

What can you do with this network? This is the big question to ask. In general, newer networks tend to be multi-purpose. But some networks have special requirements. Understanding the specific needs of each specific use on a network is beneficial for community planners who want to plan holistically for their community. Here are some kinds of networks that are built for special purposes.

NETWORK PURPOSE – What can you do with this network?	REQUIREMENTS – what structural elements are necessary to serve this purpose?	OWNERSHIP AND GOVERNANCE									REGULATED BY Who oversees this Network (local, state, Federal levels)	
		Government owned			Public Private Partnership	“Other” Public ownership		Provider owned (models below)				Ownerless
		City	County/Regional	National		University	Community	Lease to competitors	Anchor tenants	Advertising		
Health (Telehealth)	Symmetric	Y through subsidies but hard to leverage for other networking purposes			Y	N	N	N because bandwidth must remain avail.	Y hospital or health organization	N	N – uses proprietary spectrum	STAND – national mandate
Emergency Services	Ubiquity Very low latency	Y	Y	Y	Y – if negotiated	N	Maybe *	Y- if negotiated			N – uses proprietary spectrum	FCC
Government services (metering)	Ubiquity	Y	Y	Y	Y – in most cases	N	Maybe	Y if negotiated	Y	Y – if negotiated	N – uses proprietary spectrum	FCC
Education networking K-12	Abundant capacity, symmetric	Y	Y	Y	Y	Often encrypted	Difficult to apply education networks to community	Y if negotiated	Y if education institution acts as an “anchor tenant”	Y	N	
Education Post-secondary	Abundant capacity, symmetric	Unlikely	Y - State fiber networks	Y	Maybe	Y	N	N	Y if education institution acts as an “anchor tenant”	N	N	CIOs of educational institutions

* Community based communications have proven to be important complimentary services in disaster situations. For example, community radio, HAM radio operators, and volunteer built internet and voice over internet nodes proved to be important during and after Hurricane Katrina.

Some of the most interesting networks today are developing around low cost communication over the airwaves. Developers are working on applications that are meant to enhance communication at the neighborhood and city wide level. This is an area that has lacked benefit from the first generation of computer enhanced networks.

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Local Information Sharing (WiFi as community media)	Abundant Capacity; Ubiquity	Y	Y	Y	Y	Y	Y	Y if negotiated		Maybe – but advertising could replace community content	Y- using meshed network	FCC, Congress: CALEA, DMCA
Voice Communication (via WiFi)	Ubiquity, Signal Strength, Abundant capacity	Maybe	?	?	Maybe	Y – most Univ. have high-capacity networks	Maybe	Maybe, if government negotiates for a high-capacity network. Many Muni networks do not have enough coverage or capacity to handle voice traffic. Telephone networks also provide voice.			Y using Asterix open-source software	FCC, Congress: CALEA, State laws
Internet Access via WiFi	Ubiquity, Signal strength, Network Capacity	Y	Y	Y	Y	Y – but primarily for on-campus	Y	Y- prices could be high	Y – if city is anchor tenants can specify low prices for digital divide areas	Y	Y – if backhaul bandwidth is donated	FCC, Congress: CALEA, DMCA; State laws

Old fashioned networks such as radio and TV use old but reliable technologies that are closely associated with their single purpose use. Radio and TV broadcasters use licensed radio spectrum set aside for its use. Improvements in broadcasting technology have freed up a large amount of radio spectrum in the radio and TV band that can now be put to other uses. Future uses in the TV bands could include broadband service to under-served areas.

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Radio Broadcast	Ubiquity	N	N	Not in US	Private enterprise utilizing public resource (the airwaves)	Y	Y – community radio	Not allowed at present	N/A	Y – commercial radio	N	FCC
Television Broadcast	Ubiquity*	N	N	Not in US	utilizing public resource (the airwaves)	Y – some low power stations	Y – some low power stations	Not allowed at present	N/A	Y – commercial TV networks	N	FCC