Chapter XI
Utility & Public Service

"It's not public works. It's not water, sewage or utilities. It's the soul of our life."

~Don Powell

Chapter XI
Utility & Public Service

This chapter of the Master Plan contains information about both potable and waste water systems, energy, alternative energy and communications.

11.1 WATER SYSTEMS

Water Supply Systems

Tamworth has no town wide water system. The majority of homeowners' needs are met with individual wells. However, the NH Department of Environmental Services lists seven community systems that it monitors as well as three non-transient systems and 10 transient systems. Any future land use plan that includes dense villages will require a community water system solution.

Name	Population Served	Connections	Operator
Chocorua Meadows – subdivision	50	20	Iron Mountain Water Co.
Chocorua Woods – apartments	16	15	Lakes Region Water Co.
Remick Acres – apartments	60	24	Secondwind Water
Tamworth Mobile Home Park – manufactured homes	75	30	Lakes Region Water Co.
Tamworth Pines Coop – manufactured homes	138	55	Tamworth Pines Coop
Tamworth Water Works serves approximately 2/3 of the Tamworth Village	265	60	Lakes Region Water Co.
White Lake Estates – subdivision	250	100	FX Lyons Inc

Table 11.1 Community Water Systems

Tamworth Water Works

Since the early 1900s a private water system has served a limited area of Tamworth Village homes and businesses along the Chinook Trail, Main Street and Route 113. Tamworth Water Works has been owned and operated by Lakes Region Water Co. (LRWC) since 1995 and regulated by the NH Public Utilities Commission. The current system serves 60 households, the Townhouse, Town Office building, Barnstormers Theater, Tamworth Inn and several businesses. It is felt the current system is near capacity because of the storage tank's size but since it taps into a groundwater recharge area (aquifer), it could be expanded when necessary.

Two springs off Route 113A act as the water source. A small well house feeds into a larger 30' x 30' well house, with both wells' cement-lined tanks enclosed in a wooden structure. Water is piped through a 1" pipe to a pump house close to Route 113A where it flows to a junction box and through plastic or black iron feeder lines to individual customers. Pressure in the system varies from 70 to 80 lb. between 6 A.M. and 10 P.M., when the pump is functioning. During the night the water is gravity fed, with an average 20 lb. of pressure.

The owner is responsible for all service and repairs to the system excluding the private connector lines. Each customer has a shut-off valve to his own system.

LRWC started improving the system by installing a new well and laying a new water main on 113A. This necessitated an increase in the rates which were granted by the PUC in December 1998. Since Tamworth has no meters it is difficult to work out a fair charge for each customer. LRWC also soon realized that in order to bring the system up to legal standards a great deal more work needed to be done which would raise the rates even higher. To do this work, and forestall some of the rate increase, they applied for and received a Community Development Block Grant of $350,000.

Non-Transient Systems

The non-transient systems are at the Kenneth A. Brett School, the Bearcamp Children's Center and the Community School.

Transient Systems

The Transient Systems are at the Chequers Villa, Chocorua Camping Village, Dunkin Donuts, Foothills Family Campground, Market in the Pines, Rosie's Restaurant, Samantha's Inn, Songbird Chinese Restaurant, Tamworth Camping Area and White Lake State Park.

"There is no small pleasure in pure water."
~Ovid

Wastewater Systems

The majority of Tamworth residents have their own septic systems, a type of on-site sewage facility, since there is no town wide wastewater facility. The exception is a small part of Tamworth Village that is served by the Tamworth Village Septic System. Any future land use plan that includes high density development will require a community septic system solution.

Tamworth Village Septic System

The Tamworth Village Septic System is a private system run by the Tamworth Village Association. Owners of property connected to the system are permanent members of the association. Any person or entity desiring to participate in the affairs of the association may join as a contributing member; all meetings are open to the public. The system is a gravity-fed septic system that services Tamworth Village from the Congregational Church to the Remick Foundation property on Route 113 east of the Four Corners where the leaching beds are located. Pumps move the sewage from tanks behind The Other Store through a pipe underneath the Swift River. After the sewage is pumped under the river, the solids are separated and only the effluent is pumped to the leaching beds. Everyone who was eligible to be part of the system was connected except the Remick Country Doctor and Farm Museum, the Barnstormers Theatre, the house at 15 Main Street and the Unitarian Universalist Fellowship Church.

The system was designed to accommodate only the existing buildings in the village. It is currently near full capacity and no more members can be accepted. In order to encourage people to connect to the system, the TVA paid for the initial hookups. Later, members paid to be connected. Without water meters, the TVA uses State of NH figures to calculate water use: for private homes, by the number of bedrooms, and for all other buildings by their use.

The cost of the original system was approximately $570,700, and was funded by personal and corporate donations, as well as by federal grants and grants received during the fundraising for the TVA total project. The septic system became operational in 2001. There are 26 connections of which the town has two.

11.2 ENERGY SYSTEMS

Public Service of New Hampshire

Tamworth receives most of its electric service from Public Service of New Hampshire. PSNH is the largest electric utility in the state serving more than 474,000 homes and businesses. As a wholly-owned subsidiary of Northeast Utilities based in Connecticut, it is an integral part of New England's largest electric system. It has three fossil fuel-fired generating plants and nine hydroelectric facilities jointly capable of generating more than 1,110 megawatts of electricity.

New Hampshire Electric Cooperative

NHEC is a member-owned electricity distributor that provides electricity to a small portion of Tamworth along our border with the Town of Sandwich.

Pinetree Power

Pinetree Power is a waste wood power facility that meets the needs of approximately 15,000 households by selling the electricity it produces to PSNH. The plant uses wood from trees that are unsuitable for lumber or pulp, as well as residue and trim ends from local sawmills and tops of limbs and trees. As the chips burn, they heat water in tubes lining the boiler. This produces steam which drives the turbine-generator to produce electricity. An electrostatic precipitator keeps emissions within state standards. This power plant operates with no effluent discharge into rivers, lakes or ground water. Because wood contains little sulfur, the plant emits virtually no sulfur dioxide. Under a program regulated by the NH Bureau of Public Health and the USDA, the wood ash is available free to farmers with 10 or more usable acres to be used as an environmentally sound, nutrient-rich soil supplement. Pinetree is in the process of building an additional pollution control device that is required by the DES. A giant catalytic converter about the size of three tractor-trailers standing on end will be placed in back of the plant. Pinetree is one of the largest taxpayers in Tamworth. Their Payment In Lieu of Taxes with the town expired in 2007 and they will now be taxed as a utility. Utilities do not pay school taxes. This means that their payments to the Town be reduced from about $220,000 a year to around $20,000 a year. The exact amount will be decided by the Public Service Commission.

Home Heating

The following chart from the 2000 Census Survey shows the various methods of home heating in Tamworth.

Occupied housing units	**1,099**	**Percent**
Utility gas	2	0.2
Bottled, tank, or LP gas	181	16.5
Electricity	57	5.2
Fuel oil, kerosene, etc	678	61.7
Coal or coke	2	0.2
Wood	179	16.3
Solar energy	0	0
Other fuel	0	0
No fuel used	0	0

Table 11.2 Source of Heat

Alternative Energy

On questions D2 and D3 of the Natural Resources Section of the Tamworth 2007 Master Plan Survey 91.3% of respondents supported energy conservation and 81.9% said that the Town should promote alternative energy. There are already initiatives in Tamworth on both issues, including Sustainable Tamworth, the Farmers' Market, and the Sandwich-Tamworth-Moultonborough Area Renewable Energy Initiative. The Tamworth Family Medicine facility uses a geothermal system for heat and air conditioning, and a new Town Energy Committee has been granted approval by the Board of Selectmen to start assessing the energy efficiency of public buildings. There are also private citizens who on their own are exploring new conservation and sustainable methods for the energy that they need for their homes. Some residents depend on wood totally for heat and hot water. A new trend is outdoor wood burning furnaces. Wood is also used as a backup to more traditional systems, with wood stoves and Finnish furnaces. One home uses photovoltaic panels to collect energy for the home's electrical needs. Solar panels for hot water and passive solar such as sunrooms are also used. Residents are also composting to reduce the waste stream, changing to more efficient light bulbs, buying hybrid cars, and generally trying to be more aware of their carbon footprint.

Energy Committee

In accordance with the voting results of the March 17, 2007 Town Meeting, the Tamworth Board of Selectmen established a voluntary Energy Committee which meets monthly, reports to the Selectmen regularly, and observes New Hampshire state laws regarding municipal boards. This is a standing study committee. It is understood that the Energy

Committee requires the full support of the Board of Selectmen in order to access municipal energy consumption details, and to encourage cooperation from department heads and municipal boards. Some minimal administrative expenses will be necessary.

The mission of this voluntary committee is to:

Investigate the use of energy sources in the town.
Recommend local steps to save energy and reduce emissions.
Promote the use of renewable energy in public buildings, businesses, and homes.
Reach out to the community through education.
Explore the creation of a town energy plan.

Some likely energy committee activities are:

Identifying and supporting existing conservation efforts in town.
Assessing municipal consumption to determine possible savings.
Identifying federal, state, and non-governmental programs which provide funding to support conservation and efficiency upgrades.
Reviewing existing projects in NH that follow LEED (Leadership in Energy & Environmental Design) criteria established by the U.S. Green Building Council.
Promoting community education in energy efficiency.
Making recommendations to the Planning Board to comply with RSA 674:1, 674:2, and 674:3.

At present, the committee consists of town residents:
Donna Veilleux, Chair & Conservation Commission Representative, with Catherine Mersfelder as Co-Chair; Peg Custer, Secretary, and Lee Custer, Sam Sayers, and Cimbria Badenhausen.

"All Power to the People."
~Huey P. Newton

Tamworth Family Medicine Geothermal System

The new Tamworth Family Medicine built by Huggins Hospital on Route 16 in Tamworth is a "green building." It uses a new type of fluorescent lights, automatic light switches and a geothermal heating and cooling system which saves on both electricity and oil consumption. Water is pumped into the system from a 600 foot well. In winter the system extracts the heat from the water loop through the coaxial heat exchanger and compresses it to a higher temperature. This heat is then transferred into the air through the air coil and used to heat the building space. In summer the system extracts heat from the air and injects it into the water loop through the coaxial refrigerant-to-water heat exchanger. In both cases the water is then returned to the well. The system uses no oil, only electricity. According to information from PSNH, this building will save an estimated $1,404 a year on energy, see a reduced oil consumption of 968 gallons per year, reduce CO_2, (a "greenhouse" gas) by 15,027 pounds per year and reduce SO_2 and NO_x, (causes of acid rain) by 51 pounds per year.

Sandwich-Tamworth-Moultonborough Area Renewable Energy Initiative

Citizens from Sandwich and Tamworth are forming a group to help residents plan for their energy future. It is based on the model of the Plymouth Area Renewal Energy Initiative. The initiative encourages energy conservation, energy efficiency practices and promotes renewable energy in homes, businesses and public buildings. The goals will be achieved by education, working with suppliers to reduce cost, reducing cost of installations by using a neighbor-to-neighbor approach, and helping members to practice energy conservation by using an energy assessment and action planning process. The initiative right now is concentrating on installing solar panels for the heating of water. Future initiatives may expand the solar to include all energy needs, as well as other renewable/alternative systems such as wind and geothermal.

11.3 COMMUNICATION SYSTEMS

Telephone

FairPoint

In April, 2008, FairPoint merged with Verizon in the states of Maine, Vermont and New Hampshire, and in so doing, absorbed all of Verizon's access lines. FairPoint is now the telephone service provider and has a total of approximately 1,608,000 access lines, approximately 247,000 DSL customers, and approximately 712,000 long distance customers (as of December 31, 2006). This merger not only required the approval of the Public Utilities Commission/Public Services Boards of each state, but also the approval of the Federal Communications Commission.

Cell Phone

Tamworth Town Meeting passed a Personal Wireless Service Facilities Ordinance which became effective on March 12, 2002. The ordinance establishes a tower fall zone; asks for lighted tower design to minimize environmental hazards; ensures minimal visual impact; and requires tower companies to post bonds for the removal of abandoned towers. According to the Selectmen's office there are currently four cell towers in Tamworth, two on Route 16 near the Tamworth Market, one in western Tamworth on Pine Hill Road at the Ambrose gravel pit and one at the State Police facility. Service is provided by several different companies including Verizon, Sprint, and US Cellular.

Time Warner

Where there is service from Time Warner, cable customers are also provided with digital phone service. However, cable service in Tamworth is limited.

Internet

There were two questions on the community survey concerning the Internet service in Tamworth. In Community Facilities, Resources and Services, question R, 72.8% percent of those responding said that Internet service in Town was 'fair to poor' and 44.6% responded that the Town should spend more money on the Internet. Question F in Economic Development asked, **"**Should the town support high-speed Internet access throughout Tamworth?" Of those responding to this question, 84.9 % said that the town should support high speed Internet access throughout Tamworth.

High speed (broadband) service is provided by Road Runner from Time Warner, Big Blue from NHEC and Hughes Net Satellite but since service areas are limited, most residents still rely on dial up connections. Both Cook Memorial Library and Chocorua Library offer high

speed service and 24 hour wireless signaling. Fairpoint said prior to their merger with Verizon that if they were successful in their acquisition, that they would increase "overall broadband availability significantly from current levels in the northern New England region within the first 18 months after the completion of the merger."

In addition, there is a plan in the very beginning stages for an independent group to provide wireless service to the entire town at little or no cost.

> The more elaborate our means of communication, the less we communicate.
>
> *~Joseph Priestly*

11.4 RECOMMENDATIONS

Any future Land Use Planning/Zoning Ordinance should include incentives for building "green."

The Town should use all methods at its disposal to see that high speed/broadband internet service is available to all residences and businesses.

The Board of Selectmen should work with the Village Association and the Lakes Region Water Co. to see that meters are installed for customers of the Tamworth Water Company and the Village Septic Association.