

Chapter 3 — Design Standards

3.0 - Design Standards Administration

3.1 - Access and Circulation

3.2 - Landscaping, Fences and Walls

3.3 - Vehicle Parking, Bicycle Parking, and Loading Standards

3.4 - Public Facilities Standards

3.5 - Surface Water Management

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Chapter 3.0 — Design Standard Administration

Sections:

3.0.100 - Applicability

3.0.200 - Types of Design Standards

3.0.100 Applicability.

All developments within the City must comply with the provisions of Chapters 3.1 through 3.6. Some developments, such as major projects requiring land division and/or site design review approval, may require detailed findings demonstrating compliance with each chapter of the code. For smaller, less complex projects, fewer code provisions may apply.

3.0.200 Types of Design Standards.

The City's development design standards are contained in both Chapter 2 and Chapter 3. It is important to review both chapters, and all relevant code sections within the chapters, to determine which standards apply. The City may prepare checklists to assist property owners and applicants in determining which sections apply.

A. Chapter 3. The design standards contained within the following chapters apply throughout the City, for all land use types:

- 3.1 - Access and Circulation
- 3.2 - Landscaping, Street Trees, Fences and Walls
- 3.3 - Automobile and Bicycle Parking, Loading Standards
- 3.4 - Public Facilities Standards
- 3.5 - Surface Water Management
- 3.6 - Other Design Standards
- 3.7 – Flood Plain Design Standards

B. Chapter 2. Each land use district (Chapter 2) provides design standards that are specifically tailored to the district. For example, the Residential use zone contains building design guidelines that are different than those provided in the Tourist Commercial use zone, due to differences in land use, building types, and compatibility issues. In addition, each use zone provides special standards that are meant to address the impacts or characteristics of certain land uses.

Chapter 3.1 — Access and Circulation

Sections:

3.1.100 - Purpose and Applicability

3.1.200 - Vehicular Access and Circulation

3.1.300 - Pedestrian Access and Circulation

3.1.100 Purpose and Applicability

The purpose of this chapter is to help insure that developments provide safe and efficient access, circulation, and connectivity for vehicles and pedestrians. Section 3.1.200 provides standards for vehicular access and circulation. Section 3.1.300 provides standards for pedestrian access and circulation. Standards for transportation improvements are provided in Chapter 3.4.100.

This Chapter applies to new development and changes in land use necessitating a new or modified street or highway connection. Except where the standards of a roadway authority other than the City supersede City standards, Chapter 3.1 applies to all connections to a street or highway, and to driveways and walkways.

3.1.200 Vehicular Access and Circulation.

A. Intent and Purpose. The intent of this Section is to manage vehicle access to development through a connected street system, while preserving the flow of traffic in terms of safety, roadway capacity, and efficiency. Access shall be managed to maintain adequate “performance standards” and to maintain the “functional classification” of roadways as required by the City’s Transportation System Plan. Major roadways, including highways, arterials, and collectors, serve as the primary system for moving people and goods. “Access management” is a primary concern on these roads. Local streets and alleys provide access to individual properties. If vehicular access and circulation are not properly designed, these roadways will be unable to accommodate the needs of development and serve their transportation function. This Section attempts to balance the right of reasonable access to private property with the right of the citizens of the City and the State of Oregon to safe and efficient travel. It also requires all developments to construct planned streets (arterials and collectors) and to extend local streets.

To achieve this policy intent, state and local roadways have been categorized in the Transportation System Plan. Regulations have been applied to these roadways for the purpose of reducing traffic accidents, personal injury, and property damage attributable to access systems, and to thereby improve the safety and operation of the roadway network. This will protect the substantial public investment in the existing transportation system and reduce the need for expensive remedial measures. These regulations also further the orderly layout and use of land, protect community character, and conserve natural resources by promoting well-designed road and access systems and discouraging the unplanned subdivision of land.

B. Access Permit Required. Access to a public street requires an Access Permit in accordance with the following procedures:

1. Permits for access to City streets shall be subject to review and approval by the City Engineer based on the standards contained in this Chapter, and the provisions of Chapter 3.4.100

Transportation Standards. An access permit may be in the form of a letter to the applicant, or it may be attached to a land use decision notice as a condition of approval.

2. Permits for access to State highways shall be subject to review and approval by Oregon Department of Transportation (ODOT). In that case, ODOT shall determine whether access is granted based on its adopted standards.
 3. Permits for access to County roads shall be subject to review and approval by Umatilla County, except where the County has delegated this responsibility to the City, in which case the City shall determine whether access is granted based on adopted County standards.
- C. **Traffic Study Requirements.** The City or other agencies with access jurisdiction may require a traffic study prepared by a qualified professional to determine access, circulation and other transportation requirements. (See Section 3.4.100 Transportation Standards and Chapter 4.10 Traffic Impact Study.)
- D. **Conditions of Approval.** The City or other agency with access permit jurisdiction may require the closing or consolidation of existing curb cuts or other vehicle access points, recording of reciprocal access easements (i.e., for shared driveways), development of a frontage street, installation of traffic control devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and efficient operation of the street and highway system. Access to and from off-street parking areas shall not permit backing onto a public street.
- E. **Access Options.** When vehicle access is required for development (i.e., for off-street parking, delivery, service, drive-through facilities, etc.), access shall be provided by one of the following methods. These methods are “options” to the developer/subdivider, unless one method is specifically required by Chapter 2 (i.e., under “Special Standards for Certain Uses”). A minimum of 10 feet per lane is required.
1. **Option 1.** Access is from an existing or proposed alley or mid-block lane. If a property has access to an alley or lane, direct access to a public street is not permitted.
 2. **Option 2.** Access is from a private street or driveway connected to an adjoining property that has direct access to a public street (i.e., “shared driveway”). A public access easement covering the driveway shall be recorded in this case to assure access to the closest public street for all users of the private street/drive.
 3. **Option 3.** Access is from a public street adjacent to the development parcel. If practicable, the owner/developer may be required to close or consolidate an existing access point as a condition of approving a new access. Street access shall comply with the access spacing standards in Section F.
 4. **Subdivisions Fronting on to an Arterial Street.** New residential land divisions fronting onto an arterial street shall be required to provide alleys or secondary (local or collector) streets for access to individual lots. When alleys or secondary streets cannot be constructed due to topographic or other physical constraints, access may be provided by consolidating driveways for clusters of two or more lots (e.g., includes flag lots and mid-block lanes).

5. Double-Frontage Lots. When a lot has frontage onto two or more streets, access shall be provided first from the street with the lowest classification. For example, access shall be provided from a local street before a collector or arterial street. Except for corner lots, the creation of new double-frontage lots shall be prohibited in the Residential District, unless topographic or physical constraints require the formation of such lots. When double-frontage lots are permitted in the Residential District, a landscape buffer with trees and/or shrubs and ground cover not less than 20 feet wide shall be provided between the backyard fence/wall and the sidewalk or street; maintenance shall be assured by the owner (i.e., through homeowner's association, etc.). Double frontage lots are further discussed in Chapter 4.3.

Important cross-references to other code sections:

Chapters 2 and 3 may require buildings placed at or near the front property line and driveways and parking areas oriented to the side or rear yard. The City may require the dedication of public right-of-way and construction of a street (e.g., frontage road, alley or other street) when the development impact is proportionate to the need for such a street, and the street is identified by the Transportation System Plan. (Please refer to Section 3.4.100 Transportation Standards.)

F. Access Spacing. Driveway accesses shall be separated from other driveways and street intersections in accordance with the following standards and procedures:

1. Local Streets. A minimum of 50 feet separation (as measured from the sides of the driveway/street) shall be required on local streets (i.e., streets not designated as collectors or arterials), except as provided in subsection 3, below.
2. Arterial and Collector Streets. Access spacing on collector and arterial streets and at controlled intersections (i.e., with four-way stop sign or traffic signal) shall be determined based on the policies and standards contained in the City's Transportation System Plan. Access to US Highway 395 shall be subject to the applicable standards and policies contained in the Oregon Highway Plan.
3. Special Provisions for All Streets. Direct street access may be restricted for some land uses, in conformance with the provisions of Chapter 2 - Land Use Districts. For example, access consolidation, shared access, and/or access separation greater than that specified by subsections 1-2, may be required by the City, County or ODOT for the purpose of protecting the function, safety, and operation of the street for all users. (See Section 'H', below.) Where no other alternatives exist, the permitting agency may allow construction of an access connection along the property line farthest from an intersection. In such cases, directional connections (i.e. right in/out, right in only or right out only) may be required.
4. Corner Clearance. The distance from a street intersection to a driveway or other street access shall meet or exceed the minimum spacing requirements for the street classification in the City's Transportation System Plan.

G. Number of Access Points. For single-family (detached and attached), two-family, and three- family housing types, one street access point is permitted per lot, when alley access cannot otherwise be provided; except that two access points may be permitted for two-family and three- family housing on corner lots (i.e., no more than one access per street), subject to the access spacing standards in

Section 'F', above. The number of street access points for multiple family, commercial, industrial, and public/institutional developments shall be minimized to protect the function, safety and operation of the street(s) and sidewalk(s) for all users. Shared access may be required, in conformance with Section H, below, to maintain the required access spacing, and minimize the number of access points.

H. Shared Driveways. The number of driveway and private street intersections with public streets shall be minimized using shared driveways with adjoining lots where feasible. The City shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes in accordance with the following standards:

1. Shared driveways and frontage streets may be required to consolidate access onto a collector or arterial street. When shared driveways or frontage streets are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway or street temporarily ends at the property line but may be extended in the future as the adjacent parcel develops. "Developable" means that a parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).
2. Access easements (i.e., for the benefit of affected properties) shall be recorded for all shared driveways, including pathways, at the time of final plat approval (Chapter 4.3) or as a condition of site development approval (Chapter 4.2).
3. Exception. Shared driveways are not required when existing development patterns or physical constraints (e.g., topography, parcel configuration, and similar conditions) prevent extending the street/driveway in the future.
4. Cross Access. Cross access is encouraged, and may be required, between contiguous sites in Commercial and Industrial Districts and for multi-family housing in the Residential District, to provide for more direct circulation between sites and uses for pedestrians, bicyclists, and drivers.

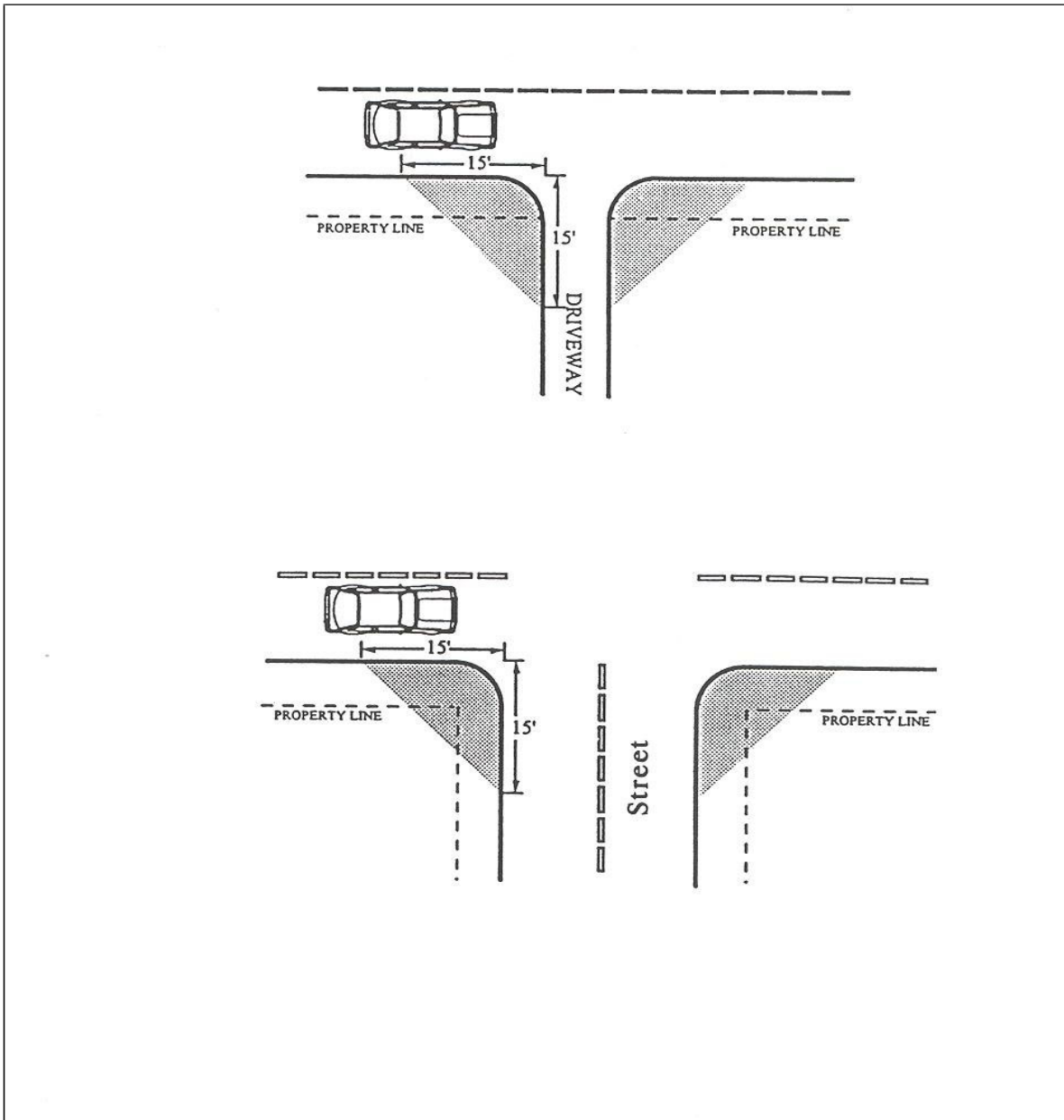
I. Street Connectivity and Formation of Blocks Required. Land divisions and large site developments often involve development of land not previously developed. This creates opportunities to help insure that pedestrian and vehicular circulation is preserved both to and from the new development. To accomplish this, site developments shall produce complete blocks bounded by a connecting network of public and/or private streets, in accordance with the following standards:

1. Block Length and Perimeter. The maximum block length and perimeter shall not exceed:
 - a. 300 feet length and 1,600 feet perimeter in the Residential District;
 - b. 300 feet length and 1,200 feet perimeter in the Commercial District;
 - c. 600 feet length and 2,000 feet perimeter in the Light Industrial District.
2. Street Standards. Public and private streets shall also conform to Section 3.4.100 Transportation Standards, Section 3.1.300 Pedestrian Circulation, and applicable Americans with Disabilities Act (ADA) design standards.
3. Exception. Exceptions to the above standards may be granted when blocks are divided by one or more pathway(s), in conformance with the provisions of Section 3.1.300.A. Pathways shall

be located to minimize out-of-direction travel by pedestrians and may be designed to accommodate bicycles. Additional exceptions may be granted for issues of topography, existing development, and features such as railroad lines that do not allow connections.

- J. Driveway Openings.** Driveway openings [or curb cuts] shall be the minimum width necessary to provide the required number of vehicle travel lanes (10 feet for each travel lane). Public Works Standards are applicable to provide adequate site access, minimize surface water runoff, and avoid conflicts between vehicles and pedestrians. Also applicable are Public Works Standards to the type and placement of driveway approaches and aprons.
1. Loading Area Design. The design of driveways and on-site maneuvering and loading areas for commercial and industrial developments shall consider the anticipated storage length for entering and existing vehicles to prevent vehicles from backing into the flow of traffic on the public street or causing unsafe conflicts with on-site circulation.
- K. Fire Access and Parking Area Turnarounds.** A fire equipment access drive shall be provided for any portion of an exterior wall of the first story of a building that is located more than 150 feet from an existing public street or approved fire equipment access drive. Parking areas shall provide adequate aisles or turn-around areas for service and delivery vehicles so that all vehicles may enter the street in a forward manner. For requirements related to cul-de-sacs, please refer to Section 3.4.100.M.
- L. Vertical Clearances.** Driveways, private streets, aisles, turn-around areas, and ramps shall have a minimum vertical clearance of 13' 6" for their entire length and width.
- M. Vision Clearance.** No public or private signs, structures, or vegetation more than three feet in height shall be placed in "vision clearance areas", as shown in Figure 3.1.200.M. The minimum vision clearance area may be increased by the City Engineer upon finding that more sight distance is required (i.e., due to traffic speeds, roadway alignment, etc.). These standards are applicable to all public and private streets except for alleyways as defined in this Code.
- N. Construction.** The following development and maintenance standards shall apply to all driveways and private streets and are detailed in the Public Works Standards:
1. Surface Options. Driveways, parking areas, aisles, and turn-arounds shall be paved with asphalt, concrete or comparable surfacing, or a durable non-paving material may be used to reduce surface water runoff and protect water quality. Paving surfaces shall be subject to review and approval by the City Engineer.
2. Surface Water Management. When a paved surface is used, all driveways, parking areas, aisles and turn-arounds shall have on-site collection or infiltration of surface waters to eliminate sheet flow of such waters onto public rights-of-way and abutting property. Surface water facilities shall be constructed in conformance with Public Works Standards.
3. Driveway Aprons. When driveway approaches or "aprons" are required to connect driveways to the public right-of-way, they shall be paved with concrete surfacing. (See also, Section J.)

Figure 3.1.200.M. Vision Clearance

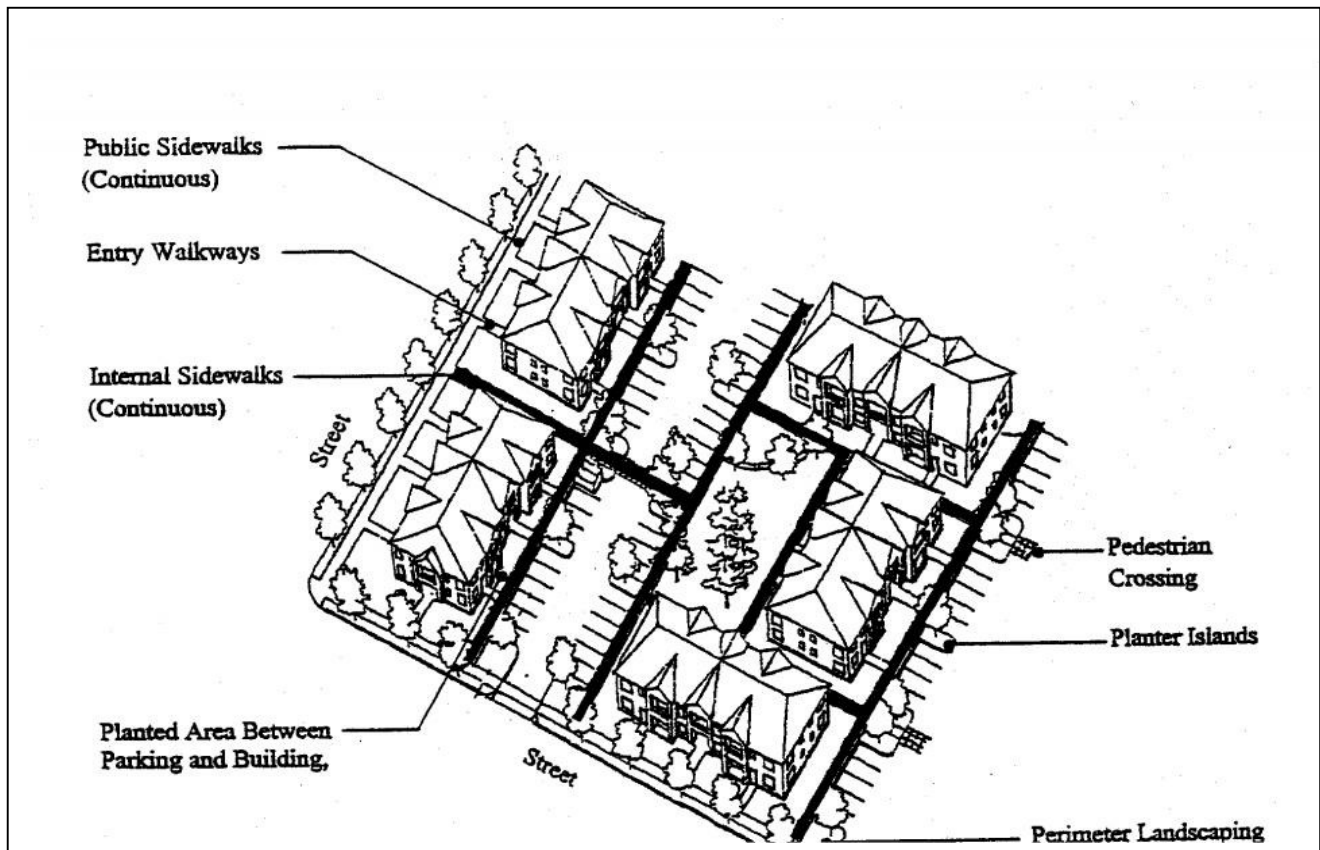


3.1.300 Pedestrian Access and Circulation.

- A.** To ensure safe, direct, and convenient pedestrian circulation, all new development shall provide a continuous pedestrian and/or multi-use pathway system. New single-family homes on individual lots, including infill development, shall also be responsible for installation of a sidewalk or enter into a remonstrance agreement to participate in future sidewalk improvements. (Pathways only provide for pedestrian circulation. Multi-use pathways accommodate pedestrians and bicycles.) The system of pathways shall be designed based on the standards in subsections 1-3, below:

1. Continuous Pathways. The pathway system shall extend throughout the development site, and connect to all future phases of development, adjacent trails, public parks, and open space areas whenever possible. The developer may also be required to connect or stub pathway(s) to adjacent streets and private property, in accordance with the provisions of Section 3.1.200 Vehicular Access and Circulation and Section 3.4.100 Transportation Standards.
2. Safe, Direct, and Convenient Pathways. Pathways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent streets, based on the following definitions:
 - a. Reasonably direct. A route that does not deviate unnecessarily from a straight line or a route that does not involve a significant amount of out-of-direction travel for likely users.
 - b. Safe and convenient. Bicycle and pedestrian routes that are reasonably free from hazards and provide a reasonably direct route of travel between destinations.
 - c. For commercial, industrial, mixed use, public, and institutional buildings, the “primary entrance” is the main public entrance to the building. In the case where no public entrance exists, street connections shall be provided to the main employee entrance.
 - d. For residential buildings the “primary entrance” is the front door (i.e., facing the street). For multifamily buildings in which each unit does not have its own exterior entrance, the “primary entrance” may be a lobby, courtyard or breezeway which serves as a common entrance for more than one dwelling.
3. Connections Within Development. For all developments subject to Site Design Review, pathways shall connect all building entrances to one another. In addition, pathways shall connect all parking areas, storage areas, recreational facilities, and common areas (as applicable), and adjacent developments to the site, as applicable and reasonable.
4. Street Connectivity. Pathways (for pedestrians and bicycles) shall be provided at or near mid-block where the block length exceeds the length required by Section 3.1.200. Pathways shall also be provided where cul-de-sacs or dead-end streets are planned, to connect the ends of the streets together, to other streets, and/or to other developments, as applicable. Pathways used to comply with these standards shall conform to all the following criteria:
 - a. Multi-use pathways (i.e., for pedestrians and bicyclists) are no less than 10 feet wide and located within a 20-foot-wide right-of-way or easement that allows access for emergency vehicles;
 - b. If the streets within the subdivision or neighborhood are lighted, the pathways shall also be lighted;
 - c. Stairs or switchback paths using a narrower right-of-way/easement may be required in lieu of a multi-use pathway where grades are steep;
 - d. The City may require landscaping within the pathway easement/right-of-way for screening and the privacy of adjoining properties;
 - e. The City Engineer may determine, based upon facts in the record, that a pathway is impracticable due to physical or topographic conditions (e.g., freeways, railroads, extremely steep slopes, sensitive lands, and similar physical constraints); buildings or other existing development on adjacent properties that physically prevent a connection now or in the future, considering the potential for redevelopment; and sites where the provisions of recorded leases, easements, covenants, restrictions, or other agreements recorded as of the effective date of this Code prohibit the pathway connection.

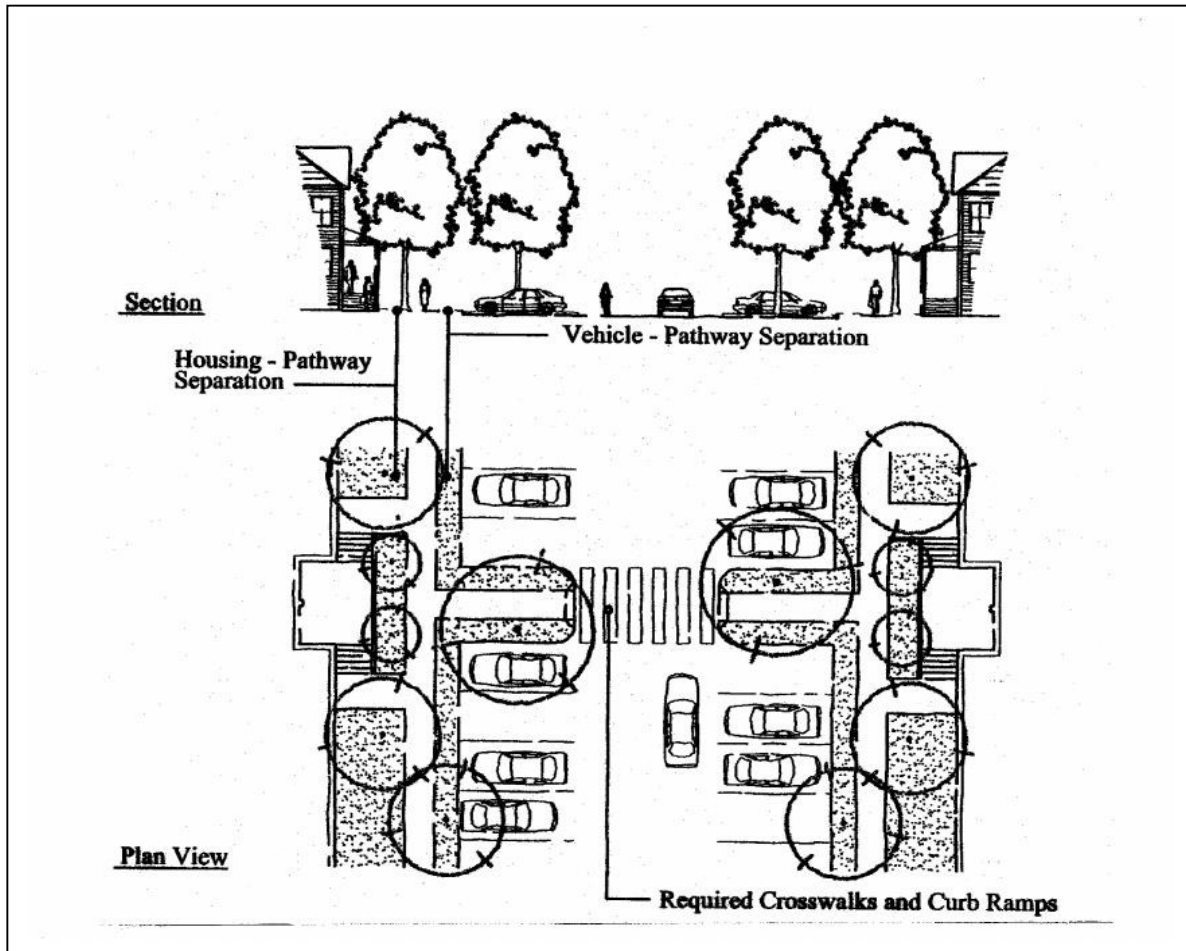
Figure 3.1.300.A – Pedestrian Pathway System



B. Design and Construction. Pathways shall conform to all the standards in 1-5:

1. Vehicle/Pathway Separation. Where pathways are parallel and adjacent to a driveway or street (public or private), they shall be raised 6 inches and curbed, or separated from the driveway/street by a 5-foot minimum strip with bollards, a landscape berm, or other physical barrier. If a raised path is used, the ends of the raised portions must be equipped with curb ramps.
2. Housing/Pathway Separation. Pedestrian pathways shall be separated a minimum of 5 feet from all residential living areas on the ground floor, except at building entrances. Separation is measured from the pathway edge to the closest dwelling unit. The separation area shall be landscaped in conformance with the provisions of Chapter 3.3. No pathway/building separation is required for commercial, industrial, public, or institutional uses.
3. Crosswalks. Where pathways cross a parking area, driveway, or street ("crosswalk"), they shall be clearly marked with contrasting paving materials, humps/raised crossings, or painted striping. An example of contrasting paving material is the use of a concrete crosswalk through an asphalt driveway. If painted striping is used, it shall consist of thermo-plastic striping or similar type of durable application and shall be maintained.

Figure 3.1.300.B Pathway Standards



4. Pathway Surface. Pathway surfaces shall be concrete, asphalt, brick/masonry pavers, or other durable surface, at least 6 feet wide, and shall conform to ADA requirements. Multi-use paths (i.e., for bicycles and pedestrians) shall be the same materials, at least 10 feet wide. (See also, Section 3.4.100 Transportation Standards for public, multi-use pathway standard.)
5. Accessible routes. Pathways shall comply with the Americans with Disabilities Act (ADA), which requires accessible routes of travel from the parking spaces to the accessible entrance. The route shall be compliant with Public Works Standards.

Chapter 3.2 — Landscaping, Street Trees, Fences and Walls

Sections:

3.2.100 - Purpose

3.2.200 - New Landscaping

3.2.300 - Fences and Walls

3.2.100 Purpose.

The purpose of this chapter is to promote community health, safety, and welfare by protecting natural vegetation, and setting development standards for landscaping, street trees, fences and walls. Together, these elements of the natural and built environment contribute to the visual quality, environmental health, and character of the community. Trees provide climate control through shading during summer months and wind screening during winter. Trees and other plants can also buffer pedestrians from traffic. Walls, fences, trees, and other landscape materials also provide vital screening and buffering between land uses. Landscaped areas help to control surface water drainage and can improve water quality, as compared to paved or built surfaces.

The chapter is organized into the following sections:

Section 3.2.200 New Landscaping sets standards for and requires landscaping of all development sites that require Site Design Review. This section also requires buffering for parking and maneuvering areas, and between different land use districts. Note that other landscaping standards are provided in Chapter 2 - Land Use Districts, for specific types of development.

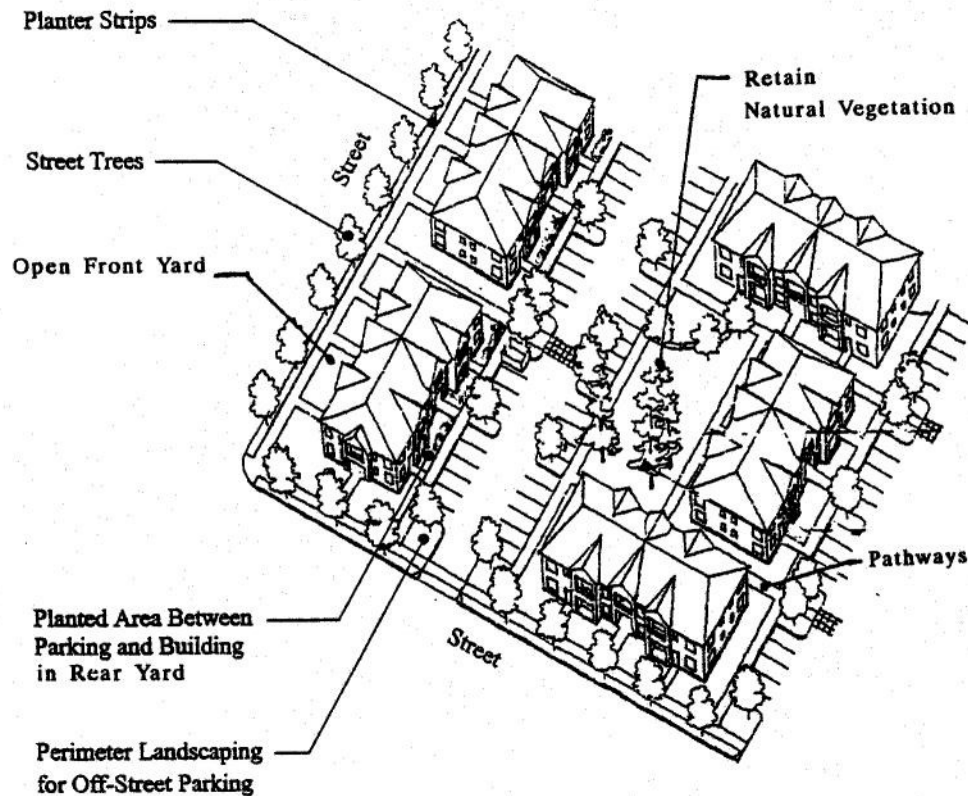
Section 3.2.300 Fences and Walls sets standards for new fences and walls, including maximum allowable height and materials, to promote security, personal safety, privacy, and aesthetics.

3.2.200 New Landscaping.

- A. **Applicability.** This Section shall apply to all developments requiring Site Design Review, and other developments with required landscaping.
- B. **Landscaping Plan Required.** A landscape plan is required. All landscape plans shall conform to the requirements in Section 4.2.500.B (Landscape Plans).
- C. **Landscape Area Standards.** The minimum percentage of required landscaping equals:
 - 1. Residential Districts. 20 percent of the site.
 - 2. Tourist Commercial. 10 percent of the site.
 - 3. Downtown Commercial District. 10 percent of the site unless it fronts on Main Street with a zero-feet front setback. Other street improvements may be required.

4. Light Industrial District. 10 percent of the site.
- D. Landscape Materials.** Landscape materials include trees, shrubs, ground cover plants, non-plant ground covers, and outdoor hardscape features, as described below:
1. Natural Vegetation. Natural vegetation shall be preserved or planted where practicable.
 2. Plant Selection. A combination of deciduous and evergreen trees, shrubs and ground covers shall be used for all planted areas, the selection of which shall be based on local climate, exposure, water availability, and drainage conditions. As necessary, soils shall be amended to allow for healthy plant growth.
 3. “Non-native, invasive” plants shall be prohibited.
 4. Hardscape features (i.e., patios, decks, plazas, etc.) may cover up to 15% percent of the required landscape area; except in the Downtown and Main Street District where hardscape features may cover up to 25% percent of the landscape area. Swimming pools, sports courts and similar active recreation facilities may not be counted toward fulfilling the landscape requirement.
 5. Non-plant Ground Covers. Bark dust, chips, aggregate or other non-plant ground covers may be used but shall cover no more than 50 percent of the area to be landscaped. “Coverage” is measured based on the size of plants at maturity or after 2 years of growth, whichever comes sooner.
 6. Tree Size. Trees shall have a minimum caliper size of 2 inches or greater at time of planting.
 7. Shrub Size. Shrubs shall be planted from 1-gallon containers or larger.
 8. Storm Water Facilities. Storm water facilities (e.g., detention/retention ponds and swales) shall be landscaped with water tolerant, native plants.
- E. Landscape Design Standards.** All yards, parking lots and required street tree planter strips shall be landscaped in accordance with the provisions of this Chapter. Landscaping shall be installed with development to provide erosion control, visual interest, buffering, privacy, open space and pathway identification, shading, and wind buffering, based on the following standards:
1. Yard Setback Landscaping. Landscaping shall satisfy the following criteria:
 - a. Provide visual screening and privacy within side and rear yards; while leaving front yards and building entrances mostly visible for security purposes;
 - b. Define pedestrian pathways and open space areas with landscape materials;
 - c. Provide focal points within a development, such as signature trees (i.e., large or unique trees), hedges and flowering plants;

Figure 3.2.300 – Landscape Areas in a Multiple Family Development (Typical)



- d. Use trees to provide summer shading within common open space areas, and within front yards;
 - e. Use landscaping to screen outdoor storage and mechanical equipment areas, and to enhance graded areas such as berms, swales, and detention/retention ponds.
2. Parking areas. A minimum of 5 percent of the combined area of all parking areas, as measured around the perimeter of all parking spaces and maneuvering areas, shall be landscaped. Such landscaping shall consist of an evenly distributed mix of shade trees with shrubs and/or ground cover plants. "Evenly distributed" means that the trees and other plants are distributed around the parking lot perimeter and between parking bays to provide a partial canopy. At a minimum, one tree per 10 parking spaces total shall be planted to create a partial tree canopy over and around the parking area. All parking areas with more than 30 spaces shall include landscape islands with trees to break up the parking area into rows of not more than 15 contiguous parking spaces. All landscaped areas shall have minimum dimensions of 4 feet by 4 feet to ensure adequate soil, water, and space for healthy plant growth.
 3. Buffering and Screening Required - Buffering and screening are required under the following conditions:

- a. Screening of Mechanical Equipment, Outdoor Storage, Service and Delivery Areas. All mechanical equipment, outdoor storage and manufacturing, and service and delivery areas shall be screened from view from all public streets and residential districts. Screening shall be provided by one or more of the following: decorative wall (i.e., masonry or similar quality material), evergreen hedge, sight obscuring fence, or a similar feature that provides a non-see-through barrier. Walls, fences, and hedges shall comply with the vision clearance requirements and provide for pedestrian circulation, in accordance with Chapter 3.1 - Access and Circulation. (See Section 3.2.500 for standards related to fences and walls.)
- F. **Maintenance and Irrigation.** The use of drought-tolerant plant species is encouraged and may be required when irrigation is not available. Irrigation shall be provided for plants that are not drought tolerant. If the plantings fail to survive, the property owner shall replace them with an equivalent specimen (i.e., evergreen shrub replaces evergreen shrub, deciduous tree replaces deciduous tree, etc.). All other landscape features required by this Code shall be maintained in good condition, or otherwise replaced by the owner.
- G. **Additional Requirements.** Additional buffering and screening may be required for specific land uses, as identified by Chapter 2, and the City may require additional landscaping through the Conditional Use Permit process (Chapter 4.4).

3.2.300 Fences and Walls.

The following standards shall apply to all fences and walls:

- A. **General Requirements.** All fences and walls shall comply with the standards of this Section. The City may require installation of walls and/or fences as a condition of development approval, in accordance with Chapter 4.2 - Conditional Use Permits or Chapter 4.4 - Site Design Review. Walls built for required landscape buffers shall comply with Section 3.2.200.
- B. **Dimensions.**
 - 1. The maximum allowable height of fences and walls is 6 feet, as measured from the lowest grade at the base of the wall or fence, except that retaining walls and terraced walls may exceed 6 feet when permitted as part of a site development approval, or as necessary to construct streets and sidewalks. A building permit is required for walls exceeding 6 feet in height and for certain retaining walls, in conformance with the Uniform Building Code.
 - 2. The height of fences and walls within a front yard setback shall not exceed 4 feet (except decorative arbors, gates, etc.), as measured from the grade closest to the street right-of-way. For large lots or residential uses with a front yard setback deeper than ~~30~~15 feet fences can be 6 feet in height outside of the vision clearance area.
 - 3. Walls and fences to be built for required buffers shall comply with Section 3.2.200.
 - 4. Fences and walls shall comply with the vision clearance standards of Section 3.1.200.
 - 4.5. Fences and walls over 6 feet in height shall require approval through the Type II process outlined in Chapter 4.

C. Materials.

1. Fences may consist of wood, metal, bricks, decorative masonry or blocks, decorative concrete panels, other permanent material, or natural growth when maintained.
 - a. Prohibited materials include concrete building blocks, straw bales, and landscaped hedges greater than 6 feet in height. Barbed or razor wire is prohibited in residential areas, with its use in Commercial or Industrial areas subject to review and approval.
 - b. Fence material shall not include materials inappropriate for fencing, such as scrap lumber, scrap metal, or similar materials.
 - c. Fences constructed of decorative bricks, masonry, or concrete over 3½ feet tall shall be approved by the City Engineer and may require a building permit.

- D. Maintenance.** For safety and for compliance with the purpose of this Chapter, walls and fences required as a condition of approval shall be maintained in good condition or otherwise replaced by the owner.

Chapter 3.3 — Vehicle Parking, Bicycle Parking, and Loading Standards

Sections:

3.3.100 - Purpose

3.3.200 - Applicability

3.3.300 - Vehicle Parking Standards

3.3.400 - Bicycle Parking Standards

3.3.500 - Loading Standards

3.3.100 Purpose.

The purpose of this chapter is to provide basic and flexible standards for development of vehicle and bicycle parking. The design of parking areas is critically important to the viability of some commercial areas, pedestrian and driver safety, the efficient and safe operation of adjoining streets, and community image and livability. Historically, some communities have required more parking than is necessary for some land uses, paving extensive areas of land that could be put to better use. Because vehicle parking facilities can occupy large amounts of land, they must be planned and designed carefully to use the land efficiently while maintaining the visual character of the community. This chapter recognizes that each development has unique parking needs by providing a flexible approach for determining parking space requirements (i.e., “minimum” and “performance-based” standards). This chapter also provides standards for bicycle parking because many people use bicycles for recreation, commuting, and general transportation. Children as well as adults need safe and adequate spaces to park their bicycles throughout the community.

3.3.200 Applicability.

All developments subject to Site Design Review (Chapter 4.2), including development of parking facilities, shall comply with the provisions of this Chapter.

3.3.300 Vehicle Parking Standards.

The minimum number of required off-street vehicle parking spaces (i.e., parking that is in parking lots and garages and not in the street right-of-way) shall be determined based on the standards below or from the ITE manual. There is no minimum number of off-street parking spaces required in the Downtown District, however, the “maximum parking” standards of this Chapter apply.

The number of required off-street vehicle parking spaces shall be determined in accordance with the following standards. Off-street parking spaces may include spaces in garages, carports, parking lots, and/or driveways if vehicles are not parked in a vehicle travel lane (including emergency or fire access lanes), public right-of-way, pathway, or landscape area. Credit shall be allowed for “on-street parking”, as provided in the Credit for On-Street Parking section.

Residential Uses

Single family detached housing. 2 parking spaces shall be provided for each detached single-family dwelling or manufactured home on an individual lot.

Two- and three-family housing. 1.5 spaces per dwelling unit.

Multi-family and single family attached housing.

- a. Studio units or 1-bedroom units less than 500 sq. ft.--1 space/unit.
- b. 1-bedroom units 500 sq. ft. or larger--1.50 spaces/unit.
- c. 2-bedroom units--1.75 spaces/unit.
- d. 3-bedroom or greater units--2.00 spaces/unit.
- e. Retirement complexes for seniors 55-years or greater--One space per unit.

Rooming and boarding houses, dormitories. Two spaces for each three guestrooms, or one per three beds, whichever is more.

Manufactured home parks. Same as for single family detached housing.

Accessory dwelling. None required except that two parking spaces are required to serve both the primary and accessory dwelling.

Commercial Uses

Auto, boat or trailer sales, retail nurseries and similar bulk retail uses. One space per 1,000 square feet of the first 10,000 square feet of gross land area, plus one space per 5,000 square feet for the excess over 10,000 square feet of gross land area, and one space per two employees.

Business, general retail, personal services. General - one space for 350 square feet of gross floor area. Furniture and appliances - one space per 750 square feet of gross floor area.

Chapels and mortuaries. One space per four fixed seats in the main chapel.

Hotels and motels. One space for each guest room, plus one space for the manager. If other uses are combined additional parking would be required based on those uses.

Offices. Medical and Dental Offices - one space per 350 square feet of gross floor area; General Offices - one space per 450 square feet of gross floor area.

Restaurants, bars, ice cream parlors and similar uses. One space per four seats or one space per 100-sq. ft. of gross leasable floor area, whichever is less.

Theaters, auditoriums, stadiums, gymnasiums, similar uses. One space per four seats.

Industrial Uses

Industrial uses, except warehousing. One space per two employees on the largest shift or for each 700 square feet of gross floor area, whichever is less, plus one space per company vehicle.

Warehousing. One space per 1,000 square feet of gross floor area or for each two employees, whichever is greater, plus one space per company vehicle.

Public utilities (gas, water, telephone, etc.), not including business offices. One space per two employees on the largest shift, plus one space per company vehicle; a minimum of two spaces is required.

Public and Institutional Uses

Childcare centers having 13 or more children. One space per two employees; a minimum of two spaces is required.

Churches and similar places of worship. One space per four seats.

Golf courses, except miniature. Eight spaces per hole, plus additional spaces for auxiliary uses set forth in this section. Miniature golf courses -four spaces per hole.

Hospitals. One space per 300 square feet of floor area.

Nursing and convalescent homes. One space per three patient beds.

Assisted living. One space per two patient beds or one space per apartment unit.

Schools, elementary and junior high. One and one-half space per classroom.

High schools. One and one-half spaces per classroom, plus one space per 10 students the school is designed to accommodate.

Colleges, universities, and trade schools. One and one-half spaces per classroom, plus one space per

five students the school is designed to accommodate, plus requirements for on-campus student housing and uses utilized by the general public.

Unspecified Uses

Where a use is not specifically listed in this table, parking requirements shall be determined by finding that a use is like those listed in terms of parking needs. Alternatively, the ITE Manual can be used.

On-Street Parking Credit. The amount of off-street parking required shall be reduced by one off-street parking space for every on-street parking space adjacent to the development. On-street parking shall follow the established configuration of existing on-street parking, except that angled parking may be allowed for some streets, where permitted by City, ODOT, and/or County standards. The following constitutes an on-street parking space:

- a. Parallel parking, each 24 feet of uninterrupted curb;
- b. 45 degree diagonal, each with 14 feet of curb;
- c. 90 degree (perpendicular) parking, each with 12 feet of curb;
- d. Curb space must be connected to the lot, which contains the use;
- e. Parking spaces that would not obstruct a required clear vision area, nor any other parking that violates any law or street standard; and
- f. On-street parking spaces credited for a specific use may not be used exclusively by that use but shall be available for public use at all times. No signs or actions limiting public use of on-street spaces is permitted.

C. Parking Location and Shared Parking.

1. **Location.** Vehicle parking is allowed only on approved parking shoulders (streets), within garages, carports, and other structures, or on driveways or parking lots that have been developed in conformance with this code. Specific locations for parking are indicated in Chapter 2 for some land uses (e.g., the requirement that parking be located to side or rear of buildings, with access from alleys, for some uses). (See also, Chapter 3.1 - Access and Circulation).
2. **Off-site parking.** Except for single family dwellings, the vehicle parking spaces required by this Chapter may be located on another lot or parcel of land, provided the parcel is within 500 feet of the use it serves. The distance from the parking area to the use shall be measured from the nearest parking space to a building entrance, following a sidewalk or other pedestrian route. The right to use the off-site parking must be evidenced by a recorded deed, lease, easement, or similar written instrument.
3. **Mixed uses.** If more than one type of land use occupies a single structure or parcel of land, the total requirements for off-street automobile parking shall be the sum of the requirements for all uses, unless it can be shown that the peak parking demands are less (i.e., the uses operate on different days or at different times of the day). In that case, the total requirements shall be reduced accordingly.
4. **Shared parking.** Required parking facilities for two or more uses, structures, or parcels of land may be satisfied by the same parking facilities used jointly, to the extent that the owners or operators show that the need for parking facilities does not materially overlap (e.g., uses primarily of a daytime versus nighttime nature), and provided that the right of joint use is

evidenced by a recorded deed, lease, contract, or similar written instrument establishing the joint use.

5. Availability of facilities. Owners of off-street parking facilities may post a sign indicating that all parking on the site is available only for residents, customers, and/or employees, as applicable. Signs shall conform to the standards of Chapter 3.6.

D. Maximum Number of Parking Spaces. The number of parking spaces provided by any particular use in ground surface parking lots shall not exceed the required minimum number of spaces provided by this Section by more than 10%. Spaces provided on street, or within the building footprint of structures, such as in rooftop parking, or under-structure parking, or in multi-level parking above or below surface lots, may not apply towards the maximum number of allowable spaces. Parking spaces provided through “shared parking” also do not apply toward the maximum number.

E. Parking Stall Standard Dimensions and Compact Car Parking. All off-street parking stalls shall be improved to conform to City standards for surfacing, stormwater management and striping, and provide dimensions in accordance with Public Works Standards.

F. Disabled Person Parking Spaces. Parking shall be provided for disabled persons, in conformance with the federal Americans with Disabilities Act, based on adopted Public Works Standards. Disabled parking is included in the minimum number of required parking spaces in Section E.

3.3.400 Bicycle Parking Requirements

All uses that are subject to Site Design Review shall provide bicycle parking, in conformance with the following standards, which are evaluated during Site Design Review:

- A. Number of Bicycle Parking Spaces.** A minimum of 2 bicycle parking spaces per use is required for all uses with greater than 10 vehicle parking spaces. The following additional standards apply to specific types of development:
 1. Multi-Family Residences. Every residential use of four (4) or more dwelling units provides at least one sheltered bicycle parking space for each dwelling unit. Sheltered bicycle parking spaces may be located within a garage, storage shed, basement, utility room or similar area. In those instances, in which the residential complex has no garage or other easily accessible storage unit, the bicycle parking spaces shall be sheltered from sun and precipitation under an eave, overhang, an independent structure, or similar cover.
 2. Parking Lots. All public and commercial parking lots and parking structures provide a minimum of one bicycle parking space for every 10 motor vehicle parking spaces up to a total of 10 bicycle parking spaces.
 3. Schools. Elementary and middle schools, both private and public, provide one bicycle parking space for every 20 students and employees. High schools provide one bicycle parking space for every 15 students and employees up to a total of 10 bicycle parking spaces. All spaces should be sheltered under an eave, overhang, independent structure, or similar cover.
 4. Colleges and trade schools provide one bicycle parking space for every 20 motor vehicle spaces

plus one space for every dormitory unit up to a total of 20 bicycle parking spaces. Fifty percent of the bicycle parking spaces shall be sheltered under an eave, overhang, independent structure, or similar cover.

5. **Downtown District.** Within the Downtown district, bicycle parking for customers shall be provided along the street at a rate of at least one space per use. Individual uses shall provide their own parking, or spaces may be clustered to serve up to six (6) bicycles. Bicycle parking spaces shall be in front of the stores along the street, either on the sidewalks or in specially constructed areas such as pedestrian curb extensions. Inverted "U" style racks are recommended. Bicycle parking shall not interfere with pedestrian passage, leaving a clear area of at least 36 inches between bicycles and other existing and potential obstructions. Customer spaces may or may not be sheltered. When provided, sheltered parking (within a building, or under an eave, overhang, or similar structure) shall be provided at a rate of one space per 10 employees, with a minimum of one space per store.
 6. **Multiple Uses.** For buildings with multiple uses (such as a commercial or mixed-use center), bicycle parking standards shall be calculated by using the total number of motor vehicle parking spaces required for the entire development. A minimum of one bicycle parking space for every 10 motor vehicle parking spaces is required up to a total of 10 bicycle parking spaces.
- B. **Exemptions.** This Section does not apply to single family, two-family, and three-family housing (attached, detached, or manufactured housing), home occupations, or other developments with fewer than 10 vehicle parking spaces.
 - C. **Location and Design.** Bicycle parking shall be conveniently located with respect to both the street right-of-way and at least one building entrance (e.g., no farther away than the closest parking space). It should be incorporated whenever possible into building design and coordinated with the design of street furniture when it is provided. Street furniture includes benches, streetlights, planters, and other pedestrian amenities.
 - D. **Visibility and Security.** Bicycle parking should be visible to cyclists from street sidewalks or building entrances, so that it provides sufficient security from theft and damage.
 - E. **Options for Storage.** Bicycle parking requirements for long-term and employee parking can be met by providing a bicycle storage room, bicycle lockers, racks, or other secure storage space inside or outside of the building.
 - F. **Lighting.** Bicycle parking should be as well-lit as vehicle parking for security.
 - G. **Reserved Areas.** Areas set aside for bicycle parking should be clearly marked and reserved for bicycle parking only.
 - H. **Hazards.** Bicycle parking shall not impede or create a hazard to pedestrians. Parking areas shall be located so as not to conflict with vision clearance standards (Chapter 3.1 Access and Circulation).

3.3.500 Loading Standards

The purpose of this section of the code is to provide standards for a minimum number of loading

spaces that are required to ensure adequate areas for loading for larger uses and developments. The regulations ensure that the appearance of loading areas will be consistent with that of parking areas.

A. Number of Loading Spaces.

1. Buildings where all the floor area is in Residential use must meet the standards of this Paragraph.
 - a. No loading spaces are required where there are fewer than 50 dwelling units in the building and the site abuts a local street.
 - b. One loading space is required for all other buildings.
2. Buildings in any commercial or industrial district must meet the standards of this Paragraph.
 - a. This section applies to uses that are expected to have service or delivery visits by trucks with a 40-foot or longer wheelbase at a frequency of one or more vehicles per week.
 - b. If off-street loading space is required, it shall be large enough to accommodate the largest vehicle that is expected to serve the use without obstructing vehicles or pedestrian traffic on adjacent streets and driveways. If frequency demands additional loading areas, they shall be provided.
 - c. Loading areas shall conform to other applicable standards including Building Orientation, Access and Circulation, and Landscaping and Screening.

Chapter 3.4 — Public Facilities Standards

Sections:

- 3.4.000 - Purpose and Applicability**
- 3.4.100 - Transportation Standards**
- 3.4.200 - Public Use Areas**
- 3.4.300 - Sanitary Sewer and Water Service Improvements**
- 3.4.400 - Storm Drainage Improvements**
- 3.4.500 - Utilities**
- 3.4.600 - Easements**
- 3.4.700 - Construction Plan Approval and Assurances**
- 3.4.800 - Installation**

3.4.000 Purpose and Applicability.

- A. Purpose.** The purpose of this chapter is to provide planning and design standards for public and private transportation facilities and utilities. Streets are the most common public spaces, touching virtually every parcel of land. Therefore, one of the primary purposes of this Chapter is to provide standards for attractive and safe streets that can accommodate vehicle traffic from planned growth, and provide a range of transportation options, including options for driving, walking, and bicycling. This Chapter is also intended to implement the City's Transportation System Plan.
- B. When Standards Apply.** Unless otherwise provided, the standard specifications for construction, reconstruction, or repair of transportation facilities, utilities and other public improvements within the City shall occur in accordance with the standards of this Chapter. No development may occur unless the public facilities related to development comply with the public facility requirements established in this Chapter.
- C. Standard Specifications.** The City Engineer shall establish standard construction specifications consistent with the standards of this Chapter and application of engineering principles. They are retained in the Public Works Standards.
- D. Conditions of Approval.** No development may occur unless required public facilities are in place or guaranteed, in conformance with the provisions of this Code. Improvements required as a condition of approval, when not voluntarily accepted by the applicant, shall be roughly proportional to the impact of development on public facilities and services. Findings in the development approval shall indicate how the required improvements are roughly proportional to the impact.

3.4.100 Transportation Standards.

- A. Development Standards.** No development shall occur unless the development has frontage or approved access to a public street, in conformance with the provisions of Chapter 3.1 - Access and Circulation, and the following standards are met:
 - 1. Streets within or adjacent to a development shall be improved in accordance with the Transportation System Plan and the provisions of this Chapter.
 - 2. Development of new streets, and additional street width or improvements planned as a portion

of an existing street, shall be improved in accordance with this Section, and public streets shall be dedicated to the City of Echo or other applicable jurisdiction;

3. New streets and drives connected to a collector or arterial street shall be paved; and
 4. The City may accept a future improvement guarantee (e.g., owner agrees not to remonstrate or object against the formation of a local improvement district in the future) in lieu of street improvements if one or more of the following conditions exist:
 - a. A partial improvement may create a potential safety hazard to motorists or pedestrians;
 - b. Due to the developed condition of adjacent properties, it is unlikely that street improvements would be extended in the foreseeable future and the improvement associated with the project under review does not, by itself, provide increased street safety or capacity, or improved pedestrian circulation;
 - c. The improvement would conflict with an adopted capital improvement plan; or
 - d. The improvement is associated with an approved land partition on property zoned residential and the proposed land partition does not create any new streets.
- B. Variances.** Variances to the transportation design standards in this Section may be granted by means of a Class B Variance, as governed by Chapter 5.1 - Variances. A variance may be granted under this provision only if a required improvement is not feasible due to topographic or environmental constraints.
- C. Creation of Rights-of-Way for Streets and Related Purposes.** Streets shall be created through the approval and recording of a final subdivision or partition plat; except the City may approve the creation of a street by acceptance of a deed, provided that the street is deemed essential by the City Council for the purpose of implementing the Transportation System Plan, and the deeded right-of-way conforms to the standards of this Code. All deeds of dedication shall be in a form prescribed by the City Engineer and shall name "the public," as grantee.
- D. Creation of Access Easements.** The City may approve an access easement established by deed when the easement is necessary to provide for access and circulation in conformance with Chapter 3.1 Access and Circulation. Access easements shall be created and maintained in accordance with the Uniform Fire Code.
- E. Street Location, Width and Grade.** The location, width and grade of all streets shall conform to the Transportation System Plan and an approved street plan or subdivision plat. Street location, width, and grade shall be determined in relation to existing and planned streets, topographic conditions, public convenience safety, and in appropriate relation to the proposed use of the land to be served by such streets. Applicable standards are found in the Public Works Standards.
- F. Minimum Rights-of-Way and Street Sections.** Street rights-of-way and improvements shall be determined by the City Engineer based on the Transportation System Plan and the Public Works Standards.
- G. Traffic Signals and Traffic Calming Features.**
1. Traffic-calming features, such as traffic circles, curb extensions, narrow residential streets, and special paving may be used to slow traffic in neighborhoods and areas with high pedestrian

traffic. When installed they shall conform to Public Works Standards.

2. Traffic signals shall be required with development when traffic signal warrants are met, in conformance with the Highway Capacity Manual and Manual of Uniform Traffic Control Devices. The location of traffic signals shall be noted on approved street plans. Where a proposed street intersection will result in an immediate need for a traffic signal, a signal meeting approved specifications shall be installed. The developer's cost and the timing of improvements shall be included as a condition of approval.

H. Future Street Plan and Extension of Streets.

1. A future street plan shall be filed by the applicant in conjunction with an application for a subdivision to facilitate orderly development of the street system. The plan shall show the pattern of existing and proposed streets from the boundaries of the proposed land division and shall include other parcels within 400 feet, or further if deemed necessary, surrounding and adjacent to the proposed land division. The street plan is not binding; rather it is intended to show potential future street extensions with future development.
2. Streets shall be extended to the boundary lines of the parcel or tract to be developed, when the Planning Official determines that the extension is necessary to give street access to, or permit a satisfactory future division of, adjoining land. The point where the streets temporarily end shall conform to a-c, below:
 - a. These extended streets or street stubs to adjoining properties are not considered to be cul-de-sacs since they are intended to continue as through streets when the adjoining property is developed.
 - b. A barricade (e.g., fence, bollards, boulders, or similar vehicle barrier) shall be constructed at the end of the street by the subdivider and shall not be removed until authorized by the City or other applicable agency with jurisdiction over the street. The cost of the barricade shall be included in the street construction cost.
 - c. Temporary turnarounds (e.g., hammerhead or bulb-shaped configuration) shall be constructed for stub streets over 150 feet in length.

I. Street Alignment and Connections.

1. Staggering of streets making "T" intersections at collectors and arterials shall not be designed so that jogs of less than 300 feet on such streets are created, as measured from the centerline of the street.
2. Spacing between local street intersections shall have a minimum separation of 125 feet, except where more closely spaced intersections are designed to provide an open space, pocket park, common area, or similar neighborhood amenity. This standard applies to four-way and three-way (offset) intersections.
3. All local and collector streets that abut a development site shall be extended within the site to provide through circulation unless prevented by environmental or topographical constraints, existing development patterns, or compliance with other standards in this code. This exception applies when it is not possible to redesign or reconfigure the street pattern to provide required

extensions. Land is considered topographically constrained if the slope is greater than 15% for 250 feet or more. In the case of environmental or topographical constraints, the mere presence of a constraint is not sufficient to show that a street connection is not possible. The applicant must show why the environmental or topographic constraint precludes some reasonable street connection.

4. Proposed streets or street extensions shall be located to provide direct access to existing or planned commercial services and other neighborhood facilities, such as schools, shopping areas, and parks.
 5. To promote efficient vehicular and pedestrian circulation throughout the city, the design of subdivisions and alignment of new streets shall conform to the Street Connectivity and Formation of Blocks standards in Chapter 3.1 - Access and Circulation.
- J. Sidewalks, Planter Strips, Bicycle Lanes.** Sidewalks, planter strips, and bicycle lanes shall be installed in conformance with the Public Works Standards, applicable provisions of the Transportation System Plan, and adopted street plans. Maintenance of sidewalks, curbs, and planter strips is the continuing obligation of the adjacent property owner.
- K. Intersection Angles.** Streets shall be laid out to intersect at an angle as near to a right angle as practicable, except where topography requires a lesser angle or where a reduced angle is necessary to provide an open space, pocket park, common area, or similar neighborhood amenities. Public Works Standards shall apply.
- L. Existing Rights-of-Way.** Whenever existing rights-of-way adjacent to or within a tract are of less than standard width, additional rights-of-way shall be provided at the time of subdivision or development, subject to the provision of Section 3.4.000.D.
- M. Cul-de-sacs.** A dead-end street shall be no more than 200 feet long, shall not provide access to greater than 25 dwelling units, and shall only be used when environmental or topographical constraints, existing development patterns, or compliance with other standards in this code preclude street extension and through circulation:
1. All cul-de-sacs shall terminate with a circular or hammerhead turnaround constructed to Public Works Standards. When an island or parking bay is provided, there shall be a fire apparatus lane of 20 feet in width; and
 2. The length of the cul-de-sac shall be measured along the centerline of the roadway from the near side of the intersecting street to the farthest point of the cul-de-sac.
- N. Grades and Curves.** Grades and curves shall be done in compliance with the Public Works Standards.
- O. Curbs, Curb Cuts, Ramps, and Driveway Approaches.** Concrete curbs, curb cuts, wheelchair ramps, bicycle ramps, and driveway approaches shall be constructed in accordance with the Public Works Standards.
- P. Streets Adjacent to Railroad Right-of-Way.** Wherever the proposed development contains or is

adjacent to a railroad right-of-way, a street approximately parallel to and on each side of such right-of-way at a distance suitable for the appropriate use of the land shall be created. New railroad crossings and modifications to existing crossings are subject to review and approval by Oregon Department of Transportation and the rail service provider.

- Q. Development Adjoining Arterial Streets.** Where a development adjoins or is crossed by an existing or proposed arterial street, the development design shall separate residential access and through traffic and shall minimize traffic conflicts. The design shall include one or more of the following:
1. A parallel access street along the arterial with a landscape buffer separating the two streets;
 2. Deep lots abutting the arterial or major collector to provide adequate buffering with frontage along another street. Double frontage lots shall conform to the buffering standards in Chapter 3.1.200.F;
 3. Screen planting at the rear or side property line to be contained in a non-access reservation (e.g., public easement or tract) along the arterial; or
 4. Other treatment suitable to meet the objectives of this subsection.
 5. If a lot has access to two streets with different classifications, primary access shall be from the lower classification street, in conformance with Chapter 3.1.200.
- R. Alleys, Public or Private.** Alleys shall conform to adopted Public Works Standards.
- S. Private Streets.** Private streets shall not be used to avoid connections with public streets. Design standards for private streets shall conform to adopted Public Works Standards.
- T. Street Names.** No street name shall be used which will duplicate or be confused with the names of existing streets in Umatilla County, except for extensions of existing streets. Street names, signs, and numbers shall conform to the established pattern in the surrounding area, except as requested by emergency service providers.
- U. Survey Monuments.** Upon completion of a street improvement and prior to acceptance by the City, it shall be the responsibility of the developer's registered professional land surveyor to provide certification to the City that all boundary and interior monuments shall be reestablished and protected.
- V. Street Signs.** The city, county or state with jurisdiction shall install all signs for traffic control and street names. The cost of signs required for new development shall be the responsibility of the developer. Street name signs shall be installed at all street intersections. Stop signs and other signs may be required. All street signs shall conform to Public Works Standards.
- W. Street Light Standards.** Streetlights shall be installed in accordance with adopted Public Works Standards.
- X. Street Cross-Sections.** Street Cross Sections are found in the Public Works Standards.

3.4.200 Public Use Areas.

A. Dedication Requirements.

1. Where a proposed park, playground, or other public use shown in a plan adopted by the City is located in whole or in part in a subdivision, the City may require the dedication or reservation of this area on the final plat for the subdivision.
2. If determined by the City Council to be in the public interest in accordance with adopted comprehensive plan policies, and where an adopted plan of the City does not indicate proposed public use areas, the City may require the dedication or reservation of areas within the subdivision of a character, extent, and location suitable for the development of parks and other public uses.
3. All required dedications of public use areas shall conform to Section 3.4.000.D (Conditions of Approval).

- B. Acquisition by Public Agency.** If the developer is required to reserve land area for a park, playground, or other public use, the land shall be dedicated to the appropriate public agency within 6 months following final plat approval, at a price agreed upon prior to approval of the plat, or the reservation shall be released to the property owner.

3.4.300 Sanitary Sewer and Water Service Improvements.

- A. Sewers and Water Mains Required.** Sanitary sewers and water mains shall be installed to serve each new development and to connect developments to existing mains in accordance with the City's construction specifications.
- B. Sewer and Water Plan Approval.** Development permits for sewer and water improvements shall not be issued until the City Engineer has approved all sanitary sewer and water plans in conformance with City standards.
- C. Over-sizing.** Proposed sewer and water systems shall be sized to accommodate additional development within the area as projected by the City based on population projections from Portland State University's Population Research Center. The developer shall be entitled to system development charge credits for the over-sizing.
- D. Permits Denied.** Development permits may be restricted by the City where a deficiency exists in the existing water or sewer system which cannot be rectified by the development and which if not rectified will result in a threat to public health or safety, surcharging of existing mains, or violations of state or federal standards pertaining to operation of domestic water and sewerage treatment systems. Building moratoriums shall conform to the criteria and procedures contained in ORS 197.505 through 197.540.

3.4.400 Storm Drainage.

- A. General Provisions.** The City shall issue a development permit only where adequate provisions for storm water runoff have been made in conformance with Chapter 3.5 Surface Water Management.

- B. **Accommodation of Upstream Drainage.** Culverts and other drainage facilities shall be large enough to accommodate potential runoff from the entire upstream drainage area, whether inside or outside the development. Such facilities shall be subject to review and approval by the City Engineer.
- C. **Effect on Downstream Drainage.** Where it is anticipated by the City Engineer that the additional runoff resulting from the development will overload an existing drainage facility, the City shall withhold approval of the development until provisions have been made for improvement of the potential condition or until provisions have been made for storage of additional runoff caused by the development in accordance with City standards.
- D. **Over Sizing.** The city may require as a condition of approval that sewer, water, or storm drainage systems serving new development be sized to accommodate future development within the area as projected by the applicable facility master plan, provided that the City may grant the developer credit toward any required system development charge for the same pursuant to the System Development Charge.
- E. **Easements.** Where a development is traversed by a watercourse, drainage way, channel, or stream, there shall be provided a storm water easement or drainage right-of-way conforming substantially to the lines of such watercourse and such further width as will be adequate for conveyance and maintenance to protect public health and safety.

3.4.5 Utilities.

- A. **Underground Utilities.** All utility lines including, but not limited to, those required for electric, communication, lighting, and cable television services and related facilities shall be placed underground, except for surface mounted transformers, surface mounted connection boxes and meter cabinets which may be placed above ground, temporary utility service facilities during construction, and high-capacity electric lines operating at 69,000 volts or above. The following additional standards apply to all new subdivisions, to facilitate underground placement of utilities:
 - 1. The developer shall make all necessary arrangements with the serving utility to provide underground services. Care shall be taken to ensure that all the above ground equipment does not obstruct vision clearance areas for vehicular traffic (Chapter 3.1);
 - 2. The City reserves the right to approve the location of all surface mounted facilities;
 - 3. All underground utilities, including sanitary sewers and storm drains installed in streets by the developer, shall be constructed prior to the surfacing of the streets; and
 - 4. Stubs for service connections shall be long enough to avoid disturbing the street improvements when service connections are made.
- B. **Exception to Under-Grounding Requirement.** An exception to the undergrounding requirement may be granted due to physical constraints, such as steep topography, environmental considerations, or existing development conditions.

3.4.600 Easements.

Easements for sewers, storm drainage and water quality facilities, water mains, electric lines or other public or private utilities shall be dedicated on a final plat or provided for in the deed restrictions. (See also Chapter 4.2 Site Design Review, and Chapter 4.3 Land Divisions.) The developer or applicant shall make arrangements with the City, the applicable district, and each utility franchise for the provision and dedication of utility easements necessary to provide full services to the development. The City's standard width for public main line utility easements shall be 5 feet unless otherwise specified by the utility company, applicable district, or City Engineer.

3.4.700 Construction Plan Approval and Assurances.

No public improvements, including sanitary sewers, storm sewers, streets, sidewalks, curbs, lighting, parks, or other requirements shall be undertaken except after the plans have been approved by the City, permit fee paid, and permit issued. The City may require the developer or subdivider to provide bonding or other performance guarantees to ensure completion of required public improvements. See Section 4.2.400 Site Design Review and Chapter 4.3.180 Land Divisions.)

3.4.800 Installation.

- A. Conformance Required.** Improvements installed by the developer, either as a requirement of these regulations or at his/her own option, shall conform to the requirements of this chapter, approved construction plans, and to improvement standards and specifications adopted by the City.
- B. Adopted Installation Standards.** The City has adopted Public Works Standards. Other standards may also be required upon recommendation of the City Engineer.
- C. Commencement.** Work shall not begin until all applicable agency permits have been approved and issued.
- D. Resumption.** If work is discontinued for more than one month, it shall not be resumed until the City is notified in writing and grants approval for work to commence.
- E. City Inspection.** Improvements shall be constructed under the inspection and to the satisfaction of the City. The City may require minor changes in typical sections and details if unusual conditions arising during construction warrant such changes in the public interest. Major modifications requested by the developer shall be subject to land use review under Chapter 4.6 - Modifications to Approved Plans and Conditions of Approval. Any monuments that are disturbed before all improvements are completed by the subdivider shall be replaced prior to final acceptance of the improvements.
- F. Engineer's Certification and As-Built Plans.** A registered civil engineer shall provide written certification in a form required by the City that all improvements, workmanship, and materials are in accord with current and standard engineering and construction practices, conform to approved plans and conditions of approval, and are of high grade, prior to City acceptance of the public improvements, or any portion thereof, for operation and maintenance. The developer's engineer shall also provide "as-built" plans, both a paper copy and a digital copy, in conformance with the City Engineer's specifications, for permanent filing with the City.

Chapter 3.5 — Surface Water Management

Sections:

3.5.100 - Statement of Purpose

3.5.200 - Applicability

3.5.300 - Stormwater Management Plan Submittal

3.5.400 - General Requirements

3.5.500 - Surface Water Conveyance Standards

3.5.100 Statement of Purpose

This section includes standards for conveyance of surface water in streams, creeks and channels that exist on a site at the time of development. It also addresses pollution reduction and flow control for stormwater generated from new and redevelopment. For the purpose of this ordinance, “new” and “redevelopment” refers to any man-made change to improved or unimproved real estate including, but not limited to the placement of buildings or other structures, dredging, filling, grading, or paving.

The ordinance provides performance standards for addressing infiltration, treatment, and detention of stormwater as well as design standards for facilities that serve to mitigate the water quality impacts of developments that fall below a certain size threshold.

3.5.200 Applicability

No permit for construction of new development or tenant improvements within the City of Echo shall be issued until a stormwater management plan is approved. Separate applicability thresholds for Pollution Reduction and Flow Control Standards are listed in section IV. Development projects shall not be phased or segmented in such a manner to avoid the requirement of these rules and regulations.

3.5.300 Stormwater Management Plan Submittal

A. Preconstruction Submittal Requirements

1. An analysis of stormwater mitigation strategies to increase infiltration and evapotranspiration (use of water by plants) and reduce the amount of stormwater runoff generated from the site. (Note: rainwater can soak into the ground where it falls or it can accumulate on a non-pervious surface, flow to a pervious area and then infiltrate into the ground. The former scenario is stormwater mitigation, while the latter scenario requires stormwater management.)
2. Calculations of the amount of impervious surface before development and the amount of impervious surface after development. Impervious surface refers only to strictly impervious surfaces including roofs of buildings, impervious asphalt and concrete pavements, and other specifically impervious pavement materials such as mortared masonry and compacted gravel.
3. An analysis of vegetative and other treatment methods used to reduce pollutants.
4. An analysis of flow reduction methods including infiltration, detention, and techniques.
5. Statement of consistency with City of Echo stormwater management objectives and, if applicable, the watershed management plan for the basin and/or requirements of a pollutant load reductive plan for a water quality limited stream.
6. When the amount of impervious surface created is less than 1,000 square feet responses required by 3-5 above are waved, and of the following sections of this code only Section V., Surface Water Conveyance Standards, apply.

7. When the amount of impervious surface created is less than 10,000 square feet and use of the design specified by the Oregon Department of Environmental Quality is proposed, responses required by 3-5 above are waived.
- B. Post Construction Submittal Requirements
1. As-built plans, stamped by a qualified professional indicating all storm water mitigation and management strategies are installed per approved plans and approved changes.
 2. Maintenance plans for all stormwater facilities installed to comply with this ordinance. The maintenance program must be approved by the City of Echo. Proof of maintenance shall be submitted annually. A signed maintenance agreement with a local contractor or city/county public works department can serve to meet this requirement.
 3. When the amount of impervious surface created is less than 10,000 square feet and use of the design standards specified by the Oregon Department of Environmental Quality is proposed, the requirement of 1 above is waived.

3.5.400 General Requirements

- A. All development shall be planned, designed, constructed, and maintained to:
1. Provide a system by which storm/surface water within the development will be managed without causing damage or harm to the natural environment, or to property or persons.
 2. Protect property from flood hazards.
 3. Removal of 80% of suspended solids from stormwater.
- B. Plan Review Standards
- Plans shall be submitted to the [Jurisdiction] for review. Plan approval will be based on the following criteria:
1. Plans and calculations for development proposals resulting in more than [10,000 square feet] of impervious surface and proposals not using treatment facilities built to the design criteria specified in [name document] must be stamped and signed by a [qualified professional].
 2. Design, construction and maintenance of proposed stormwater management practices will result in post construction stormwater volumes flowing off site which are substantially the same as preconstruction volumes for all storms less than or equal to the [two-year] design storm.
 3. Where required due to presence of fish, culvert installations must allow fish passage in accordance with Department of State Lands (DSL) and the U.S. Army Corps of Engineers (COE) and any other authorized federal, state, or local agency.
 4. Installation of culverts, spans or stormwater outfalls along natural water features shall be designed to emphasize preservation of natural flow conditions, allow for natural obstructions and pursue stream enhancement opportunities.
 5. Stormwater mitigation strategies, such as retention of existing trees, and use of porous paving surfaces, as well as stormwater treatment and flow control facilities used to meet the requirements of this code must be included in the plans.
 6. Stormwater management plan shall be consistent with [State applicable basin or sub basin watershed management plan and/or pollutant load reduction plan].
 7. In areas of high pollutant load, stormwater infiltration shall incorporate, or be preceded by treatment as necessary to prevent siltation of the infiltration facility, protect ground water, and prevent toxic accumulations of pollutants in the soil.

8. All vegetation used for the installation and landscaping of stormwater facilities shall be selected from plants listed in this Development Code or the Public Works Standards. Trees which are preserved or planted on site for stormwater mitigation credit do not need to meet this criterion. Planting schedule and maintenance of vegetation shall be approved by the City Engineer.
 9. All storm conveyance pipes and vaults shall be built to specifications of the City of Echo, as described in the Public Works Standards. See Section VI for Pollution Reduction and Flow Control standards.
 10. All stormwater infiltration, treatment, and detention facilities shall be built to the specifications of the City of Echo as described in the Public Works Standards.
- C. The City of Echo reserves the right to restrict the use of infiltration facilities in high-risk areas including those with steep slopes, unstable soils, high water tables, or sites known to be contaminated by hazardous substances.
- D. Infiltration facilities which fall under the jurisdiction of DEQ's Underground Injection Control (UIC) Program must be registered with the state and meet the requirements of the UIC Program.
- E. Bonds: Applicants shall provide a performance bond, similar surety, or irrevocable petition for public improvement acceptable to the City of Echo to assure successful installation and initial maintenance of surface pollution reduction and flow control facilities. During construction and for a period of one year thereafter, the bond shall be in favor of the City of Echo and in an amount of the anticipated construction cost.
- F. Contingency for system failure: If the storm management system fails due to lack of maintenance or breakage and causes impacts to downstream water quality or flooding as a result of the failure, the City of Echo may perform the maintenance or repair and charge the owner of the facility.

3.5.500 Surface Water Conveyance Standards

- A. Culverts and/or spans of streams, creeks, gulches, and other natural drainage channels shall maintain a single channel conveyance system.
- B. Culverts and/or spans are to be sized for the 24-hour post-developed tributary conditions of the 100-year storm.
- C. Conveyance calculations shall use the Rational Method for analysis. Exceptions must be documented and approved by the City of Echo.
- D. In-stream detention is not allowed.
- E. It shall be the responsibility of the owner that the new drainage system shall not negatively impact any natural waters, upstream or downstream from the site. The owner is responsible for providing a drainage system for all surface water, springs, and groundwater on site for water entering the property as well as management of springs and groundwater that surface during construction.

Chapter 3.6 — Other Standards

Sections:

3.6.100 - Telecommunication Facilities

3.6.200 - Wetlands

3.6.300 - Signs

3.6.100 Telecommunication Facilities.

- A. Purpose.** The purpose of this chapter is to protect the public interest by promoting telecommunications facilities in a way which protects the public health and safety; minimizes disruption of residential, natural, historical and environmentally sensitive areas; aesthetically complements the surrounding environment when possible; regulates telecommunications providers and services consistent with federal and state law; assures that all telecommunication providers' facilities or services within the city can continue to responsibly protect the public health, safety and welfare; and enable the city to discharge its public trust consistent with rapidly evolving federal and state regulatory policies, industry competition and technological development.
- B. Wireless Communication Equipment.** Wireless communication equipment, including radio (i.e. cellular), television and similar types of transmission and receiving facilities are permitted in any Commercial or Industrial District subject to an Administrative Review. Wireless communication equipment shall also comply with required setbacks, lot coverage and other applicable standards of the Light Industrial District.
- C. Applicability**
1. Pre-Existing Towers and Antennas
 2. New Facilities
- D. Design Criteria**
1. The maximum height for telecommunications transmission towers shall be 195 linear feet including antennas.
 2. Minimum setback for telecommunications support structures and transmission towers shall conform to the district or sub-district it is sited in.
 3. Guyed towers are not permitted.
 4. Towers at or over 200 feet require a Conditional Use Permit (see Chapter 4.4).
 5. Maintenance of a facility is allowed without a permit.
- E. Small Wireless Facilities.** Small Wireless Facilities, if proposed within the street right-of-way, shall be subject to franchise fees and be installed in such a manner as to limit impacts to adjoining uses.

3.6.200 Wetlands

Wetlands Notifications Provisions. Written notice shall be provided to the Oregon Department of State Lands of applications which involve lands that are wholly or partially within areas that are identified as wetlands on the Statewide Wetlands Inventory (SWI). Wetland boundaries shall be verified in the field by a qualified professional before any application for development in or adjacent to a wetland is accepted as complete.

1. Notice shall be sent within five (5) working days of the acceptance of a complete application for a subdivision, building permit for new structure, planned development, or any other development permit or approval that allows physical alteration of the land involving excavation, grading, fill, or construction on the land.
2. Notice shall be sent if the City receives information that there is a possible wetland on the subject property following acceptance of the application.
3. Notice is not required for any application listed in if a permit has been issued by the Department of State Lands for that activity.
4. If the Department of State Lands fails to respond to the notice from the City within thirty (30) days of the postmark date of the notice, the City may issue approval for the proposed activity with written notice to the applicant and owner of record that the proposed activity may require state or federal permits.
5. The City may issue an approval for a comprehensive plan map or zoning map amendment for parcels identified as or including wetlands on the SWI upon providing to the applicant and the owner of record of the affected parcel a written notice of the possible presence of wetlands and the potential need for state and federal permits and providing the Department of State Lands with a copy of the notification of comprehensive plan map or zoning map amendments for specific properties.
6. The City may issue approval for any activity providing that the approval includes one of the following statements:
 - a. Issuance of a permit under ORS 196.665 and 196.800 to 196.800 to 196.900 by the Department of State Lands is required for the proposed project before any physical alteration takes place within the wetlands.
 - b. Notice from the Department of State Lands that no permit is required; or
 - c. Notice from the Department of State Lands that no permit is required until specific proposals to remove, fill, or alter the wetlands are submitted to the division.
7. Notice of activities authorized within an approved wetland conservation plan shall be provided to the Department of State Lands five days following approval by the City.
8. Failure of the City to provide notice to the Department of State Lands as required in this section will not invalidate county approval of the proposed activity.

3.6.300 Signs.

A. Sign Requirements. A sign is permitted only as an accessory use to the use of the property on which the sign is located, except that off-premise directional signs, not more than 6 square feet in area, may be allowed by the City in cases of demonstrated need.

B. Standards.

1. In the Residential Districts, the following regulations shall apply:
 - a. No sign shall be illuminated in any manner, except for street numbers and housing project, apartment or mobile home park identification or directional signs;
 - b. One name plate or home occupation sign shall be allowed and shall not exceed two (2) square feet in area.
 - c. Identification signs for mobile home parks, apartments, and housing projects are not to exceed 24 square feet, with one per primary access. Directional signs are also allowed within a housing complex.
2. In the Commercial Districts, the following regulations shall apply:
 - a. Signs shall be set back at least ten (10) feet from any Residential District/Sub-District.
 - b. Moving or flashing signs are allowed through the Site Design Review Type II process;
 - c. Total area of all signs shall not exceed the area of the largest exposed exterior wall of the main structure;
 - d. No sign shall project above the roof edge of the building containing the business which the sign identifies; except for shopping centers and the Tourist Commercial District;
 - e. Signs visible from residential properties shall be shielded or directed so as to not to constitute a nuisance to residential property owners and shall not interfere with, confuse or mislead a vehicle operator;
3. In the Industrial District, the following regulations shall apply:
 - a. Signs shall be set back at least ten (10) feet from any Residential District;
 - b. Moving or flashing signs are allowed through the Site Design Review Type II process;
 - c. Signs visible from residential properties shall be shielded or directed to not constitute a nuisance to residential property owners and shall not interfere with, confuse, or mislead a vehicle operator.
4. Temporary signs.
 - a. One sign shall be allowed per lot advertising the property for sale, lease or rent and the sign shall not exceed six (6) square feet in area. A "for sale" sign shall not be allowed to remain on the property after the property is sold.
 - b. One sign shall be allowed per subdivision advertising lots or homes for sale. Such signs shall not exceed fifty square feet in area and shall be setback at least twenty feet from the nearest street.
 - c. One notice sign not to exceed eight (8) square feet in area, for advertising for a period not more than two (2) weeks prior to an event such as a picnic bazaar or banquet of a church, service club fraternal organization or similar group shall be allowed.
 - d. One political sign per lot shall be allowed not to exceed two (2) square feet in area, for advertising a candidate or issue, for a period of not more than thirty (30) days prior to the date of an election.

5. Public or semi-public sign. On property in public or semi-public use, an identification sign facing each abutting street not to exceed six (6) square feet in area and a bulletin board not over ten (10) square feet in area shall be allowed.

Chapter 3.7 — Flood Plain Design Standards

Sections:

- 3.7.100 - Purpose and Applicability**
- 3.7.200 - Methods of Reducing Flood Losses**
- 3.7.300 - Compliance and Penalties for Noncompliance**
- 3.7.400 - Abrogation and Severability**
- 3.7.500 - Interpretation**
- 3.7.600 - Warning and Disclaimer of Liability**
- 3.7.700 - Definitions**
- 3.7.800 - Coordination with the State of Oregon Specialty Codes**
- 3.7.900 - Administration**
- 3.7.1000 - Substantial Improvement and Substantial Damage Assessments and Determinations**
- 3.7.1100 - Establishment of Development Permit**
- 3.7.1200 - Variance Procedure**
- 3.7.1300 - Provisions for Flood Hazard Reduction**
- 3.7.1400 - Specific Standards for Riverine Flood Zones**
- 3.7.1500 - Floodways**
- 3.7.1600 - Standards for Shallow Flooding Areas**

3.7.100 Purpose and Applicability.

It is the purpose of this Chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed:

1. To protect human life and health;
2. To minimize expenditure of public money and costly flood control projects;
3. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
4. To minimize prolonged business interruptions;
5. To minimize damage to public facilities and utilities such as water and gas mains; electric, telephone and sewer lines; and streets and bridges located in areas of special flood hazard areas;
6. To help maintain a stable tax base by providing for the sound use and development of flood hazard areas so as to minimize blight areas caused by flooding;
7. To notify potential buyers that their property is in a special flood hazard area;
8. To notify those who occupy special flood hazard areas that they assume responsibility for their actions; and
9. To participate in and maintain eligibility for flood insurance and disaster relief.

This Chapter shall apply to all special flood hazard areas within the jurisdiction of the City of Echo. Those special flood hazard areas identified by the Federal Insurance Administrator became effective on September 3, 2010, and include panels 41059C0611G, 41059C0612G, 41059C0613G, and 41059C0614G.

3.7.200 Methods of Reducing Flood Losses.

To accomplish its purposes, this Chapter includes methods and provisions for:

1. Restricting or prohibiting uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
2. Requiring that development vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
3. Controlling the alteration of natural flood plains, stream channels, and natural protective barriers, which help accommodate or channel flood waters;
4. Controlling filling, grading, dredging, and other development that may increase flood damage; and
5. Preventing or regulating the construction of flood barriers that will unnaturally divert flood waters or may increase flood hazards in other areas.

3.7.300 Compliance and Penalties for Noncompliance.

- A. Full Compliance Required.** No structure or land within the Flood Plain District or Floodway Sub-District described in Chapter 2.7 shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this Chapter and other applicable regulations.
- B. Penalties for Noncompliance.** Violations of the provisions of this Chapter by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions), shall constitute a misdemeanor. Any person who violates this ordinance or fails to comply with any of its requirements shall upon conviction thereof be fined not more than \$1,000.00 for each violation, and in addition shall pay all costs and expenses involved in the case. Nothing herein contained shall prevent the City of Echo from taking such other lawful action as is necessary to prevent or remedy any violation.

3.7.400 Abrogation and Severability.

This Chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this Chapter and another ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

This Chapter and the various parts thereof are hereby declared to be severable. If any section clause, sentence, or phrase of this Chapter is held to be invalid or unconstitutional by any court of competent jurisdiction, then said holding shall in no way effect the validity of the remaining portions of this Chapter.

3.7.500 Interpretation.

In the interpretation and application of this Chapter, all provisions shall be:

1. Considered as minimum requirements;
2. Liberally construed in favor of the governing body; and,
3. Deemed neither to limit nor repeal any other powers granted under State statutes.

3.7.600 Warning and Disclaimer of Liability.

The degree of flood protection required by this Chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. This ordinance does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages.

This Chapter shall not create liability on the part of the City of Echo, any officer or employee thereof, or the Federal Insurance Administration, for any flood damages that result from reliance on this Chapter or any administrative decision lawfully made hereunder.

3.7.700 Definitions

Definitions for this Chapter are included in Chapter 1.3 Definitions.

3.7.800 Coordination with State of Oregon Specialty Codes

Pursuant to the Requirement established in Oregon Revised Statute 455 that the State of Oregon, on behalf of the City of Echo, administers and enforces the State of Oregon Specialty Code, the City of Echo does hereby acknowledge that the Oregon Specialty Codes contain provision that apply to the design and construction of buildings and structures located in special flood hazard areas. Therefore, this Chapter is intended to be administered and enforced in conjunction with the Oregon Specialty Codes.

3.7.900 Administration

DESIGNATION OF THE FLOODPLAIN ADMINISTRATOR. The Planning Official is hereby appointed to administer, implement, and enforce this ordinance by granting or denying development permits in accordance with its provisions. The Floodplain Administrator may delegate authority to implement these provisions.

DUTIES AND RESPONSIBILITIES OF THE FLOODPLAIN ADMINISTRATOR. Duties of the floodplain administrator, or their designee, shall include, but not be limited to:

PERMIT REVIEW. Review all development permits to determine that:

- A. The permit requirements of this ordinance have been satisfied;
- B. All other required local, state, and federal permits have been obtained and approved.
- C. Review all development permits to determine if the proposed development is in a floodway. If located in the floodway assure that the floodway provisions of this ordinance are met; and
- D. Review all development permits to determine if the proposed development is in an area where Base Flood Elevation (BFE) data is available either through the Flood Insurance Study (FIS) or from another authoritative source. If BFE data is not available, then ensure compliance with the provisions of the **USE OF OTHER BASE FLOOD ELEVATION DATA**; and
- E. Provide building officials with the Base Flood Elevation (BFE) applicable to any building requiring a development permit.
- F. Review all development permit applications to determine if the proposed development qualifies as a substantial improvement as defined in Chapter 1.3.

- G. Review all development permits to determine if the proposed development activity is a watercourse alteration. If a watercourse alteration is proposed, ensure compliance with the provisions of the **ALTERATION OF WATERCOURSES** is met.
- H. Review all development permits to determine if the proposed development activity includes the placement of fill or excavation.

INFORMATION TO BE OBTAINED AND MAINTAINED. The following information shall be obtained and maintained and shall be made available for public inspection as needed:

- A. Obtain, record, and maintain the actual elevation (in relation to mean sea level) of the lowest floor (including basements) and all attendant utilities of all new or substantially improved structures where Base Flood Elevation (BFE) data is provided through the Flood Insurance Study (FIS), Flood Insurance Rate Map (FIRM), or obtained in accordance with the provisions of the USE OF OTHER BASE FLOOD ELEVATION DATA.
- B. Obtain and record the elevation (in relation to mean sea level) of the natural grade of the building site for a structure prior to the start of construction and the placement of any fill and ensure that the requirements of sections **FLOODWAYS, ALL REQUIRED LOCAL, STATE, AND FEDERAL PERMITS** are adhered to.
- C. Upon placement of the lowest floor of a structure (including basement) but prior to further vertical construction, obtain documentation, prepared, and sealed by a professional licensed surveyor or engineer, certifying the elevation (in relation to mean sea level) of the lowest floor (including basement).
- D. Where base flood elevation data are utilized, obtain As-built certification of the elevation (in relation to mean sea level) of the lowest floor (including basement) prepared and sealed by a professional licensed surveyor or engineer, prior to the final inspection.
- E. Maintain all Elevation Certificates (EC) submitted to the community;
- F. Obtain, record, and maintain the elevation (in relation to mean sea level) to which the structure and all attendant utilities were floodproofed for all new or substantially improved floodproofed structures where allowed under this ordinance and where Base Flood Elevation (BFE) data is provided through the FIS, FIRM, or obtained in accordance with section **5.1.7**.
- G. Maintain all floodproofing certificates required under this ordinance;
- H. Record and maintain all variance actions, including justification for their issuance;
- I. Obtain and maintain all hydrologic and hydraulic analyses performed as required under section **FLOODWAYS**.
- J. Record and maintain all Substantial Improvement and Substantial Damage calculations and determinations as required under section **SUBSTANTIAL IMPROVEMENT AND SUBSTANTIAL DAMAGE ASSESSMENTS AND DETERMINATIONS**.
- K. Maintain for public inspection all records pertaining to the provisions of this ordinance.

REQUIREMENT TO NOTIFY OTHER ENTITIES AND SUBMIT NEW TECHNICAL DATA

COMMUNITY BOUNDARY ALTERATIONS. The Floodplain Administrator shall notify the Federal Insurance Administrator in writing whenever the boundaries of the community have been modified by annexation or the community has otherwise assumed authority or no longer has authority to adopt and enforce floodplain management regulations for a particular area, to ensure that all Flood Hazard Boundary Maps (FHBM) and Flood Insurance Rate Maps (FIRM) accurately represent the community's boundaries. Include within such notification a copy of a map of the community suitable for reproduction, clearly delineating the new corporate limits or new area for which the community has assumed or relinquished floodplain management regulatory authority.

WATERCOURSE ALTERATIONS. Notify adjacent communities, the Department of Land Conservation and Development, and other appropriate state and federal agencies, prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration. This notification shall be provided by the applicant to the Federal Insurance Administration as a Letter of Map Revision (LOMR) along with either:

- A. A proposed maintenance plan to assure the flood carrying capacity within the altered or relocated portion of the watercourse is maintained; or
- B. Certification by a registered professional engineer that the project has been designed to retain its flood carrying capacity without periodic maintenance.

The applicant shall be required to submit a Conditional Letter of Map Revision (CLOMR) when required under THE REQUIREMENT TO SUBMIT NEW TECHNICAL DATA. Ensure compliance with all applicable requirements in REQUIREMENT TO SUBMIT NEW TECHNICAL DATA and ALTERATION OF WATERCOURSES.

REQUIREMENT TO SUBMIT NEW TECHNICAL DATA. A community's base flood elevations may increase or decrease resulting from physical changes affecting flooding conditions. As soon as practicable, but not later than six months after the date such information becomes available, a community shall notify the Federal Insurance Administrator of the changes by submitting technical or scientific data in accordance with Title 44 of the Code of Federal Regulations (CFR), Section 65.3. The community may require the applicant to submit such data and review fees required for compliance with this section through the applicable FEMA Letter of Map Change (LOMC) process.

The Floodplain Administrator shall require a Conditional Letter of Map Revision prior to the issuance of a floodplain development permit for:

- A. Proposed floodway encroachments that increase the base flood elevation; and
- B. Proposed development which increases the base flood elevation by more than one foot in areas where FEMA has provided base flood elevations but no floodway.

An applicant shall notify FEMA within six (6) months of project completion when an applicant has obtained a Conditional Letter of Map Revision (CLOMR) from FEMA. This notification to FEMA shall be provided as a Letter of Map Revision (LOMR).

3.7.1000 Substantial Improvement and Substantial Damage Assessments and Determinations

SUBSTANTIAL IMPROVEMENT AND SUBSTANTIAL DAMAGE ASSESSMENTS AND DETERMINATIONS.

Conduct Substantial Improvement (SI) (as defined in section 2.0) reviews for all structural development proposal applications and maintain a record of SI calculations within permit files in accordance with INFORMATION TO BE OBTAINED AND MAINTAINED. Conduct Substantial Damage (SD) assessments when structures are damaged due to a natural hazard event or other causes. Make SD determinations whenever structures within the special flood hazard area are damaged to the extent that the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

3.7.1100 Establishment of Development Permit

FLOODPLAIN DEVELOPMENT PERMIT REQUIRED. A development permit shall be obtained before construction or development begins within any area horizontally within the special flood hazard area.

The development permit shall be required for all structures, including manufactured dwellings, and for all other developments, including fill and other development activities.

APPLICATION FOR DEVELOPMENT PERMIT. Application for a development permit may be made on forms furnished by the Floodplain Administrator and may include, but not be limited to, plans in duplicate drawn to scale showing the nature, location, dimensions, and elevations of the area in question, existing or proposed structures, fill, storage of materials, drainage facilities, and the location of the foregoing. Specifically, the following information is required:

- A. In riverine flood zones, the proposed elevation (in relation to mean sea level), of the lowest floor (including basement) and all attendant utilities of all new and substantially improved structures; in accordance with the requirements of INFORMATION TO BE OBTAINED AND MAINTAINED.
- B. Proposed elevation in relation to mean sea level to which any non-residential structure will be floodproofed.
- C. Certification by a registered professional engineer or architect licensed in the State of Oregon that the floodproofing methods proposed for any non-residential structure meet the floodproofing criteria for non-residential structures in NON-RESIDENTIAL CONSTRUCTION.
- D. Description of the extent to which any watercourse will be altered or relocated.
- E. Base Flood Elevation data for subdivision proposals or other development when required per PERMIT REVIEW and SUDVISION PREPOSALS AND OTHER PROPOSED DEVELOPMENTS.
- F. Substantial improvement calculation for any improvement, addition, reconstruction, renovation, or rehabilitation of an existing structure.
- G. The amount and location of any fill or excavation activities proposed.

3.7.1200 Variance Procedure

VARIANCE PROCEDURE. The issuance of a variance is for floodplain management purposes only. Flood insurance premium rates are determined by federal statute according to actuarial risk and will not be modified by the granting of a variance.

CONDITIONS FOR VARIANCES.

- A. Generally, variances may be issued for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, in conformance with the provisions of sections (C) and (E), and VARIANCE NOTIFICATION. As the lot size increases beyond one-half acre, the technical justification required for issuing a variance increases.
- B. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
- C. Variances shall not be issued within any floodway if any increase in flood levels during the base flood discharge would result.
- D. Variances shall only be issued upon:
 - 1. A showing of good and sufficient cause;
 - 2. A determination that failure to grant the variance would result in exceptional hardship to the applicant;
 - 3. A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing laws or ordinances.
- E. Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that the

criteria of sections (B) – (D) above are met, and the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

VARIANCE NOTIFICATION. Any applicant to whom a variance is granted shall be given written notice that the issuance of a variance to construct a structure below the Base Flood Elevation will result in increased premium rates for flood insurance and that such construction below the base flood elevation increases risks to life and property. Such notification and a record of all variance actions, including justification for their issuance shall be maintained in accordance with VARIANCE NOTIFICATION.

3.7.1300 Provisions for Flood Hazard Reduction

GENERAL STANDARDS. In all special flood hazard areas, the following standards shall be adhered to:

ALTERATION OF WATERCOURSES. Require that the flood carrying capacity within the altered or relocated portion of said watercourse is maintained. Require that maintenance is provided within the altered or relocated portion of said watercourse to ensure that the flood carrying capacity is not diminished. Require compliance with WATERCOURSE ALTERATIONS and REQUIREMENT TO SUBMIT NEW TECHNICAL DATA.

ANCHORING.

- A. All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.
- B. All manufactured dwellings shall be anchored per MANUFACTURED DWELLINGS.

CONSTRUCTION MATERIALS AND METHODS.

- A. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
- B. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.

UTILITIES AND EQUIPMENT.

WATER SUPPLY, SANITARY SEWER, AND ON-SITE WASTE DISPOSAL SYSTEMS

- A. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.
- B. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharge from the systems into flood waters.
- C. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding consistent with the Oregon Department of Environmental Quality.

ELECTRICAL, MECHANICAL, PLUMBING, AND OTHER EQUIPMENT. Electrical, heating, ventilating, air-conditioning, plumbing, duct systems, and other equipment and service facilities shall be elevated at or above the base flood level or shall be designed and installed to prevent water from entering or accumulating within the components and to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during conditions of flooding. In addition, electrical, heating, ventilating, air-conditioning, plumbing, duct systems, and other equipment and service facilities shall:

- A. If replaced as part of a substantial improvement shall meet all the requirements of this section.

TANKS.

- A. Underground tanks shall be anchored to prevent flotation, collapse, and lateral movement under conditions of the base flood.
- B. Above-ground tanks shall be installed at or above the base flood level or shall be anchored to prevent flotation, collapse, and lateral movement under conditions of the base flood.

SUBDIVISION PROPOSALS & OTHER PROPOSED DEVELOPMENTS.

- A. All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) greater than 50 lots or 5 acres, whichever is the lesser, shall include within such proposals, Base Flood Elevation data.
- B. All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) shall:
 - 1. Be consistent with the need to minimize flood damage.
 - 2. Have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize or eliminate flood damage.
 - 3. Have adequate drainage provided to reduce exposure to flood hazards.

USE OF OTHER BASE FLOOD ELEVATION DATA. When Base Flood Elevation data has not been provided in accordance with the BASIS FOR ESTABLISHING THE SPECIAL FLOOD HAZARD AREAS the local floodplain administrator shall obtain, review, and reasonably utilize any Base Flood Elevation data available from a federal, state, or other source, to administer the PROVISIONS FOR FLOOD HAZARD REDUCTION. All new subdivision proposals and other proposed new developments (including proposals for manufactured dwelling parks and subdivisions) must meet the requirements of SUBDIVISION PROPOSALS AND OTHER PROPOSED DEVELOPMENTS.

Base Flood Elevations shall be determined for development proposals that are 5 acres or more in size or are 50 lots or more, whichever is lesser in any A zone that does not have an established base flood elevation. Development proposals located within a riverine unnumbered A Zone shall be reasonably safe from flooding; the test of reasonableness includes use of historical data, high water marks, FEMA provided Base Level Engineering data, and photographs of past flooding, etc. where available. Failure to elevate at least two feet above grade in these zones may result in higher insurance rates.

STRUCTURES LOCATED IN MULTIPLE OR PARTIAL FLOOD ZONES. In coordination with the State of Oregon Specialty Codes:

- A. When a structure is in multiple flood zones on the community's Flood Insurance Rate Maps (FIRM) the provisions for the more restrictive flood zone shall apply.
- B. When a structure is partially located in a special flood hazard area, the entire structure shall meet the requirements for new construction and substantial improvements.

3.7.1400 Specific Standards for Riverine Flood Zones

SPECIFIC STANDARDS FOR RIVERINE (INCLUDING ALL NON-COASTAL) FLOOD ZONES. These specific standards shall apply to all new construction and substantial improvements in addition to the General Standards contained in GENERAL STANDARDS of this ordinance.

FLOOD OPENINGS. All new construction and substantial improvements with fully enclosed areas below the lowest floor (excluding basements) are subject to the following requirements. Enclosed areas below the Base Flood Elevation, including crawl spaces shall:

- A. Be designed to automatically equalize hydrostatic flood forces on walls by allowing for the entry and exit of floodwaters;
- B. Be used solely for parking, storage, or building access;
- C. Be certified by a registered professional engineer or architect or meet or exceed all of the following minimum criteria:
 - 1. A minimum of two openings,
 - 2. The total net area of non-engineered openings shall be not less than one (1) square inch for each square foot of enclosed area, where the enclosed area is measured on the exterior of the enclosure walls,
 - 3. The bottom of all openings shall be no higher than one foot above grade.
 - 4. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they shall allow the automatic flow of floodwater into and out of the enclosed areas and shall be accounted for in the determination of the net open area.
 - 5. All additional higher standards for flood openings in the State of Oregon Residential Specialty Codes Section R322.2.2 shall be complied with when applicable.

GARAGES.

- A. Attached garages may be constructed with the garage floor slab below the Base Flood Elevation (BFE) in riverine flood zones, if the following requirements are met:
 - 1. If located within a floodway the proposed garage must comply with the requirements of FLOODWAYS.
 - 2. The floors are at or above grade on not less than one side;
 - 3. The garage is used solely for parking, building access, and/or storage;
 - 4. The garage is constructed with flood openings in compliance with section FLOOD OPENINGS to equalize hydrostatic flood forces on exterior walls by allowing for the automatic entry and exit of floodwater.
 - 5. The portions of the garage constructed below the BFE are constructed with materials resistant to flood damage;
 - 6. The garage is constructed in compliance with the GENERAL standards; and
 - 7. The garage is constructed with electrical, and other service facilities located and installed to prevent water from entering or accumulating within the components during conditions of the base flood.
- B. Detached garages must be constructed in compliance with the standards for appurtenant structures in section APPURTENANT (ACCESSORY) STRUCTURES or non-residential structures in section NON-RESIDENTIAL CONSTRUCTION depending on the square footage of the garage.

FOR RIVERINE (NON-COASTAL) SPECIAL FLOOD HAZARD AREAS WITH BASE FLOOD ELEVATIONS. In addition to the general standards listed in the GENERAL STANDARDS the following specific standards shall apply in Riverine (non-coastal) special flood hazard areas with Base Flood Elevations (BFE): Zones A1-A30, AH, and AE.

BEFORE REGULATORY FLOODWAY. In areas where a regulatory floodway has not been designated, no new construction, substantial improvement, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's Flood Insurance Rate Map (FIRM), unless it is demonstrated that the cumulative effect of the proposed development, when combined with

all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

RESIDENTIAL CONSTRUCTION.

- A. New construction, conversion to, and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated at or above the BFE.
- B. Enclosed areas below the lowest floor shall comply with the flood opening requirements in FLOOD OPENINGS.

NON-RESIDENTIAL CONSTRUCTION.

- A. New construction, conversion to, and substantial improvement of any commercial, industrial, or other non-residential structure shall: 1. Have the lowest floor, including basement elevated at or above the Base Flood Elevation (BFE); or, together with attendant utility and sanitary facilities:
 - i. Be floodproofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water;
 - ii. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.
 - iii. Be certified by a registered professional engineer or architect that the design and methods of construction are in accordance with accepted standards of practice for meeting provisions of this section based on their development and/or review of the structural design, specifications, and plans. Such certifications shall be provided to the Floodplain Administrator as set forth in INFORMATION TO BE OBTAINED AND MAINTAINED.
- B. Non-residential structures that are elevated, not floodproofed, shall comply with the standards for enclosed areas below the lowest floor in FLOOD OPENINGS.
- C. Applicants floodproofing non-residential buildings shall be notified that flood insurance premiums will be based on rates that are one (1) foot below the floodproofed level (e.g. a building floodproofed to the base flood level will be rated as one (1) foot below.

MANUFACTURED DWELLINGS.

- A. Manufactured dwellings to be placed (new or replacement) or substantially improved that are supported on solid foundation walls shall be constructed with flood openings that comply with FLOOD OPENINGS;
- B. The bottom of the longitudinal chassis frame beam shall be at or above Base Flood Elevation;
- C. Manufactured dwellings to be placed (new or replacement) or substantially improved shall be anchored to prevent flotation, collapse, and lateral movement during the base flood. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors (Reference FEMA's "Manufactured Home Installation in Flood Hazard Areas" guidebook for additional techniques), and;
- D. Electrical crossover connections shall be a minimum of twelve (12) inches above BFE.

RECREATIONAL VEHICLES. Recreational vehicles placed on sites are required to:

- A. Be on the site for fewer than 180 consecutive days, and
- B. Be fully licensed and ready for highway use, on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or
- C. Meet the requirements of MANUFACTURED DWELLINGS, including the anchoring and elevation requirements for manufactured dwellings.

APPURTENANT (ACCESSORY) STRUCTURES. Relief from elevation or floodproofing requirements for residential and non-residential structures in Riverine (Non-Coastal) flood zones may be granted for appurtenant structures that meet the following requirements:

- A. Appurtenant structures located partially or entirely within the floodway must comply with requirements for development within a floodway found in FLOODWAYS.
- B. Appurtenant structures must only be used for parking, access, and/or storage and shall not be used for human habitation;
- C. In compliance with State of Oregon Specialty Codes, appurtenant structures on properties that are zoned residential are limited to one-story structures less than 200 square feet, or 400 square feet if the property is greater than two (2) acres in area and the proposed appurtenant structure will be located a minimum of 20 feet from all property lines. Appurtenant structures on properties that are zoned as non-residential are limited in size to 120 square feet.
- D. The portions of the appurtenant structure located below the Base Flood Elevation must be built using flood resistant materials;
- E. The appurtenant structure must be adequately anchored to prevent flotation, collapse, and lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, during conditions of the base flood.
- F. The appurtenant structure must be designed and constructed to equalize hydrostatic flood forces on exterior walls and comply with the requirements for flood openings;
- G. Appurtenant structures shall be located and constructed to have low damage potential;
- H. Appurtenant structures shall not be used to store toxic material, oil, or gasoline, or any priority persistent pollutant identified by the Oregon Department of Environmental Quality unless confined in a tank installed in compliance with TANKS.
- I. Appurtenant structures shall be constructed with electrical, mechanical, and other service facilities located and installed to prevent water from entering or accumulating within the components during conditions of the base flood.

3.7.1500 Floodways

FLOODWAYS. Located within the special flood hazard areas are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of the floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

- A. Prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless:
 - 1. Certification by a registered professional civil engineer is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment shall not result in any increase in flood levels within the community during the occurrence of the base flood discharge; Or,
 - 2. A community may permit encroachments within the adopted regulatory floodway that would result in an increase in base flood elevations, provided that a Conditional Letter of Map Revision (CLOMR) is applied for and approved by the Federal Insurance Administrator, and the requirements for such revision as established under Volume 44 of the Code of Federal Regulations, section 65.12 are fulfilled.
- B. If the requirements of section (A) above are satisfied, all new construction, substantial improvements, and other development shall comply with all other applicable flood hazard reduction provisions of the PROVISIONS FOR FLOOD HAZARD REDUCTION.

3.7.1600 Standards for Shallow Flooding Areas

STANDARDS FOR SHALLOW FLOODING AREAS. Shallow flooding areas appear on FIRMs as AO zones with depth designations or as AH zones with Base Flood Elevations. For AO zones the base flood depths range from one (1) to three (3) feet above ground where a clearly defined channel does not exist, or where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is usually characterized as sheet flow. For both AO and AH zones, adequate drainage paths are required around structures on slopes to guide floodwaters around and away from proposed structures.

STANDARDS FOR AH ZONES. Development within AH Zones must comply with the standards in the GENERAL STANDARDS, SPECIFIC STANDARDS FOR RIVERINE FLOOD ZONES, and STANDARDS FOR SHALLOW FLOODING AREAS.

STANDARDS FOR AO ZONES. In AO zones, the following provisions apply in addition to the requirements in the GENERAL STANDARDS and STANDARDS FOR SHALLOW FLOODING AREAS:

- A. New construction, conversion to, and substantial improvement of residential structures and manufactured dwellings within AO zones shall have the lowest floor, including basement, elevated above the highest grade adjacent to the building, at minimum to or above the depth number specified on the Flood Insurance Rate Maps (FIRM) (at least two (2) feet if no depth number is specified). For manufactured dwellings the lowest floor is the bottom of the longitudinal chassis frame beam.
- B. New construction, conversion to, and substantial improvements of non-residential structures within AO zones shall either:
 1. Have the lowest floor (including basement) elevated above the highest adjacent grade of the building site, at minimum to or above the depth number specified on the Flood Insurance Rate Maps (FIRMS) (at least two (2) feet if no depth number is specified); or
 2. Together with attendant utility and sanitary facilities, be completely floodproofed to or above the depth number specified on the FIRM or a minimum of two (2) feet above the highest adjacent grade if no depth number is specified, so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy. If this method is used, compliance shall be certified by a registered professional engineer or architect.
- C. Recreational vehicles placed on sites within AO Zones on the community's Flood Insurance Rate Maps (FIRM) shall either:
 1. Be on the site for fewer than 180 consecutive days, and
 2. Be fully licensed and ready for highway use, on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or
 3. Meet the elevation requirements of STANDARDS FOR AO ZONES(A), and the anchoring and other requirements for manufactured dwellings.
- D. In AO zones, new and substantially improved appurtenant structures must comply with the standards in APPURTENANT (ACCESSORY) STRUCTURES.
- E. In AO zones, enclosed areas beneath elevated structures shall comply with the requirements in FLOOD OPENINGS.