

CITY OF PLEASANT HILL COMPREHENSIVE PLAN

Chapter Four: Public Utilities and Community Services

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UTILITIES

Water Services

The water distribution system is owned and operated by the City. Treated potable water is purchased from two different sources, (1) the Tri-County Water Authority and (2) the City of Kansas City (via the City of Lee's Summit). Water from both sources is delivered to the City through a 12" diameter pipeline from the northwest. The City of Kansas City has constructed a new pipeline to the vicinity of a new combustion turbine power plant that is located several miles northwest of Pleasant Hill. When this new pipeline goes into service it will allow water to be delivered directly from the Kansas City distribution system rather than pass through the Lee's Summit system.

The 12" water main delivers water to a 60,000 gallon ground storage tank located southeast of the intersection of Campbell Street and Timber Street. A pump station equipped with three 650 gpm pumps is located near this reservoir, and if needed can pump from the ground storage tank into the system. However, the delivery pressures are adequate to allow the water from the 12" water main to enter the distribution system directly without passing through the ground storage tank and without being pumped. Therefore, the ground storage tank functions as a reserve source of water in case the delivery pressure should drop to a level that would force the water to be pumped into the system.

The distribution system floats on a 750,000 gallon elevated tank located in the northeast corner of Pleasant Hill along S. Knorpp Road. The tank is 165 feet tall and has an overflow elevation of 1160 feet above sea level. A 12" water pipeline is routed from the ground storage tank and pump station to the elevated tank. The City's distribution system is tied into this 12" line and branches out in both directions from this line. This 12" waterline is anticipated to have adequate capacity to serve the City's needs in the near future. The following is a summary tabulation of the average water use in the City of Pleasant Hill.

Table 4.1: Tabulation of Average Water Purchased, Sold and Used

(based upon records from 4/27/00 through 3/31/01)

Purchased from Lee's Summit	207,614 gal/day
Purchased from Tri-County	454,535 gal/day
Less water to R.W.D. No. 5	<u>94,661 gal/day</u>
Total water purchased	567,488 gal/day

Residential sales	320,268 gal/day
Commercial sales	84,052 gal/day
Industrial sales	64,052 gal/day
Municipal use	5,668 gal/day
R.W.D. No. 1	<u>47,902 gal/day</u>
Total metered water use	521,942 gal/day

Unaccounted Line Loss 8 %

Pleasant Hill, Missouri is contracted with Tri-County Water Authority to purchase a minimum of 60,000 gal/day. In the past the City has purchased nearly 70% of their water from Tri-County. The percentage

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of water from Tri-County is expected to drop in the future when water is delivered directly from Kansas City. The City plans to improve their control over the source of the water purchased. This will allow the City to purchase the minimum amount required from Tri-County, and purchase the balance of their water from Kansas City which is anticipated to be available at lower cost.

On average, 567,488 gal/day passes through the metering point to the City. Rural Water District No. 5 takes 94,661 gal/day from the pipeline before it reaches Pleasant Hill. The average water consumption within the city is 474,040 gal/day (not counting water sold to R.W.D. No. 1).

The water supply and distribution system appears to have adequate capacity for the anticipated future growth in water consumption in the near future. It is anticipated that as water demands increase in the future that the delivery water pressures will drop because of increased line losses. Eventually, it will be necessary to use the booster pumps and ground storage tank on maximum demand days. When this condition begins to occur with regularity, it will be necessary to construct additional pipeline capacity.

Improvements are needed to the System Control and Data Acquisition (SCADA) system to improve control over the source of delivery and the pumping of water from the ground storage tank. At present the City has no control over the source of water being delivered to the City. The split between Tri-County and Lee's Summit (KCMO) is currently determined by the source with the highest water pressure. In the future, the city will need a means to control the quantities purchased from the two sources based upon the unit cost of water. The City also needs improved controls over the operation of the pumps and changing of the water in the ground storage tanks. The water in the ground storage tank is currently changed by manual operation of the pumps. Improved controls are needed to allow this operation to be conducted automatically.

Wastewater Services

The City has a wastewater collection system consisting of gravity sewers varying in diameter for 4" to 10". There are six wastewater pumping stations in the system.

Country Club Lift Station: The Country Club Lift Station is located on the east edge of the City and pumps wastewater from an area generally described as north of Country Club Drive and east of Main Street. This pump station has a firm capacity of 906 gpm (1.3 mgd) and an installed capacity of 1,278 gpm (1.8 mgd). This is adequate capacity during periods of dry weather and moderate wet weather flows. However, peak wet weather flows entering the pump station exceeds the pumping capacity of the station. The cause of these high flows are known to be infiltration and inflow into the sanitary sewer system. It is speculated that a significant portion of these extraneous flows may be entering from the Sunnyside Subdivision. This subdivision had combined storm and sanitary sewer system prior to being included in the City's system, and it is believed that there are a number of locations where storm water can still enter the sanitary sewer system in this area.

Myrtle Street Lift Station: The Myrtle Street Lift Station is located at the west end of Myrtle Street. Wastewater flows from the area west of Main Street and north of Lock Leonard Lake generally flow into

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this lift station and are pumped into the central system and conveyed by gravity flow to the treatment plant.

Timber Creek Lift Station: The Timber Creek Lift Station is located near the intersection of Timber Creek and Armstrong. It serves a small area located east of Kellogg Lake. Pumped flow from the Timber Creek Lift Station enters the gravity collection system and is conveyed to the wastewater treatment plant.

Boardman Lift Station: The Boardman Lift Station is located on S. Boardman Road in the northwest part of the City. The Boardman Lift Station serves the Sugarland Estates Subdivisions located in the north part of the City and west of Main Street. Wastewater flows from this area are pumped into an interceptor sewer that flows to the Myrtle Street Lift Station.

Valley View Lift Station: The Valley View Station is located on W. Valleyview Street in the extreme northwest corner of the City. It serves a small portion of the Sugarland Estates. Pumped flow from the Valley View Lift Station enters a gravity sewer that flows into the Boardman Lift Station.

Duncan Branch Lift Station: The Duncan Branch Lift Station is located in the northeast part of the City, and is located south of Henley Drive and east of the east end of Matthes Lane. The Duncan Branch Lift Station serves the Lexington Trails Estates, Valley View Estates, and Willow Creek Estate subdivisions. Pumped flow from Duncan Branch Lift Station enters a gravity sewer that flows into the Country Club Lift Station.

The Wastewater treatment plant is located on the south side of the City, southeast of the intersection of Missouri Highways 7 and 58. The treatment plant is a sequencing batch reactor type (SBR) design that went into service in 1996. It has a design capacity of 1.0 mgd. It has wet weather flow capacity of 2.3 mgd. The average wastewater flow has generally been in the range of 425,000 gallons per day. The plant capacity is adequate during dry weather and moderate wet weather flows. However, peak wet weather flows have to be bypassed through the old lagoon area located next to the plant.

The City has recently made improvements to the Country Club Lift Station that will reduce odor problems that have occurred in the vicinity of Walker Road on the east side of town. The City is also planning on constructing improvements to their sludge handling facilities at the treatment plant.

Improvements needed in the future include the reduction of the quantities of inflow and infiltration entering the sanitary sewer system. Disconnecting sources of storm water from the sanitary sewer system can reduce these flows. These improvements are needed to allow the collection and treatment system to operate satisfactorily.

Stormwater Management

Most of the areas that flood are near downtown, due mostly to the terrain rather than the system. In 1982, the area west of the fairgrounds between Highway 7 and downtown flooded. Pleasant Hill is studying stormwater needs in a three phase procedure. The study will lead to a stormwater management master plan:

- Obtain community input and collect technical data;
- Perform analyses; and
- Report findings.

The final step includes a process to help the community begin using the plan, and provides the transition to the process of implementing improvements if they are needed. Following is a summary of the study approach.

Phase 1 — Stormwater Policy

1. Meet with city staff and Board of Aldermen to gather perspective and background information on stormwater issues in Pleasant Hill.
2. Review city's current subdivision ordinances and design criteria relative to stormwater and drainage issues.
3. Prepare public opinion questionnaire to be distributed to residents of Pleasant Hill through direct mailing, or by inclusion in utility bills. In order to encourage participation, articles will be prepared for the local newspaper, and a web page will be posted to facilitate response. Compile results of questionnaire.
4. Conduct public meeting to gather input from citizens on importance of drainage issues in community. Obtain information on locations and types of existing drainage problems, and opinions on stormwater policy issues including financing of storm drainage improvements.
5. Prepare a document describing the requirements of the EPA Stormwater NPDES discharge program for information for staff, the Board of Aldermen, and the Public.
6. Develop preliminary stormwater policy statement based on the information gathered from the city staff, Board of Aldermen and public, incorporating the requirements of the NPDES program, and submit to city for review. Meet with Board of Aldermen in work session to discuss proposed policies. Make revisions to statement as required and submit final policy statement. Some of the issues to be addressed in the policy statement include:
 - Identification of critical waterways or streams;
 - Management of drainage as the city grows;
 - Use of detention in stormwater management, local vs. regional detention (if required at all);

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- Accommodation of the 100-year floodplain in developed areas;
- Allowable new development within the 100-year floodplain;
- Retention of green space/greenways along natural channels;
- Acquisition, ownership and maintenance of greenways — public of private;
- Ownership and maintenance of open channels, detention facilities, drainage system components;
- Water quality — current and future regulations; use of best management practices;
- Responsibility for financing drainage projects — improvements to existing system vs. new development;
- Identification of alternatives funding sources.

Phase 2 — Technical Analysis

1. Obtain city records, subdivision plans, etc., to identify existing drainage facilities. Prepare preliminary system map. It is assumed that base map in a digital format will be available from the County GIS system.
2. Perform field reconnaissance to verify location, size, material and condition of facilities including pipes 18 inches in diameter and larger, open channels (both natural and constructed) and detention basins within the city limits. (Does not include Baldwin Lake, Loch Leonard, or Big Creek.) Complete inventory form for each component. Also verify current land use throughout drainage areas. Detailed surveys will not be performed as part of this task.
3. Revise system map based on field observations.
4. Prepare watershed data and determine peak flows throughout the identified system using the HEC-1 computer program based on existing land use and development conditions. Topographic information will be provided by the city. If not available, USGS map will be used as a basis to estimate drainage areas and slopes along with field observations.
5. Determine capacity of existing system components using the HEC-2 computer program for major open channels within the city identified system and other calculation methods for the enclosed system components. Extensive modeling of the enclosed pipe system is not included in this task.
6. Identify existing drainage problems due to undersized drainage facilities. Develop recommendations for improvements and provide budget-grade estimates of construction costs. Prioritize recommended improvement projects.
7. Determine peak flows throughout identified system based on projected future land use. Future land use will be based on information from city's most recent comprehensive plan.
8. Identify potential future drainage problems due to increased flows to existing system. Make recommendations for improvement and/or means to prevent problems from developing.

Phase 3 — Report

1. A report will be prepared to communicate the results of the project. It will contain a description of the study methods, results of the technical analyses, a description of possible sources of funds for improvements, operations, and maintenance, and the policy statement developed in phase one. Maps, exhibits, and other graphics will be included to facilitate communication of the findings and recommendations.

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2. The report will take the form of a *Stormwater Management Plan* and will meet the requirements of the stormwater discharge permit program. The report will include an implementation plan, which will contain recommend ordinance changes (if needed) and a funding plan.
3. The report will be reviewed with the Board of Aldermen at a work session, and after incorporating changes from the work session 20 copies of the final document will be delivered to the City.
4. Digital copies of the maps and other data developed during the project will also be delivered to the city for use with the GIS. Hydraulic models will be stored and made available upon request.

COMMUNITY SERVICES

City Services & Parks

Pleasant Hill's municipal government operates under a unique Special Charter that was written for the community by the Missouri Legislature in 1859. It is governed by an elected Mayor and four Council members, assisted by an appointed City Administrator. The City employs 35 full time employees, and roughly an equal number of part-time and seasonal employees. City operations are divided into six departments, each led by a Department Head.

The Administration and Finance Department is responsible for Council support, financial control, utility billing, records management, policy development assistance, and administrative oversight of the various City operations. Community Development oversees the development process, ensures compliance with zoning laws, performs construction inspections, and enforces building codes. Police Department personnel provide around the clock law enforcement, maintain a 24 hour communications/dispatch operation including a 911 answering point, and enforce nuisance and animal codes. The Fire Department works in concert with the Ambulance District to provide around the clock emergency services. The Water/Wastewater department operates the water distribution system, including hydrants, meters, elevated tower and ground storage reservoir. They also maintain the wastewater system, including the treatment plant and lift stations. Facilities Management includes Parks and Recreation, Street Maintenance, and Buildings & Grounds Maintenance.

Each of these City departments provide quality services even though the demands of a growing community often outpace available resources. Additional resources will likely need to be identified to maintain service levels and/or address future capital improvements identified in the City Capital Improvement Program (CIP).

City Offices and departmental headquarters facilities include: City Hall, which houses Finance & Administration, Community Development, and the Council Chambers; the Municipal Building, which houses Police and Communications; the Fire/Rescue Building which is a facility the Fire Department shares with the Pleasant Hill Ambulance Department; the Street Barn, which is the headquarters for Streets and Facilities Maintenance; and the Wastewater Treatment Plant, which houses the Water/Wastewater Department. The Animal Shelter is also attached to the Street Barn.

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The City also maintains the Memorial Building and Community Building, which are public meeting facilities. The Community Building also houses Meals on Wheels, and an office for the Recreation Programmer.

City Park facilities include the 90 acre City Lake, the 40 acre Recreational Ball Complex, Stone Creek Nature Park, City Park, Big Creek Park (which also houses the Cass County Fairgrounds), the indoor Municipal Pool, and four ball fields not included in the parks already mentioned.

The current City facilities listed above are adequate at present, but all the buildings are at capacity, and will soon be insufficient to keep up with the growth of the community. In addition, new park facilities will need to be developed in the newly developed areas to serve the growing population.

Schools and Other Community Services

Schools. Pleasant Hill is served by the Pleasant Hill R-III School District. The District, which is headquartered in Pleasant Hill, covers approximately 75 square miles and serves about 1900 students. The district maintains a teaching staff of 151 teachers and a support staff of 56. It is governed by a seven member elected Board of Education which is assisted by an appointed Superintendent. The quality of education provided by the District is excellent, and it has consistently been recognized for educational achievement. The rapid growth of Pleasant Hill has presented a number of challenges to the School District. To avoid overcrowding, a new high school was opened in 2000, and grades were realigned in the other four structures. To keep up with the expected growth in the future, the District has purchased property in the north end of Pleasant Hill which will be used for new facilities, including a new Middle School. Once again, realignment of grades in existing buildings will be part of this strategy to handle future growth.

Library Services are another important community service. Pleasant Hill is served by a branch of the Cass County Public Library system, which operates through property taxes and direct state aid. It is governed by a five member Board appointed by the Cass County Commissioners. The Pleasant Hill branch currently operates in a leased facility, but property has been purchased on north 7 highway for a permanent facility. If funding for construction can be obtained, this new facility should meet the needs of the Pleasant Hill community for years to come.

There are many other community services which are vital to the people of Pleasant Hill, including churches and their related programs, the Cass County Medical Clinic and other health care providers, the Lay Clergy Council and other resources for those in need, the Historical Society, the Historic Preservation Commission, Community Betterment, and others involved in preservation activities, the Chamber of Commerce, Downtown Association, and others promoting economic development, to name a few.

These community resources, many of which are covered in detail elsewhere in the Appendix of this document, contribute greatly to the rich quality of life enjoyed by the citizens of Pleasant Hill.

Electric Service. Electric service in Pleasant Hill is supplied by Aquila, which maintains headquarters in Raytown, Missouri, and a local service office in Lee's Summit. Aquila actually began in Pleasant Hill

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back in 1917 as the Green Power and Light Company. The old company headquarters in Pleasant Hill is still in use as part of a peak generating operation. Aquila also maintains its newest generating plant on the west side of Pleasant Hill at the state-of-the-art Aries power plant. These assets ensure that the power needs of our community will be met for the foreseeable future.

Gas Service. Gas service in Pleasant Hill is supplied by Missouri Gas Energy, headquartered in Kansas City, Missouri. MGE has sufficient assets to serve Pleasant Hill and meet future demands.

Cable Service. The City of Pleasant Hill has a nonexclusive franchise for Cable T.V. service with Comcast, headquartered in Independence, Missouri. Comcast offers a variety of services, including Internet access, and has indicated the ability to serve the needs of the community now and in the future.

Telephone Service. Telephone service in Pleasant Hill is provided through Sprint, headquartered in Warrensburg, Missouri. Sprint offers a variety of services, including optional toll-free calling to and from the Kansas City metro area, and DSL Internet access. Sprint communications assets are sufficient to meet future needs of the community. A variety of wireless telephone providers are also available in Pleasant Hill.

SOLID WASTE AND RECYCLING

Garbage Removal and Recycling

Garbage service is provided by three private companies: Cass County Disposal, Deffenbaugh Disposal, and Town and Country Disposal. The city has an extensive recycling program including a disposal area located near the police building where residents can drop off recyclables once a month. The program is run by volunteers and once a year they have a hazardous waste recycling program that is coordinated with the Mid-America Regional Council, as well as a city-wide clean-up. The recycling program is advertised on the local cable access channel and in articles in the newspaper.