EXHIBIT B

HISTORY OF MOBILE TELEPHONE SERVICE ("MTS") AND EVOLUTION OF WIRELESS TECHNOLOGY

This factual history summarizes the state of Mobile Telephone Service and its technology as it was in the 1970 era, in contrast to present day wireless cellular telephone services. This review also examines features in the 1970 era mobile and marine telephone technologies or service operations that would enable the use of those devices to be excluded from taxation while taxing commonly delivered wired service that served most residents and businesses at the time.

As the historical review provides below, the Mobile Telephone Service ("MTS") in existence when the Chula Vista Municipal Code tax ordinance was originally enacted in 1970 was quite different than today's wireless telephone service. Even a more advanced version, Improved Mobile Telephone Service ("IMTS"), at most, known only conceptually at that time, was still twelve years away from being installed in the San Diego/Chula Vista region. Cellular wireless technology was still fifteen years away from commercial launch in the Chula Vista area. Other than a few scientific people at a very small number of companies, few even knew of cellular technology back in 1970. The common understanding of "mobile telephone" service in the 1970-era was based upon the then-existing technology as described in more detail below.

1. Evolution of "Mobile Telephone Service" from 1970 era to Modern Wireless Phones

This section provides a timeline summarizing the chronology of events from the evolution of the MTS system through development of modern wireless phone service, and details the distinctions between the technology, operation and function of the two different systems.

1946

Bell Labs introduces the first commercial MTS (Mobile Telephone Service) system in St. Louis.

- This is the same generation of mobile telephone system that was later in limited use at the time the Chula Vista utility tax ordinance was enacted in 1970.

First MTS System press demonstration

1959: Reginald Blevins, the Postmaster General of the UK, inaugurates the first radio telephone service for motorists.[1]

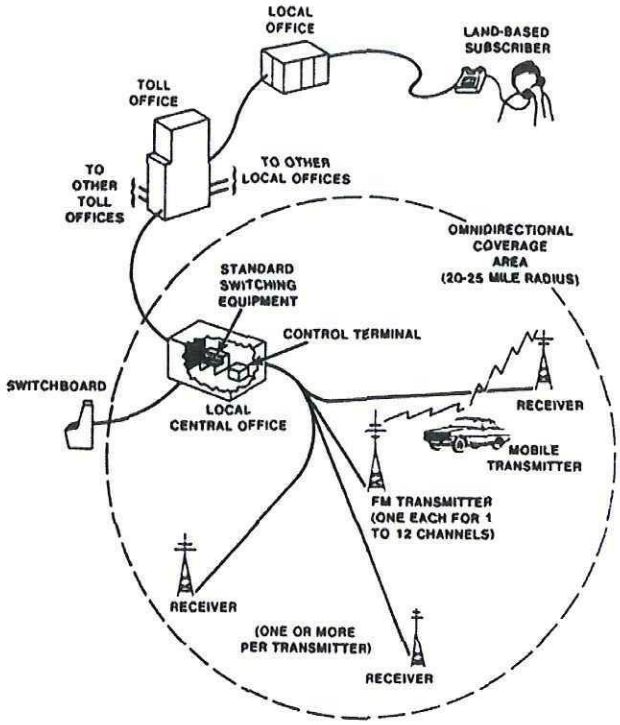


Figure 11-34. A manual, or MJ/MK, mobile telephone system.

Schematic Diagram of the MTS Network

Shows a call being connected between mobile and landline telephone callers

(Note: MTS requires a manual operator and switchboard to interconnect calls to the mobile telephone)

[1] http://content.time.com/time/photogallery/0,29307,1636836,00.html#ixzz2ee4qVA39 (last visited Sept. 2013)

1960

Bell Labs develops Improved Mobile Telephone Service (IMTS). IMTS offers operation on higher frequencies and has electronic switching, which does not require a human operator to interconnect calls. This would have been the most advanced telephone system then generally known.

Late 1960's to Early 1980's

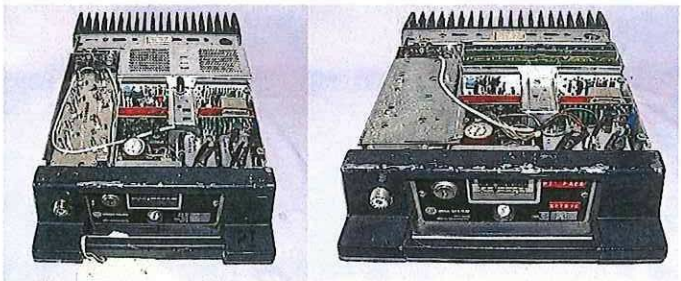
IMTS commercially rolls out in different metro markets across the US. Twelve new UHF frequency allocations are made by the FCC in addition to the 11 VHF and 9 "low" VHF frequency assignments that date back to the 1950's.

In the mid to late 1970's, the FCC conducts formal inquiry and rules from industry to enable large scale wireless telephone service through spectrum allocation procedures in the 800MHz band.

Typical later generation MTS mobile trunk mount and control head.

1982

San Diego and other California cities start to install IMTS and phase out MTS installations as new central switching infrastructure becomes available.

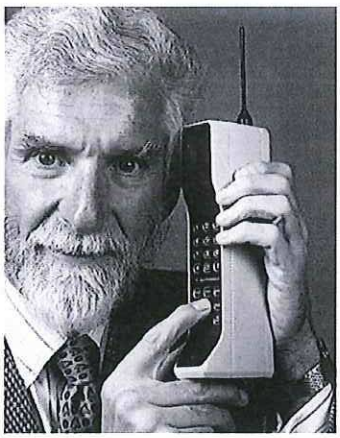


Late generation trunk-mount IMTS transceiver (c. 1975)

1983

The first cellular network is commercially launched in Chicago in October, 1983. The number of MTS and IMTS subscribers is approximately 150,000[2] for the entire US, which represents an adoption level of 1 per 1333 people in the US (based on the 1980 US population census). San Diego cellular "A and B side" licenses, awarded in 1981 to PacTel and GenCom Cellular,[3] prepare to rollout service in the San Diego region.

The first cellular portable phone device is announced by Motorola.



1983: Inventor Martin Cooper is credited with developing the first cell phone approved for commercial use.[4]

Motorola First Cellular Portable Device, the DynaTac in 1984
(Note: the unit was 32 ounces and sold for $3000)

1985

The first cellular service is launched in San Diego area. (It is believed that the City of Chula Vista was served by cellular shortly afterwards.) There are 340,213 cell phone subscribers in the United States,[5] well surpassing the peak number of United States MTS and IMTS mobile telephone subscribers, which decline as cellular increases service coverage nationally.

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[2] G.A. GARRARD, CELLULAR COMMUNICATIONS: WORLDWIDE MARKET DEVELOPMENT 19 (1997).
[3] *Id.* at 34.
[4] http://content.time.com/time/photogallery/0,29307,1636836,00.html#ixzz2ee2IUb2X (last visited Sept. 2013)
[5] CTIA, http://ctia.org/media/industry_info/index.cfm/AID/10388 (last visited Sept. 2013).

1992

The first auction of public airways is conducted, and raises the number of wireless competitors. As many as 7 blocks per metropolitan area are awarded using new spectrum blocks in the 1900MHz band by the FCC. Over $7B in auction proceeds are collected from competitive bidders.

1995

PacTel takes all remaining IMTS/MTS service in California off the air in May.[6]

Mid to Late 1990's

Cellular wireless service transitions from analog to higher capacity and performance digital technologies. Portable cellular devices surpass the number of mobile cellular devices used.

2000-2010

Cellular reaches most age ranges and socio-economic levels of society as prices fall and new services such as data and texting appear. United States cellular wireless penetration levels reach over 85% of population and households start to replace the telephone service from wireline to wireless delivery.

2011

FCC proposes National Broadband Plan, recommending 500MHz of spectrum be allocated for commercial use by 2020. In June, President Barack Obama signs a memorandum committing to freeing up 500 MHz of (primarily Federal) spectrum for the wireless industry.

2012

Nearly 20% of US households are exclusively served by wireless and this trend continues. Intensity of network coverage reaches virtual saturation including hard-to-reach indoor locations. It is estimated by a network equipment supplier, Cisco (citing industry research from Informa, 2011), that

[6] http://www.wb6nvh.com/MTSfiles/Carphone11.htm (last visited Sept. 2013).

75% of today's wireless cellular calls occur at locations inside homes or workplace offices, which was once the sole province of wired telephone.[7] This trend is expected to continue.

Currently

Because the FCC now mandates wireless devices be geographically locatable, all new wireless devices are equipped with mobile GPS allowing network based geo-location of subscribers -- a capability mobile and marine telephone did not have in 1970 when Chula Vista enacted the TUT ordinance.

2. Comparison of MTS to Modern Wireless Phones Based on Technical and Service Operations Differences, Use, Nature, Manner of Use, Capabilities

The Mobile Telephone System in existence in 1970 has many important distinctions from today's wireless cellular service in terms of use, form and function, mobility, price, availability, subscriber size, and usage.

MTS in 1970 was delivered to a tiny part of the population over a single tower infrastructure reaching a relatively long distance -- up to 50 miles radius from a high position tower, typically atop a mountain. Review of available records indicates that no MTS tower or infrastructure was located in Chula Vista. Since the principal population center was north in San Diego, a more likely site for the MTS tower transmitter would have been one serving the greater San Diego region.

Table I (beginning on the following page) summarizes the relevant differences between the 1970 mobile telephone service and present public wireless cellular services.

[7] Jim Tavares, *Femtocells: Natural Solution for Offload* at 4 (FemtoForum, FemtoZone 2011).

Table I

Technical and Service Operations Differences between 1970 era MTS, IMTS and Today's Cellular/Wireless Telephone Service

Relevant characteristics:	MTS and IMTS (in 1970. IMTS was not available in Chula Vista/San Diego until 1982)	Cellular Wireless Services (1985-present)
Service range	50 miles from tower[8]	0.1-5 miles from tower[9]
Number of subscribers served	1970: estimate between 50-100 based on MTS/IMTS US penetration[10]	Today: 220,000 residents, virtually 100% of businesses, roaming service visitors
Adoption as a percent of US population	0.075% (in 1982)	104%[11] (multiple units per person average)
Service roaming capability	Typically limited to local service area inscribed by tower range.[12]	National extent.
Interconnection to public switched network	1970 MTS required human operator; later IMTS was automatic	Automatic
Capacity	12-20 voice channels, customers often had to wait for available channel[13]	Virtually unlimited voice-call capacity, plus increases in capacity through small cell innovations and expected increases in spectrum allocation.
Usage/month (minutes of use)	50-100 estimated (based on average minute rate of .30-1.00 and average amount paid)	575[14]
Use venue	Only inside the vehicle	On-person, virtually any environment
Data service availability	None, limited to narrowband analog radio voice communication	Supports text, video, email, web surfing, video conferencing, VoIP
Service fee, average per user per month (based on US average price and usage)	$100-120[15]	$47[16]
Replacement for wireline telephone	None	Very high direct substitution, 31.6%[17] households in 2011 were "wireless only"
Infrastructure location within city limits	Non-existent	Most if not all cellular infrastructure used by citizens, businesses, roamers is located within city limits
Use of public thoroughfares, rights of way, and public buildings	Non-existent	Telecommunication infrastructure under or at surface of city rights of way. Certain tower or roof sites on public

[8] http://en.wikipedia.org/wiki/Improved_Mobile_Telephone_Service (last visited Sept. 2013).
[9] Based on Chula Vista's 50 square miles city, the average cell radius is .28 miles or 450 meters range.
[10] Chula Vista in 1970 had about 69,000 residents. US DEPT. OF COMMERCE, CENSUS BUREAU, US CENSUS (1970).
[11] CTIA Press Release, CTIA-The Wireless Association® Semi-Annual Survey Shows Significant Demand by Americans for Wireless Broadband (April 13, 2012).
[12] As an extraordinary measure this could be addressed if the called party informed expected callers to tell the operator that information. *See* J.H. GREEN, THE IRWIN HANDBOOK OF TELECOMMUNICATIONS 397 (1997).
[13] Blocking probabilities could be as high as 30-50%. *See* C.Y. LEE, MOBILE CELLULAR TELECOMMUNICATION 3 (2d ed. 1995).
[14] *See* fn 11, *supra.*
[15] R.L. Lagace, *Public mobile telephone - a comparative analysis of systems worldwide*, (IEEE vehicular technology conference record, 1976).
[16] *See* fn 11, *supra.*
[17] *See* fn 11, *supra.*

Relevant characteristics:	MTS and IMTS (in 1970. IMTS was not available in Chula Vista/San Diego until 1982)	Cellular Wireless Services (1985-present)
		buildings, schools or public land.
Network expansion	None once initial tower installed. Capacity was limited to number of radio channels available and had no frequency re-use within the MTS or IMTS technology. New customers had to wait in many cases, sometimes 2-3 years.	Instant activation and increasing service capacity based on additional spectrum mandated by FCC, Congress, NTIA, and the White House. Increasing capacity available with cellular technologies designed to re-use frequencies.
Ability to obtain position of caller at time of call?	None	Several methods including GPS
E911 available?	None	Available to all callers automatically, supports local public safety by serving each E911 caller's location within 50 meters, 67% of time.
Automated billing systems?	Evidence that in 1970 bills were manually typed and remitted at intervals less than once per month.[18]	Highly automated systems specialized to collect calls and bill subscribers, including on-line collection methods.
Number of cell towers, active base station elements within Chula Vista	NA, likely none in preference to placing in San Diego.	Presently there are about 200 cell sites with 1000-1200 active elements. Growing numbers as a function of data, voice usage and competitive quality.

[18] 1970-era "vintage mobile phone bills" at http://www.wb6nvh.com/MTSfiles/Carphone11.htm