

8 | **Community Facilities and Services**

8 | A **Vision & Purpose**

The City of Lebanon should continue to provide high quality community facilities and services. The City should also continue to maintain and improve community facilities; this includes the reuse of facilities and development of new facilities within the downtown areas to maintain more of the outlying open areas.

Since both the quality and cost of community facilities and services are impacted by the City's development policies, they are an integral part of the long-range planning program. The City should coordinate land use and development with the capacity and capability of facilities and services to maximize their efficiency and effectiveness in a manner consistent with the Land Use Chapter of this Master Plan.

Participation in ongoing regional planning and contribution to regional efforts when possible and appropriate is of key importance. In order to better integrate community facilities, the City should coordinate with the Lebanon School Board to assure management of major capital expenses and bond issues for City residents.

8 | B **Issues & Priorities**

8 | B-1 **Demand for Services**

The City provides a variety of facilities and services for its citizens and the region. Each of these services and the City's overall infrastructure is affected by the amount of employment, housing, medical, retail, and tourism activities that bring people to Lebanon to live, work, shop or visit. Demand for these services has increased from expansion of employment and residential development in the City and Upper Valley.

As Lebanon continues to grow, demand for public services and infrastructure will continue to increase, straining the City budget and, ultimately, the ability of residents to afford living here. The cost of providing the facilities and services that will be demanded as the City continues to grow can be controlled through:

- Adopting land use policies that direct development toward existing built up areas where City facilities and services are already available.
- Improving the efficiency of City facilities and services.
- Reducing the per capita demand on City facilities and services.
- Keeping City facilities and infrastructure in good condition to avoid costly repairs resulting from deferred maintenance.
- Continued long-range planning and capital budgeting for upgrading and expanding City facilities and services.

key points | vision & purpose

- Provide high quality community facilities and services.
- Manage growth so that new development does not create a demand for community facilities and services that would place an excessive burden on City taxpayers.

key points | issues & priorities

- Meet demand for community facilities and services as the City continues to grow without unduly burdening taxpayers.
- Increase regional coordination and sharing of resources in the provision of community facilities and services.

key points | existing conditions & trends

- Protecting public health, safety and welfare is a basic role of government, and residents also look to City government to provide facilities and services that enrich quality of life.
- Lebanon has a paid fire department, which also provides emergency medical services, and a police department. Calls to both departments have been increasing in recent years.
- Lebanon does not directly provide electric or telecommunications services, but the City has a role in establishing policies related to energy and telecommunications infrastructure.
- Lebanon provides municipal water and wastewater service in parts of the City. The City's wastewater collection system and treatment plant are being upgraded and the treatment plant is expected to reach capacity by 2029.
- Lebanon owns and operates a lined landfill that accepts waste from the City and other communities in New Hampshire and Vermont. The City is currently seeking a permit to expand the landfill, which would extend its life from 2015 to 2027.
- Lebanon owns a variety of buildings and lands including the City Hall/Opera House, the Public Works facility and cemeteries.
- Lebanon has a K-12 school system that includes neighborhood elementary schools, a middle school and a high school.



8|B-2 Regional Coordination

There are many opportunities for improved coordination with neighboring municipalities, the school district, the state, and other partners in providing community facilities and services. Sharing resources is becoming more important as all levels of government are facing budgetary constraints. Greater regional coordination could also result in greater access to community facilities and services for residents throughout the Upper Valley.

8|C Existing Conditions & Trends

Protecting public health, safety and welfare is a basic role of government. The City fulfills that role through the provision of community services like police, fire, ambulance, road maintenance, code enforcement, and disaster response. Government and private utilities work together to maintain and improve the infrastructure that provides the basic necessities of modern life - drinking water, sanitation, electric power and communications. Residents also look to City government to directly provide or contribute funding for services that enrich quality of life such as parks and recreation programs, educational opportunities, library, arts and cultural amenities, and social and human services.

8|C-1 Emergency Services

8|C-1a **Fire Department.** The Fire Department responds to ambulance, rescue, hazardous materials, fire calls, vehicle accidents. The department is also involved with emergency management, disaster preparedness, pandemic planning and prevention services. In 2010, the department responded to 3,216 calls, 56% of which were for emergency medical services and 10% of which were outside the City. The number of calls increased 55% during the 2000s.

In 2009, the department was composed of 24 career firefighters, 2 fire inspectors, a fire chief and an assistant fire chief, 12 on-call firefighters and 11 support staff. Seventeen of the department's responders are certified EMTs (emergency medical technicians). The department maintains a minimum of five firefighters on duty at all times.

The department has a fleet of 10 emergency vehicles and 5 support vehicles.

There are three fire stations in the City:

- Station #1 on Park Street in downtown Lebanon, which is in need of repair and general upgrades.
- Station #2 on Main Street in West Lebanon, which is in need of repair and general upgrades.
- Station #3 on Route 4 north of Mascoma Lake, which is in need of water and septic upgrades, and additional facilities for personnel.

In past years, the Fire Department's on-duty response personnel was able to provide additional services such as: in-service inspections, pre-permitting plan review, municipal fire alarm, building repairs, training, etc. The department can no longer provide many of those services because of the increase in emergency calls, and the

change in personnel and equipment. With the sophistication of emergency apparatus, on-duty personnel can no longer undertake major repair work on the transmissions, engines, pumps and hydraulic systems.

The City of Lebanon has an ISO (Insurance Service Office) rating of 4 for areas served by water hydrants and 9 for areas without hydrant service based on the capabilities of the City's Fire Department and infrastructure. Insurance companies use the City's ISO ratings to set fire insurance premiums with a rating of 1 representing the highest level and 10 indicating the lowest level of fire protection. The City's recent ISO assessment included highlighting deficiencies in several areas primarily related to the number of available personnel.

8|C-1b **Police Department.** The Lebanon Police Station is located on Poverty Lane. The station is centrally located as far as operations are concerned. The Police Department feels the building is sufficient to meet the department's needs.

The Lebanon Police Department had 35 full-time sworn officers and 2 part-time officers on the force as of 2009. It maintains 24 hour-per-day dispatching with a communications staff of eight full-time and two part-time people. Because of Lebanon's role as a regional economic center, the police force provides many services unrelated to residential uses and must be capable of meeting a wider range of non-resident demands for a much larger daytime population.

The Lebanon Police Department continues its efforts as a community-based department, with a proactive, person-to-person emphasis on crime prevention, drug and alcohol education, and community activity. The Department's efforts are especially targeted to young people, including the "Student Resource Officer" program, in which the police maintain a presence in the City's schools. This approach leads to a greater familiarity between police and residents, resulting in a greater feeling of safety and sense of community.

8|C-2 Electric Utilities & Telecommunications

8|C-2a **Electric Service.** National Grid, formerly Granite State Electric, provides electrical service in the City of Lebanon. In 1998, National Grid opened up to electric competition, but to date there have been few competitors.

Three-phase power is available at the City's industrial and commercial centers and major arteries and can be made available to any new areas once the demand is established. The running of new lines is performed for a fee charged to the new user. National Grid currently offers conservation incentive programs for residential and commercial/ industrial customers.

8|C-2b **Local Power Generation.** The Wilder Dam, at maximum capacity, can generate 41,000 kilowatts of power or 41 megawatts. The dam's current license expires in 2018; re-license procedures are likely to start in 2012. During the process of re-licensing the dam there is opportunity for the public to comment on what is desired for a benefit to the community to offset the dam impacts. In addition to the Wilder Dam, there are two dams on the Mascoma River producing power. The Rivermill Hydro Dam owned by Rivermill Hydroelectric Inc. and the Glen Road Dam owned by Enel North America Inc.

The potential for expanding the region's hydropower capacity is limited because the majority of environmentally and economically feasible sites have already been developed or licensed. The greatest potential for ad-



wilder dam

ditional hydropower is likely to be found in improving generating efficiency at existing plants or in bringing nonproductive or under-productive existing dams online. More study is needed to identify and evaluate options.

8|C-2c **Communications.** The maintenance of a modern and accessible communications network is considered essential to the public welfare. Telecommunications technologies are rapidly changing, and must be evaluated on an ongoing basis. Police and fire departments and emergency medical services all rely on communication facilities to provide essential services. Technology and telecommunications can also improve the functions of City government and the quality of its service to residents. Access to information is critical to maintaining a sustainable economic climate that keeps up with current technology and anticipates technological trends.

8|C-2d **Telephone Service.** Fairpoint Communications provides land-line phone service in Lebanon.

8|C-2e **Cable Television.** In New Hampshire, local municipalities can regulate the cable television industry. The City of Lebanon is currently working on negotiating a franchise agreement with Comcast as the sole provider. Taking part in the regional public access channel for local programming is an important consideration for the City, as it is another strategy to help keep citizens better informed about City government and activities and helping in providing transparency in government. High-speed internet access over cable lines would improve the business climate and also provide cable users with video quality on the internet.

8|C-2f **Wireless Communications Towers.** During the 2000s, consumer adoption of cell phones and the extension of cell phone service from major cities to smaller markets and rural areas has resulted in the proliferation of wireless communications infrastructure to meet growing demand for this rapidly evolving technology. Wireless technologies have expanded beyond voice service, to internet, e-mail and streaming video. As wireless service continue to develop, additional and/or upgraded infrastructure will be needed to expand capacity or improve service quality.

The major planning issue in wireless communications technology today is the siting and construction of new communication towers and supporting network infrastructure including power lines, access corridors and support buildings. With the City of Lebanon's hilly topography, towers and related facilities need to be located on the higher elevation points in order to provide the broadest service area coverage. These structures and their supporting infrastructure can negatively impact mountaintops and ridge lines that are so important to the City's ecological richness and the scenic character of the rural areas of the City.

8|C-2g **Satellite.** Satellite services generally complement, rather than compete with, terrestrial services. According to the FCC, there doesn't seem to be a trend towards satellites replacing towers, especially in urban areas. In areas where it is expensive to run cable or put up facilities, satellites will better compete with terrestrial services.

8|C-3 Water and Wastewater Infrastructure

8|C-3a **Water Source.** The City's public water supply is the Mascoma River with the intake for the potable water treatment plant approximately 3.5 miles below the outlet to Mascoma Lake and three miles above the Mascoma River's confluence with the Connecticut River.

Lebanon's surface water comes from the greater Mascoma River watershed, which encompasses 195 square miles and includes Mascoma Lake, Goose Pond and Crystal Lake. Based on U.S. Geological Service data, the

usable capacity of these reservoirs is 7.93 billion gallons. The flow of the Mascoma River is primarily controlled by the dam at Mascoma Lake operated by the New Hampshire Department of Environmental Services (NHDES).

Minimum water levels are being established to provide adequate habitat for aquatic species. The amount of water that the City of Lebanon withdraws from the river for its potable water supply is approximately 3.1 cubic feet per second. Given that the river's typical summer day flow is 40 cubic feet per second, there is sufficient supply for the City's current and future potable water demand. A period of drought, however, would result in less water in the river and could, if sustained, lead to a water shortage and competition for water between multiple uses. As such, a drought management policy should be developed.

A 2001 study examined potential groundwater sources as a supplemental potable water supply for the City. A supplemental water source would not only provide the City with a back up in the event the Mascoma River source is contaminated, but additionally provide the groundwater source that could potentially meet future demands, possibly reducing the need for expensive upgrades to the filtration plant to support increased capacity. With the examination of potential glacial and bedrock aquifers as potable water sources, there appeared to be only one well site within Lebanon that is potentially capable of producing one million gallons per day. The site is an aquifer adjacent to the eastern bank of the Connecticut River, just upstream of the City's wastewater treatment facility. Although the site appears to have excellent potential to serve as a well supply, potential contamination and the ability to pump water from this location to higher elevation areas of the City are concerns.

8 | C-3b **Water Source Protection.** A protection program for the portion of the Mascoma River's 195 square mile watershed that drains directly to the plant intake has historically been identified as a high priority for the City. In the event of the river being contaminated, the City could be temporarily without water, unless alternative potable water supply resources, such as reserves in tanks or improved interconnections with Hanover and/or Hartford, are made available. The Department of Public Works currently engages in protection measures in close proximity to the source water intake but at a limited scope and scale as administered through a chemical monitoring waiver granted by NHDES Drinking Water and Groundwater Bureau.

In 2011 with the support of a grant from the New Hampshire Department of Environmental Services, the Upper Valley Lake Sunapee Regional Planning Commission (UVLSPRC) began assisting the City in initiating the development of a source water protection program for the portion of the Mascoma watershed that drains directly to the outtake. The effort includes assessing the range of options for protection, including education and regulatory measures, and includes the concept of risk analysis relative to direct contamination incidents, such as hazardous chemical spills from adjacent roadways. This initial effort was intended to conclude in late 2011, providing recommendations for further advancement of the planning effort.

8 | C-3c **Water Treatment and Distribution.** The City of Lebanon water distribution system consists of:

- Approximately 83 miles of water mains up to 16 inches in diameter.
- 4 water storage tanks (Farnum Hill, Craft's Hill, Prospect Hill, and at the end of Lahaye Drive near DHMC).
- 2 pumping stations.
- 3 pressure reducing valve stations.

- The plant intake and dam on the Mascoma River.
- The water treatment facility located on Pumping Station Road.

The system provides service throughout Lebanon and West Lebanon. The City's topography necessitates that the service area be divided into four separate zones to maintain desirable pressures. The system also includes two interconnections with the Town of Hanover and one interconnection with the Town of Hartford. All three interconnections require manual operation in the case of an emergency and only allow water to flow due directionally away from Lebanon to the neighboring communities due to system hydraulic pressures unless pumped. The City's water quality generally meets or exceeds current regulatory standards.

2010 water data show that City withdraws an average of 1.64 million gallons daily (maximum of 2.5 million gallons) and approximately 600 million gallons annually to meet the demands of the system users. Potable water usage is split between about 42% residential, 42% commercial, 13% industrial, and 3% municipal.

The treatment plant's hydraulic capacity is estimated to be an average daily demand of 2.5 million gallons and a maximum daily demand of 3.5 million gallons. The 1998 Facilities Plan for the Lebanon Water Distribution System projected that demand would reach the plant's capacity by 2026. The 2009 Water Business Plan highlights that recent water usage trends have changed, suggesting that the plant may not reach full capacity as quickly as previously estimated.

The 2008 Facilities Master Plan identified \$1.5 million in capital projects for the water treatment facility. The 2009 Water Business plan highlights that the City does not have a current comprehensive plan that includes projections for water infrastructure needs, and highlights the value of having such.



wastewater treatment facility

8|C-3d **Wastewater.** Lebanon operates a wastewater treatment system that serves a portion of the City and parts of the neighboring Town of Enfield. The area of Lebanon near the Town of Hanover is connected to Hanover's wastewater treatment system, which has a treatment plant located near the confluence of Mink Brook and the Connecticut River. Approximately 17% of Lebanon's wastewater went to the Hanover Wastewater Treatment Plant in 2010, including the flows from DHMC and Centerra Business Park.

Lebanon's wastewater treatment facility is located in West Lebanon near the confluence of the Connecticut and Mascoma Rivers. It provides secondary treatment and discharges into the Connecticut River. The treatment facility employs the conventional activated sludge process, and has a design capacity of 3.18 million gallons per day.

The average flow from Lebanon and Enfield during the 2000s was 1.86 million gallons per day. In 2010, the annual total of 617 million gallons of treated wastewater represented an 8% decrease from 2009. Based on the 2007 20-Year Wastewater Treatment Facility Flow Projections report, wastewater flows will approach 2.5 million gallons per day by 2030 if Hanover continues to accept wastewater from its current service area in Lebanon, and would exceed 3.0 million gallons per day if Hanover does not. With its design capacity of 3.18 million gallons per day, the treatment facility is expected to reach capacity sometime after 2026.

The physical infrastructure of the plant is currently 35 years old with a typical lifespan of 50 years. In 2007, a needs assessment was completed, which recommended a \$11.2 million, multi-year wastewater treatment

facility improvement project intended to maintain existing capacity and permitted flow as projected to 2030. Implementation of the multi-year improvement project is expected to begin in 2012 and be completed in 2014.

The wastewater treatment system also needs continued upgrades to its collection infrastructure. The 2007 20-Year Wastewater Treatment Facility Flow Projections report found that nearly 47% of the flows reaching the treatment plant were a result of groundwater and stormwater entering into the system. Groundwater infiltrates into sanitary sewers through broken, cracked or improperly connected pipes. Stormwater enters through direct connections of roof drains and sump pumps, and through combined sewer lines. Of the estimated 58 miles of public sewer lines in Lebanon, an estimated 27 miles are combined sewer lines that accept both wastewater and stormwater flows.

The City's combined sewer lines create a major operating challenge for the wastewater treatment plant during periods of rainfall and snow melt when a lot of stormwater enters the wastewater system. There are seven combined sewer overflow outlets in the City that discharge untreated wastewater when the flows into the system exceed the plant's capacity. Five of these outlets are in the Water Street/Church Street/Spring Street neighborhood. The releases of raw sewage from the outlets in that area were identified as contributing significantly to the degradation of water quality in the Connecticut River, Great Brook and the Mascoma River. In 2008, untreated wastewater was released 61 times from the combined sewer overflow outlets.

In 2000, the EPA issued an administrative order requiring the City to separate sewer and storm water lines and eliminate discharges containing sewage to surface waters. In 2009, the City and the EPA negotiated a revision to the original mandate, modifying the original completion date of 2012, to a revised completion date of no later than 2020. From 2000 through 2011, the City appropriated more than \$34 million to this effort. Approximately \$17 million is anticipated to be appropriated between 2012-2018, bringing the estimated total cost of separating the City's stormwater and wastewater systems to \$51 million.

8 | C-4

Solid Waste

The City of Lebanon owns and operates a municipal solid waste landfill located between Route 12A and the Connecticut River in the southwestern area of the City. The site has been used for disposal of solid waste for many years, first through the use of an unlined landfill, which operated through 1992, and then from a permitted lined landfill located on a 10-acre site. The landfill is available to area communities on an ongoing contractual basis and is currently used by 23 communities, 12 in Vermont and 11 in New Hampshire. The City landfill accepted approximately 40,000 tons of waste in 2010. A recycling facility located adjacent to the landfill provides a means to reduce the overall volume of solid waste in the waste stream and extend the life of the landfill.

The active lined landfill consists of several discrete cells which are categorized by development phase. Based upon current filling conditions, it is anticipated that existing cells will be filled to capacity in 2015. In 2010, the City submitted an application to the New Hampshire Department of Environmental Services Solid Waste Bureau for a proposed 4.82 acre expansion. The proposed expansion should extend the life of the facility by about 12 years, reaching capacity in approximately 2027.

Solid waste business plans have been prepared for the City in 2006 and 2011. The business plans provided the City with strategies to improve the landfill through design, construction and operation. Components of the

plans included the proposed purchase of equipment to assist in more efficient compaction, as well as methane recovery strategies, and a cost/benefit analysis related to the long-term use of the facility.

8|C-5 Civic Buildings & Properties

The City's Public Facilities Committee advises the City Council and administration on the stewardship and disposition of city-owned buildings and land (excepting lands under the jurisdiction of the Conservation Commission).

- 8|C-5a **City Hall/Opera House.** City Hall is located in downtown Lebanon on North Park Street facing Colburn Park. This two-story brick Neo-Federal structure with cupola was built in 1923, replacing the meetinghouse town hall destroyed by fire. Lebanon City Hall is listed in the National Register of Historic Places as a contributing structure within the Colburn Park Historic District.

The Opera House occupies more than 70% of the square footage of City Hall. The Lebanon Opera House Improvement Corporation holds a long-term lease for this space. Over 30,000 people attend performances or other events at the Opera House each year.

The "old-style construction" of the City Hall Building gives it character and charm, but makes renovations more challenging. Numerous internal building upgrades have been completed, including energy efficiency improvements, as well as ADA-compliant changes including ramps and the installation of an elevator. Additionally, the size constraints of available space limit any future expansion, in the absence of additional add-on construction.

- 8|C-5b **Public Works Facility.** The Department of Public Works utilizes several buildings for operations and storage. Located along Route 4, near the Water Treatment Plant, is the Mose E. Sanville Memorial Public Works Facility Building constructed in 2010, as well as a working operations and maintenance garage space. The grounds contain an enclosed area for salt and sand storage, areas for construction materials storage, and parking for vehicles and equipment.

- 8|C-5c **Lebanon Public Library.** The Lebanon Public Library is located on the east side of Colburn Park, on the corner of Bank Street. The brick structure, combining Greek details with forms borrowed from Roman and Egyptian sources as well as abstracted designs, was constructed in 1909 with a Carnegie donation and public subscription. It is also listed in the National Register of Historic Places as a contributing structure within the Colburn Park Historic District. An addition nearly doubling the size of the building was constructed in 1986, and provides a handicapped accessible entrance and an elevator serving all 4 floors of the library. The original Carnegie section of the building and the addition contain approximately 8,000 square feet.

- 8|C-5d **West Lebanon Kilton Public Library.** In 1998 the library system received a bequest of approximately \$1.3 million from the estates of James and Willena Kilton, to be used for capital improvements or construction of a new West Lebanon Library. The Lebanon Public Libraries Foundation was formed in 2006, which spearheaded the capital campaign to raise additional supporting funds for construction of the Kilton Public Library. After a considerable amount of fund-raising, the foundation requested that the City match the original Kilton gift. In December 2008, the Lebanon City Council unanimously voted to match the Kilton legacy with a \$1.5 million



lebanon public library

contribution toward the project. The Kilton Public Library was opened in 2010 and replaces the former West Lebanon library building.

8 | C-5e **Cemeteries.** The Operations and Maintenance division of the Department of Public Works is responsible for maintaining City-owned cemeteries among various other responsibilities. The City owns and maintains the following cemeteries:

- Old Pine Tree Cemetery, Old Pine Tree Cemetery Road, West Lebanon
- Glenwood: Mt. Calvary Cemetery, Dulac Street, Lebanon
- Valley/Sacred Heart Cemetery, Mascoma Street Extension, Lebanon
- School St. Cemetery, School Street, Lebanon
- West Lebanon Cemetery, Pleasant Street, West Lebanon
- East Mascoma Cemetery, Route 4, East Lebanon
- Cole Cemetery, Great Brook Road, Lebanon
- Valley Cemetery Annex, Lebanon

There are roughly 2,000 cemetery plots available, and this number should be sufficient for the next decade. Planning should begin now to identify and assess potential future sites. The level of maintenance could be improved, as well as an overall community acknowledgement that cemeteries primary purpose is for burial of the dead, and that collateral uses should not interfere with the respect due to these sacred places.

8 | C-6 **Lebanon School District**

The Lebanon School District operates completely independently from City government and has its own annual meeting in March of each year. While construction projects proposed by the district are exempt from municipal zoning and planning regulations, the district presents their plans formally to municipal boards for advisory review.

The Lebanon School District has a comprehensive school system consisting of grades K-12, a vocational educational program and an English Language Learner program. The district's long range vision is to better serve the educational needs of a wide range of students in this very diverse community. One goal is to raise over time the quality of land and physical facilities available to its educational programs.

As recommended in the district's long range plan, and approved by voters, a new middle school is currently being constructed for grades 5-8. The location of the new middle school is along Route 4, nearly a mile east of the existing Lebanon Junior High School. Recent consolidation of neighborhood elementary schools, plus the scheduled September 2012 opening of the Lebanon Middle School, will leave the district with surplus buildings and land that is slated for sale of the writing of this plan.

Recreation fields owned and maintained by the Lebanon School District are adequate for present needs and supplement city-owned facilities through successful collaboration by the district and the City's Recreation and Parks Department.



- As the City continues to grow, the demand for community facilities and services will increase. The City would benefit from a well-planned vision that clearly delineates where utilities can extend. The establishment of an Urban Services Boundary would permit the City to focus development in a more concentrated area. This would reduce the capital and operating costs of City water and sewer systems.
- Ongoing monitoring of the condition of the emergency service equipment and infrastructure, the efficiency of the delivery, and the implementation of preventative strategies is needed to ensure that emergency services are provided at a level commensurate with demand.
- Local planning for energy and telecommunications should be aligned with regional and statewide efforts, as well as informed or guided by efforts underway by the Lebanon Energy Advisory Committee, which is currently engaged in the preparation of an energy master plan.
- The City has a long recognized need for a second water supply to supplement the current water source, the Mascoma River, in case of contamination or inadequate supply. The City also needs a source water protection program to protect its water supply. Efforts to conserve water would benefit both the City's water and wastewater treatment systems.
- The City needs to continue to operate the municipal landfill in a financially sustainable manner. Diverting waste from the landfill through recycling, re-use and composting will extend the life of the landfill and may generate other revenue streams for the landfill.
- As the City grows and expands its services, pressure for additional employees and facilities will continue to increase. Additional administrative space in downtown Lebanon should be sought to meet those future needs.
- Lebanon residents would be best served by collaborative efforts between the school administration and City administration as it relates to infrastructure and capital planning.

8 | D

Future Challenges & Opportunities

8 | D-1

Demand for Services

As the service center and employment hub of the Upper Valley, there is increasing pressure on the City of Lebanon for public services and transportation infrastructure; as the City grows the demand for services and infrastructure will increase. Environmental, fiscal, political, and other factors challenge local capacity to build, operate, and maintain the types of facilities that residents and visitors want or need. As noted in the Introduction Chapter, the City of Lebanon's resident population is 13,151 (Census 2010). The daytime population (estimated to be 25,000—35,000) is significantly increased by the numbers of non-residents who work and shop in Lebanon. This influx creates an additional burden on our City's infrastructure and public services. Since most municipal programs are supported by tax revenue, the reality is that civic infrastructure and fiscal impact are inter-dependent public policy issues. Each is driven by local land use choices.

The extent and adequacy of community facilities and services are far from static. Existing facilities may become inadequate through structural deterioration or functional obsolescence and/or the increased public expectations and demands that accompany residential and non-residential population growth and lifestyle changes. To plan for future facility and service needs, existing facilities must be reviewed and assessed. The cost of any upgrades or improvements should continue to be incorporated into the City's Capital Improvement Program (CIP), which the Planning Board is authorized to prepare (RSA 674:5).

While the City needs to ensure that it is served by the best practical and obtainable utilities with sufficient level of service and controls, for existing and future demands, the location of City services must be addressed. Lebanon's utility infrastructure has a major influence on land use patterns in the City. With the introduction of water and sewer utilities, development is able to occur at increased density or intensity, resulting in a major impact on the future growth and development of the City. Potable water and sewer services are second only to road access as factors affecting the type and pattern of land use development. For these reasons, the City of Lebanon should carefully consider and establish a policy regarding line extensions. Currently, potable water and sewer extensions must be approved by the City Council before the final application for subdivision review. The City would benefit from a well-planned vision that clearly delineates where utilities can extend. The establishment of an Urban Services Boundary, beyond which utilities would not be expanded, would permit the City to focus development in a more concentrated area. This would reduce the capital and operating costs of the systems and help preserve the rural character of the outlying areas.

The City should work to direct development in the central districts, reducing utilities infrastructure costs and preserving the character of the City's outlying rural areas. In keeping with the issues identified in the Lebanon Central Business District and West Lebanon Central Business District chapters of this Master Plan, services should remain in the central Lebanon and West Lebanon downtown areas whenever possible. Centralized municipal services offer convenience, support commercial activity downtown, facilitate better communication for both employees and residents, and contribute to the vitality of Lebanon's downtown areas.

8 | D-2 **Emergency Services**

The provision of emergency services will continue to be a core or essential service provided by the City of Lebanon. As such, measures should be implemented to continually assess the condition of the emergency service equipment and infrastructure, the efficiency of the delivery, and the implementation of preventative strategies. Assessments and proposed recommendations should take into account the symbiotic relationship between pending development and the subsequent demand for services.

8 | D-3 **Electric Utilities & Telecommunications**

Local planning for utilities and telecommunications should be aligned with regional and statewide efforts, as well as informed or guided by efforts underway by the Lebanon Energy Advisory Committee, which is currently engaged in the preparation of an energy master plan. The NH Climate Action Plan, prepared by the New Hampshire Department of Environmental Services is an example of a regional effort, intended to provide guidance, and speaks to a “more diversified energy mix, more efficient use of energy, and development of our communities in ways that strengthen neighborhoods and urban centers, preserve rural areas, and retain New Hampshire’s quality of life”.

Common themes in these local and regional energy planning efforts include:

- Maximize energy efficiency and renewable energy opportunities.
- Support energy conservation strategies, local clean power generation, distributed generation technologies, and innovative industries.
- Reduce greenhouse gas emissions and consumption of fossil fuels.

A shift toward greater reliance on renewable resources, such as solar, wind, and wood, would allow users to have more control over their energy sources. In the not so distant future, imported forms of energy, especially petroleum products, will eventually and inevitably become scarce and more expensive. Shifting towards these renewable resources would require lifestyle changes and would be capital intensive in the short term, but would be a sound long-term investment. Community energy and energy alternatives could be encouraged with local tax incentives.

8 | D-4 **Water & Wastewater Infrastructure**

Understanding potential barriers to the continued use of the Mascoma River as source water intake is fundamental to the long-term provision of potable water the residents of Lebanon. A water business plan should assess how water supply withdrawal limits that may be imposed by the state Department of Environmental Services relate to projected future use, as well as factors such as water rights that may be vested by the hydro-electric dams.

Additionally, existing plans recommend that the City continue to pursue alternate and/or additional water supply source(s) to provide redundancy, including whether the aquifer well site located near the Connecticut River and Route 12A is a viable supplemental or alternative future source. The previous recommendation that a formal Inter-Municipal Agreement be executed between the City and the towns of Hanover, NH and Hartford,



lebanon police department
Photo by: Douglas Albanese

VT and additional hydraulic analysis be performed to further evaluate the engineering controls required for the adjacent communities, would provide additional means to provide water to the City for present emergency demand.

The response to an emergency event such as the contamination of the Mascoma River should be provided within an existing plan. The existing Hazard Mitigation Plan developed by UVLSRPC, as well as the Lebanon Emergency Operations Plan, provide general information related to the water supply but are absent of specifics as to an emergency supply.

- 8 | D-4a **Water Source Protection.** The City would be well served to complete the development and implementation of a source water protection program for the Mascoma River Watershed. This effort would expand the scale and scope of the existing efforts of the Department of Public Works, including potentially engaging more stakeholders, such as the Mascoma Lake Association, the Intermunicipal Mascoma River Local Advisory Committee, the Conservation Commission, and substantially increasing awareness and protection of this resource.

An aquifer protection overlay district as well as riverbank protection standards would set guidelines for protection of Lebanon’s surface and ground waters, and could be components of the source water plan as well as expanded to apply to the City in its entirety.

- 8 | D-4b **Water Treatment & Distribution.** The existing 2007 Water Business Plan recommends the development of a comprehensive master plan to integrate and project future water treatment and distribution system improvements and needs in a single document. The last water distribution master plan was performed in 1998, therefore the distribution system master plan should be performed now and an update of the water treatment facility master plan be performed in 2013. The design life/depreciation of existing infrastructure should be components of the plan, as well as a review of projected demands. In general, the master plan should be updated every five to ten years.

Elements that have been expressed as ideas in the past that should be included within a comprehensive water master plan or perhaps pursued in the immediate include:

- Implementing a water conservation and efficiency program to minimize water system expenditures and reduce the associated carbon footprint. The conservation program should include public education efforts, a potable water audit to understand all sources of “lost” or “unbilled” water, and should recommend long-term conservation measures, which would be required in order to apply for a large groundwater withdrawal permit.
- An assessment of whether the City may not meet anticipated future water quality regulations. Recommendations for additional testing and processes that may allow the City to meet anticipated regulations are discussed in the water treatment plant recommendations section of the 2007 Water Business Plan, and could be implemented as well as a status update provided in the comprehensive plan.
- Recommendations as to the required on-going capital improvements to replace unsafe or inefficient lines.

- 8 | D-4c **Wastewater Treatment Facilities & Infrastructure.** The two major factors driving the current projected life of the Wastewater Treatment Plant include the condition of the plant itself, to include condition of the equipment and ability for the treatment process to meet or exceed NPDES permitting standards, as well as the total

amount of wastewater flow that the plant can accept. The planned completion of the treatment plant upgrades are designed to allow for the plant to operate out to year 2029, which coincides with projected flows that are anticipated to reach the plant's capacity for acceptance. A change in NPDES permitting conditions, which are reviewed every five years, and/or an unexpected increase in flows would alter the current projected life of the plant.

Actively assessing and monitoring the plant's ability to reach 2029 should include monitoring NPDES requirements, tracking projected flows, and oversight of the currently proposed plant upgrades. Planning for beyond 2029 could include a fiscal analysis as to replacement costs, financing strategies, scale of capacity increase, as well as the additional factors typically involved in this process.

In addition to the treatment plant, the condition of the utility lines and associated equipment will be evaluated as part of the EPA administrative order requiring the City to develop a sewer collection system preventive maintenance and sewer overflow response plan. This effort is currently included within the City's Capital Improvement Plan and presents a valuable opportunity for gathering information for system as well as general planning endeavors. Identifying and upgrading sewer lines experiencing infiltration offers a return on investment by alleviating the estimated 47% of flows that originate from infiltration, providing a savings in the cost of current treatment, and potentially capturing additional plant capacity for the future.

While the City is under the EPA administrative order pertaining to sewer and stormwater separation, it should continue to use that as the opportunity to not only improve aging or substandard water and drainage systems, but also improve bicycle and pedestrian amenities within the streetscape. Additionally, implementing a water conservation program (low flow toilets, faucets, and shower heads) could be the most economical way to gain capacity in the existing system.

8 | D-5

Solid Waste

The current long term solid waste disposal goals for the City landfill as captured in the 2011 Solid Waste Business Plan include:

- Continue to operate profitably as a limited regional landfill.
- Provide on-site solid waste disposal capacity to the year 2050 and beyond.

In order to meet the above goals, the City needs to continue to offer a competitive tipping fee that allows the City to meet its financial obligations and implement strategies that will extend the useful life of the existing resource.

The business plan provides an opportunity to capture both short and long term utilization of the landfill and should remain a priority as to its implementation. Residents have historically expressed the desire to assess the provision of the landfill as a regional resource, as well as the intention to increase the currently under-utilized recycling efforts, including offering curbside recycling pick-up on a citywide basis which would increase the number of items recycled by City residents. The business plan speaks to these and many other related issues.

8|D-6 City Buildings & Properties

As the City grows and expands its services, pressure for additional employees and facilities will continue to increase. There have been numerous discussions regarding the potential relocation of various City services outside of City Hall, but the general consensus has been that residents would like City services to remain centralized for the convenience of “one-stop shopping.” Keeping most services centralized also promotes and retains the vitality of the downtown area and discourages sprawl in outlying City areas.

While the Department of Public Works currently handles maintenance for City cemeteries, the City may want to set up a civic committee to address maintenance, beautification, and promotion of City cemeteries.

8|D-7 Lebanon School District

Residents of Lebanon would be best served by collaborative efforts between the school administration and City administration for infrastructure and capital planning. The current school consolidation effort within the urban core, creates an opportunity for desirable planning for the reuse of the institutional buildings.

Outcomes & Strategies

OUTCOME 1 Meet demand for community facilities and services as the City continues to grow without unduly burdening taxpayers.

STRATEGIES	ACTIONS
1 Develop a clear policy for water and sewer extensions, guided by goals for future land use.	1 Conduct an in-depth study of emergency services (police, fire, ambulance) to determine the impact of development in certain locations on the Police and Fire Department's ability to respond adequately in emergencies.
2 Ensure that new public facilities (and where possible, existing facilities) incorporate the following principles, when appropriate: Central location (locally and regionally); good access and traffic flow; adequate parking; energy efficiency; handicapped access; multi-purpose buildings when possible.	2 Assess all City-owned buildings periodically to determine needed repairs, upgrades, energy-efficiency improvements, and replacements, as well as the suitability of operational standards.
3 Ensure that Fire and Police Department resources are used for maximum benefit to the City, and make sound planning and budget decisions that will minimize unnecessary strain of department resources.	3 Continue to evaluate and refine the impact fee structure for new development projects to provide adequate revenue to meet the infrastructure and service needs of the City.
4 Continue to explore strategies to improve recruitment and retention of police officers.	4 Conduct a response time study every five years to evaluate the current needs for additional fire stations and emergency vehicles in the City.
5 Meet the community's energy and telecommunications needs in an efficient manner while preserving the character of the community.	5 Evaluate the personnel needs for emergency response and fire prevention operations and staff to maintain the effectiveness and efficiency of emergency response, fire inspection, and fire prevention efforts.
6 Ensure that the City is served by the best practical and obtainable utilities for existing and future demands.	6 Conduct a traffic study to evaluate traffic effects on emergency vehicle response, to include corrections to identified concerns by the Insurance Service Office.
7 Direct development into the central districts as much as possible to reduce utilities infrastructure costs and preserve the character of the outlying rural areas.	7 Develop community and school fire prevention programs and remove fire hazards in the City.
8 Continue to monitor state and federal regulations, industry trends, and developments to protect the best interests of the City and its residents.	8 Evaluate the demands that proposed development, its size, distance from population centers, and type will make upon police services in Lebanon, and consider those impacts in the development review and permitting process.
9 Encourage the exploration of supplemental energy-generating sources such as wind, water, and solar power.	9 Continue to include police equipment that meets capital improvement plan definitions in the City's Capital Improvement Program.
10 Encourage the electric utilities to evaluate the generating efficiency of existing hydroelectric plants as well as the feasibility of bringing existing plants online.	10 Develop an appropriate staff metric that considers the FBI New England average ratio of police officers to residents and the daytime population increases due to commercial, retail, and the commuting nature of Lebanon.
11 Practice and promote cost-effective energy efficiency.	11 Incorporate robust energy efficiency and conservation requirements into the City's building code.
12 Publicize and encourage energy conservation on the City website and in the City newsletter.	12 Review energy use in all City government operations on an annual basis.
13 Support the activities and recommendation of the Lebanon Energy Action Committee (LEAC).	13 Develop an energy conservation plan for City buildings and facilities.
14 Bury utility lines, when feasible, for aesthetic, safety, reliability and economic reasons.	14 Establish a committee to address telecommunications needs with an emphasis on technologically advanced telecommunication links to enhance the City's economic climate.
15 Continue to participate in the regional public access channel.	15 Develop a long-range telecommunications plan to monitor trends and plan for future telecommunications needs.
16 Promote "smart" development to decrease pressure on the City's water and wastewater systems.	
17 Continue identifying significant threats to the City's water supply.	
18 Establish a program to reduce water use and increase capacity.	

OUTCOME 1

Meet demand for community facilities and services as the City continues to grow without unduly burdening taxpayers.

STRATEGIES

- 19 Coordinate utility extensions with the Zoning Ordinance and the Master Plan through a duly adopted public policy.
- 20 Monitor annually the success with which new development has harmonized with the City's growth management, land use planning, and environmental goals, and adjust water and/or sewer extension policy or the parameters of the goals as necessary.
- 21 Formulate a plan to conserve and maintain wastewater capacity.
- 22 Make improvements in the solid waste system to improve the use of solid waste as a commodity and extend the life of landfills.
- 23 Use all available recycling resources and make recycling more convenient so more people will recycle.
- 24 Continue to implement methane recovery systems underway.
- 25 Continue to support waste reduction technology where financially viable for example: crushing and using waste construction material instead of purchasing gravel for landfill maintenance projects.
- 26 Utilize any media available to the City (i.e., public access TV channel) to educate the public about recycling.
- 27 Encourage private haulers to expand and better promote their curbside recycling services.
- 28 Continue to lobby the State of New Hampshire to define "closure" in Lebanon as "intermediate."
- 29 Provide the best library services possible for the community.
- 30 Continue to study the best use of space for library and community meetings.
- 31 Increase storage and collection space for the libraries.
- 32 Use cemeteries as a City asset.
- 33 Promote the use of City cemeteries as civic and open spaces.

ACTIONS

- 16 Develop and approve a telecommunications ordinance to enforce the appropriate siting and design of telecommunications towers.
- 17 Develop, through the City's Hazardous Materials Plan, a clear notification system to respond to any contamination of public water sources including but not limited to spills on roadways adjacent to surface waters.
- 18 Incorporate a Water Department review of all proposed developments that may affect the City water supply.
- 19 Prepare and adopt an Aquifer Protection Overlay District.
- 20 Prepare an up to date water distribution system map identifying the information identified during the water distribution system inventory efforts.
- 21 Add inventoried information to the City's GIS system and continuously update as new developments are connected to the water distribution system.
- 22 Complete a hydraulic modeling study to evaluate the capacity and feasibility of increased water and sewer lines.
- 23 Conduct a test well program on the identified supplemental water supply source site.
- 24 Finalize the hydraulic analysis of the water treatment plant.
- 25 Conduct a water audit to determine "lost" and "unbilled" water sources.
- 26 Establish an Urban Services Boundary, clearly keyed to the Zoning Map and the Land Use Map that includes high-density residential, commercial, and industrial zones, as well as potential identified growth areas, while excluding the rural zones.
- 27 Study the potential cost and benefits of an aggressive water conservation program as an alternative strategy to interceptor replacement that could include approaches such as requiring low-flow toilets, showers, faucets in the new construction, and subsidizing retrofit in existing buildings, much like electric companies' programs.
- 28 Create a schedule for initiation of water conservation by comparing the plan for stormwater separation and the "optimal" capacity for future development.
- 29 Draft and implement a clear water and sewer extension policy that will support the City's growth management, land use and environmental goals as expressed in the Zoning Ordinance and the Master Plan.

OUTCOME 1

Meet demand for community facilities and services as the City continues to grow without unduly burdening taxpayers.

ACTIONS

- | | |
|---|----|
| Develop educational programs to make all citizens aware of the social, ecological, and financial benefits of recycling. | 30 |
| Provide an additional line item in solid waste budget for education and outreach initiatives. | 31 |
| Conduct a cost-benefit analysis for a City curbside recycling program. | 32 |
| Offer a financial incentive to residents and businesses to recycle. | 33 |
| Begin the process of identifying and assessing potential future cemetery sites. | 34 |
| Establish a civic committee to implement recommendations in the cemetery study, to better promote and maintain City cemeteries. | 35 |

OUTCOME 2

Increase regional coordination and sharing of resources in the provision of community facilities and services.

STRATEGIES

- 1 Coordinate utility work – including highway, water, sewer, and electric - as much as possible to minimize the costs of construction and impact on neighborhoods.
- 2 Work with other communities in the Mascoma watershed to develop a watershed management plan to protect water quality and other resources in the watershed.
- 3 Encourage schools, churches/religious organizations, chambers of commerce to lead the way in this educational process about recycling.
- 4 Solicit assistance from local institutions, organizations, and businesses, i.e. recyclers, Dartmouth, Rotary, Boy Scouts, to educate the public about recycling.
- 5 Continue to make use of inter-library loan and information retrieval to avoid excessive purchasing.
- 6 Coordinate with the Lebanon School District SAU #88.
- 7 Consider incorporating Lebanon School buildings in a coordinated schedule for completing all required inspections of City-owned buildings.

ACTIONS

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| Continue to participate in regional planning efforts since growth in neighboring communities has a significant impact on Lebanon's community facilities and services. | 1 |
| Review City and school district buildings no longer used for their original purpose for potential future uses or disposal. | 2 |
| Study the ability of the water system interconnections between Lebanon and Hanover as well as Lebanon and Hartford, to allow for sharing of water resources under emergency or other conditions. | 3 |
| Develop inter-municipal operating procedures to allow for utilization of the interconnections. | 4 |
| Work with the school district in developing a course on recycling as part of the curriculum at all levels. | 5 |
| Hold joint School Board and City Council Meetings regularly to coordinate planning of capital expenditures in the City. | 6 |
| Incorporate SAU #88 in the capital improvement program process. | 7 |