

Maintaining Cellular Service Which Works Everywhere

The terrific growth in cellular subscribers has put pressure on the current cellular spectrum. Already in major markets cellular capacity is overloaded at peak times with the result that the consumer cannot get a line. The introduction of digital transmission technologies (now being tested) holds the promise of alleviating some of that congestion.

However, the digital technologies have the drawback that they are incompatible. Thus, a consumer whose home cellular company uses the TDMA format will not be able to use his/her phone in an area where the cellular operator uses the CDMA standard. In order to overcome this problem all digital units will be "dual mode" -- i.e., they will default to the current AMPS analog system when confronted with a different digital interface.

It, therefore, becomes important to maintain and protect AMPS analog capacity as the "common denominator" of a nationwide wireless system. Thus, while digital technology may solve the current congestion problem, it actually creates an analog spectrum problem as cellular subscribers increase in number.

Today, cellular is a nationwide communications backbone for the United States. The same cellular phone that works in New York City works in Kalispell, Montana, and vice versa. What's more, the cellular industry is installing a nationwide "Find Me Anywhere" service by which a call to the home number in Kalispell will find the subscriber in New York or anywhere else he or she may be. That backbone must be maintained despite the pressure to utilize the spectrum with digital efficiency.

"The maintenance of analog spectrum will be particularly important to consumers outside of major metropolitan areas," Wheeler observed. "There is less pressure to adopt digital technology in non-urban areas where the analog capacity is not yet stressed. It is important to maintain the ability of a non-urban consumer to be able to use his/her cellular phone in urban areas and the only way to do that is by maintaining the analog common denominator."

The importance of maintaining the ability of all cellular phones to interface was recently illustrated during the Hurricane Andrew disaster. When the wireline system was seriously damaged, cellular stepped in to provide communications services not only for emergency service providers such as the military, police and Red Cross, but also for the homeless.

"Imagine what would have happened if Homestead, Florida had been a TDMA system and West Palm Beach had been a CDMA system," Wheeler asked. "Without the maintenance of the analog common denominator how would the Red Cross and other emergency services have communicated?"

**CONTINUING NEED TO SERVE ANALOG CUSTOMERS
(Sample Markets)**

YEAR	TOTAL SUBSCRIBERS	TOTAL ANALOG	TOTAL DIGITAL	% ANALOG
1992	300,000	300,000	0	100.00%
1993	360,000	324,000	36,000	90.00%
1994	432,000	348,600	83,400	80.69%
1995	518,400	371,580	146,820	71.68%
1996	622,080	390,078	232,002	62.71%
1997	746,496	400,395	346,101	53.64%
1998	895,795	397,750	498,045	44.40%
1999	1,074,954	375,975	698,979	34.98%
2000	1,289,945	327,129	962,816	25.36%
2001	1,547,935	241,020	1,306,915	15.57%
				SOURCE: CTIA

ASSUMPTIONS: City of 10 million people, with 3% cellular subscriber penetration in 1992, growing by 20% per year; 10% of all new phones sold are digital in 1993, increasing by 10% each year, until all phones sold in 2001 are digital; each year 10% of analog phones are traded in for digital.

NEW WIRELESS TECHNOLOGIES

Analog

AMPS
N-AMPS

Digital

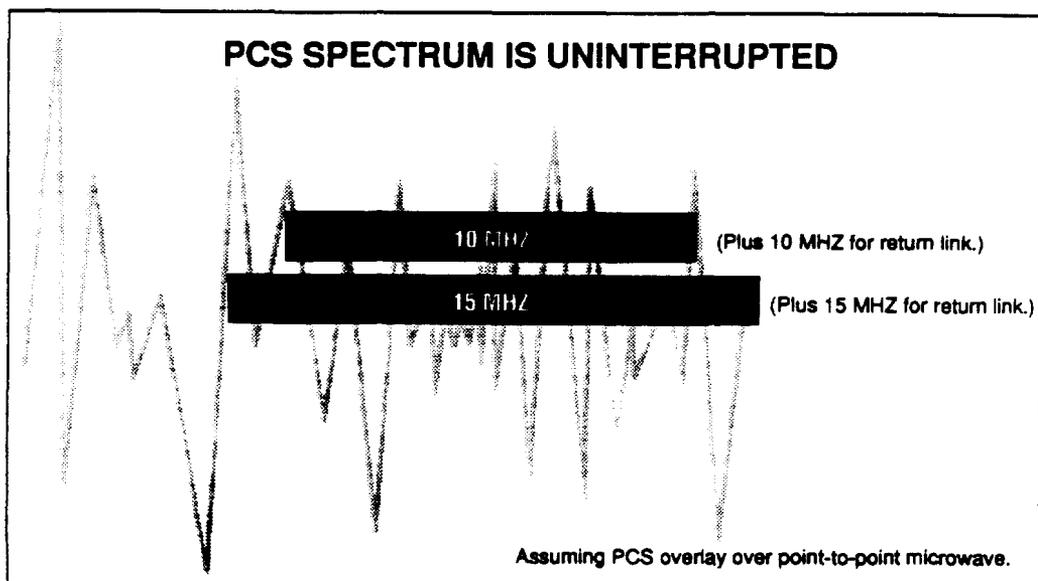
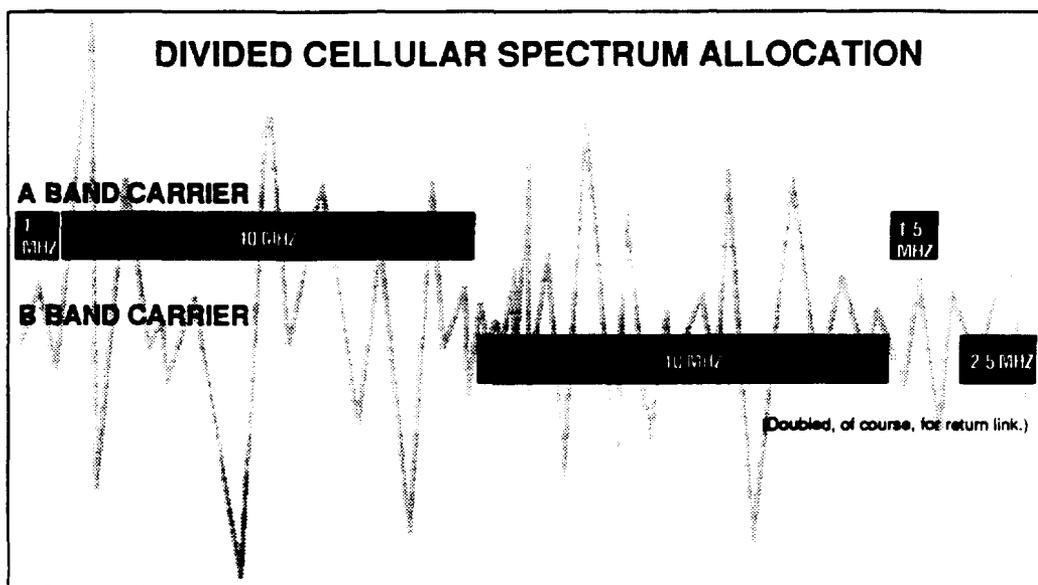
TDMA
N-CDMA
B-CDMA

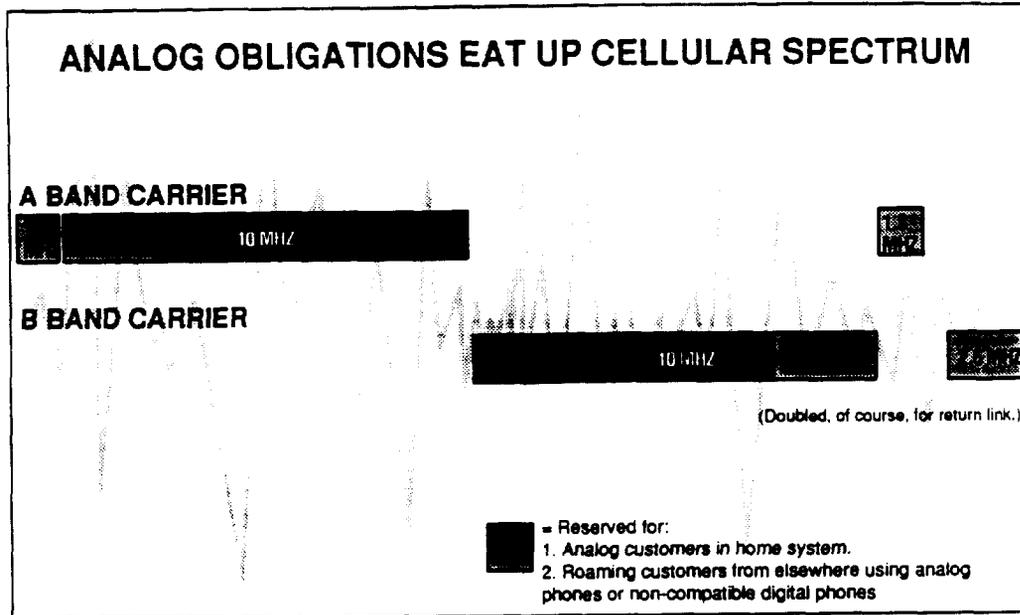
***Note:** In order to provide universal service, the new digital equipment (which will be incompatible with other digital equipment) must be "dual mode" with the capability of communicating in the chosen digital format plus AMPS, the analog cellular standard. Therefore, there must always be maintained sufficient analog spectrum capacity.*

Characteristics Of Personal Communications Spectrum

The new PCS spectrum has different technical characteristics than the existing cellular spectrum. For instance, while cellular spectrum is chopped into several pieces, the new PCS spectrum is uninterrupted. Although this is transparent to the end user, it has important implications for future wireless services.

To elaborate, the divided cellular spectrum is suitable for the narrowband technology used today for both analog and digital voice transmission, but the larger pieces in the new PCS spectrum permit broadband transmission. The transmission of high-speed data -- a necessity for the popular wireless services of the future -- requires such a broadband pathway.





While the cellular industry might be able to use its one large (10 Mhz) segment of spectrum for broadband transmission with digital technology, it would do so to the detriment of existing cellular consumers.

Thus, should cellular operators not have access to new spectrum, they would be faced with the unpleasant choice of degrading existing services or foregoing new services -- both unacceptable alternatives for our customers.

Avoiding Regulatory Delays

The cellular industry will ask the FCC to allocate the new spectrum based on the same 734 license areas used for cellular and interactive video.

"The existing license areas reflect the results of three FCC Rule-Makings and 17 FCC Reports and Orders," Wheeler observed. "It took the FCC nine years to reach this point. To reinvent that wheel will only delay the provision of the new PCS services by starting the process all over again."

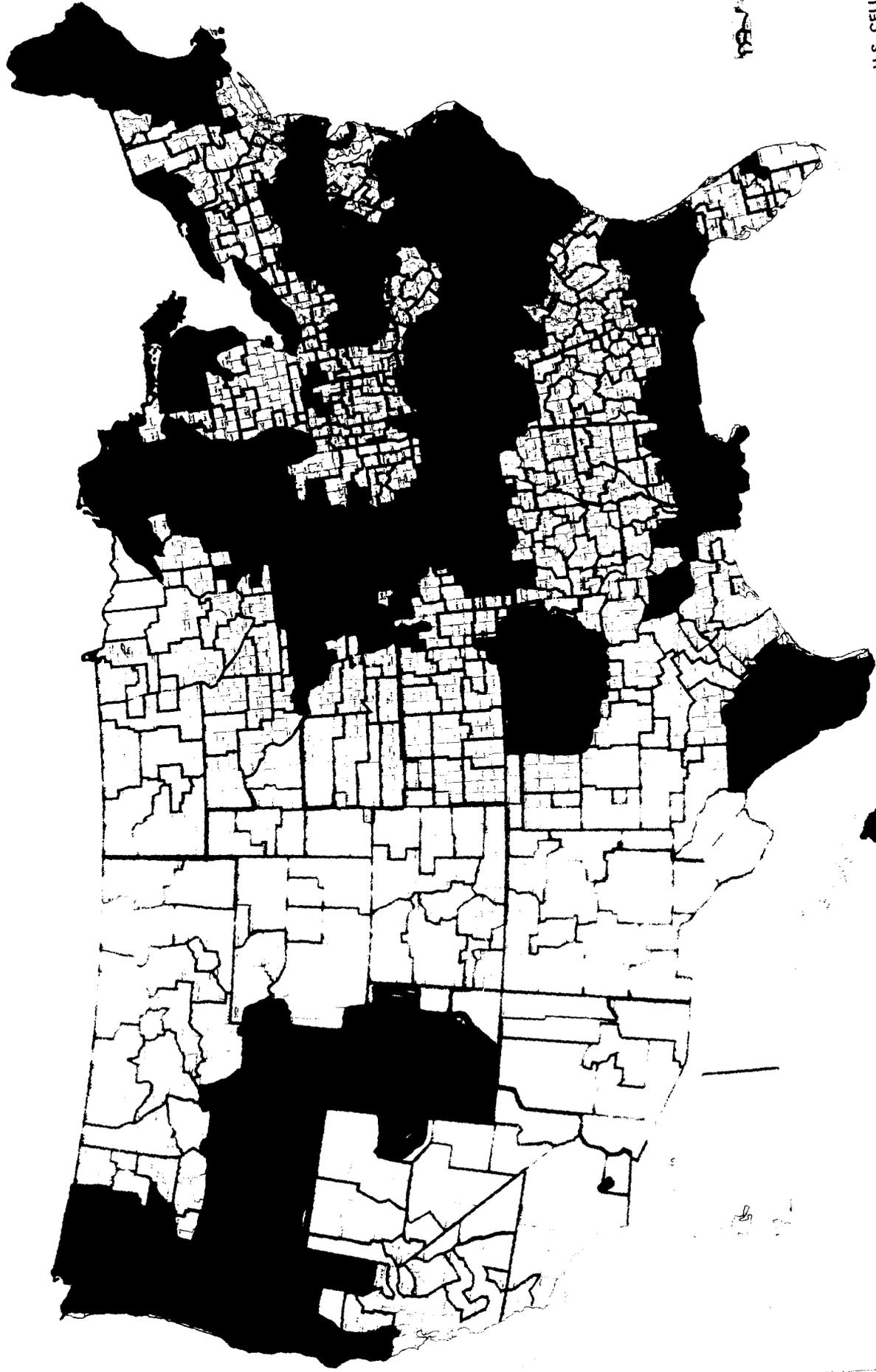
The 734 cellular/interactive video license areas also are manageable enough in size to permit service to be offered by companies other than behemoth corporations. This approach will attract entrepreneurs and niche services appealing to specific local areas.

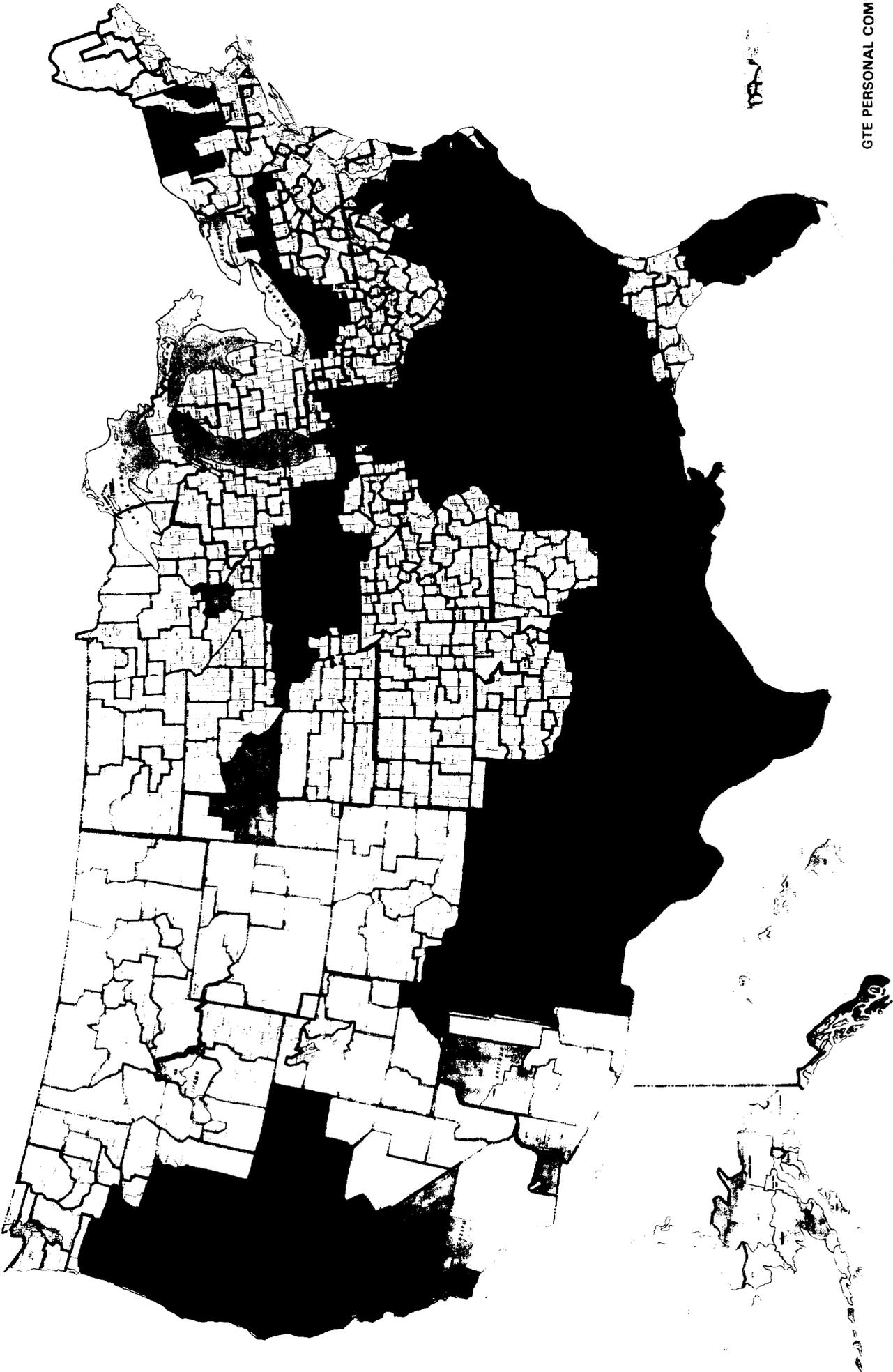
"A major reason why cellular service is now available to 90 percent of the population is because the FCC allocated licenses in bite-sized geographic chunks," Wheeler said. "Only this approach will assure that all areas of the country receive new PCS services, not just the most populous areas."

FOR MORE INFORMATION: Contact Norman Black at 202-785-0081.

U.S. CELLULAR

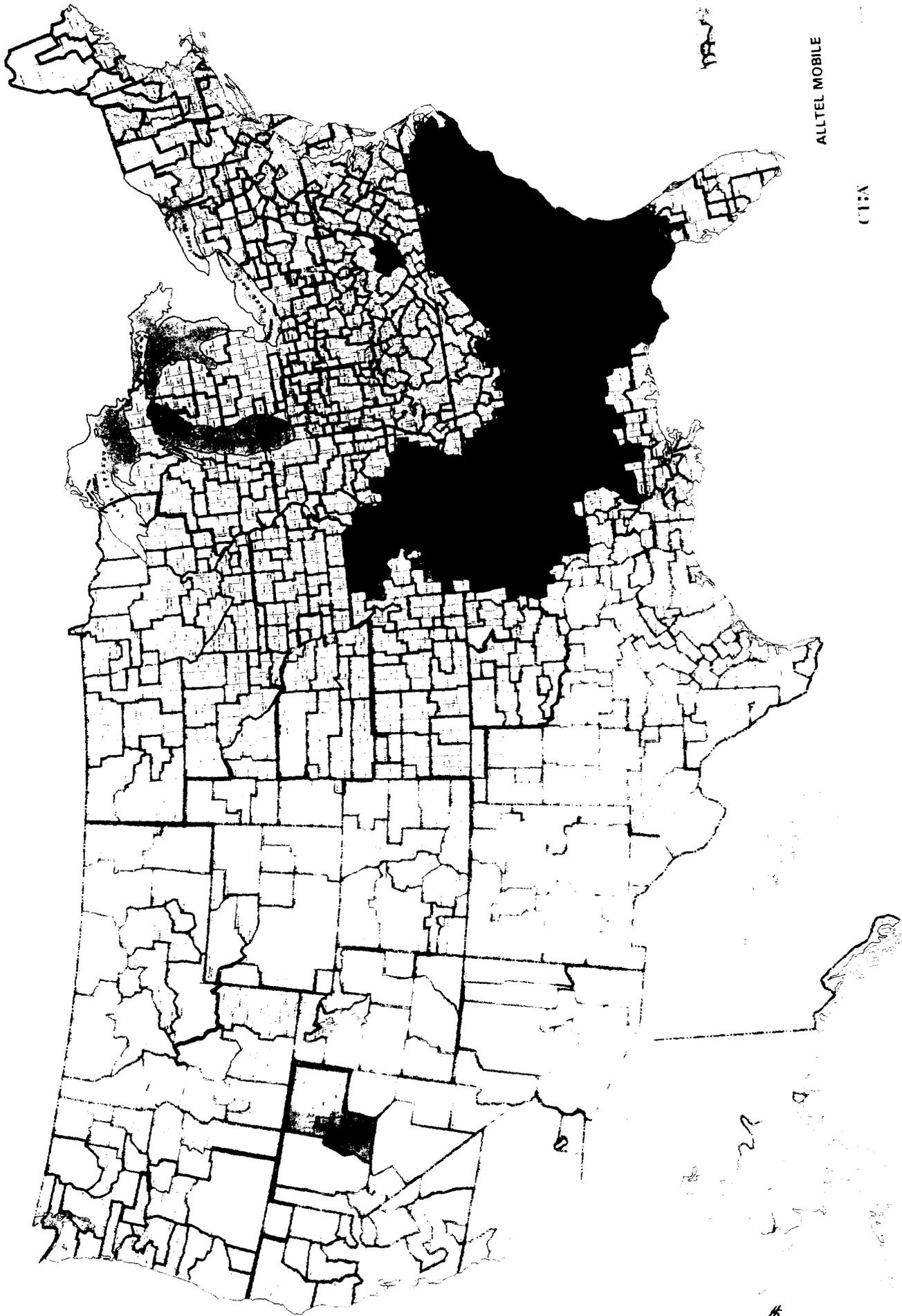
CTA





GTE PERSONAL COM'NS

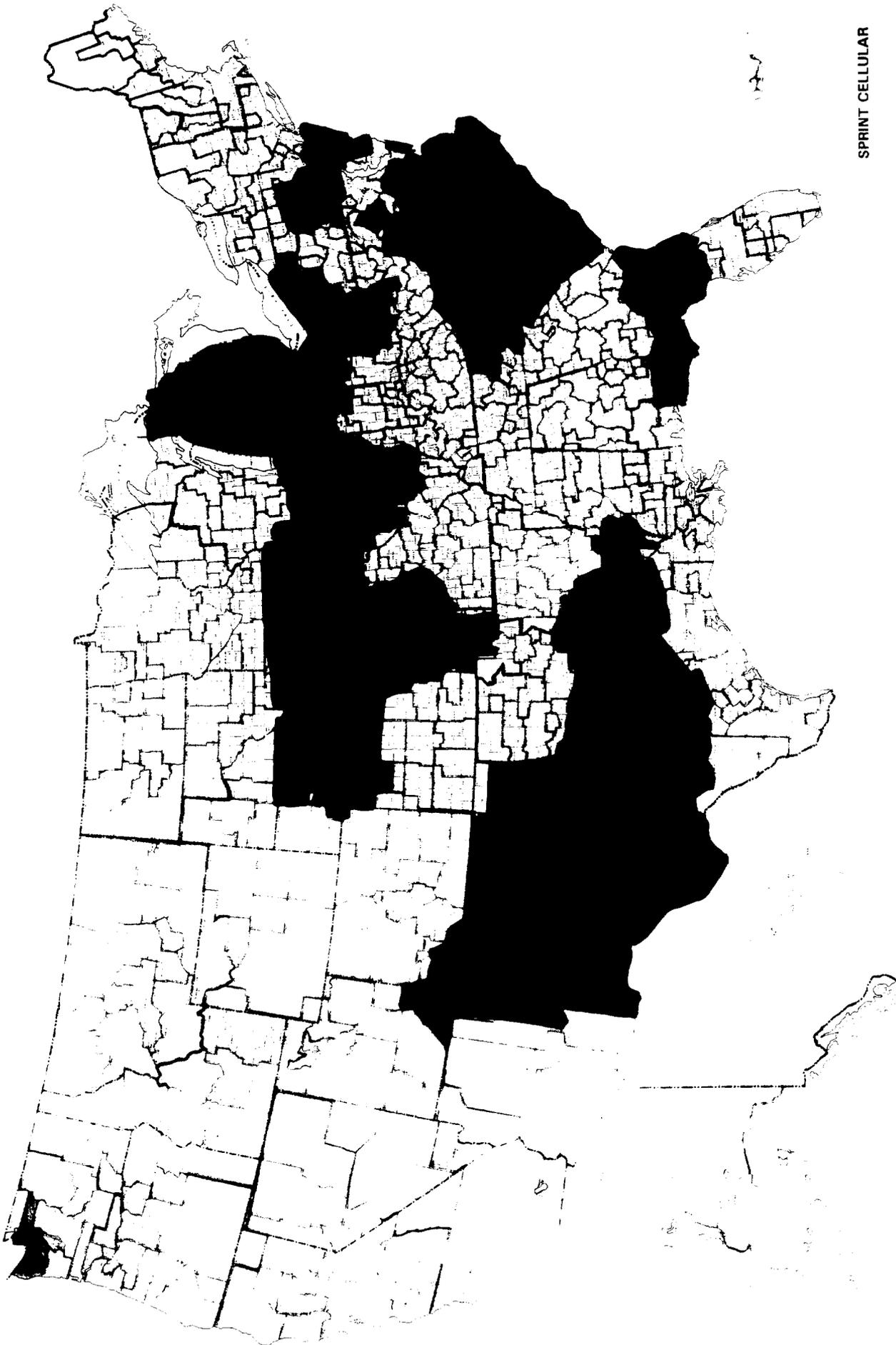
CT:A



ALLTEL MOBILE

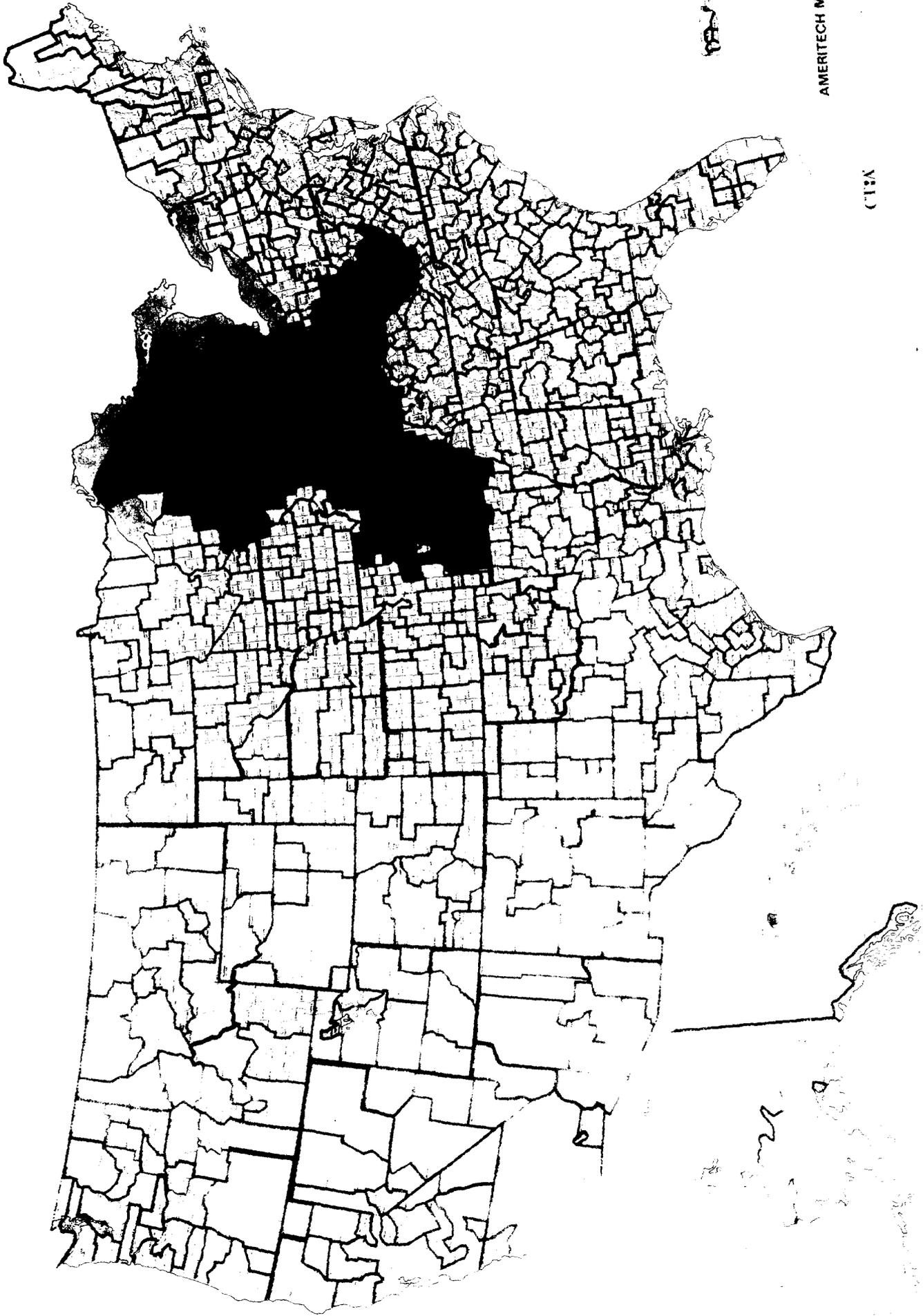
CTEA

\$ 2.00



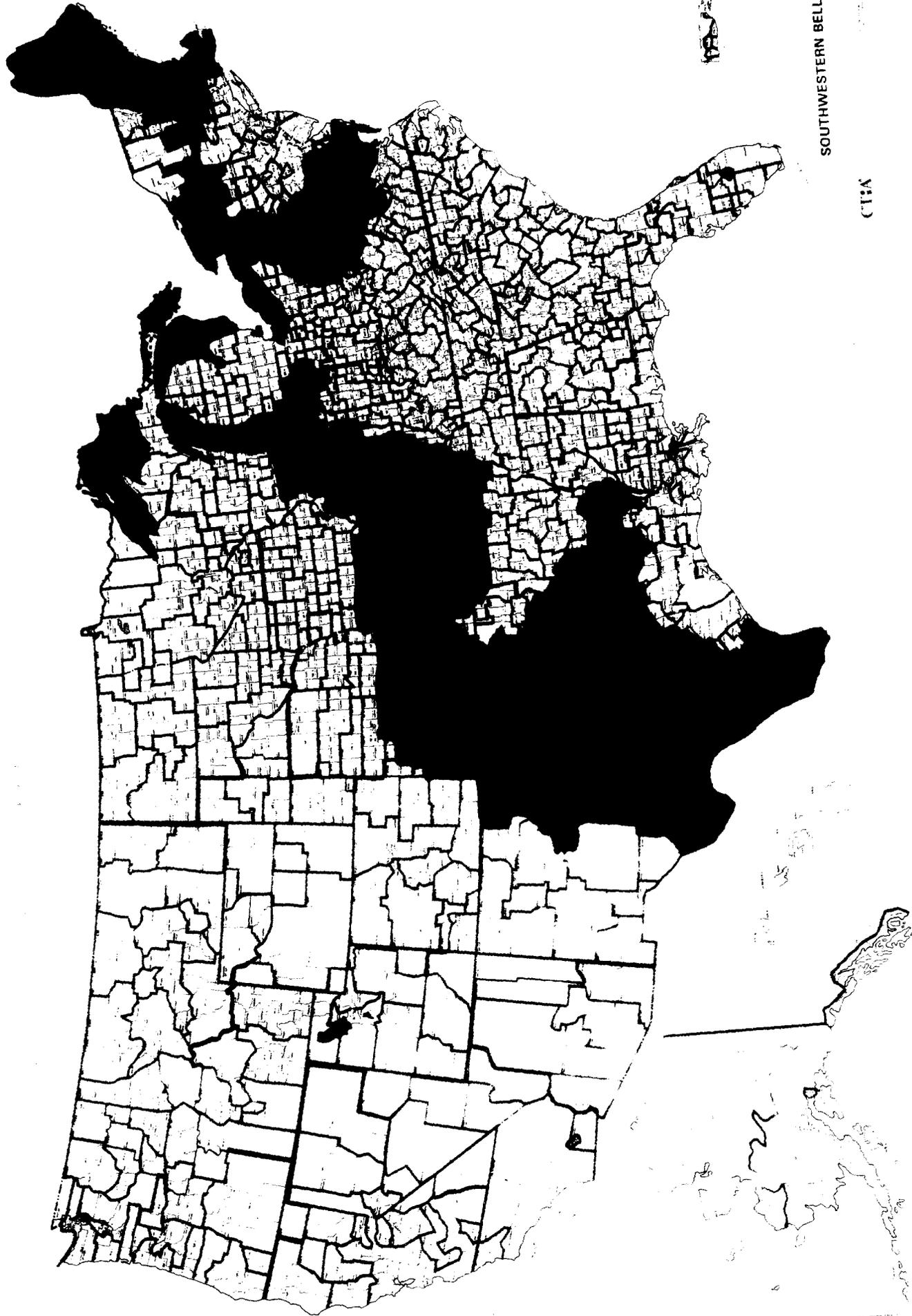
SPRINT CELLULAR

CT-A



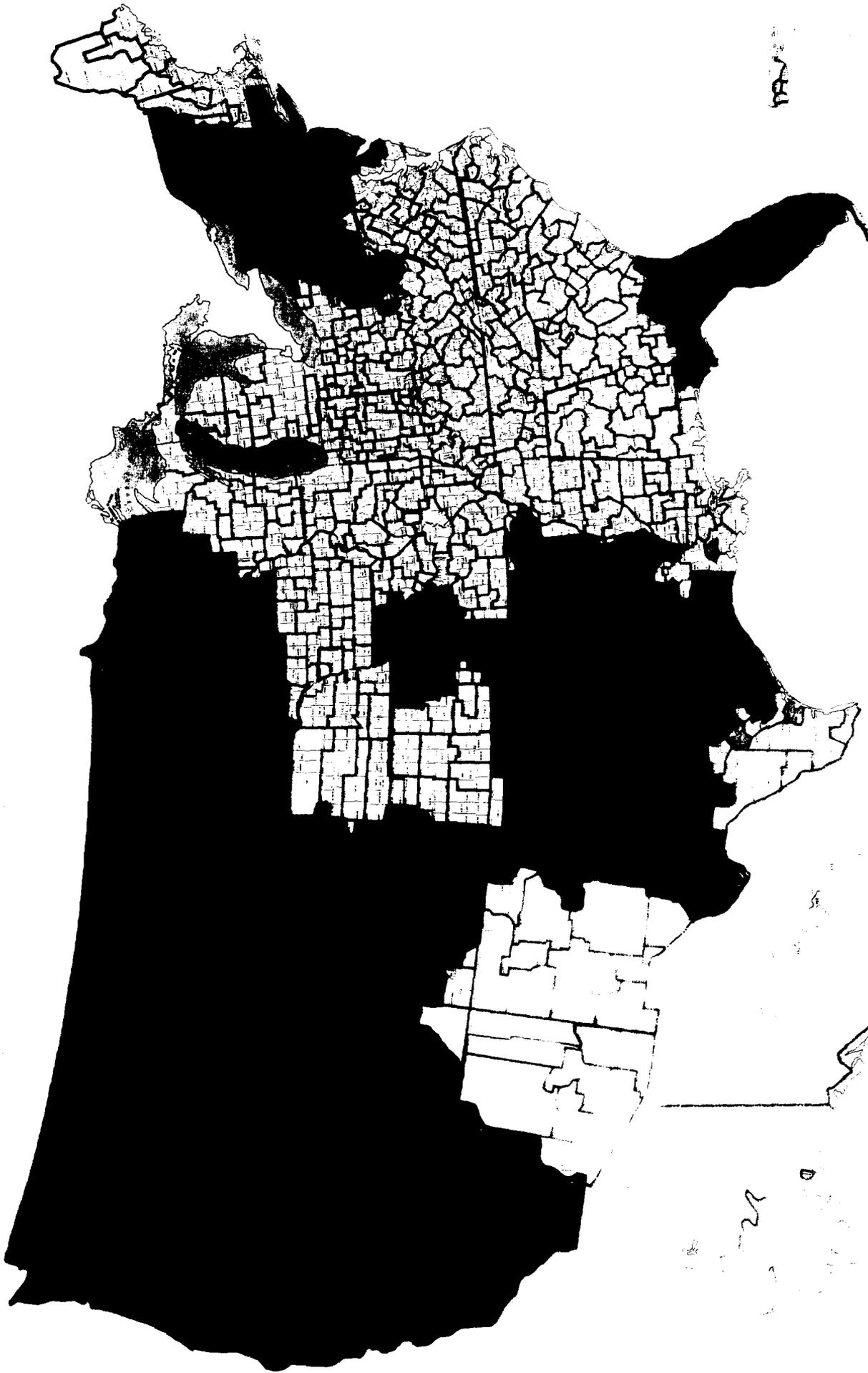
AMERITECH MOBILE

CTA



SOUTHWESTERN BELL MOBILE

CTSA



MCCAW CELLULAR

CT:8