Title 12

STREETS, SIDEWALKS AND STORM DRAINS CONSTRUCTION STANDARDS

Chapter 12.28

Sections:

12.28.005 Short Title.

This ordinance shall be known as " Streets, Sidewalks and Storm Drains Construction Standards" of the Town of Lyman which shall constitute Title 12 of the Lyman Municipal Code and shall hereafter be referred to as this Title.

12.28.010 Purpose.

The purpose of this title is to provide minimum standards for the design and construction of new streets, storm water facilities, and the designation of easements such that they protect and promote a safe, convenient, durable and sufficient transportation access and movement within and through the Town.

12.28.020 Application.

This Chapter sets for the specifications and requirements for the construction of public works including streets, sidewalks, sanitary sewers and storm drains within the city.

A. Improved right-of-way is required for access to all new construction projects.

B. Improved right-of-way for new single-family and duplex buildings on existing lots of record is defined as grading to a minimum of 20 feet and installing six inches of crushed rock. An additional three-inch lift of crushed rock is required if the roadbed is destroyed by trucks during the construction process.

C. All other new construction shall meet the right-of-way improvement standards specified in this code, unless, in the opinion of the Town Engineer, improvements are not warranted at the time of development. In that case, the property owner shall be required to do one of the following, as specified by the Town Engineer:

1. Enter into a binding agreement to participate in any street improvement, local improvement district (LID) affecting the described right-of-way which LID may be formed now or in the future;
2. Enter into a binding agreement to construct specified right-of-way improvements by specified date;
3. Construct improvements which conform to existing improvements in the immediate area.

D. The Town of Lyman Comprehensive Transportation Plan has adopted Level of Service "A" for all streets. If a traffic study meeting the specifications of the Town Engineer is prepared that demonstrates that the development causes the level of service to decline below the adopted standards, then transportation improvements or strategies to accommodate the impacts of development are required to be made concurrent with the development, or the development permit application shall be denied.

These strategies may include increased public transportation service, ride sharing programs, demand management, and other transportation systems management strategies. For the purposes of this section, "concurrent with the development" shall mean that improvements or strategies are in place at the time of development, or that a financial commitment is in place to complete the improvements or strategies within six years. In the case of transportation facilities of state-wide significance, which includes State Route 20, every effort shall be made to coordinate with the State to work toward timely planned improvements, although a six-year commitment may not be feasible.

12.28.30 Standard specifications.

Construction and maintenance of all public works, including streets, sidewalks, storm drains and all associated appurtenances shall be in conformance with, and comply with, the 1984 Washington State Department of Transportation/American Public Works

Association (WSDOT/APWA) standard specifications, WSDOT amendments and General Special Provisions (GSPs), and the APWA amendments, and as hereafter amended, unless different standards or specifications are required by the Town Engineer, or are provided for in the applicable public works contract.

I. Street Classifications

12.28.040 Generally.

All streets in the Town shall be functionally classified in one of the categories specified in Section of this Chapter 12.28.050.

12.28.050 Types of Streets.

A. Major arterial (Principal).

Major arterials provide for the movement of traffic across and between large subparts of the urban region and serve predominately "through" trips with minimum direct service to abutting land uses. Major arterial service is required by the central business district, large shopping centers, large industrial plants, major governmental centers, large hospitals, important secondary business districts and similar land uses which comprise the top layer of hierarchy or trip generators. Major arterials shall form a closed, interconnected system linking together major traffic generators in the urban region, and functioning to collect and distribute traffic from freeways and state highways to less important arterial streets.

B. Secondary arterial (Minor).

Secondary arterials provide for movement within the large subparts prescribed by major arterials. Secondary arterials may also serve "through" traffic, but provide more direct service to abutting land uses than do major arterials. Secondary arterial service is required by small central business districts, tourist districts with motels, and restaurants, high schools and some grade schools, strip commercial development, parks and recreational areas, warehousing areas and similar land uses which comprise the middle layer of the trip generator hierarchy. Secondary arterials shall, whenever possible, be long, continuous streets with direct rather than meandering alignments.

C. Collector arterial (Collector).

Collector arterials provide for movement within the smaller areas, which are often definable neighborhoods and may be bounded by higher class arterials. Collector arterials serve very little "through" traffic but serve a high proportion of local traffic requiring direct access to abutting land uses. Collector arterial service is required for the majority of land uses which generate measurably important traffic volumes such as plats, churches, small parks and recreation areas, convenience shopping centers and other areas which are not served by major or secondary arterials. Collector arterials need not be particularly long or continuous since this

would tend to attract through trips. Collector arterials have an average daily traffic volume that ranges between 100 to 1,000 vehicles per day.

D. Access street (Access).

Access streets provide for movement within residential neighborhoods, light commercial areas, and the residential agricultural districts. Access streets serve no through traffic and may terminate in cul-de-sacs.

12.28.060 Street designations.

Designation and classification of new streets shall be appropriate to serve land uses as designated in the Land Use Element of the Comprehensive Plan. Every effort shall be made to incorporate new streets into the existing street grid pattern, and to provide for systematic naming and numbering of streets.

II. Street and Sidewalk Design Criteria

12.28.070 Plans required.

Street and sidewalk improvements or new street and sidewalk construction shall require engineering plans with the following information:

A. Vicinity map showing the location of existing arterial streets adjoining the proposed improvement;

B. Street plans for individual street sections shall contain at least the following information;
   1. Width and location of existing streets adjoining the improvement,
   2. Property lines, right-of-way lines and easement lines with dimensions and north arrow,
   3. Location of street improvement and appurtenances including driveways, properly dimensioned and stationed along the centerline and location and stationing of all horizontal angle points and horizontal curve data,
   4. Location of all existing and proposed overhead and underground utilities, including storm and sanitary sewers, water courses, railroad crossings, structures within the right-of-way, trees, and all pertinent topographic features, including location and elevations or all survey bench marks,
   5. Suitable title plate on each drawing with street name, name and address of developer, scale, date and the name, address and telephone number and stamp of the registered engineer or land surveyor responsible for the plan preparation;

C. Street profiles for individual street sections shall contain at least the following information;
   1. Street centerline stationing and vertical elevations,
   2. A two or three-line profile showing the existing ground surface along the street centerline and proposed top of curb and street centerline profiles,
   3. Slope of the street between grade changes and vertical curve information,

4. Centerline profile of intersecting streets a minimum of 100 feet each side of the street improvement and profile of all driveways with grades greater than eight percent,

5. Suitable title plate on each drawing with street name, name and address of developer, vertical and horizontal scale, date and the name, address, telephone number and stamp of the registered engineer or land surveyor responsible for the plan preparation;

D. Structural details shall include properly dimensioned details of curbs and gutters, street cross sections, drainage facilities, retaining walls and all major structures to be constructed within the right-of-way.

12.28.080 Geometric design standards- General requirements.

Streets shall be designed and constructed in accordance with the following general requirements:

A. Streets shall be designed to provide vehicular access according to the street classification to, from and through the service area;

B. Street widths shall be adequate to provide access for emergency vehicles, firefighting equipment, garbage trucks and town service vehicles;

C. Whenever possible streets shall be used to collect runoff from adjacent properties in the service area and divert it into storm drain systems;

D. Whenever possible new streets shall align with the existing street grid. New streets shall intersect existing streets at an approximate 90-degree angle;

E. Vertical clearance of structures or vegetation above a paved roadway shall be sixteen and one-half (16-1/2) feet. Vertical clearance of structures or vegetation above a sidewalk or walkway surface shall be eight (8) feet;

F. Lateral clearance between the curb or edge of street shoulder and the closest part of any fixed object (excluding traffic control signs and breakaway supports) shall be at least three (3) feet;

G. Traffic control devices shall conform to the Washington State Department of Transportation Manual on Uniform Traffic Control Devices, latest edition;

H. Ramps for Handicapped. Curb ramps for physically handicapped persons shall be included in all construction in accordance with the laws of the state of Washington;

I. Roadway Geometric. Street designs shall be based on accepted engineering practices and current standards of the American Association of State Highway and Transportation Officials;

J. Design Year. Twenty years after the year construction is completed.

K. Street Intersections. Gutter drainage should not be allowed to cross any intersections on major, secondary or collector arterials.

L. Storm drainage designs and systems shall be based on the standards and requirements as set forth in the Washington State Department of Ecology *Stormwater Management Manual for the Puget Sound Basin (Technical Manual),* February 1992 and the *Stormwater Program Guidance Manual for the Puget Sound Basin Vol. 1 & 2,* July 1992, unless different standards or specifications are required by the Town Engineer, or are provided for in the applicable public works contract.

12.28.090 Geometric design standards-Major Arterials.

Major arterials shall be designed and constructed in accordance with the following requirements:

A. Access conditions; intersections at grade with traffic signals at all major intersections; traffic channelization at all major intersections or driveways; parking restricted within road right-of-way; access control to adjoining properties according to the following conditions:
   1. One driveway per lot or driveways spaced a minimum of 150 lineal feet apart,
   2. No driveways within 150 lineal feet of street intersections,
   3. Driveway width 24 feet minimum, 36 feet maximum;

B. Average daily traffic. 5,000 to 25,000 vehicles per day;

C. Right-of-way width: 80 feet minimum;

D. Traffic lane width criteria;
   Two-way: 12 feet minimum
   Turn Lane: 12 feet minimum
   Shoulders: 8 feet minimum
   Bus Lane: 12 feet minimum

E. Pavement width (two-way traffic):
   With curbs: 48 feet measured to face of curb
   with shoulders: 56 feet

F. Horizontal curvature: minimum centerline radius = 955 feet;

G. Maximum grade= 6 percent; minimum grade= 0.5 percent;

H. Road surface cross slope: 2.5 percent minimum;

I. Curb radii at intersections = 25 feet minimum;

J. Curb type APWA Type A;

K. Five-foot wide sidewalks each side required unless exempt by Town Council.

12.28.100 Geometric design standards -Secondary Arterials.

Secondary arterials shall be designed and constructed in accordance with the following requirements:

A. Access conditions: intersections at grade with traffic channelization at major intersections; driveways allowed to all adjoining properties;

B. Average daily traffic: 1,500 to 10,000 vehicles per day;

C. Right-of-way width: 60 feet minimum;

D. Traffic lane width criteria;
Two-way: 11 feet minimum
Tum lane 12 feet minimum
Shoulders 8 feet minimum
Parking Lane: 10 feet minimum
Bus Lane: 12 feet minimum

E. Pavement width (two-way traffic):
With curbs: 44 feet measured to face of curb
with shoulders: 52 feet

F. Horizontal curvature: minimum centerline radius= 820 feet;

G. Maximum grade= 6 percent; minimum grade= 0.5 percent;

H. Road surface cross slope: 2.5 percent minimum;

I. Curb radii at intersections = 20 feet minimum;

J. Curb type APWA Type A or D;

K. Five-foot wide sidewalks both sides required unless exempt by Town council.

12.28.110 Geometric design standards- Collector arterials.

Collector arterials shall be designed and costructed in accordance with the following requirements:

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A. Access conditions: intersections at grade with stop signs at major cross streets; driveways allowed to all adjoining properties;

B. Average daily traffic: 1,000 to 5,000 vehicles per day;

C. Right-of-way width: 60 feet minimum;

D. Traffic lane width criteria;
Two-way: 11 feet minimum
Parking Lane: 8 feet minimum
Bus Lane: 12 feet minimum

E. Pavement width (two-way traffic):
With curbs: 36 feet measured to face of curb
with shoulders: 44 feet

F. Horizontal curvature: minimum centerline radius= 715 feet;

G. Maximum grade= 7 percent; minimum grade= 0.4 percent;

H. Road surface cross slope: 2.78 percent minimum;

I. Curb radii at intersections = 20 feet minimum;

J. Curb type APWA Type A or D;

K. Five-foot wide sidewalks both sides required unless exempt by Town Council.

12.28.120 Geometric design standards- Access Streets.

Access streets shall be designed and constructed in accordance with the following requirements:

A. Access conditions: intersections at grade with stop signs at all major cross streets; driveways allowed to all adjoining properties;

B. Average daily traffic: 500 vehicles per day or less;

C. Right-of-way width: 50 feet minimum;

D. Traffic lane width criteria:
Two-way: 10 feet minimum
Parking Lane: 8 feet minimum

E: Pavement width (two-way traffic):
With curbs and parking both sides: 36 feet measured to face of curb
With curbs and parking one side: 32 feet

With shoulder (five feet each side): 34 feet total width

F. Horizontal curvature: minimum centerline radius = 410 feet;

G. Maximum grade= 12 percent; minimum grade= 0.4 percent;

H. Road surface cross slope: 2.78 percent minimum;

I. Curb radius at intersections = 10 feet minimum;

J. Curb type APWA Type A or D;

K. Cul-de-sacs:
Length: 300 feet maximum
Diameter: 90 feet - residential zone
100 feet - commercial zone

L. Five-foot wide sidewalks one side required unless exempt by Town Council.

12.28.130 Structural design standards.

A. All streets shall be designed to provide a useful life span of 20 years without excessive maintenance. Major, secondary and collector arterials shall be designed and stamped by a civil engineer registered in the State of Washington. Accepted engineering practices shall be employed in the street designs. Soil, drainage and traffic conditions shall be considered in the design.

B. Access streets will not require design by a registered engineer but shall be submitted to the town according to the format described in section 12.28.070. The following minimum pavement cross- sections shall apply to access streets:
1. Asphalt concrete surfacing:
   a. Three inches Class B asphalt concrete placed in two lifts of one and one-half inches;
   b. One and one-half inches crushed rock base;
   c. Eight inches' pit run gravel ballast.
2. Portland cement concrete pavement:
   a. Five inches 4000 psi PC concrete on compacted subgrade.

C. Adequate storm sewers and gutters shall be provided for all streets.

III. Storm Sewers

12.28.140 Definitions.

A. "Primary drainage system" means a drainage system serving a watershed of 20 acres or greater.

B. "Secondary drainage system" means a drainage system serving a watershed of less than 20 acres in size or a watershed with a runoff of three cubic feet per second or less for a storm with a five-year frequency.

12.28.150 Plans required.

Storm sewers and drainage improvements shall require engineering plans with the following information:

A. Plan map properly dimensioned and drawn to scale showing the location of the proposed storm sewer, drainage ditches and sewer appurtenances within the street right-of-way. Sewers and drainage ditches shall be stationed and all manholes, catch basins, and appurtenances shall be numbered;

B. Location of existing above and below ground utilities in road right-of-way or adjacent easements;

C. Location and dimensions of utility and drainage easements and locations of all existing watercourses, ditches, trunk storm sewers, ponds and retention facilities connected with or adjacent to the proposed drainage facilities;

D. Profiles a storm drains and drainage ditches with the following information:
   1. Location and number of all manholes, catch basins and appurtenances,
   2. Profile of existing and proposed ground surface and storm drain,
   3. Size, slope and length of storm sewers between consecutive manholes,
   4. Sewer, manhole, and catch basin invert elevations;

E. Suitable title plate on each drawing with street or sewer name, name and address of the developer, scale, date and the name, address and telephone number and stamp of the registered engineer responsible for the plan preparation;

F. Structural details of any special manholes, catch basins, and appurtenances including drop manholes, retention control manholes, outlet structures, pumping stations, diversion structures, etc.

12.28.160 Design Criteria.

A. Storm sewers and drainage facilities shall be designed for a projected life span of 30 years without excessive maintenance. All trunk sewers and collector sewers serving a watershed of 20 or more acres shall be designed and stamped by a civil engineer registered in the State of Washington. Accepted engineering practices shall be employed in the design of all drainage facilities. Collector sewers and storm drains serving less than 20 acres will not require design by a registered civil engineer, but shall conform to the minimum design standards of this chapter.

B. Storm drainage facilities shall be designed for a storm frequency of 25 years for trunk sewer and ditches serving watersheds of 20 acres or greater (primary drainage systems), and for a storm frequency of five years for drainage systems serving less than 20 acres (secondary drainage systems). All drainage facilities in public rights-of-way shall have an outfall into an existing watercourse, existing storm watercourse, existing storm sewer or existing drainage ditch.

C. The minimum requirements for storm drainage facilities shall be as follows;

1. Catch basins or inlets shall be spaced a maximum of 300 feet apart along any street, alley or avenue;
2. The minimum catch basin lateral pipe size shall be six inches in diameter and the minimum storm main size shall be eight inches in diameter;
3. Manholes on trunk sewers shall have a maximum spacing of 400 feet;
4. Construction materials and methods shall be in accordance with *Standards and Specifications for Municipal Public Works Construction* prepared by the American Public Works Association, latest edition.