

**SECTION 24006
IMPROVEMENTS**

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SECTION 24006: IMPROVEMENTS

24006.1 ADEQUATE PUBLIC FACILITIES REQUIRED

- a. **Generally.** Land proposed for development shall be served by public facilities and services which are adequate to support the proposed development. Land shall not be approved for development unless and until adequate public facilities exist or provision has been made for the following essential public facilities: water service, wastewater treatment and disposal, stormwater management, electrical service, telecommunications service and streets.
- b. **Comprehensive Plan Consistency Required.** Proposed public improvements shall conform to and be properly related to the City's Comprehensive plan and applicable capital improvements plans.
- c. **Water.** All habitable buildings and buildable lots shall be connected to a public water system which is capable of providing water for health and emergency purposes, including adequate fire protection as required in Section 24006.2.
- d. **Wastewater.** All habitable buildings and buildable lots shall be served by an approved means of wastewater collection and treatment as required in Sections 24006.3 and 24006.4.
- e. **Stormwater Management.** Drainage improvements shall accommodate potential runoff from the entire upstream drainage area and shall be designed to prevent increases in downstream flooding. The City may require the use of control methods such as retention or detention, and/or the construction of off-site drainage improvements to mitigate the impacts of the proposed development, pursuant to Section 24006.5.
- f. **Streets.** Proposed streets shall provide a safe, convenient and functional system for vehicular, pedestrian and bicycle circulation, shall be properly related to the Comprehensive plan, and shall be appropriate for the particular traffic characteristics of each proposed development. Adequate street capacity shall be provided as required in Section 24006.6.
- g. **Phasing.** The City may require the phasing of development or improvements in order to maintain current levels of service for existing public services and facilities or for other reasons based upon maintaining the health, safety and general welfare of the City's inhabitants.
- h. **Extension Policies.** All public improvements and required easements shall be extended through the parcel on which new development is proposed. Streets, water lines, wastewater systems, drainage facilities, electric lines and telecommunications

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lines shall be constructed through new development to promote the logical extension of public infrastructure. The City may require the applicant of a subdivision to extend off-site improvements to reach the subdivision or oversize required public facilities to serve anticipated future development as a condition of plat approval.

i. Easements/Rights-of-Way.

1. Except as otherwise provided in the UDC, an applicant for a development approval shall ensure that adequate on-site and off-site easements are provided for future roadways, water, wastewater and other public utilities.
2. The property owner shall grant adequate utility easements for all public and private utilities along rear and side property lines as required by the Director of Public Works. Utility easements shall be submitted to the Director prior to plat recordation.
3. All public utility easements shall be at least ten (10) feet wide along ROW and fifteen (15) feet in other locations. Additional width may be required for reason of unusual topography or the need to use easements for multiple utilities.
4. Easements shall be centered along or to be adjacent to a common property line where practical. All easements for drainage or sewer shall be selectively cleared of undergrowth, trees and other obstructions by the developers prior to final approval. This does not apply to easements which are provided for possible future use.
5. An applicant shall provide adequate on-site rights-of-way for anticipated traffic demands in a manner consistent with the UDC, the Comprehensive Plan and project specific traffic impact analysis (TIA), if applicable. If a TIA, prepared in accordance with Section 24006.6, shows that a proposed development creates the need for additional off-site right-of-way, the applicant may be required to provide said right-of-way prior to development approval.
6. All designated Right-of Ways and Easements shall be kept clear of trees, landscaping and other vegetation.

- j. Construction and Materials.** Except as otherwise provided in the UDC, the Construction and Material Specifications shall comply with the standards established by the Kansas City Metropolitan Chapter of the American Public Works Association (APWA Standards). All public facilities structures shall comply with Section 5700 of the APWA Standards. Division II of the APWA Standards shall be modified as follows:

1. Section 2400 of the APWA Standards shall be modified to permit the use of erosion control blankets or mats in place of sod, if approved by the Director. Section 2401.3.C.1 of the APWA Standards shall be modified to require the following seeding mixture:

Kind of Seed	Minimum Pure Live Seed (%)	Rate of Pure Live Seed (Lbs. per Acre)
Alta Fescue or Kentucky 31 Fescue (Festuca Elatior) Var. Arundinices	75	50
Rye Grass (Lolium Perenne or L. Multi-florum)	80	50
Kentucky Blue Grass (Pac. Pratensis)	75	40
Creeping Red Fescue (Festuca Rubra)	85	20
Total		160

2. Section 2500 and 2600 of the APWA Standards shall be modified to allow the Director to approve the use of alternative pipe materials other than vitrified clay pipe. Any excavation under the public right-of-way pavement shall be backfilled with digable flowable fill. Aggregate may be dumped into the flowable fill in the trench to reduce the quantity of flowable fill required. (Flowable fill is a low strength concrete/flyash/sand mixture with strengths of 50-200 p.s.i. and slump of up to 12 inches).
 3. Section 2502.4 of the APWA Standards shall be modified to prohibit the use of vitrified clay pipe.
- k. Inspections/Acceptance.** The City will inspect public improvements to ensure that such improvements are constructed to City standards and specifications. City acceptance of required improvements shall be required prior to use or occupancy of a development.
- l. Maintenance.** The City shall require performance bonds and/or maintenance guarantees for any street, wastewater line or drainage facility as a condition of accepting such improvement in accordance with Section 24003.15 of the UDC.

m. Park and Recreation Land and Fund

A. - Parks and playgrounds.

It shall be a condition of a subdivision plat, PUD (planned unit developments) or other residential/commercial property improvement, that each sub-divider, developer or owner will be required to make to the city, and at the discretion of the city staff to either:

- (1) Donation of Land, (minimum of 5 acres);
- (2) Cash in lieu of land donation; or
- (3) Combination of both.

*The method selected shall be recommended by the city staff.

B. - Cash in lieu of land dedication.

If approved by the city staff, a cash payment in lieu of land may be made to satisfy park land dedication. And shall be paid at the time a building permit is issued.

C. – **Fee.** The fee is established in City Code Appendix B.

D. - Suitability criteria.

- (a) All designated open space, parks or recreational facilities shall be of suitable size, location, dimension, topography and general character and shall have proper road and/or pedestrian access, as may be appropriate, to be usable open space, as follows:
 - (1) The minimum land area for a dedicated parkland tract shall be five acres. Parkland shall be in a single parcel unless there are physical features, such as a railroad, or water, separating the proposed tracts provided that neither tract is smaller than five acres.
 - (2) Retention areas or detention basins which are required as part of this chapter shall not qualify as a public open space.
 - (3) At least 50 percent of the gross area of any active open space required to be dedicated pursuant to this section shall have a natural slope of four percent or less and shall not be located in an existing watercourse, drainage easement or water ponding area. In addition, that portion of the land must have a cover of six inches or more of topsoil suitable for the seeding and cultivation of grass. If land proposed to be dedicated has a natural slope in excess of that required by this subsection, but may be engineered to provide for a slope that meets the requirements imposed therein, the developer may, upon the favorable recommendation of the parks and recreation board, permit such land to be dedicated to satisfy the requirements of this subsection.
 - (4) Open space areas located in spillways where the spillway is greater than 25 percent of the land area shall not be used to meet the requirements of this section.

- (5) Parkland shall be dedicated by the developer in a condition ready for full service with electrical, water, and sewer access at the property line.
- (6) The layout of the park shall maximize street frontage on a public street.
- (b) All land to be dedicated to the city for park purposes shall have the prior approval of the City and shall be shown and marked on the plat, as dedicated to the city. All land dedicated shall transfer ownership at the time of plat recording.

E. - Community open space network/trails system requirement.

- (a) Developments planned for land on which a trail segment is identified on the trail system Master plan shall be required to provide such trail segment. Trail segments shall be constructed at the time of infrastructure improvement and shall be constructed to meet or exceed the standards set forth by the MetroGreen Plan adopted by the Mid-America Regional Council. A public access easement 15 feet in width shall be required over the entire length of the trail segment. The Homeowners Association established for the development shall maintain the land adjoining the trails' surface along with all other common areas in their development.
- (b) The trail system is considered integral to the parks and recreation system and all developers required to construct a segment of a required trail shall be awarded credit against the land dedication requirement. The developer shall be awarded credit both for the property acreage within the public access easement and for the cost of the trail improvement. Trail construction cost credits shall be determined by the city engineer using AASHTO standard costs for asphalt installation for the year in which the construction takes place.

F. - Privately developed recreation space.

The developer may comply with the provisions of this section to furnish land for recreational purposes by privately developing recreational open space and/or preserving significant natural, cultural or historic features or landmarks under the following provisions:

- (1) The developer must provide an area that meets the minimum standards set forth in this section related to size, suitability, and location.
- (2) The developer must provide minimum neighborhood park improvements in a privately developed open space tract including, but not limited to:
 - a. Family picnic shelter.
 - b. Children's playground.
 - c. Turfed playfields.
- (3) All improvements to privately developed open space tracts shall be included in the first phase of infrastructure installation for the development's first final plat. A public access easement over the entire area shall be required and shown on the preliminary and final plat

of the phase of development which includes the dedicated space.

- a. Privately developed parkland shall be maintained by the developer or Home Owners Association (HOA) in the subdivision under a legal agreement approved by the city as adequate to ensure its continued operation and maintenance. The developer may turn over all rights and maintenance of the completed park to the HOA if so agreed upon prior to final plat.
- (4) The city may recommend credit against the requirements of this article for privately developing parkland upon a finding that the development would advance the goals of the parks and recreation element of the city's most recent comprehensive plan and/or would preserve a significant natural, cultural or historic feature or landmark. All requests shall be submitted to the parks and recreation department two weeks prior to appearance before the board and shall include the following information:
- a. A site plan showing:
 1. Scale of the drawing and the boundaries, dimensions, and orientation of the site to true north.
 2. Topography at a minimum two-foot-contour interval.
 3. Location and layout of existing physical characteristics (vegetation, natural waterways and drainage-ways, rock outcroppings, etc.) indicating any significant features to be removed, improved, or preserved.
 4. Location and layout of proposed improvements including landscaping, Irrigation system, pathways and trails, play areas and playground equipment, lighting, fencing, structures, etc.
 5. Ingress, egress, and internal circulation for the site.
 6. Relationship of the proposed site and proposed improvements to adjoining property.
 - b. An itemized list of the proposed improvements including a description, the quantity, and estimated per unit cost figure for the individual improvements.
 - c. A statement of the methods and/or provision for ownership, maintenance and use of the site and proposed improvements.
 - d. Any materials and/or information determined by the parks and recreation department to be necessary or appropriate for board review.
- (4) A combination of accepted land and improvements should total the partial land/partial cash requirement for the development.

G- Subdivision of park and open space prohibited.

Land designated as open space shall be maintained as open space and may not be separately sold, subdivided, or developed except to the city, an appropriate public agency, or a nonprofit entity if there is a public or nonprofit agency willing to accept the dedication and financially

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capable of maintaining such open space.

H - Prohibited Activity.

Following dedication of lands as provided herein, no person shall remove trees, vegetation or topsoil there from, nor shall the lands be used for the purpose of stockpiling of earth or construction material, or disposal of construction debris, without the written consent of city staff.

I - Platting requirements.

All land to be dedicated to the city for park purposes shall have the prior approval of city staff shall be shown and marked on the plat as dedicated to the City of Pleasant Hill, Missouri. All land dedicated shall transfer ownership at the time of the Final Plat recording.

24006.2 WATER SYSTEMS

- a. Generally.** All proposed development shall be connected to a public water system providing adequate supplies for normal usage and emergency needs. The guidelines in Exhibit 240.19 shall be used to evaluate compliance with this provision. The Director and Commission may recommend and the City Council may approve subdivisions which do not comply with the guidelines in Exhibit 240.19, subject to the following conditions:
1. The applicable water supplier has reviewed the proposed development and stated in writing that it has budgeted improvements to provide water supplies consistent with the guidelines in Exhibit 240.19 within two (2) years or that there is no feasible way to meet the water supply guidelines within five (5) years;
 2. The Pleasant Hill Fire Protection District has reviewed the proposed development and has recommended alternative strategies for delivering fire protection services to the proposed development; and
 3. The City Council finds that the proposed development:
 - a. will be adequately served for normal water demands;
 - b. will not reduce system water pressures or supplies so as to create a hazard to the public health or safety within other development served by the water system;

- c. will not pose a threat to life or property within or adjacent to the proposed development due to inadequate fire protection; and
 - d. will not impede the logical extension of services to serve growth in the City in accordance with the Comprehensive Plan.
- b. Design Standards.** All water supply systems shall be designed and constructed to meet APWA and AWWA Standards or other standard adopted by the water supplier. Written authorization from the water supplier shall be required prior to approval of any system which does not meet these standards.
- c. Off-Site Improvements.** The developer of a parcel shall provide for on-site and off-site improvements required to adequately serve a proposed development, provided, however, that the Director may authorize development to proceed if the water provider certifies that the necessary capital improvements have been funded for construction within 18 months. In no event shall a certificate of occupancy be granted prior to connection to an adequate public water supply.

Exhibit 240.19: Water System Design Guidelines

Improvement		Commercial	Residential	Rural
Minimum Diameter Main Line Size (inches) *		8	8	8
Minimum Distance from Approved Emergency Water Supply to Structure (feet)		600	1,200	2,400
Fire Flow (gallons per minute)	Building Separation > 100'		500	
	Building Separation 31' - 100'		750	
	Building Separation 11' - 31'		1,000	
	Building Separation < 11'		1	

Notes * Water Line Piping shall be C-900 or Class 52 Ductile Iron.

(1) *Fire flow for buildings closer than 11 feet should comply with applicable fire safety codes.*

- d. Extension/Oversizing.** Upon recommendation of the Director may require that water lines be over-sized to accommodate future development. The City shall arrange to reimburse the developer for the cost in excess of the minimum line size required to serve the proposed development, provided that no reimbursement shall be

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granted for installation of a water main with less than or equal to a ten (10) inch diameter. Such reimbursements shall be determined pursuant to Section 24003.15.

- e. **Water System Construction.** The Director shall review and approve all proposed public water system improvements prior to construction, and shall require inspection during construction of such improvements and final approval prior to issuance of a building permit.
- f. **Water System Easements.** The property owner shall dedicate adequate easements to accommodate all water system facilities required to serve new development, except individual service lines. The Director shall identify the location and dimensions of required easements, but in no instance shall an easement be narrower than ten (10) feet in width. Easements should follow property lines to the greatest extent possible.

24006.3 PUBLIC WASTEWATER SYSTEMS

- a. **Generally.** The following development shall be connected to a centralized wastewater collection and treatment system complying with this section:
 - 1. All new lots are required to be connected wastewater system which can provide adequate service. Except in the agricultural
- b. **Design Standards.** All wastewater systems shall be designed and constructed to comply with DNR and APWA Standards as modified by the UDC.
 - 1. These design standards are not intended to cover extraordinary situations. Deviations will be allowed and may be required in those instances where considered justified by the Director.
 - 2. Sanitary sewer systems should be designed or built for the ultimate tributary population. Due consideration should be given to current zoning regulations and approved planning and zoning reports where applicable. Sewer capacities should be adequate to handle the anticipated maximum hourly quantity of sewerage and industrial waste together with an adequate allowance for infiltration and other extraneous flow. Design flows shall be subject to approval of the Director for each particular development.
- c. **Deflection Test for Thermo-flexible Conduit.** Prior to acceptance of the completed sewer line, a full circle mandrel of not less than five (5) percent of the average calculated reference internal diameter of the plastic pipe shall be pulled by hand freely through each reach of sewer pipe no sooner than sixty (60) days after installation and final backfill. All plastic pipelines shall be measured for vertical ring deflection. Maximum ring deflection of the pipeline under load shall be limited to

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five (5) percent of the average calculated reference vertical internal pipe diameter as shown in the following table. All pipe exceeding this deflection shall be considered to have reached the limit of its serviceability and shall be realigned or replaced by the applicant at no additional cost to the City. On-site re-rounding is not allowed.

Pipe Size	Mandrel Outer Diameter
4 DR26	3.688
6 DR26	5.485
8 DR26	7.354
10 DR26	9.193
12 DR26	10.944
15 DR26	13.396

- d. Off-Site Improvements.** The developer of a parcel shall provide for on-site and off-site improvements required to adequately serve a proposed development, provided, however, that the Director may authorize development to proceed if the service provider certifies the necessary capital improvements have been funded for construction within 18 months. In no event shall a certificate of occupancy be granted prior to connection to an approved wastewater system.
- e. Extension/Oversizing.** Upon recommendation of the Director and the Commission, the City Council may require that wastewater lines be over-sized to accommodate future development. The City shall reimburse the developer for the cost in excess of the minimum line size required to serve the proposed development, provided that no reimbursement shall be granted for installation of a wastewater line with a diameter of eight (8) inches or less. Such reimbursements shall be determined pursuant to Section 24003.15.
- f. Wastewater System Construction.** The Director shall review and approve all proposed water system improvements prior to construction, and shall require inspection during construction of such improvements.
- g. Wastewater System Easements.** The property owner shall dedicate adequate easements to accommodate all wastewater system facilities required to serve new development, except individual service lines. The Director, shall identify the location and dimensions of required easements, but in no instance shall an easement be narrower than ten (10) feet in width. Easements should follow property lines to the greatest extent possible.

24006.4 PRIVATE (ON-SITE) WASTEWATER SYSTEMS

- a. **Private Systems, Generally.** Where septic tanks or other individual sewage disposal systems are to be installed, they shall be subject to City approval and compliance with any applicable State regulations.
- b. **Permit Required.** Any person who desires to install, add to, alter, expand or repair a private waste treatment system shall make a written application on forms provided by the Director. No person shall install, add to, alter, expand or repair a private waste treatment system without a valid and unrevoked permit issued by the City.
- c. **Failure to Comply with Stop Work Order.** Failure to comply with a stop work order or other lawful order of the Director issued pursuant to this chapter is a violation of these regulations.
- d. **One Residence Per Individual On-Site System.** Only one residence shall be connected to an individual on-site sewage treatment system.
- e. **When Private Waste Treatment System Constitutes a Public Nuisance.** Any private waste treatment system installed, added to, altered, expanded or repaired in violation of this chapter and the rules and regulations of the Director is a threat to the health, safety and welfare of the City and is a public nuisance.
- f. **Private Waste Treatment, Issuance of Permit.** The Director shall issue the appropriate permit in compliance with this chapter and any rule or regulation adopted pursuant to this chapter, and payment of the appropriate fee.
- g. **Private Waste Treatment, Standards.** All private waste disposal systems shall be installed, altered, expanded, repaired or operated according to the Pleasant Hill On-Site Sewage Disposal Rules and Regulations and following standards:
 1. **Systems Designed by Professional Registered Engineer.** All individual on-site sewage disposal systems shall be designed by an engineer registered in the State of Missouri. A minimum of two copies of the design plan shall be submitted to the Director for review. Design plans must be approved by the Director before construction of the system begins. System installations shall be inspected and approved by the City before backfilling.
 2. **Not Create a Public Nuisance.** The location and installation of private waste disposal systems shall be such that with reasonable maintenance, the private waste disposal system will function in a sanitary manner and will not

create a nuisance, health hazard or endanger the safety of any domestic water supply.

3. **Factors Considered.** When reviewing an application for an individual waste treatment system, consideration shall be given to the size and shape of the lot, slope of natural and finished grade, soil type and classification, depth of ground water, proximity of existing or future water supplies and possible expansion of the system.
4. **Minimum Lot Size.** All lots platted subsequent to April 1, 1986 shall be a minimum of two (2) acres in size and contain a minimum of 10,000 square feet of suitable land designed for on-site sewage treatment. All lots platted subsequent to January 1, 1995 shall be a minimum of three (3) acres in size and contain a minimum of 15,000 square feet of suitable land designed for on-site sewage treatment.
5. **Basis for Type of System.** The type of system shall be determined by a registered professional engineer on the basis of location, topography, soil permeability and ground water level.
6. **Designed to Receive All Sewage.** The system shall be designed to adequately receive all sewage from the dwelling. Footing or roof drainage shall not enter any part of the system.
7. **Percolation Test.** Percolation tests shall be made as required by the Director. The tests shall be conducted by or under the supervision of an engineer registered in the State of Missouri.
8. **Sewage Treatment, Issuance of Rules and Regulations.** The Director may promulgate reasonable rules and regulations to implement the provisions of this Section.
 - (a) **Minimum Standard.** Any rule and regulation promulgated shall meet the minimum standard of the Missouri Department of Natural Resources, but nothing in this Chapter shall prevent the Director from requiring compliance with higher requirements than the State regulations.
 - (b) **When Effective.** Rules and regulations issued by the Director shall be effective after approval by the City Council.
 - (c) **Sewage Treatment, Enforcement of Rules.** The Director may enforce this chapter and the rules and regulations adopted under this chapter in the manner set forth below.

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- (d) Sewage Treatment, Suspend or Revoke Permit. The Director may suspend or revoke any permit for noncompliance with this chapter or any rule or regulation issued pursuant to this chapter.
 - (e) Sewage Treatment, Notice of Violation. When the Director determines a violation exists, the Director shall notify the violator in writing. Such notice of violation shall be delivered to the person causing the violation or the legally authorized representative of the person or mailed to the last known address of that person.
 - (f) Sewage Treatment, Stop Work Order Issued. In addition to the notice of violation, the Director may issue a written stop work order if it is believed that the violation poses a serious threat to health and safety. The stop work order shall be delivered to the owner of the property involved, to the agent of the owner or to the person doing the work.
 - (g) Sewage Treatment, Reinstallation of System. The Director may require a system installed in violation of this section and the rules and regulations issued pursuant to this section be reinstalled in compliance with this section and any rules and regulations adopted.
9. Sewage Treatment, Alternative Method. If the system installed in violation of this section and the Rules and Regulations issued under this section cannot be reinstalled and be in compliance, the Director may approve an alternative method of sewage disposal.

24006.5 STORMWATER MANAGEMENT

- a. Purpose.** The purposes of these stormwater management provisions are to protect life and property from reasonably preventable flood hazards; protect the quality of surface waters from contamination, and to minimize loss of valuable wildlife by preserving habitat and linkages between wildlife habitat areas.
- b. Design Objectives.**
 - 1. Natural drainageways shall be retained to minimize interference with floodwater conveyance, floodwater storage, wetlands, and both surface and subsurface hydrology. The Director may approve modifications to natural channels that are consistent with the other provisions of the UDC.
 - 2. Development design should reduce the exposure of people and property to flood hazards and nuisances associated with inadequate management of stormwater runoff.

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3. Erosion and sedimentation problems should be minimized to conserve/enhance water quality and conserve valuable top soil.
4. Development design should accommodate large floods and smaller, more frequent floods along major and minor waterways.
5. Stormwater systems should be designed to minimize future operational and maintenance expenses.
6. Stormwater systems should be designed to reduce the exposure of streets, utilities and other public facilities to damage from stormwater.
7. Development design should minimize need for rescue and relief efforts from floods, and provide sufficient access for such efforts when needed.

c. Stormwater System Design Requirements.

1. All improvements shall be designed in accordance with the most current version in Division V Design Criteria listed in Section 5600 of the standards established by the Kansas City Metropolitan Chapter of the American Public Works Association (APWA Standards), except as modified in this section. All stormwater structures shall comply with the most current version in Section 5700 of the APWA Standards. Construction and materials specifications shall comply with Division II of the APWA Standards, except as modified by this UDC.
2. Stormwater pipe shall be rubber or neoprene gasketed. Drainage structures shall be precast or cast in place concrete in accordance with Pleasant Hill Standard Details sheets, with eccentric cones for manholes and steps located under manhole access.
3. In development as identified in the Comprehensive plan, and where average lot size is less than three (3) acres, the following exceptions shall apply:
 - (a) The provisions of Section 5601.5.A.1. of the APWA Standards shall be modified so that channelized stormwater flows are only required to be piped if the flow from a 10-year storm event can be conducted under gravity flow conditions by a 48-inch or narrower diameter reinforced concrete pipe at a one (1) percent grade.
 - (b) The provisions of Section 5605.1.B of the APWA Standards shall be modified so that drainage easements are not automatically required for open stormwater conveyances. However, those areas which would be required to be located within easements according to the

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APWA Standards shall be designated as "no-build zone" on the proposed development plat or plan.

- (c) The provisions of Section 5606 of the APWA Standards shall be modified to eliminate the requirement for dedication of detention and retention facilities. At the time of development approval, the applicant shall obtain the Director's approval of a plan for future maintenance of any such facilities required for the proposed development.
4. In the Comprehensive plan, and where average lot size is greater than two (2) acres, the following exceptions shall apply:
- (a) The provisions of Section 5601.5.A.1. of the APWA Standards shall be modified so that enclosed stormwater conveyance systems are not required except under streets, driveways and other vehicular or pedestrian areas.
 - (b) The provisions of Section 5605.1.B. of the APWA Standards shall be modified so that drainage easements are not automatically required for open stormwater conveyances. However, those areas which would be required to be located within easements according to the APWA Standards shall be designated as "no-build zone" on the proposed development plat or plan.
 - (c) The provisions of Section 5606 of the APWA Standards shall be modified to eliminate the requirement for detention and retention facilities.
- d. Drainage Study Required.** A drainage study, sealed by a professional engineer, shall be required prior to approval of construction plans or issuance of a building permit for any development other than a single family dwelling, a two-family dwelling or farm structure. The drainage study shall include information necessary to demonstrate compliance with the APWA Standards as modified by this section and applicable DNR, U.S. Army Corps of Engineers or FEMA requirements. All applications for single family permits shall clearly show the boundaries of the 100-year floodplain, if applicable, any channelized water conveyance draining an area of ten (10) acres or larger and sufficient grading information to illustrate the direction of storm water drainage. The Drainage Study shall be supported by a Hydrological Analysis, prepared by a Missouri Registered Engineer. The Director may require the analysis area include the entire inundation area, watershed, or sub-watershed.

e. Stormwater Facility Management.

1. Stormwater facilities shall be maintained to prevent retention of water on site except in designated retention ponds.
2. Landscaping and storage shall be maintained to prevent soil erosion or blockage of drainageways.
3. Property owners are responsible for removal of debris from stormwater conveyances and facilities on their property.
4. No fence, berm or structure shall interfere with drainage patterns unless approved by the Director or part of a Soil Conservation Service project.

f. Floodplain/Inundation Management.

1. **Scope of Floodplain/Inundation Management.** The provisions of this sub-section shall apply to all incorporated areas of Pleasant Hill identified on the Flood Insurance Rate Maps (FIRM) or Floodway Maps as promulgated by the Federal Emergency Management Agency (FEMA) and determined to be within the FW and FF districts as defined in this unified development code.
2. **Disclaimer of Liability.** The provisions of this sub-section do not imply or otherwise warrant that areas outside of the FW and FF, districts or land uses permitted in said districts will be free from flooding or flood damage nor does this code create liability on the part of Pleasant Hill, its officers or employees for any flood damages that may result from reliance on these floodplain/inundation management provisions, FEMA or any regulations or administrative decision made hereunder.
3. **Permit Required.** In all areas covered by these floodplain/inundation management provisions, no development or construction, including manufactured homes, located, extended, converted, structurally altered or otherwise shall be permitted except upon City issuance of a permit to develop granted under the procedures stated herein:
 - (a) No person, firm or corporation shall initiate any development, construction or substantial improvement or cause the same to be done within the FW or FF districts without first obtaining a separate permit for development under these floodplain/inundation management provisions and in compliance with FEMA or Missouri Department of Natural Resources Dam Safety regulations.

- (b) Application for a permit for development, construction or substantial improvement within the FW or FF districts shall be made in writing on a form provided by the Director.
- 4. **Residences within the FW or FF Districts.** All residences to be placed or substantially improved within the FW or FF districts shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is at least one (1) foot above base flood elevation and shall be permanently anchored to said foundation.
- 5. **Preventing Water Accumulation.** Electrical, heating, ventilation, plumbing, and air-conditioning equipment and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding or hydrological event.
- 6. **Automatic Equalization of Hydrostatic Flood Forces.** For all new construction and substantial improvements, fully enclosed areas below the lowest floor that are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwater. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria: A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade in the FW or FF Districts.. Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwater.
- 7. **Enforcement Officer.** The Director is hereby designated as the Enforcement Officer for compliance under these floodplain/inundation management provisions and FEMA regulations.
- 8. **Duties of Enforcement Officer.** The duties of the Enforcement Officer shall include, but not be limited, to the following:
 - (a) Review of all applications for development permits to require that sites are reasonably safe from flooding/inundation and that the permit requirements of this section have been satisfied as well as the other requirements of these regulations.

- (b) Review of all permits for proposed developments to confirm that all necessary permits have been obtained from those Federal, state or local governmental agencies from which prior approval is required.
- (c) Notify adjacent communities and the Missouri Department of Natural Resources prior to any alteration or relocation of a watercourse, and to provide evidence of such notification for FEMA.
- (d) Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.
- (e) Require verification, recording and updating of records of the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures, using reference marks ("RM") established by FEMA.
- (f) Require verification, recording and updating of records of the actual elevation (in relation to mean sea level) using reference marks ("RM") established by FEMA, to which the new or substantially improved structures have been floodproofed and certified by a qualified individual as defined by FEMA when floodproofing as defined herein is utilized for a particular structure.
- (g) Take any actions necessary to assure compliance with City and FEMA regulations in the granting or denial of applications for any permits in the FW and FF districts.
- (h) Require that all proposals for subdivisions and other new development (including manufactured home subdivisions or parks) are consistent with the need to minimize floor damage and that:
 - (1) all public utilities and facilities such as sewer, gas, electrical, and water systems are located, elevated and constructed to minimize or eliminate damage from floods or an hydrological event; and
 - (2) adequate drainage is provided for the purpose of reducing exposure to flood or inundation hazards; and
 - (3) regulatory flood and inundation protection elevations utilizing FEMA "RM" are included in all proposals for all development.

- (i) Require annual training for continued education in floodplain management for all applicable staff.
 - (ii) Maintain records of certification when issuing development permits in conformance with this section.
9. Floodplain/Inundation Permit Application Requirements. All written applications for development or substantial improvement in said districts shall:
- (a) Identify and describe the development to be covered by the permit;
 - (b) Describe the land on which the proposed development is to be done by lot, block, tract and house and street address, or similar description that will readily identify and definitely locate the proposed building or development;
 - (c) Indicate the use or occupancy for which the proposed development is intended;
 - (d) Be accompanied by plans and specifications for proposed construction;
 - (e) Be signed by the proposed permittee or his authorized agent who may be required to submit evidence to indicate such authority;
 - (f) Provide such other information as reasonably may be required by the Enforcement Officer or as required from the applicant under any part of these regulations, including, but not limited, to evidence of compliance with FEMA regulations or guidelines for anchoring to prevent flotation and lateral movement, the use of flood resistant materials and utility equipment and construction methods which minimize flood damage.
10. Flood Plain Considerations in Granting Variances. The Board of Zoning Adjustment shall hear and decide appeals and requests for variances from the requirements of this sub-section. In passing upon such applications, the Board shall consider all technical evaluations, all relevant factors, standards specified in other sections of these regulations, and:
- (a) the danger that materials may be swept onto other lands to the injury of others;

- (b) the danger to life and property due to flooding, inundation or erosion damage
- (c) the susceptibility of the proposed land use to flood damage or inundation and the effect of such damage on the individual owner;
- (d) the importance of the services provided by the proposed land use to the community;
- (e) the necessity to the proposed land use of a waterfront location, where applicable;
- (f) the availability of alternative locations, not subject to flooding, inundation or erosion damage, for the proposed land use;
- (g) the compatibility of the proposed land use with existing and anticipated development;
- (h) the relationship of the proposed land use to the comprehensive plan and floodplain/inundation management program for that area;
- (i) the safety of access to the property in times of flood/inundation for ordinance and emergency vehicles;
- (j) the expected heights, velocity, duration, rate of rise and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site; and
- (k) the costs of providing governmental services during and after flood or inundation conditions including maintenance and repair of public utilities and facilities such as sewer, gas, electrical, and water systems, and streets and bridges.

24006.6 STREETS

- a. Street, Generally.** No development shall be approved if such development, at full occupancy, will result in or increase traffic on an arterial or collector so that the street does not function at a level of service C or better as defined in Section 24002. The applicant may propose and construct approved traffic mitigation measures to provide adequate roadway capacity for the proposed development. The applicant for any development projected to generate more than 1,000 vehicle trip ends per day shall submit a traffic impact analysis.
- b. Street Design.**

1. **Street Design, Generally.** The standards established by this chapter shall apply to all public and private roads in the incorporated area of Pleasant Hill. The City's Comprehensive Plan shall serve as a guide for the location and scale of future arterial, collector and local streets.
2. **Street Classification.** All City streets shall be classified as either a major arterial, minor arterial, collector or local street as defined in Section 24002. Any street that is not already classified in the Comprehensive Plan shall be classified by the Director, subject to confirmation by the Commission and City Council. In classifying roads, the City shall consider projected traffic demands after 20 years of development.
3. **Street Design Standards.** All street improvements shall be designed according to "A Policy on Geometric Design of Highways and Streets" (current - AASHTO), hereafter referred to as AASHTO Standards, except as specifically modified in this Chapter. Construction and materials shall comply with Division II of the APWA Standards as modified by this UDC. Street structures shall comply with Division V of the APWA Standards.
 - (a) Exhibits 240.20 through 240.25 (Appendix B) illustrate typical cross-sections for minor arterials, collectors and local streets. The Dimensions in these figures are minimums, which shall be increased as necessary to safely accommodate required public improvements in accordance with the AASHTO and APWA Standards referenced above. Major arterial design criteria shall be based on projected traffic loads, roadway alignment, topography and other factors.
 - (b) Exhibit 240.27 lists the minimum street standards for rural areas. In, non-residential development and residential development at a density of one dwelling per two (2) acres or greater shall comply with local street standards; and residential development at densities of less than one dwelling per two (2) acres shall comply with rural street standards.

Exhibit 240.27: Design Standards for Streets

Design Standard	Street Classification			
	Major Arterial	Minor Arterial	Collector	Local
Minimum Right-of-Way	100'	100'	80'	50'
Minimum Street Width	60'	48'	32'	24'
Traffic Lanes	5	4	4	2
Design Speed (mph)	55	50	40	30
Minimum Intersection Spacing	based on arterial type and location	250'	200'	125'
Curb & Gutter	required both sides	required both sides	required both sides	required both sides
Shoulder	none	none	none	none
On-Street Parking	not permitted	not permitted	controlled	permitted
Sidewalks	required both sides	required both sides	required both sides	required on 1 side 4 foot in width *
Hike/Bike Trail	Hike and bike trails shall be provided in accordance with the City's Trails Plan			

- Unless adjoining an existing subdivision or street. Then shall meet the existing designs.

4. **Alleys.** Alleys will not be approved in residential districts except where justified by special conditions such as the continuation of an existing alley in the same block.
5. **Dead-End Alley.** Dead-end alleys shall be avoided wherever possible. If unavoidable, dead-end alleys may be approved if adequate turn-around facilities are provided at the closed end.

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6. **Cul-de-sac Approaches.** Cul-de-sac approaches shall have a minimum right-of-way radius of fifty feet (50') for single-family and two-family use, and sixty feet (60') for all other uses. The maximum length shall be no more than 750 feet from the nearest intersecting through street. Development on cul-de-sacs longer than 300 feet shall not generate more than 200 vehicle trips per day as projected using current data from the Institute of Transportation Engineers.
7. **Cul-de-sac Turn-arounds.** Cul-de-sac turn-arounds shall have an outside curb radius of 48 feet (48') and a 60' right-of-way radius edge of pavement 48' right-of-way min 60' and easements needed for drainage. Temporary turnarounds may be provided at the end of streets that will be extended within three (3) years from the beginning of development activity on the cul-de-sac.
8. **Temporary Cul-de-sac.** A street in a phased development may be constructed without a turnaround if it is constructed one lot in length. A street constructed in a phased development which is longer than one lot shall have a temporary turnaround meeting the cul-de-sac dimensions. All temporary cul-de-sacs shall be asphalt surfaced.
9. **General Street Arrangement.**
 - (a) **Adequate Traffic Circulation.** Provisions shall be made for adequate traffic circulation. Local streets shall be designed to limit through traffic.
 - (b) **Lot Access.** Every lot shall have access to a public right-of-way accepted by the appropriate governing body.
 - (c) **Multiple Intersections.** No more than two (2) streets shall cross or intersect at the same point.
 - (d) **Street Connections.** Streets should connect with streets already dedicated in adjoining or adjacent subdivisions and provide for future connections to adjoining unsubdivided tracts whenever possible.
 - (e) **Street Islands.** Street islands are prohibited unless permanent surfacing is installed or the applicant records a covenant to maintain the island. The design of street islands must be approved by the Director. A minimum of 14 feet of pavement shall be provided on either side of a street island and curbs shall be provided if the island is to include any trees or structures. No tree or structure shall be permitted within five (5) feet of the edge of a street island as measured from the adjacent curb face.

- (f) **Street Names.** New streets shall be named so as to provide continuity of name with existing streets and to prevent conflict or confusion with identical or similar existing street names. If a street is a continuation of a named street or is in alignment with an existing street, as determined by the Director, the extension of the street shall bear the same name of the existing street.

10. **Street Dedication and Maintenance.**

- (a) No road or street shall be accepted by the City, unless it meets the design standards established by these regulations and all other design standards established by ordinance or law.
- (b) Dedication of half-streets will not be approved, except where it is essential to the reasonable development of a subdivision and in conformity with all other requirements of these regulations, or where it is found that it will be impracticable to require dedication of the other half when the adjoining property is subdivided, or where it is necessary to acquire the remaining half by condemnation. Dedication of reserve strips shall not be approved.

c. **Traffic Impact Analysis.** For any project projected to generate more than 1,000 vehicle trips per day based on Institute of Transportation Engineers trip generation rates, or if otherwise required pursuant to any provision of the UDC, an applicant shall prepare a traffic impact analysis in conformance with the provisions of this section. At a minimum, the traffic impact analysis shall include the following:

1. existing traffic conditions and peak hour levels of service on adjacent roadways and intersections located within one mile of the project;
2. average daily and peak hour traffic demands to be generated by the project;
3. existing capacity of adjacent roadways;
4. projected roadway level of service, based on full development of the project and any other approved projects within one mile of the subject property, on adjacent roadways and at intersections located within one mile of the project;
5. recommended traffic mitigation measures for any development for which is projected to result in a level of service "D" or worse as defined in Section 24002. Said measures shall result in a projected level of service "C" or better; and
6. costs of the recommended traffic mitigation measures.

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- d. **Traffic Control.** Traffic control devices shall be provided for new development pursuant to the Pleasant Hill Code.

24006.7 PARKING, LOADING AND ACCESS STANDARDS

- a. **Parking Required for All Structures.** For all buildings or structures hereafter erected, constructed, reconstructed, moved or altered, off-street parking shall be provided. Such parking spaces shall be located entirely on the same property as the main use with no portion other than the necessary drives extending into any street right-of-way or other public way. The issuance of building permits or certificates of occupancy shall require compliance with the minimum parking standards even though a plan may have been approved previously which included fewer parking spaces.

- b. **Minimum Parking Requirements.**

1. Each use shall provide the number of parking spaces specified in Exhibit 240.28.
2. The Director shall determine the number of parking spaces required for uses not referenced in Exhibit 240.28 by applying the standard for the most similar use or uses as listed in the table. If there is no similar use, the Director shall make a determination based on available parking studies or standards.
3. Any fraction of a parking space calculated as required under this section shall be counted as a full parking space.
4. Parking shall be provided on the same lot with the use except as permitted by this section.
5. Handicapped spaces shall be designed and provided as required by the Americans with Disabilities Act (ADA) standards.
6. Off-street parking facilities shall be provided for any new building constructed, for any new use established, for any addition or enlargement of an existing building or use, or for any change of occupancy or manner of operation that would result in additional parking spaces being required. If insufficient parking exists on a lot or parcel, then the number of spaces required to meet the needs of both the existing and proposed buildings or uses shall be provided.
7. Facilities being used for off-street parking on the effective date of these regulations shall not be reduced in capacity to less than the number of spaces

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prescribed, or altered in design or function to less than the minimum standards prescribed herein.

8. For sites with more than one use, or for adjacent sites served by a common parking facility, the parking requirement shall be the total number of spaces required for each site or use, except as otherwise provided.
9. Head-in parking from any public right-of-way shall not be permitted.

Exhibit 240.28: Off-Street Parking Requirements

Use	Parking Spaces Required
Single-Family Dwelling	2 spaces per dwelling unit (DU)
Two-Family Dwelling	2 spaces per DU
Multiple-Family Dwelling	1.5 spaces per efficiency or 1 bedroom (BR) per DU; 1.75 spaces per 2 or 3 BRs per DU; 2 spaces per 4 or more BRs per DU
Hotel/Motel	1.1 spaces per guest unit
Dormitory, Lodging House, Fraternity/Sorority House	0.5 spaces per BR
Nursing/Convalescent Home, Congregate Care Facility	1 space per 3 beds plus 1 space per 200 SF of office space
Office	1 space per 250 SF of Gross Leasable Area (GLA)
Retail, Commercial	1 space per 200 SF for # 50,000 SF GLA 1 space per 250 SF for > 50,000 SF and # 100,000 SF GLA 1 space per 300 SF for > 100,000 SF GLA
Restaurant	1 space per 100 SF GLA
Tavern/Cocktail Lounge	1 space per 50 SF GLA
Industrial/Warehouse	1 space per 1,000 SF GLA plus 1 space per 200 SF GLA of office space
Public Assembly	1 space per 4 persons allowed under maximum occupancy
Recreational Uses Amusement Center Driving Range Golf Course	1 space per 200 SF GLA 1 space per tee 4 spaces per green
Mixed Use	See Section 24006.7 d.

c. Off-Site or Remote Parking. The Director may approve locating the required parking for a use on another site when:

1. Both the primary use and the off-site parking are located in an area zoned for the primary use served by the off-site parking;
2. The off-site parking is located within 300 feet of the primary use it serves;
3. The applicant has provided written documentation of the continued availability of the proposed off-street parking facilities; and
4. Adequate parking is provided on-site for the handicapped.

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d. Parking for Mixed Use Developments. The Director may authorize a reduction in the total parking requirement for separate uses located on the same site or adjoining sites which are served by a common parking facility. Reductions pursuant to this section shall not be granted for facilities using off-site or remote parking. In determining whether to approve an adjustment for mixed use developments, the Director shall consider all relevant factors, including:

1. The characteristics of each use and the differences in projected peak parking demand, including days and hours of operation;
2. The potential reduction in vehicle movements afforded by multi-purpose use of the parking facility by employees, customers or residents of the uses served;
3. The potential improvements in parking facility design, circulation and access afforded by a joint parking facility; and
4. The report and recommendation of the Director.

e. Parking Design Standards.

1. Exhibit 240.29 establishes the minimum design standards for parking areas; the Director may require modifications to parking lot design to ensure the safety of pedestrians, bicyclists and motorists:

Exhibit 240.29: Minimum Parking Facility Design Standards

Parking Angle (degrees)	Maneuvering Lane Width (feet)		Parking Space Dimensions (feet)		Total Width of 2 Tiers of Spaces & Maneuvering Lane (feet)	
	One Way	Two Way	Width	Length	One Way	Two Way
30 ^N - 50 ^N	12	20	9	18	48	56
51 ^N - 75 ^N	13	22	9	18	49	58
76 ^N - 90 ^N	N/A	24	9	18	N/A	60

2. All parking areas and drives shall be ready for use prior to occupancy of a building or site, and shall be approved by the Director prior to the issuance of a certificate of occupancy. The Director may grant special permission to delay this requirement due to weather conditions not being satisfactory for proper installation of surfacing materials.
3. All off-street parking shall be located outside of required landscape areas.

4. Parking facilities constructed or substantially reconstructed subsequent to the effective date of these regulations, whether required or not, shall conform to these design standards.
5. All required parking facilities shall be maintained for the duration of the use requiring such facilities. Required parking facilities shall be used exclusively for the temporary parking of passenger automobiles, motor vehicles or light trucks not exceeding one ton in capacity, and shall not be used for the sale, display or storage of merchandise, or for the storage or repair of vehicles or equipment.
6. Each standard parking space shall consist of an independently accessible rectangular or trapezoidal area.
7. Each parking space shall have a vertical clearance of at least 7.5 feet.
8. Each parking and loading area shall have adequate drives, aisles, and turning and maneuvering areas for access and usability, and shall at all times have access to a street or alley and provide sidewalk access to buildings.

f. Parking Area Paving and Drainage.

1. Parking and loading facilities for all uses shall be surfaced and maintained with asphaltic concrete or other surfacing material approved by the Director. Paved surfaces shall be designed to withstand anticipated traffic loads. The Director may authorize the use of pervious materials, provided that the applicant documents that the proposed design and construction will be durable under anticipated traffic demands. All parking areas shall meet the following minimum paving standards:

Zoning District	Within the Right-of-Way		Outside the Right-of-Way	
	Driveway Surface	Pavement Thickness	Driveway Surface	Driveway Thickness
A	Asphalt	6 inches	Dust Free *	4 inches
RS	Asphalt	6 inches	Dust Free*	4 inches
R1	Concrete	6 inches	Dust Free*	4 inches
R2	Concrete	6 inches	Dust Free*	4 inches
R3	Concrete	8 inches	Dust Free*	4 inches
CO	Concrete	8 inches	Dust Free*	4 inches
C1 & C2	Concrete	8 inches	Dust Free*	4 inches
M1	Concrete	8 inches	Dust Free*	4 inches
M2	Concrete	8 inches	Dust Free*	4 inches
UG	Concrete	8 inches	Dust Free*	4 inches

- * **Dust free surface:** surface constructed of either concrete, asphalt, chip and seal, pavers or brick. It shall not include any surface composed of loose aggregate or other fill, not permanently bonded together.
2. All parking and loading facilities shall be designed, graded and provided with permanent storm drainage facilities that prevent standing water on any parking area, and do not increase the flow of water onto adjacent properties, streets or alleys.
- g. Parking Area Lighting.** If provided, lighting used to illuminate parking areas shall be arranged, located or screened so that light sources are not directly visible from adjoining or abutting residential district or any street right-of-way.
- h. Landscaping and Screening.** Parking lot landscaping and buffering shall comply with Sections 24006.10 and 24006.11.
- i. Off-Street Loading Requirements.**
1. Off-street loading facilities shall be provided for any new building constructed, for any new use established, and for any addition or enlargement that would result in the additional loading spaces pursuant to Exhibit 240.30.

2. Facilities being used for off-street loading on the effective date of these regulations shall not be reduced in capacity below the number of spaces prescribed herein, or altered in design to less than the minimum standards.
3. Loading facilities constructed or substantially reconstructed subsequent to the effective date of these regulations shall conform to the standards set forth herein.
4. All required loading facilities shall be maintained for the duration of the use or building requiring such facility, and shall be used exclusively for the purpose of loading and unloading goods, materials and supplies. Loading areas shall not be used for the sale, display or storage of materials or merchandise or for the storage or repair of vehicles or equipment.
5. Loading and unloading spaces, unless adequately provided for within a building shall be an area ten feet (10') by forty feet (40'), with fifteen feet (15') vertical clearance.

Exhibit 240.30: Loading Requirements

Gross Floor Area (SF)	Loading and Unloading Spaces Required
0 - 1,999	None
2,000 - 4,999	Up to 1 space at the discretion of the Director
5,000 - 19,000	1 space
20,000 - 99,000	1 space plus one space for each 20,000 sq. ft. or portion thereof in excess of 20,000
100,000 or more	5 spaces plus one space for each 40,000 sq. ft. or portion thereof in excess of 100,000 sq. ft.

j. Sidewalk Design Standards.

1. Sidewalks, or pedestrian crosswalks, may be required, upon a determination by the Director, to provide circulation or access to schools playgrounds shopping centers, community facilities or other locations with significant pedestrian traffic.
2. Sidewalks, are required pursuant to these regulations, shall be granted a right-of-way width of not less than ten feet (10') and be graded and constructed of reinforced concrete at least four (4) feet in width and four (4) inches thick on

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designated local streets Sidewalks located within 500 feet of a school or public park shall be a minimum of five (5) feet in width. These standards shall be increased as required to comply with ADA requirements.

k. Access Standards.

1. Proper access design and location are essential to the maintenance of safe, efficient traffic flow. Access standards shall apply to all development to prevent the proliferation of poorly spaced driveways that can reduce the safety and carrying capacity of community streets.
2. Every lot shall abut a street with adequate width for private driveways for the purpose of ingress and egress to the lot. Except as expressly provided by the UDC, no building permit shall be issued for any lot or parcel which does not abut a public street.
3. All lots shall be provided with access by means of streets which have been constructed in conformance with the standards and specifications of these regulations, and dedicated in accordance with these regulations. However, the City Council may consider for approval lots, parcels or tracts that are provided with the means of access by private streets so long as the private streets are constructed in conformance with standards and specifications prescribed for public roads in the these regulations, and an association or entity is responsible for maintenance of these streets.
4. Driveways shall meet or exceed the minimum standards established in Exhibit 240.31.
5. Turning lanes may be required along arterial streets. When channelized right turn lanes are used, the Director shall determine the minimum spacing between the driveways and intersections based on AASHTO standards.
6. No single family or two-family lot shall be created which is accessed from an arterial street.

Exhibit 240.31: Driveway Standards

		Adjoining Road Type			
		Major Arterial	Minor Arterial	Collector	Local
Minimum separation between driveways (feet)		350	200	125	not applicable
Minimum separation between driveway and intersection (feet)		350	100	50	25
Minimum driveway width (feet)		28	24	20	12
Maximum driveway width (feet)		32	28	24	24
Minimum turning radius (feet)	Single Family	25	20	10	5
	Other	25	25	25	10
Minimum distance between driveway and drainage inlet (feet)		15	15	15	15

Notes

- (1) *Where single family and two-family lots along collector streets are not subject to the minimum separations between driveways.*
 - (2) *Divided driveways shall be considered single drives and are subject to the above standards except that drives shall not exceed 24 feet in width on either side of the divider nor be less than 14 feet.*
 - (3) *Minimum driveway separations shall be measured from the nearest parallel street point of curvature to nearest driveway surface point of curvature along the connecting street pavement edge.*
7. These standards are not intended to preclude access to existing lots. Where Exhibit 240.31 would preclude access to a lot, the BZA may vary the access standards, subject to the following guidelines.
- (a) Corner lots adjacent to streets of unequal classification shall access the street designed to carry a lower traffic volume.

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- (b) Corner lots adjacent to streets of equal classification shall access the street with the greatest frontage.
- 8. The Director shall establish minimum contractor insurance standards unless work is to be done by property owner - then insurance is waived.
- 9. Driveways and subdivision entrances shall meet sight distance requirements set by the Director. The Director shall give special consideration to existing parcels and land platted before adoption of the UDC provided that the owner must sign a waiver prior to the Director's grant of exception.
- 10. Details of construction (e.g., driveway pipe, ditch grading, etc.) shall be designed and constructed as specified by the Director.

24006.8 LOTS

a. Lot Dimensions, Generally. The lot standards provided in this Chapter shall apply in each zoning district in which such uses are permitted. In the event that standards identified in this Chapter vary from those regulations specified in the zoning district text, the more restrictive standard shall govern.

b. Single-Family Lots.

- 1. Maximum height, as well as the minimum lot size, depth, width and building setbacks for single-family development shall comply with the applicable zoning district standards.
- 2. Single family lots shall be deeper than wide.
- 3. For lots on cul-de-sacs or similar circumstances, the minimum width shall apply at all points between the front and rear setback lines. Cul-de-sac lots shall have a minimum width of 25 feet at the street line.
- 4. A minimum of 15 feet must be provided between structures and the street side property line of a corner lot.
- 5. The minimum yard requirements shall be increased to 30 feet from any lot or parcel boundary which abuts an arterial or collector street along the side or rear property line.

6. Only one principal building is permitted on a lot except within a planned development district.

c. **Dense Housing Types.** Lot depth, lot width, and the front, side and rear yard setbacks listed in Exhibit 240.32 shall apply to the listed housing types in any district in which they are permitted.

Exhibit 240.32: Lot Standards for Dense Housing Types

Housing Type	Minimum Lot Size (square feet)	Minimum Building Setback (Feet)		
		Front	Side ¹	Rear
Patio Homes	6,000	20	10	20
Zero Lot Line Homes	4,000	20	0	20
Duplex, Twinplex	6,500	15	7	20
Townhouse	2,000	10	25 ²	20
Multifamily	10,000	25	25 ²	20

Notes:

¹ A total distance of 10 feet is required between buildings with 10 ft. minimum setback being required on one side of each lot.

² A minimum 25 feet must be provided between multi-family buildings.

d. **Non-Residential Lots.**

1. Canopies connected to the main building shall be set back a minimum of 20 feet from any property line.
2. No interior side yard will be required on contiguous lots developed as a common project, except as required to comply with fire codes.
3. Accessory structures shall be located a minimum of 20 feet from all property lines.
4. More than one principal building may be permitted on a lot pursuant to a Planned District.

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e. Corner Lots.

1. Corner lots shall have extra widths where necessary to permit the establishments of sight area easements. On all corner lots, there shall be provided a sight area easement as illustrated in Exhibit 240.33 (Appendix B). Within this easement no building, earth bank, vegetation, or other obstruction shall be allowed which is more than three (3) feet in height above the centerline of the adjacent the road. In lieu of dedicating a sight area easement, the applicant may dedicate said area as part of the street right-of-way.
2. Corner lots adjacent to streets of unequal classification shall have only one (1) access driveway to be located on the lower classification, based upon traffic volume, of the intersecting streets.

f. Through Lots. Through lots, or double-frontage lots, shall be avoided except where essential to separate residential development from traffic arteries or to overcome specific disadvantages of topography and orientation.

g. Flag Lots. Flag lots are only permitted in agricultural zoning districts. Flag lots or parcels may be permitted in the rural development tier under the following conditions:

1. The flag lot directly accesses a local street;
2. The aggregate width of the pole, or poles for two (2) adjacent flag lots, is a minimum of 60 feet in width with minimum pole width of 30 feet; and

h. Lot Lines. All quadrangular lots and, so far as practical all other lots, shall have side lines at right angles to straight street lines or radial to curved street lines. Unusual or odd-shaped lots having boundary lines that intersect at extreme angles shall be avoided.

i. Lot Orientation. The lot line common to the street right-of-way line shall be the front line. All lots shall face the front line and a similar lot across the street. Wherever feasible, lots shall be arranged so that the rear line does not abut the side line of an adjacent lot.

j. Lot Remnants. No lot or parcel shall be created which does not meet the minimum standards of the applicable zoning district and the UDC, except pursuant to a planned district which provides for the perpetual maintenance of such remnants. Reserve strips are prohibited.

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24006.9 BLOCKS

The length and width of blocks shall be sufficient to accommodate two (2) tiers of lots with minimum standards specified by the applicable zoning district and this Chapter, except where a single row of lots back up to an arterial street. When reviewing proposed lot and block arrangements, the Commission shall consider the following factors:

- a. **Adequate Building Sites Required.** Provisions of adequate building sites suitable to the special needs of the type of land use (residential, commercial or other) proposed for development shall be provided, taking into consideration topographical and drainage features.
- b. **Minimum Lot Sizes Established.** Minimum zoning district and lot requirements defining lot sizes and dimensions shall be accommodated without creating unusable lot remnants.
- c. **Safe Access Required.** Block layout shall enable development to meet UDC requirements for convenient access, circulation, control and safety of street traffic.
- d. **Crosswalks.** The City Council may require the dedication of a pedestrian access easement and crosswalk and construction of sidewalks for any block that exceeds 1,200 feet in length.

24006.10 LANDSCAPING STANDARDS

- a. **Statement of Intent.** The purpose of these landscaping requirements is to promote the health, safety and welfare of existing and future residents by establishing minimum standards for the protection of natural resources and the installation and continued maintenance of landscaping within Pleasant Hill. The City encourages creative landscape design. These requirements will be applied to all new development, redevelopment or building expansion projects. Minimum landscaping requirements will:
 - 1. Provide greenery to visually soften paved areas and buildings.
 - 2. Improve air and water quality.
 - 3. Maintain permeable land areas essential to surface water management and the conservation of lakes, ponds and lagoons.

4. Reduce air, noise, heat and chemical pollution through the biological filtering capacities of trees and other vegetation.
5. Screen certain unsightly equipment or materials from the view of persons on public streets or adjoining properties and buffer uncomplimentary land uses.
6. Promote energy conservation through the creation of shade, reducing buildings' heat gain.
7. Provide habitat for wildlife.
8. Encourage the preservation and stabilization of wetlands and other natural habitats.
9. Maintain property values.
10. Generally enhance the quality and appearance of developed properties within the City.

b. Interpretation of Landscaping Terms. Where necessary to interpret the precise meaning of technical landscaping terms used in this Chapter, reference shall be made to The American Standard For Nursery Stock, as published by the American Association of Nurserymen (AAN).

c. Landscaping Plan Required. A landscape plan shall be submitted in support of a site plan or building permit for any development within any area, except for farms, ranches, single-family dwellings and two-family dwellings. The landscape plan shall be signed by a registered landscape architect. All landscaping plans shall include the following information:

1. the locations, varieties, number, and size of plants to be planted within required landscape areas;
2. the irrigation system proposed to sustain plantings;
3. topographic information showing the final site grading and drainage for landscape area, and properly specify planting for areas needing slope protection;
4. impervious surfaces, including sidewalks, pavement areas and building footprints;
5. property boundaries;
6. mature sizes of plant materials shall be drawn to scale;

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7. existing trees, eight inch (8") caliper or larger, measured at three (3) feet above ground level that are proposed to remain.
8. the boundaries and edge treatments of all landscape areas; and
9. the registered landscape architect's certification that the City's landscape regulations have been met and all materials to be planted will be of sufficient size, grade, condition, quality and geographically appropriate variety to create a durable, attractive landscape for the property.

d. Minimum Landscaping Requirements.

1. All developed land areas subject to a landscape plan, which are to be unpaved or not covered by buildings, shall be brought to finished grade and planted with turf or native grass or other durable ground cover which will minimize erosion. In addition to the minimum number of trees required to be planted by this section, an appropriate number or amount of shrubs, ground cover and/or turf area plantings shall be included within each project. Landscape design for a project shall consider visual safety and landscape function.
2. The minimum percentage of the total lot area of a property subject to landscaping requirements is listed in Exhibit 240.34.

Exhibit 240.34: Landscaping Coverage

Land Use (type of development)	Landscaping Required (% of total lot area)
Single-family; Two-family	1-11/2 inch tree
Multi-family	20
Office	15
Commercial	10
Industrial	10

3. All plant materials shall be of a size, species and condition to create healthy, low maintenance landscape areas.
4. A minimum of one tree shall be planted for every sixty (60) feet of street frontage. Such trees may be clustered, staggered or planted in line. In

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addition, one tree shall be planted for every 3,000 square feet of required landscape area.

5. Trees planted to meet these requirements shall be a minimum three inches caliper at three feet (3') above grade.
 6. Shrubs, small deciduous/ornamental trees and dwarf trees should be planted in appropriate numbers to create an attractive understory. Understory plantings are encouraged, but not required, except pursuant to Section 24006.11 (Bufferyards).
- e. Existing Landscaping.** Existing trees, which are a minimum of three inches caliper at three feet (3') above grade, and other plant material saved on the site during construction may be credited toward the minimum number of trees and plants required as specified for each use. All existing plant material saved shall be healthy and free of mechanical injury.
- f. Landscaping Required to be Installed.** All required landscaping materials shall be in place prior to the time of issuance of a final Certificate of Occupancy, weather permitting. In periods of adverse weather conditions, a temporary Certificate of Occupancy may be issued, subject to the posting of a cash escrow or irrevocable letter of credit in an amount equal to one and one-half times the estimated cost of the landscaping, with said estimated cost to be certified by a landscaping provider. The cash escrow or irrevocable letter of credit may be forfeited if the landscaping is not completed within one year after the issuance of the temporary Certificate of Occupancy. Forfeiture of any cash escrow or irrevocable letter of credit shall not relieve the owner of the responsibility to complete the required landscaping.
- g. Landscaping Maintenance.**
1. The developer, the property owner, and/or subsequent or successor owners and their agents shall be responsible for maintenance of landscaping on the property on a continuing basis for the life of the development. All required landscaping shall be maintained in a neat and orderly manner at all times. This shall include, but not be limited to, mowing (of grass of six inches (6") or higher), edging, pruning, fertilizing, watering, weeding, and other activities common to the maintenance of landscaping.
 2. Landscaped areas shall be kept free of trash, litter, weeds, and other materials or plants not a part of the landscaping.
 3. All required plant material shall be maintained in a healthy and growing condition as is appropriate for the season of the year. Plant materials which exhibit evidence of insect pests, disease and/or damage shall be appropriately

treated, and dead plants promptly removed and replaced within the next planting season after installation.

h. Landscaping Requirements within Parking Areas.

1. The Director may approve alternative landscape designs which combine landscape areas to preserve existing vegetation.
2. A minimum ten foot (10') wide landscape area shall surround all parking lots for multi-family, commercial, industrial or public use. Additionally, any lot with more than fifty (50) parking spaces shall have at least one landscaped island or peninsula of 200 square feet for every fifty (50) parking spaces.
3. Landscape islands and peninsulas may be dispersed throughout the parking lot.
4. The primary landscaping materials used in parking lots shall be trees which provide large shaded areas at maturity. Conifers should be used in buffer areas only.
5. Landscape areas within parking lots or other paved areas shall have a minimum width of ten feet (10') and a minimum contiguous area of 200 square feet.
6. All parking lot landscaping shall be protected from inadvertent damage from vehicles due to direct contact or ground compaction, by means of curbs, berms or bollards.

24006.11 SCREENING AND BUFFERYARD STANDARDS

- a. **Purpose.** The intent of these screening and bufferyard standards is to ensure that the use and design of new developments will be compatible with that of adjacent development.
- b. **Screening Requirements.** Landscaping plans for all residential projects containing multi-family dwellings and all commercial and industrial projects shall include a detailed drawing of enclosure and screening methods as provided:
 1. Trash enclosures shall be screened from public view on at least three sides with a 6-foot solid fence constructed of cedar, redwood, masonry or other compatible building material, and shall be appropriately landscaped.

2. For purposes of this section, the phrase "screened from public view" means not visible from adjoining residential properties or any street right-of-way.
3. All buildings or additions thereto in commercial or industrial districts shall provide a solid screen fence or wall not less than 6 feet in height along all rear and side property lines which are common to property zoned for residential purposes, except that such screening shall not extend in front of the front building line. Such screening shall not be required where similar screening exists on the abutting residential property.

c. Bufferyard Requirements. If proposed development does not have the same use and density as adjacent land use, then the bufferyards shall be required as specified in Exhibits 240.35 and 240.36.

1. The applicant may select any of the appropriate bufferyard alternatives illustrated in Exhibit 240.35 (Appendix B), choosing between provision of additional space or additional plantings.
2. Approval of plant material and bufferyard design is required. The Director shall determine whether the proposed bufferyard satisfies the intent of the bufferyard requirements, and shall reasonably determine whether or not the specific planting criteria of this paragraph for vegetative bufferyards have been met.
3. Bufferyards and open spaces shall be provided on the site of the new development, regardless of existing setbacks, bufferyards or open space otherwise provided on the existing developed site.
4. Bufferyards do not include required building setbacks and shall be shown as landscape easements on the plat and site plan.

d. Fences.

1. Fences shall not be located outside or beyond the property lines of the lot or parcel upon which said improvements are located.
2. Opaque or solid fences shall be placed no closer to the front lot line than the front yard setback line established by the building or buildings erected upon said lot. Picket fences not exceeding three (3) feet in height, chain link fences not exceeding four (4) feet in height, wrought iron fences and other decorative fences may be located in the front yard, provided that they do not conflict with the sight triangle.

3. Privacy fences shall be located no closer to the said lot line than the platted side yard setback line of residential corner lots which adjoin interior lots that front or face on to the side street.
4. No fence shall be constructed which will constitute a traffic hazard or encroach upon the sight triangle as defined in Section 24006.8 of this UDC.
5. No fence shall exceed eight (8) feet in height except as for public utilities, public or private schools, public or private recreation facilities or industrial properties.
6. No fence shall be constructed in such a manner or be of such design as to be hazardous or dangerous to persons or animals.
7. The installation of electric fences shall be prohibited in all zoning districts except the A district.
8. Barbed wire fences or barbed wire assemblies atop fences shall be permitted in the A district but prohibited in all other districts.

Exhibit 240.36: Required Bufferyards

Existing Development	Proposed Development				
	Single-family; Two family	Multi-family	Office	Commercial	Industrial
Agricultural Use	A	B	A	A	Not Required
Single-family; Two-family	Not Required	A	B	C	D
Multi-Family	A	Not Required	A	B	D
Office	B	A	Not Required	A	D
Commercial	C	B	A	Not Required	D
Industrial	D	D	D	D	Not Required

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