

ARTICLE 9 STREET DESIGN AND CONSTRUCTION STANDARDS

901 PURPOSE AND APPLICABILITY

901.1 Purpose. In addition to the general purposes of the City Code set forth in Chapter 1, Article 2, the purpose of this Article 9 is to promote public health, safety and welfare by establishing design and construction standards for roads and accessways for developments within the City of Ellsworth.

901.2 Applicability. This Article shall apply to:

- A. Developments that generate new trips that utilize roadways and intersections affecting directly or indirectly one or more traffic signals; and
- B. The construction and reconstruction of all streets and accessways, except that this Article does not apply to the following types of streets and accessways, as defined: (i) Commercial Driveways and Residential Driveways, except as specifically noted in sections 907.1.I, 910.2 A & B, 910.3 A & B, 915, and 916.2 of this Article; and (ii) Timber Harvesting Activities, as defined in 12 M.R.S.A. § 8868(5).
- C. State-owned roads are exempt from this Article.

901.3 Interpretation. Nothing in this Article shall be construed to prevent the construction of accessways which meet higher standards or use improved methods or materials of equivalent or higher quality.

902 PLAN SUBMISSIONS

902.1 Submittal Contents. Streets shall be presented on site plans showing, at a minimum:

- A. A location map.
- B. The location, width, typical cross-section, horizontal and vertical alignments (plan & profile) of all proposed streets, accessways, sidewalks, and bikeways.
- C. The location of all existing streets and accessways within 600 feet, walkways and sidewalks within 200 feet, and bikeways within 500 feet of the proposed street or accessway.
- D. The location of any pedestrian ways, easements, rights-of-way, and other areas to be reserved for or dedicated to public use and/or ownership. For any proposed easement or right-of way, the developer shall submit the proposed easement language with a signed statement certifying that the easement will be executed upon approval of the development. In the case of any streets or other ways dedicated to public ownership, the developer shall submit a signed statement that s/he will maintain such streets or ways year-round until they are accepted by the City.
- E. A note describing the property owner association for any accessway serving more than one property owner that is to remain temporarily or permanently in private ownership.

903 INSPECTION AND ENFORCEMENT

903.1 Permit and Notification. Prior to start of the construction or reconstruction of a road, a Road Permit is needed with the following exceptions:

- A. Construction and reconstruction of a public street by the City of Ellsworth.

- B. Road work conducted in response to an emergency when there is a risk of significant property damage or there is an imminent threat to the health, safety or welfare of the citizens. Work conducted under such circumstances shall be reported to the Code Enforcement Officer within 48 hours of its occurrence.

903.2 Additional Permits. Any permit required by this Article shall be in addition to any other permit required by law or ordinance.

903.3 Fee. Road permit fees shall be set by the City Council, as provided in Chapter 1, Article 3 (Fee Schedule and Special Fees).

903.4 Inspection. To ensure that all requirements of this Article are met during construction and reconstruction of a road, the developer shall contact the Code Enforcement Officer prior to the following stages of improvement so an inspection can be conducted:

- A. Preparation and clearing of right-of-way;
- B. Sub-base course;
- C. Aggregate base course;
- D. Storm water provisions constructed; and
- E. Completed project.

903.5 Inspector. The inspections will be conducted by the Code Enforcement Officer and Highway Foreman and/or a professional retained by the City. If the City retains a professional to inspect the improvements, the applicant shall be assessed a fee to cover the cost of such inspections.

903.6 Sign-off. The Code Enforcement Officer shall approve each of the improvement inspection stages before the developer may continue with the work.

903.7 Modification during Construction. If at any time before or during construction of the road it is demonstrated to the satisfaction of the Code Enforcement Officer and Highway Foreman that unforeseen conditions make it necessary or preferable to make minor modifications to the location or design of the road, the Code Enforcement Officer may allow such changes provided that the modifications are within the spirit and intent of the approval(s) under which it was granted. The Code Enforcement Officer shall issue any authorization under this section in writing and shall provide a copy to the approving authority.

903.8 Noncompliance. If it is found upon inspection of the road improvements that they have not been constructed in accordance with approved plans and specifications, the inspector shall so report to the Code Enforcement Officer. The Code Enforcement Officer shall then notify the applicant and if necessary, the bonding company, and take all necessary steps to preserve the City's rights under the guarantee, security or bond. If, in the opinion of the Code Enforcement Officer, the improvements are not corrected in a timely manner, the City may use any Financial Security provided by the applicant to correct the improvements to the satisfaction of the City.

904 WAIVERS AND ALTERNATIVE DESIGNS

904.1 Alternative design standards proposed by applicants must be compliant with sound engineering practices, as reflected in publications by the Maine Department of Transportation, Americans with Disabilities Act (ADA), American Association of State Highway and Transportation Official (AASHTO), and/or The Institute of Transportation Engineers (ITE).

A. The Planning Board may grant necessary waivers of particular design standards for road construction or reconstruction where any of the following conditions exist within the project limits:

- i. Right-of-way width is insufficient to reconstruct the road to meet standards;
- ii. Physical limitations, such as encroaching buildings or steep grades make construction within the appropriate design standards impractical;
- iii. Traffic volumes are less than 400 average daily traffic (ADT).
- iv. The road serves a Special Use, as defined.

904.2 The City Council. The City Council has the authority to waive the design standards of this Article in accordance with Chapter 1, Section 206.4, and subject to the following additional procedure:

- A. **Written Recommendation.** The City Council shall consider written input from the Administrator, the Ellsworth Road Commissioner, and the Highway Foreman as applicable.
- B. **Public Hearing.** The Council shall hold a public hearing.
- C. **Determination.** The City Council shall make a determination that a departure from the design standards of this Article is in conformity with the spirit and the intent of this Article, related to applicable City adopted Plans, based on the particular set of circumstances, and with section 904.

904.3 Public Safety. No waivers or departures from the standards of this Article shall be approved if such modifications will have more adverse impact on public safety than the existing conditions.

904.4 Final Plan Record. All waiver and/or alternative design decisions shall be recorded on the final road plan, site plan and/or subdivision plan.

905 MAINTENANCE, REPAIR AND RECONSTRUCTION OF STREETS

905.1 Private Ways. Maintenance for any private accessway serving more than one property owner shall be managed by written property owner association by-laws. Copies of by-laws shall be submitted with road permit applications when applicable.

905.2 Street Work by the City. The repair or reconstruction by the City of an existing city-owned street should meet or exceed (1) the current road design standards; or (2) the road standards to which the street was last constructed or reconstructed.

905.3 Repair Work by a Developer. The repair by a developer of an existing City-owned street shall meet or exceed (1) the current road design standards; or (2) the road standards to which the street was last constructed or reconstructed.

905.4 Reconstruction of a City-owned Street by a Developer. Reconstruction of a City-owned street by a developer must be approved by the City Council, as follows:

- A. **Scoping Process.** When a development is expected to generate more than 250 ADT, the City Planner, in consultation with the Ellsworth Police Chief and Code Enforcement Officer, shall meet with the developer to determine the scope of the potential traffic impact area to be studied. The area to be studied may include the first major intersection and road segments in between in each direction from the development direct accessway(s) where it is determined that there are potential safety, capacity or other traffic-related issues. The proposed off-site improvements shall meet, to the greatest extent possible, all applicable road construction standards of this Article that can take place within the existing right-of-way.
- B. **Planning Board.** In the approval process, the Planning Board shall state an opinion as to whether the proposed off-site road improvements have a more adverse impact on public safety than the existing conditions or shall cause unreasonable traffic congestion or unsafe condition to the improved street, abutting existing street or to the proposed street. The Planning Board shall present in writing its findings and recommendations to the City Council.

If the Planning Board finds that a proposed road does not meet the design standards of this Article and does not grant a waiver, it may approve an application upon the condition that the road design must be approved by the City Council before any construction may begin.

- C. **City Council Approval.** In making its decision, the City Council shall consider the particular set of circumstances as presented to the Planning Board, the findings and recommendations of the Planning Board, and follow the process established in section 904.2.

906 STREET TYPES AND GENERAL DESIGN PURPOSES

Using the functional classification and criteria presented in Table 906, all new roads and roads proposed for reconstruction shall be assigned a Street Type by the City Planner upon consultation with the Code Enforcement Officer and the Police Chief.

Table 906 STREET TYPES AND GENERAL DESIGN PURPOSES		
Name	Purpose and Special Criteria	Examples
1. Transit Roads*	To provide long-distance continuous routes between Ellsworth and the surrounding service centers such as Bangor/Brewer, Bucksport, and Bar Harbor. These State-owned roads are designed to move large numbers of vehicles at high speeds.	Bucksport Rd from the City line to Christian Ridge Rd. Bangor Rd from the City line to the Union River Bridge.
2. Regional Roads*	To collect traffic from rural areas and surrounding communities and deliver it to the City center and the arterial network. The priority for these roads is vehicle mobility at moderate speed with some pedestrian/ bikeways, especially within the Growth Area.	North St, Surry Rd, Bayside Rd, North Bend Rd, and Mariaville Rd. Main Street from the Fairground Rd to the City line.
3. Rural Roads*	To collect traffic from rural neighborhoods and deliver it to the City Center and/or to the larger collector and arterial road network. The priority for this type of road is to preserve and enhance the existing rural character of the areas it serves with some pedestrian amenities, especially within the Growth Area.	Buttermilk Rd, Red Bridge Rd, Winkumpough Rd, Happytown Rd, Gary Moore Rd and Nicolin Rd. Union St from McDonald Ave to the City line.
4. Retail Streets*	To serve Ellsworth's retail and service areas. This type of commercial arterial has many intersections and driveways needed to access businesses. The design of these roads considers mobility and access,	High St, Myrick St, Downeast Hwy, Douglas Hwy, and High St. State St from Central St to the

Table 906 STREET TYPES AND GENERAL DESIGN PURPOSES			
Name		Purpose and Special Criteria	Examples
		as well as to provide for other modes of transportation. Pedestrian access is considered secondary to vehicular mobility/access to adjacent businesses.	Fork in the Rd.
5.	Mixed-Use and In Town Streets*	To connect Ellsworth's retail, service areas and neighborhoods, as well as provide pedestrian-friendly access to these areas. These streets are typically located in mixed-use, commercial, downtown, retail and residential areas with pedestrian activity. These streets may have on-street parking depending on the type and intensity of adjacent commercial land uses. These streets emphasize a variety of travel choices including pedestrian and bicycle.	Oak St, Water St, Foster St Beechland Rd, Christian Ridge Rd, Washington St, Birch Ave, Park St, Spruce St, Deane St, Franklin St, Elm St, and Hancock St. Bucksport Rd from Christian Ridge Rd to the Surry Rd. Main St from Grant St to the Fairground Rd.
6.	Commercial Streets*	To provide vehicle and heavy truck access to targeted commercial and industrial areas	Commerce St, Vittum Rd, Industrial Rd.
7.	Alleys	To provide a secondary means of access to lots. <i>Designed for 0 to 50 ADT.</i>	Store Street.
8.	Residential Streets	To provide an acceptable, if not optimal environment for a residential neighborhood. Such roadway shall be designed to carry no more traffic than is generated on the street itself. The road shall be designed to carry less than 1,000 ADT. <i>Designed for 0 to 999 ADT.</i>	Altons Avenue.
9.	Private Residential Street	To provide for very low volume of traffic at low speed and to provide the safest and most desirable environment for a residential neighborhood. Such roadway shall be designed to carry no more traffic than is generated on the street itself. Streets designated private residential street must serve less than 50 ADT. Roads constructed under these standards shall remain privately-owned and maintained unless the road is improved to standards and accepted by the City Council. <i>0 to 50 ADT. These must remain private unless upgraded to higher standards.</i>	Overlook Way.
10.	Site Roads	10.1. Internal: To provide site circulation within a parking lot serving a building, a development site under one ownership, a consolidated development, or a phased development generating more than 100 peak hour trips (PHT) and having more than 100 parking spaces.	Parking lot of shopping mall or other large place of business.
		10.2. Cross-access: To provide connectivity between parking lots.	Business to business.
		10.3. Commercial Access: To provide access to a commercial development not to exceed 100 PHT.	Public way to business.

**Definition not dependent on ADT*

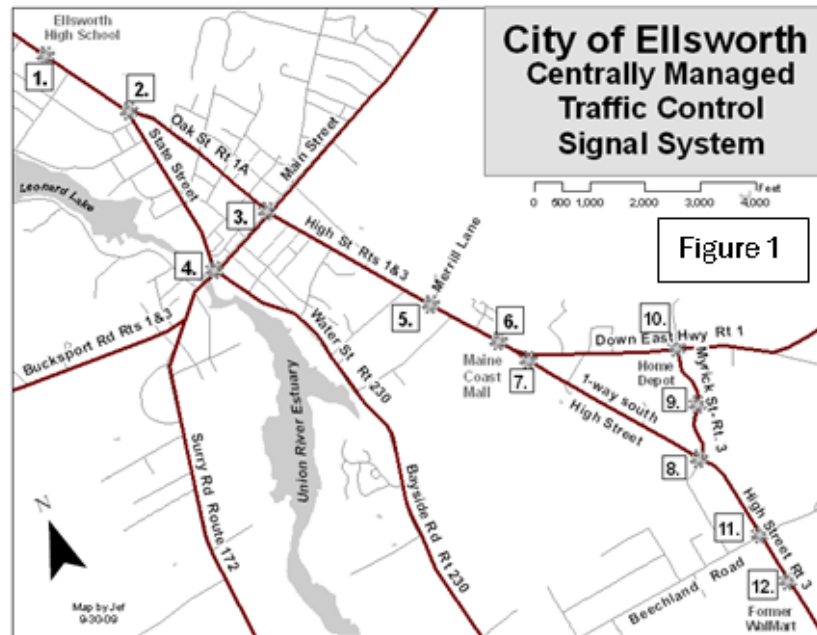
907 STREET DESIGN STANDARDS (See also Section 916 Accessway Construction Standards)

907.1 General Provisions.

- A. **Minimum Standards.** The design standards are considered minimum standards and shall control the roadway, shoulders, curbs, sidewalks, drainage systems, culverts, and other appurtenances except as otherwise specified.
- B. **Alternative Design Standards.** Proposed street plans may use road design standards other than presented in Table 908 Street Design Standards if the road will serve infill residential development within the Ellsworth designated Urban Compact area or cluster residential development within the Growth Area serviced by City water and sewer; and will generate a volume of traffic of less than 400 average daily trips, with

a maximum speed limit of 25 mile per hour. The minimum right-of-way shall comply with the standard presented in Table 908 Street Design Standards. This alternative road design shall be approved by the Planning Board and shall be designed by an Engineer per the standards provided in the latest editions of the “Geometric Design of Highway and Streets” and “Guidelines for Geometric Design of Very Low Volume Local Roads” published by the American Association of State Highway and Transportation Officials (AASHTO).

- C. **Additional Right-Of-Way Width** at intersection approaches may be required for such special elements as, but not limited to, raised median channelization and turning lanes.
- D. **Apron.** No connector and/or street apron shall extend into the street farther than the base of the curb or beyond the gutter line.
- E. **The Centrally Managed Traffic Control Signal System (CMS)** (Figure 1) provisions found in this section and in sections 907.1. K and M, and 909.3.B. and C shall apply to developments affecting one or more traffic signals, or developments that generate new trips that utilize roadways and intersections affecting directly or indirectly one or more of the traffic signals.



The City of Ellsworth CMS consists of, but is not limited to, the following traffic signals:

1. State Street at High School
2. State Street and Oak Street
3. High Street and Main Street
4. Water Street and Main Street
5. High Street at Merrill Lane
6. High Street at north entrance to Maine Coast Mall

7. High Street at south entrance to Maine Coast Mall
8. Route 3 at Myrick Street
9. Myrick Street at Home Depot
10. Myrick Street at Route 1
11. Route 3 at Beechland Road
12. Route 3, south of Beechland Road

The goals of the CMS are to reduce delays and manage travel times for vehicles traveling through these intersections by optimizing progression of traffic (minimize stops) on the artery roadways (State Street, High Street, Water Street, Route 1, Route 3, and Myrick Street) and minimizing congestion. Any proposed traffic signals or changes to the CMS shall be reviewed by the City of Ellsworth Traffic Engineer. Review cost shall be borne by the applicant. The City Engineer shall submit a written report to the City Planner for final approval by the Administrator.

- F. Capacity.** Streets and accessways which can be expected to carry traffic to and from neighboring streets and developments, shall have traffic carrying capacity and be suitably improved to accommodate the amount and types of traffic generated by them. A traffic impact analysis of the proposed project on the capacity, level of service and safety of adjacent streets prepared by an Engineer shall be submitted. The analysis shall include anticipated trip generation, current and impacted Level of Service, sight distance relative to posted speed, crash history and linear distance from adjacent driveways and accessways on the same road. The Administrator may waive this requirement for development generating less than 50 ADT, and for Residential or Private Residential Streets if, in the Administrator's opinion, the impact will be small enough to warrant such a waiver.
- G. Centerline.** The centerline of the roadway shall be the centerline of the right-of-way unless the Administrator determines there is a logical reason for it to be shifted.
- H. Corner Easements** may be required to provide and maintain the safety sight distance.
- I. Driveways Exempt.** Per 901.2 Commercial and residential driveways are exempt from complying with this article unless specified otherwise.
- J. Emergency Access.** The Ellsworth Fire Department shall be consulted for written approval of proposed perimeter access. Such access shall comply with Chapter 4 Fire Protection and Prevention.
- K. Level of Service.**
 - i. No Development shall cause a reduction in Level of Service, as defined in Table 907.K Level of Service Definition by more than one grade level and in no case shall the Level of Service be reduced to the level of "D" or below.
 - ii. Any proposed changes resulting from the application of the LOS requirements to the CMS such as but not limited to, changes in cycle lengths and offsets, Time-of-Day schedules, phasing, splits, clearance intervals, and other programming or equipment shall comply with the review process in section 907.1.E and be consistent with the goals of the CMS per section 907.1.E. In some cases, the LOS on the side streets may be programmed to be less than

LOS “D” to maintain the overall goals of the CMS, as recommended by the City Traffic Engineer.

Table 907.K Level of Service Definitions

LOS A: Free flowing traffic. Drivers, passengers and pedestrians have high level of comfort and convenience. Each individual is unaffected by other users and is able to maneuver about safely.

LOS B: Stable flow. Other users are noticeable because there is some affect on behavior. Less freedom to maneuver than in level A.

LOS C: Still in the range of stable flow, but actions of others may significantly affect the individual. Safe speeds are determined by factoring in the behavior of others. Maneuvering about is more difficult and the levels of comfort and convenience decline.

LOS D: High density traffic but still with a stable flow. Maneuverability and speed are restricted by other traffic. Users experience low levels of comfort and convenience. Pedestrians have difficulty at times with crossing.

LOS E: Operations are at or near capacity level and often unstable. All speeds are greatly reduced. Maneuverability is significantly hampered. Levels of comfort, convenience and safety are dangerously low and frustration runs high.

LOS F: Forced or breakdown flow occurs because the system is over capacity. Lines queue up and move in a stop-and-go waves that are highly unstable. This can be considered a failing grade for the intersection or road segment. Service breaks down and gridlock can occur.

L. Multiple frontages. Where a lot has frontage on two or more accessways including Residential and Commercial Driveways, the primary access to the lot shall be provided from the accessway where there is less traffic congestion or fewer potential hazards to traffic and pedestrians.

M. Queuing. Intersections shall be of a design and have sufficient capacity to provide for necessary queuing.

- i. Sufficient vehicle storage length shall be based on a determination of the 95th percentile queue (in vehicles), as calculated by the latest Synchro/SimTraffic traffic modeling software used by the MDOT. In determining required vehicle storage lengths for turning lanes, consideration shall also be made for the average (50th percentile queue) for the adjacent through lane in order to assist in maintaining mobility on the through lane. Where feasible, the storage length for turning lanes shall meet the greater of the calculated 95th percentile queue length or the average - 50th percentile queue length, of the adjacent through lane.

Note: The **95th percentile queue** is the queue length (in vehicles) that has only a 5-percent probability of being exceeded during the analysis time period.

- ii. Queuing at traffic control signals located within the CMS shall be designed to minimize congestion on the artery roadways to maintain progression and minimize stops.
- N. **Reserved area.** When a proposed street or accessway borders an existing narrow street (not meeting the width requirements of the standards for streets in these regulations), or when an adopted city plan indicates plans for realignment for widening of a street that will require use of some of the abutting land, the plan shall indicate the reserved area and the subject land deeded to the City of Ellsworth or to the State of Maine.
- O. **Traffic management.** Where necessary to safeguard against hazards to traffic and pedestrians and/or to avoid traffic congestion, provision shall be made for turning elements such as, but not limited to, lanes, traffic directional islands, frontage roads, and traffic controls within public streets.
- P. **Traffic Counts.** Developers may request traffic counts for the signalized intersections from the City Planner or designee. A fee will be charged to the developer based on the number of time periods requested. The fee scheduled is set by the Council.

907.2 Construction Materials/Paving.

- A. **Accessway Paving.** All accessways entering a paved street shall be paved at least within the street right-of-way and preferably to 30 feet beyond the street right-of-way.
- B. **Curbing.** All new accessways entering a curbed street shall be curbed on both sides to a distance of at least 30 feet from the street right-of-way, with materials matching the street curbing. Sloped curbing is required around all raised channelization islands or medians.
- C. **Curbing Within the Urban Core Area.**
 - i. Curbing and gutters are required where subsurface drainage systems are present and recommended along accessways with traffic volumes greater than 100 ADT or high demand of on-street parking.
 - ii. Curbing shall be granite in high use areas and concrete in all other places.
- D. **Paving.** All new roads shall be paved with the exception of the two conditions presented below:
 - i. The Planning Board may waive the paving requirement for Private Residential Roads and Alleys if the applicant can demonstrate that potential erosion issues have been adequately addressed; or
 - ii. The Planning Board may waive paving requirement if the street or accessway is located in the Rural Area and traffic counts are determined to be less than 100 ADT, and if the proposed road grade will not result in the loss of existing road base or surface, or cause an adverse environmental impact because of erosion, dust, phosphorus loading, sediments or other factors to sensitive areas such as water bodies or significant natural areas.

NOTE: Unpaved roads shall under no circumstance be accepted by the City of Ellsworth as a public road.

908 STREET DESIGN STANDARDS TABLE

Table 908 STREET DESIGN STANDARDS									
Street Designation →	Transit and Regional	Rural	Retail	Mixed Use & In-town	Commercial	Alley	Residential	Private Residential	Site Road
Street Type (#):	1 & 2	3	4	5	6	7	8	9	10
Functional Class	Arterial/ Collector	Collector	Collector	Collector	Local	Local	Local	Local	Local
Estimated Ultimate Volume (ADT)	DOT	NA	NA	NA	NA	≤ 50	> 50	≤ 50	NA
Maximum design speed (MPH)	DOT	45	35	30	35	10	30	15	20
Minimum Right-of-way Width (ft)	60	60	50	50	60	20	50	40	NA
Minimum Travel Way Width (ft)	DOT	22	22	22	24	10	20	18	22
Minimum width of shoulders (ft)	DOT	4	4	4	5	NA	3	2	3
Min. Centerline Radius (ft)	DOT	ENG	510	200	510	NA	150	75	100
Minimum Tangent Between Curves of Reverse Alignment (ft)	DOT	ENG or 400	ENG or 300	100	100	NA	50	NA	NA
Min. Angle of Street Intersections (degrees)	DOT	60	60	60	60	60	60	60	60
Minimum Curb/ Entrance Radius (ft)	DOT	40	40	40	60	20	40	20	35
Minimum ROW Radii at Intersections (ft)	20	20	20	20	40	NA	20	NA	20
Minimum Grade (%)	DOT	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Maximum Grade (%) (may be exceeded for 100' or less)	DOT	11	12	12	12	15	12	14	12
Max. Grade within 50' of Intersection (%)*	DOT	3*	3*	3*	3*	3*	3*	3*	3*
Crown % (Paved)	DOT	2	2	2	2	1	2	1	2
Crown % (Gravel w/o superelevation)	NA	4	NA	NA	NA	4	4	4	NA

Key to Table:

DOT: Overseen by Maine Department of Transportation.

ENG: Must be designed by Professional Engineer

N: Not Required

NA: Not Applicable

R: 3* Max. Grade within 50' of intersection up to 6% may be allowed if road geometric design is properly adjusted to enhance safety. Must be designed by a Professional Engineer if > 3%.

909 STREET SYSTEM DESIGN STANDARDS

909.1 Connectivity. The design of developments requiring Planning Board Approval shall strive to achieve connectivity with other compatible developments to logically extend the street system into surrounding areas. Property owners providing for future connectivity shall record:

- A. An easement allowing access to and from the adjacent development.
- B. The design of the street shall conform to the standards of this Article. The design shall ensure efficient and safe vehicular operation and pedestrian movements for internal circulation and for traffic mobility on the adjacent roadway.
- C. All street stubs shall be provided with temporary turn-around or cul-de-sacs unless specifically exempted by the Planning Board, and the restoration and extension of the street shall be the responsibility of any future developer or abutting landowner.
- D. The Planning Board may waive the requirement for connectivity following recommendation by the City Planner. This recommendation shall be made in consultation with the Ellsworth Police Chief and Code Enforcement Officer.

909.2 Dead-end/Turnaround.

- A. All streets shall provide adequate vehicle turnaround.
- B. Any dead-end street of more than 300 feet in length shall include a vehicle turnaround consisting of a cul-de-sac, a T or a Y ending. At the terminus, a cul-de-sac shall have no less than 120 feet outside diameter of the traveled way. If the T or Y configuration is used, there shall be a minimum length of 70 feet on each leg of the T or Y at the terminus. The 70-foot distance is measured from the centerline of the closed street that is dead-ending. An adequate easement in line with the street to provide continuation of the street where future development is possible should be provided.

909.3 Traffic Control Devices.

- A. **Signs.** Appropriate traffic control signage shall be placed within the site and at intersections, on pavement, on medians and on channelization islands.
- B. **New Traffic Signal.** All new traffic signals shall be equipped with emergency vehicle preemption equipment, traffic counter apparatus, and battery back-up systems, as well as meet the equipment general specifications sheet as provided by the City Engineer.
- C. **Upgraded Traffic Signal.** All traffic signals being upgraded as part of a Maine DOT permit or Planning Board approval shall be equipped with emergency vehicle preemption equipment, traffic counter apparatus, and battery back-up systems, as well as meet the equipment general specifications sheet as provided by the City Engineer.
- D. **Connection to the CMS.** New, existing, or upgraded traffic signals shall be interconnected and be coordinated, as deemed necessary by the City of Ellsworth Traffic Engineer.

910 ACCESS MANAGEMENT

910.1 Safety Sight Distance.

- A. **General.** Accessways onto City streets shall be designed in profile and location to provide the required safety sight distance measured in each direction.

- B. **Standards.** Safety sight distance shall comply with the standards in the Maine Department of Transportation Highway Driveway and Entrance Rules, codified in 17-229 C.M.R. ch. 299, pt. A, § 2.1.A (Sight Distance).

910.2 Functional Area of Intersection

- A. New accessways including Commercial Driveway and Residential Driveways shall not be permitted within the functional area of an intersection unless:
 - i. No other reasonable access to the property is available, and
 - ii. The accessway does not create a safety or operational problem, and
 - iii. The applicant agrees in writing to close the accessway if and when alternative accessway becomes available that is more consistent with the standards of this article.
- B. Where no alternatives exist, construction of an accessway including a Commercial Driveway and a Residential Driveway may be allowed as far as possible from the functional area of the road intersection as a non-conforming accessway. Property access will be restricted to the road with the expected lowest traffic and/or lowest functional classification and shall be closed within six months of when any conforming access becomes available.
- C. Accessways shall be at least as wide as required by this ordinance for their entire length.

910.3 Alignment/Offset/Spacing.

- A. **Adjacent Properties** under the same ownership shall be considered as a single property for application of accessway spacing, including the spacing of Commercial and Residential Driveways.
- B. **Multiple Accessways.** One accessway including Commercial and Residential Driveways per development is preferred. Application for multiple accessways for a single development shall conform to the spacing standards of this Article. Multiple accessways may be allowed if one or more of the following criteria are met:
 - i. Separation of standard vehicles from heavy trucks or emergency vehicles;
 - ii. Two one-way accessways that, in combination, serve ingress and egress to the development;
 - iii. Multiple accessways enhance the safety of the abutting roadway and improve on-site traffic circulation.
- C. **Alignment.** To reduce turning movement conflicts, accessways on undivided streets should be aligned with those accessways across the road. If this is not possible, separation between accessways shall provide for maximum safety and mobility.

910.4 Cross and Shared Access.

- A. **Commercial Developments** shall provide for cross access and/or shared access to connect adjacent properties in order to reduce curb cuts and to preserve the capacity and safety of the road system.

B. Deeded Access. Property owners establishing shared and/or cross access shall record:

- i. An easement allowing cross access to and from the adjacent properties;
- ii. A joint maintenance agreement defining maintenance responsibilities of property owners of the shared accessway and cross access system.

C. Temporary Access. Property owners that provide shared accessways and/or cross access may be granted a temporary approval, where necessary, to provide reasonable access until such time as permanent shared access and/or cross access are provided with adjacent properties. Within six months after construction of a joint use or cross access, property owners utilizing such accessway shall close and remove any existing temporary accessway provided for in the interim.

D. Future Cross Access. Developments may be required to construct a paved stub-out to the property line in anticipation of a future accessway. The design of the cross-access corridor or joint access shall conform to the standards of this Article. The design shall ensure efficient and safe vehicular operation and pedestrian movements for internal circulation and for traffic mobility on the adjacent roadway.

E. Maintenance. Private cross and shared accessways are not intended to be publicly maintained.

F. Parking reduction. Properties that provide for shared access to commercial lots shall benefit from a 5% reduction in parking spaces and properties that provide cross access (connectivity) shall also benefit from a 5% reduction in parking spaces. The total combined reduction in parking spaces shall not exceed 7% and must be recommended to the Planning Board by the City Planner.

G. Service roads. Subdivisions with frontage on State Routes 1, 1A, and 3 may be required to be designed with access to the lots from a service road.

H. Waivers. The Planning Board may waive the requirement for cross and/or share access following recommendation by the City Planner. This recommendation shall be made in consultation with the Ellsworth Police Chief and the Ellsworth Code Enforcement Officer.

911 LANDSCAPING AND STREETSCAPE

- A. Developments requiring Planning Board Approval and located within the City Urban Core Area shall provide for consistent streetscape and landscaping design.
- B. Developments requiring Planning Board Approval located on High Street shall provide for design consistent with the High Street Beautification Study.
- C. Cul-de-sacs located in a wooded area prior to development shall maintain a stand of trees at the center of the cul-de-sac if such trees are healthy and have a diameter at breast height of 8 inch. In the event the trees have been harvested, the proposed development plan should include landscaping of the center of the cul-de-sac.

912 SIDEWALKS AND BIKEWAYS

For developments requiring Planning Board Approval, reasonable and safe provision shall be made to create pedestrian and/or bicycle connections between points intended for, and suitable for such uses. Provisions including, but not limited to sidewalks, curb ramps, pedestrian crossings and/or

bikeways shall be within the development boundary and/or abutting street rights-of-way, and as required below:

- A. Development whose location can clearly further the implementation of Ellsworth pedestrian and/or bicycle facilities per the Ellsworth Downtown Plan - Bicycle-Ped section shall do so by providing for sidewalk and/or bikeway facilities.
- B. Sidewalks and/or bikeways shall be constructed if the development is located within 200 feet of an existing sidewalk or bikeway, in the Ellsworth Downtown Area, or abutting a Street Type # 4 or #5, or when necessary to provide direct or indirect access to public facilities, and retail and financial services.
- C. Sidewalks and/or bikeways easement(s) shall be provided if the development is located within the Ellsworth Urban Core and/or within 500 feet of an existing pedestrian and/or bikeway facility.
- D. Easement provided for pedestrian and bicycle facilities shall be recorded with the Hancock County Registry of Deeds.
- E. Minimum sidewalk width is 5 feet.
- F. The Planning Board may waive part or all of the requirements of this section in accordance with Chapter 1, Section 206.4.

913 STREET LIGHTING FOR ROADWAYS AND SIDEWALKS

Reserved.

914 STREET NAMING AND PROPERTY NUMBERING

Reserved.

915 ACCESSWAYS IN THE SHORELAND ZONE

- A. Regulation of accessways in the Shoreland Zone pertains to all accessways including Residential Driveways and Commercial Driveways.
- B. New permanent accessways shall be set back at least 100 feet from the normal high-water line of great ponds and the Union River and 75 feet from the normal high-water line of the Union River Estuary and other water bodies and wetlands unless no reasonable alternative exists as demonstrated by the applicant. If no reasonable alternative exists, the accessway shall be set back as far as possible, but no less than 50 feet on slopes up to ten 10%. Where slopes exceed 10%, setback shall be increased by 25 feet for each 10% increase in slope. This paragraph shall not apply to approaches to water crossings nor to accessways that provide access to permitted structures and facilities located nearer to the shoreline due to an operational necessity.
- C. New accessways are prohibited in the Resource Protection District except to provide access to permitted uses within the District, or as approved by the Planning Board upon a finding that no reasonable alternative route or location is available outside the District, in which case the accessway shall be set back as far as practicable from the normal high-water line of a water body, tributary stream, or upland edge of a wetland.
- D. Existing State and City streets may be expanded within the legal road right-of-way regardless of their setbacks from a water body.

916 ACCESSWAY CONSTRUCTION STANDARDS

(See also Table 908 Street Design Standards)

The following standards shall apply to the construction and repair of accessways and related features such as drainage systems and culverts.

916.1 General Construction Standards for Streets.

- A. Streets shall be crowned or graded to provide surface drainage.
- B. All plans for new or modified streets shall include an erosion and sedimentation control plan for describing temporary and permanent erosion control measured to be provided. Temporary and permanent maintenance requirements shall be provided in the plan. Final design plans shall reference the erosion and sedimentation plan by note.
- C. In order to prevent road surface drainage from directly entering water bodies, roads shall be designed, constructed, and maintained to empty into an unscarified buffer strip at least 50 feet in width between the outflow point of the ditch or culvert and the normal high-water line of a water body. Where slopes exceed 10%, the buffer strip shall be increased 25 feet for each 10% increase in slope.
- D. Buffer strips less than prescribed above may be approved upon a clear showing by the applicant that an exception is necessary and that appropriate techniques will be used to avoid sedimentation of the water body. Such techniques may include, but are not limited to, the installation of settling basins and/or the effective use of additional ditch relief culverts and turnouts placed so as to avoid sedimentation of the water body.
- E. Ditches, culverts, bridges, dips, water turnouts, and other water control installations associated with roads shall be maintained on a regular basis to assure effective functioning.
- F. Ditch relief (cross drainage) culverts, drainage dips, and water turnouts shall be installed in a manner effective in directing drainage onto unscarified buffer strips before the flow in the road or ditches gains sufficient volume or head to erode the road or ditch.
- G. Prior to final completion and acceptance of a road, or the issuance of a Certificate of Occupancy, the Engineer shall provide to the Code Enforcement Officer a letter stating that the site work was evaluated and was built, according to approved plans to the maximum extent possible and will likely function as intended.
- H. The Code Enforcement Officer may request as built-plans.
- I. The laying of the pavement course, where required by this ordinance, for residential developments is optional until one of these conditions are met: 1) at least 30% or three of the residential lots are occupied, whichever is greater, or 2) three years has passed since the first Certificate of Occupancy was issued.

916.2 General Construction Standards for Residential and Commercial Driveways.

- A. Commercial and Residential Driveways shall be crowned or graded to provide surface drainage.
- B. Commercial and Residential Driveways shall include an erosion and sedimentation control plan describing temporary and permanent erosion control measured to be

provided.

- C. In order to prevent accessway surface drainage from directly entering water bodies, Commercial and Residential Driveways shall be designed, constructed, and maintained to empty into an unscarified buffer strip at least 50 feet in width between the outflow point of the ditch or culvert and the normal high-water line of a water body. Where slopes exceed 10%, the buffer strip shall be increased 25 feet for each 10% increase in slope.
- D. Buffer strips less than prescribed above may be approved upon a clear showing by the applicant that an exception is necessary and that appropriate techniques will be used to avoid sedimentation of the water body. Such techniques may include, but are not limited to, the installation of settling basins, and/or the effective use of additional ditch relief culverts and turnouts placed so as to avoid sedimentation of the water body.
- E. Ditches, culverts, bridges, dips, water turnouts, and other water control installations associated with roads shall be maintained on a regular basis to assure effective functioning.
- F. Ditch relief (cross drainage) culverts, drainage dips, and water turnouts shall be installed in a manner effective in directing drainage onto unscarified buffer strips before the flow in the accessway or ditches gains sufficient volume or head to erode the Commercial Driveway, Residential Driveway, or ditch.

916.3 Minimum Thickness of Material After Compaction.

TABLE 916.3A STREET MATERIALS					
Road Type	Transit and Regional	Rural, Mixed Use/ In-town, and Retail	Commercial and Site Road	Residential Street	Private and Alley
Material	When it is anticipated that a road will carry significant truck traffic or heavy axel loads, an engineer shall design a thicker structure than these minimum standards.				
Aggregate Sub-base Course	*ENG	18"	18"	16"	12"
	Layers of Sub-base shall be placed in 2 equal thickness lifts & compacted.				
Aggregate Base Course	*ENG	3"	3"	3"	3"
Gravel Surface Course	NA	3" (where allowed)	NA	3"	3"
*ENG: Shall be designed by an Engineer Gravel Course Road: Where a gravel surface course is allowed by other portions of this Article, the above "Gravel Surface Course" may be used instead of hot bituminous pavement.					

TABLE 916.3B HOT BITUMINOUS PAVEMENT*				
Road Type	Transit and Regional	Rural, Mixed Use/ In-town, and Retail	Commercial and Site Road	Residential Street, Private**, and Alley**
Material	When it is anticipated that a road will carry significant truck traffic or heavy axel loads, an engineer shall design a thicker structure than these minimum standards.			
Total Thickness	**ENG	3 ¼"	3 ¾"	3 ¼"
Wearing Course	**ENG	1"	1 ¼"	1"
Base Course	**ENG	2 ¼"	2 ½"	2 ¼"
**ENG: Shall be designed by an Engineer				

916.4 Preparation and Construction.

- A. **Marking.** Before any clearing has started on the right-of-way, the centerline and sidelines of the new street shall be staked or flagged at 50-foot intervals.
- B. **Clearing.** Before grading is started, the entire area to be improved within the right-of-way shall be cleared of all tree stumps, roots, branches, ledge, large boulders, and other objectionable material.
- C. **Grubbing.** All organic materials shall be removed to a depth of 2 feet below the sub grade of the roadway. Rocks and boulders visible at sub-grade shall also be removed to a depth of 2 feet below the sub grade of the roadway. On soils which have been identified as not suitable for roadways, the subsoil shall be removed from the street site to a depth of at least 2 feet below the sub grade and replaced with material meeting the specifications for gravel aggregate sub-base course.
- D. **Side Slopes.** Except in a ledge cut, side slopes shall be no steeper than a slope of 3 feet horizontal to 1 foot vertical, and shall be graded, loamed, limed, fertilized, and seeded according to the specifications of the erosion and sedimentation control plan. Unsuccessful seeding must be redone to grow a catch of grass. Where a cut results in exposed ledge, a side-slope no steeper than 4 feet vertical to 1 foot horizontal is permitted.
- E. **Underground Utilities,** when proposed shall be installed prior to paving to avoid cuts in the pavement. Building sewers and water service connections shall be installed to the edge of the right-of-way prior to paving.
- F. **Cleanup.** Following street construction, a thorough cleanup of stumps and other debris from the entire street right-of-way shall be made. If on-site disposal of the stumps and debris is proposed, the site shall be indicated on the plan, and be suitably covered with fill and topsoil, limed, fertilized, and seeded.

916.5 Bases and Pavement.

- A. **The Aggregate Sub-base Course** shall be mix of sand and gravel made of hard durable particles free from vegetative matter, lumps or balls or clay and other deleterious substances. Aggregates for sub-base shall not contain particles of rock which will not pass the 6-inch square mesh sieve. The gradation of the part that passes a 3-inch square mesh sieve shall meet the grading requirements in Table 916.5A.
- B. **The Aggregate Base Course** shall be mix of sand and gravel made of hard durable particles free from vegetative matter, lumps or balls or clay and other deleterious substances. Aggregates for sub-base shall not contain particles of rock which will not pass the 2-inch square mesh sieve. The gradation of the part that passes a 3-inch square mesh sieve shall meet the grading requirements in Table 916.5B.
- C. **Gravel Surface Course** shall be a mix of sand and gravel made of hard durable particles free from vegetative matter, lumps or balls of clay and other deleterious substances. The gradation of the part that passes the 2-inch square sieve shall meet the grading requirements in Table 916.5C.

Table 916.5A Aggregate Sub-base Course	
Sieve Designation	% By Weight Passing Square Mesh Sieves
6" square mesh	100%
1/4 inch	25-70%
#40	0-30%
#200	0-7%
Table 916.5B Aggregate Base Course	
Sieve Designation	% By Weight Passing Square Mesh Sieves
2" square mesh	100%
1/2 inch	35-75%
1/4 inch	25-60%
#40	0-25%
#200	0-5%
Table 916.5C Surface Course Gravel	
Sieve Designation	% By Weight Passing Square Mesh Sieves
2" square mesh	95 - 100%
1/2 inch	30-65%
#200	7-12%

D. Recycled Asphalt Pavement (RAP). RAP may be used in lieu of a gravel surface course if approved by the Administrator. RAP shall be ground, hot mix asphalt, properly compacted and be a minimum thickness of 3 inches.

E. Pavement Joints. Where pavement joins an existing pavement, the existing pavement shall be cut along a smooth line and form a neat, even vertical joint. Joints shall be tack coated prior to placement of adjoining pavement.

F. Pavements.

- i. Minimum standards for the base layer of pavement shall be the Maine Department of Transportation specifications for Hot Mix Asphalt, 19.0 mm Superpave or equivalent if wearing course is required or Hot Mix Asphalt, 12.5 mm fine Superpave or equivalent if only one course required.
- ii. Minimum standards for the wearing layer of pavement shall be the Maine Department of Transportation specifications for Hot Mix Asphalt, 9.5 mm Superpave or equivalent.
- iii. Alternatives to the above standards may be approved by the Planning Board if the applicant can demonstrate their long-term durability and appropriate application. The intent of this modification is to allow the use of alternative surface covers such as permeable concrete, permeable hot mix asphalt, or other treatments which are intended to reduce the impervious impact on a site. The intent is to encourage the use of Low Impact Development and materials.

G. Sidewalk Material. Concrete sidewalks are preferable. The Planning Board may consider allowing bituminous sidewalks in low use areas. Minimum sidewalks design standards:

- i. **Concrete Sidewalks:**
 - a. The sand or crushed aggregate base shall be no less than 6 inches thick.
 - b. The concrete shall be reinforced with 6-inch square, number 10 wire mesh

(or equivalent) and shall be no less than 4 inches thick. Concrete shall have a compressive strength of at least 4000 psi.

ii. **Bituminous Sidewalks:**

- a. The crushed aggregate base course shall be no less than 8 inches thick.
- b. The hot mix bituminous travel way surface course shall be no less than 2 inches after compaction.
- c. Paved sidewalks shall be Hot Mix Asphalt, 12.5 mm or 9.5 mm Superpave or equivalent.

916.6 Curbs and Gutters.

- A. Granite Curbing** shall be installed on a thoroughly compacted gravel base of 6 inches minimum thickness. Granite Curb shall be set in concrete.
- B. Concrete Curbing** may be used in place of granite curbing in locations not directly adjacent to or meeting existing granite curbing and where approved by the Planning Board. Concrete curbing shall be poured in place or pre-cast members. Pre-cast members shall be installed on a thoroughly compacted gravel base of 6 inches minimum thickness, and the base shall be set with in-place concrete.
- C. Bituminous Curbing, where allowed,** shall be installed on the base course of the travel way. The specified travel way width above shall be measured between the curbs.

917 STREET ACCEPTANCE AS PUBLIC WAYS

917.1 Intent. This section establishes guidelines and procedures to be followed by the City Council for the acceptance of properly constructed streets for maintenance by the City of Ellsworth. Streets being considered for acceptance must be connected to a public way and be paved.

917.2 Application. A request for street acceptance shall be made to the City Manager and include the information listed below. The City Manager and/or the City Council reserves the right to request additional information, as deemed appropriate, including, but not limited to, professional/peer review, street construction costs, and financial security.

- A. Request.** A written request from the developer/owner or the abutters to place the street acceptance request on the City Council Agenda.
- B. Petition.** A petition signed by a simple majority of the property owners who have the legal right to use the road supporting or acknowledging the request.
- C. Deed.** A copy of the deed(s) with accurate legal description of the subject road.
- D. Engineering Report.** An engineer's report assuring that the street is built to the standards in effect at the time of construction or Planning Board approval, or description of deficiencies, proposed improvements and standards.
- E. Construction Plan.** A time schedule and financing plan for any needed construction.
- F. Financial Security.** The City Council may assess a construction cost or financial security for final construction tasks such as, but not limited to, final course pavement.
- G. As Built Drawings.** Prior to final acceptance of a street as a public way, the City

Council may require detailed "as built" construction drawings showing a plan view, profile, typical cross-section of the street and existing streets within 200 feet of any proposed intersections, as well as all utilities and infrastructure. "As built" construction drawings shall be prepared by an engineer.

- H. Code Enforcement Officer Report.** The City of Ellsworth Code Enforcement Officer, in conjunction with the City Highway Foreman, shall inspect the road to record its condition, verify the engineer's report, and submit a written report to the City Manager. Inspection by the Code Enforcement Officer and Highway Foreman should take place between May 1 and November 1.
- I. Utilities.** If there are any underground utilities, the servicing utility shall certify in writing that they have been installed in a manner acceptable to the utility.
- J. Professional/Peer Review Cost.** When required, the applicants shall pay any professional/peer review costs to the City who in turn will pay the consultant.

917.3 Decision Criteria.

- A. City Council Review.** The City Council shall consider all applicable information prior to making a decision, including City street standards, applicant submittals, professional/peer review reports, public benefit criteria, occupation rates and City economic factors.
- B. Economic Factors.** Given the number of unaccepted streets in Ellsworth and associated maintenance cost in connection with their acceptance, the City Council will make any final acceptance decision dependent on the availability of fiscal resources, budgetary constraints, and other criteria as established in this policy.
- C. Pre-agreement.** In consideration of economic factors, developers who intend to build a street and desire to ask the City Council to take ownership of the road may submit a Letter of Intent to the City Planner. The letter shall include the road type, location, uses that it will serve, and a construction schedule. The City Council may consider the Letter of Intent at their next regular Council Meeting and whether to take ownership of the road once it has been constructed and to the standards of this Article. The City Council may include a time limit for the adoption of any street.
- D. Street Standards.** Streets shall meet the following design and Construction Standards.
 - i. For streets approved after May 7, 2009, the City Council will ensure strict compliance with the design standards of this Article.
 - ii. For streets approved between August 20, 2007 and May 7, 2009, the City Council will ensure strict compliance with the design standards of Chapter 35 (repealed on May 7, 2009) in effect at the time of Planning Board Approval.
 - iii. For streets approved between July 19, 1999 and August 19, 2007, the City Council shall aim to have the streets meet the design standards of Chapter 35 in effect at the time of Planning Board approval. In certain exceptional circumstances the City Council may consider alternative standards.
 - iv. For streets built prior to the adoption of Chapter 35 (September 19, 1977) and before July 18, 1999, the council may consider alternative standards.

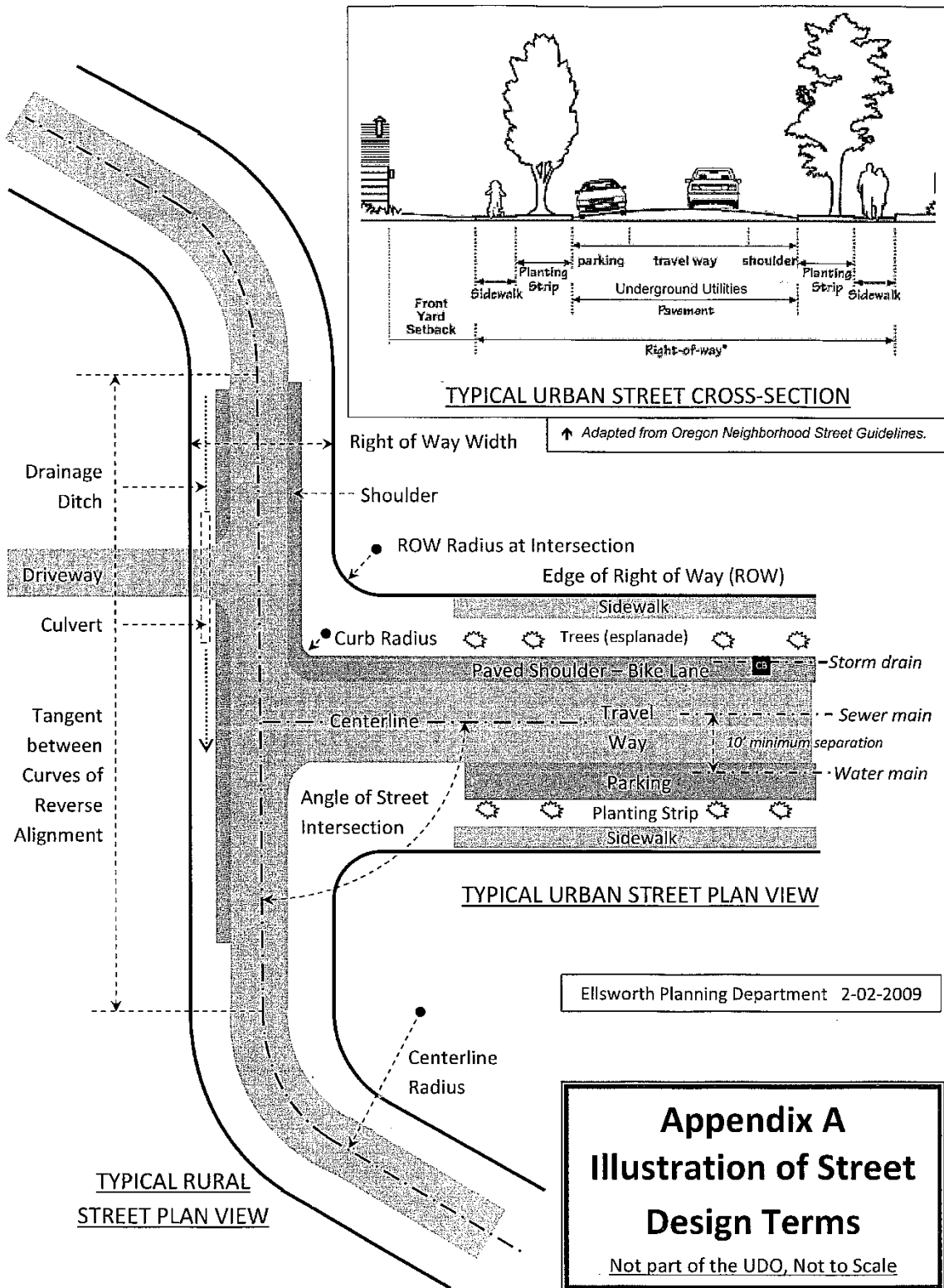
In cases where the creation of a street is not linked to a Planning Board approval, other

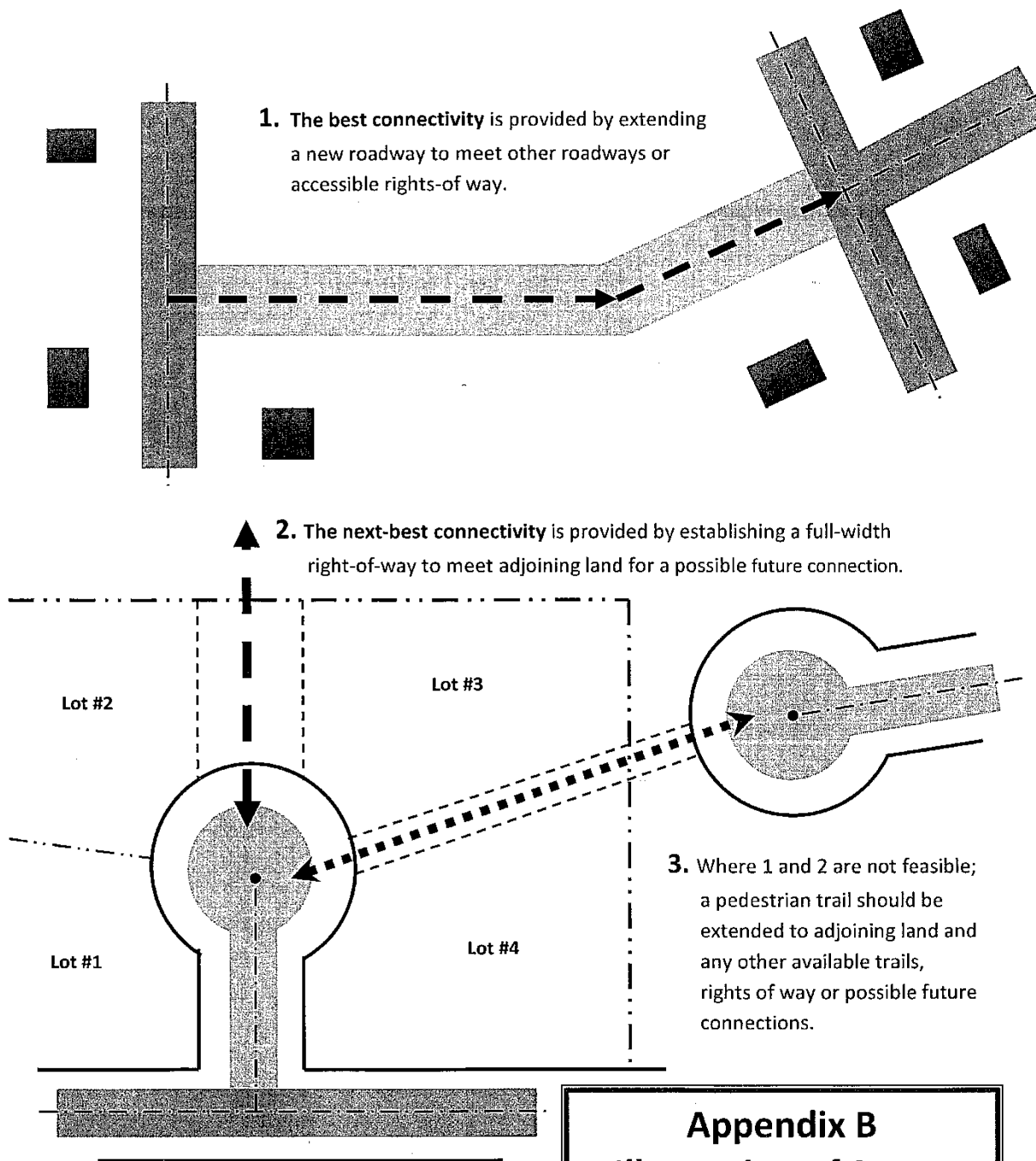
means will be used to best establish the creation of the road such as but not limited to deeds.

- E. Alternative Street Standards.** In the event the City Council agrees to consider alternative design standards, it will use the standards published by the *American Association of State Highway and Transportation Officials* (AASHTO) – most recent version. When AASHTO standards are applied, the design of the street shall, in the opinion of the City Council, provide adequate access to public service vehicles (i.e. fire, plow and garbage trucks, school buses, etc.) and shall not pose a threat to the health, safety, and welfare of the residents of Ellsworth. The City Council may assess a construction cost fee and/or financial security for any part of the road.
- F. Growth Area Streets.** The City Council shall accept Growth Area streets, meeting standards as public ways if they serve commercial or mix-use developments and improve mobility, safety, stormwater runoff, or exemplify smart growth principles as presented in the International City/County Management Association (ICMA) *Getting to Smart Growth* and *Getting to Smart Growth II* publications.
- G. Occupation.** The City Council shall accept streets meeting standards as public ways when occupied as follows:
- i. Growth Area Streets having at least three lots with occupied dwelling units; having at least 30% of all its residential lots with occupied dwelling units; and having an average road frontage not to exceed 250 feet per lot.
 - ii. Rural Area Streets having at least three lots with occupied dwelling units; having at least 60% of all its residential lots with occupied dwelling units; and having an average road frontage not to exceed 400 feet per lot.

NOTE: Properties abutting the intersection of the street under consideration for acceptance and an existing publicly maintained street do not count toward the occupied legal lot threshold calculations.

- H. Public Benefit.** The City Council may accept streets meeting standards as public ways when the occupation threshold calculations above are not met if the acceptance of the road will clearly improve mobility, safety, stormwater runoff, or the development exemplifies smart growth principles as presented in the International City/County Management Association (ICMA) *Getting to Smart Growth* and *Getting to Smart Growth II*.





Appendix B Illustration of Street Connectivity

Not part of the UDO, Not to Scale