Please complete the following table with the total number of subscribers served by all of your cable systems and your best estimates of the percentage of your total subscribers in each year that will be served by cable systems of the specified capacity. For each year the column percentages for the five system capacity classes ("Under 500 MHz" to ">750 MHz") should sum to 100.

TOTAL NUMBER OF SUBSCRIBERS SERVED AND % DISTRIBUTION BY SYSTEM CAPACITY

Cable System Capacity	Yearend 1999		Yearend 2000		Yearend 2001		Yearend 2002		Yearend 2003	
	Number	%								
Cable System Capacity										
>750 MHz	199,924	3.20%	1,127,238	18.10%	2,091,233	33.50%	2,837,417	45.50%	2,891,797	46.30%
750 MHz	1,822,810	29.20%	2,448,910	39.20%	2,544,367	40.80%	2,629,441	42.10%	2,629,441	42.10%
Between 550 and 750 MHz	34,222	0.50%	48,044	0.80%	44,873	0.70%	13,822	0.20%	13,822	0.20%
550 MHz	887,567	14.20%	657,162	10.50%	506,009	8.10%	310,654	5.00%	310,440	5.00%
Under 500 MHz	3,296,764	52.80%	1,959,933	31.40%	1,054,805	16.90%	449,953	7.20%	395,787	6.30%
Total		100%		100%		100%		100%		100%

Question 2

Please provide, for each of the five capacity classes and for each year, a breakdown of the total MHz usable for downstream transmissions. The breakdown should be based on a representative cable system in each size class, specifically the one with the largest number of subscribers. For the >750, <550, and 550-750 MHz capacity classes, please specify the capacity of the system for which the information is being provided.

If the total downstream capacity does not equal total capacity minus the bandwidth below 54 MHz, please explain the discrepancy. Also please note if any capacity above 54 MHz is used for upstream services. Please provide the total MHz expected to be used for analog video transmission, the total MHz expected to be used for digital video transmission, and the total MHz expected to be used for other purposes, and list the anticipated other services. The sum of the total MHz used for analog, digital, and other downstream services should equal total MHz usable for downstream transmissions.

Year 1999

Capacity of Representative Cable System	Specific Capacity	Total MHz usable for downstream transmissions	Total MHz expected to be used for analog video	Total MHz expected to be used for digital video#	Total MHz expected to be used for other downstream services+
>750 MHz*	858	780	474	Range 102-108 MHz	Range 198-204 MHz
750 MHz	750	672	474	Range 90-102 MHz	Range 96-108 MHz
550-750 MHz**	N/A	N/A	N/A	N/A	N/A
550 MHz	546	468	372	72	24
< 550 MHz***	450	372	336	36	0

+Identify any other downstream services (1999-2003):

Charter anticipates use of this downstream capacity for video-on-demand channels, high definition television, cable modem data services, cable modem virtual private networks, cable modem streaming media applications, business and residential telephony applications through additional cable modem bandwidth, and interactive television services and applications. It is not possible at this time to provide a meaningful allocation of bandwidth between these services. The bandwidth allocation interplay between video-on-demand services, high definition television, the current generation of cable modem service and the more advanced services listed herein, will be a dynamic and fluid process affected by changes in both technology and the marketplace.

It is possible that these initial estimated ranges for "other downstream services" will not prove sufficient for all such developing services, and that a further bandwidth allocation (from digital video or analog video) to such developing services will need to be implemented. Charter would like to emphasize the difficulty of predicting exact bandwidth requirements or allocations for services that are currently being developed or which will be developed over the next two to three years. Any bandwidth use predictions beyond 2003 would be literally impossible. The need to maintain bandwidth capacity and bandwidth allocation flexibility is absolute. The only bandwidth "certainty" is that every year there will be new services, applications and technologies demanding greater bandwidth use.

Year 2000

Capacity of Representative Cable System	Specific Capacity	Total MHz usable for downstream transmissions	Total MHz expected to be used for analog video	Total MHz expected to be used for digital video#	Total MHz expected to be used for other downstream services+
>750 MHz*	858	780	474	Range 102-108 MHz	Range 198-204 MHz
750 MHz	750	672	474	Range 90-102 MHz	Range 96-108 MHz
550-750 MHz**	N/A	N/A	N/A	N/A	N/A
550 MHz	546	468	372	72	24
< 550 MHz***	450	372	336	36	0

Year 2001

Capacity of Representative Cable System	Specific Capacity	Total MHz usable for downstream transmissions	Total MHz expected to be used for analog video	Total MHz expected to be used for digital video#	Total MHz expected to be used for other downstream services+
>750 MHz*	860	780	474	Range 102-108 MHz	Range 198-204MHz
750 MHz	750	672	474	Range 90-102 MHz	Range 96-108 MHz
550-750 MHz**	N/A	N/A	N/A	N/A	N/A
550 MHz	546	468	372	72	24
< 550 MHz***	450	372	336	36	0

#Regarding "Total MHz expected to be used for digital video", Charter has deployed a wide variety of digital video services on rebuilt systems that often already consume 102 MHz of bandwidth. Although Charter's digital video service package is varied throughout the country, the following digital packages or programming "suites" are found on many of Charter's rebuilt cable systems: near video on demand services; NBA season package; NHL season package; MLB season package; ESPN packages; HBO services package; Showtime services package; STARZ/Encore services package; Discovery suite of services; VIACOM suite of services; A&E services; Adult package of services; and FOX suite of services. Numerous other individual digital video services are offered on various Charter cable systems. Charter expects that the competition for carriage of cable networks on this digital video bandwidth will dramatically increase over the next few years.

Year 2002

Capacity of Representative Cable System	Specific Capacity	Total MHz usable for downstream transmissions	Total MHz expected to be used for analog video	Total MHz expected to be used for digital video#	Total MHz expected to be used for other downstream services+
>750 MHz*	858	780	474	Range 102-108 MHz	Range 198-204 MHz
750 MHz	750	672	474	Range 90-102 MHz	Range 96-108 MHz
550-750 MHz**	N/A	N/A	N/A	N/A	N/A
550 MHz	546	468	372	72	24
< 550 MHz***	450	372	336	36	0

Year 2003

Capacity of Representative Cable System	Specific Capacity	Total MHz usable for downstream transmissions	Total MHz expected to be used for analog video	Total MHz expected to be used for digital video#	Total MHz expected to be used for other downstream services+
>750 MHz*	858	780	474	Range 102-108 MHz	Range 198-204 MHz
750 MHz	750	672	474	Range 90-102 MHz	Range 96-108 MHz
550-750 MHz**	N/A	N/A	N/A	N/A	N/A
550 MHz	546	468	372	72	24
< 550 MHz***	450	372	336	36	0

* fill in a capacity greater than 750 MHz if applicable, or enter NA if no systems in the >750 MHz category

** fill in a capacity between 550 and 750 MHz if applicable, or enter NA if no systems in the 550-750 MHz category

*** fill in a capacity below 550 MHz if applicable, or enter NA if no systems in the <550 MHz category

Please explain here any discrepancies between capacity usable for downstream transmissions and total capacity minus the bandwidth below 54 MHz.

Note: As explained in the following paragraphs, we have excluded the FM band and the 4 MHz gap between EIA channels 4 and 5.

Standard Quadrature Amplitude Modulators (QAM) -- those used to broadcast digital video in broadband cable networks -- transmit in blocks of 6 MHz. Broadband cable networks using standard channel assignments have 4 MHz (megahertz) of unused spectrum between channel 4 (66 MHz to 72 MHz) and channel 5 (76 MHz to 82 MHz). There is insufficient spectrum in this interstitial bandwidth of 4 MHz to transmit digital video programming in a broadband cable network that utilizes standard channel assignments.

Over-the-air FM radio is carried in the frequency spectrum between 88 MHz and 108 MHz. Many urban and sub-urban markets have FM transmission facilities (towers and antennas) located within the broadband cable network's service area. Coaxial cable has insufficient shielding to prevent the incursion of the spectral energy from these FM radio stations. Interference from these FM signals makes significant portions of the FM spectrum unusable within broadband cable networks serving these markets.

Question 3

For each capacity class and year entered in question 2, please provide (i) information on the digital modulation techniques you intend to use and (ii) a further breakdown of the total MHz expected to be used for downstream digital video transmission. To answer this question, use the same representative cable systems that you used in question 2. What modulation technique do you expect to use (e.g., 64 QAM, 256 QAM)? How many MHz do you anticipate devoting to HDTV transmissions and how many HDTV program streams do you anticipate transmitting in each 6 MHz of spectrum devoted to that purpose? How many MHz do you anticipate devoting to standard definition television program streams and how many such program streams do you anticipate transmitting in each 6 MHz of spectrum devoted to that purpose?

NOTE: If you plan to use different modulation techniques on a single system or on different systems in the same capacity class, please explain below. If the number of HDTV or SDTV program streams per 6 MHz is expected to vary, please indicate a typical figure in the table and explain the range of variation below.

YEAR 1999

Capacity of Representative Cable System	Specific Capacity	Total MHz expected to be used for digital video transmission (from question 2)	Modulation technique	MHz expected to be devoted to HDTV transmissions (broadcast or nonbroadcast)	HDTV Program streams per 6 MHz	MHz expected to be devoted to standard definition video	SDTV program streams per 6 MHz
>750 MHz*	860	Range 102-108 MHz	64 QAM	0	0	102	8
750 MHz		Range 90-102 MHz	64 QAM	0	0	102	8
550-750 MHz**	N/A	N/A	N/A	N/A	N/A	N/A	N/A
550 MHz		72	64 QAM	0	0	72	8
<550 MHz***	450	36	64 QAM	0	0	36	8

YEAR 2000

Capacity of Representative Cable System	Specific Capacity	Total MHz expected to be used for digital video transmission (from question 2)	Modulation technique	MHz expected to be devoted to HDTV transmissions (broadcast or nonbroadcast)	HDTV Program streams per 6 MHz	MHz expected to be devoted to standard definition video	SDTV program streams per 6 MHz
>750 MHz*	860	Range 102-108 MHz	64 QAM	0	0	102	8
750 MHz		Range 90-102 MHz	64 QAM	0	0	102	8
550-750 MHz**	N/A	N/A	N/A	N/A	N/A	N/A	N/A
550 MHz		72	64 QAM	0	0	72	8
<550 MHz***	450	36	64 QAM	0	0	36	8

YEAR 2001

Capacity of Representative Cable System	Specific Capacity	Total MHz expected to be used for digital video transmission (from question 2)	Modulation technique	MHz expected to be devoted to HDTV transmissions (broadcast or nonbroadcast)	HDTV Program streams per 6 MHz	MHz expected to be devoted to standard definition video	SDTV program streams per 6 MHz
>750 MHz*	860	Range 102-108 MHz	64 QAM	0	0	102	8
750 MHz		Range 90-102 MHz	64 QAM	0	0	102	8
550-750 MHz**	N/A	N/A	N/A	N/A	N/A	N/A	N/A
550 MHz		72	64 QAM	0	0	72	8
<550 MHz***	450	36	64 QAM	0	0	36	8

YEAR 2002

Capacity of Representative Cable System	Specific Capacity	Total MHz expected to be used for digital video transmission (from question 2)	Modulation technique	MHz expected to be devoted to HDTV transmissions (broadcast or nonbroadcast)	HDTV Program streams per 6 MHz	MHz expected to be devoted to standard definition video	SDTV program streams per 6 MHz
>750 MHz*	860	Range 102-108 MHz	256 QAM	24	2	102	Range 8-11
750 MHz		Range 90-102 MHz	256 QAM	12	2	102	Range 8-11
550-750 MHz**	N/A	N/A	N/A	N/A	N/A	N/A	N/A
550 MHz		72	64 QAM	0	0	72	8
<550 MHz***	450	36	64 QAM	0	0	36	8

YEAR 2003

Capacity of Representative Cable System	Specific Capacity	Total MHz expected to be used for digital video transmission (from question 2)	Modulation technique	MHz expected to be devoted to HDTV transmissions (broadcast or nonbroadcast)	HDTV Program streams per 6 MHz	MHz expected to be devoted to standard definition video	SDTV program streams per 6 MHz
>750 MHz*	860	Range 102-108 MHz	256 QAM	24	2	102	Range 8-11
750 MHz		Range 90-102 MHz	256 QAM	12	2	102	Range 8-11
550-750 MHz**	N/A	N/A	N/A	N/A	N/A	N/A	N/A
550 MHz		72	256 QAM	12	2	72	Range 8-11
<550 MHz***	450	36	64 QAM	0	0	36	8

* fill in a capacity greater than 750 MHz if applicable, or enter NA if no systems in the >750 MHz category

** fill in a capacity between 550 and 750 MHz if applicable, or enter NA if no systems in the 550-750 MHz category

*** fill in a capacity below 550 MHz if applicable, or enter NA if no systems in the <550 MHz category

Please describe here any situations in which you plan to use different modulation techniques on a single system or on different systems in the same capacity class.

If the number of HDTV program streams per 6 MHz is expected to vary, please explain the range of variation here.

Question 4

On Chart 4A below, please list the cable systems and television stations for which you have negotiated retransmission consent agreements that include carriage of digital transmissions by the station. For each television station, please include in parentheses the network affiliation if any. Please include, if known, the capacity of each system in MHz, the Designated Market Area ("DMA") in which the station is located, when digital carriage is scheduled to commence, the modulation technique you intend to use (e.g., 8 VSB, 64 QAM, 256 QAM), the format (480P, 720P, 1080I, something else) of the signal as received from the broadcaster, and the format that you plan to use for retransmission through the system to subscribers.

On Chart 4B below, please provide the best information available at this time on pending retransmission consent negotiations, if possible. If you have pending negotiations with respect to more than 10 systems, please provide information for the five largest and the five smallest systems, measured by number of subscribers.

Note: If you have signed digital retransmission agreements with a television station for more than one cable system, please make a separate entry for each cable system.

Please use additional pages if necessary for response.

CHART 4A: COMPLETED RETRANSMISSION CONSENT AGREEMENTS

DMA	Television Station (with affiliation status)	Cable System	System Capacity (MHz)	Date Carriage Commenced or is to Commence	Modulation Technique	Broadcast Transmission Format	Retransmission Format	Number of Stations in DMA now transmitting a digital signal

CHART 4B: RETRANSMISSION CONSENT AGREEMENTS IN NEGOTIATION

In retransmission consent negotiations, Charter will, of course, negotiate in good faith regarding the carriage of future digital signals. It must be emphasized that television broadcast stations have already exercised substantial leverage in retransmission consent negotiations to require Charter to carry numerous cable network services affiliated with television broadcasters on Charter cable systems. A significant amount of Charter's cable capacity is now dedicated to such retransmission consent "affiliated" cable services. There should be little doubt that television broadcasters will exercise similar leverage when the issue of carriage of digital signals is more directly addressed in retransmission consent negotiations.