NORTHSTAR PLANNING

MEMORANDUM

TO: Lisbon Planning Board

CC: Mark Stambach, Code Enforcement Officer

From: Kate Burch, Senior Planner, North Star Planning

RE: Lisbon Road Ordinance Revisions

Date: June 19, 2024

Project Purpose

Lisbon has no unified standards for road design and construction for roads built outside of a subdivision. The existing road standards lack dead end, driveway, turnaround, and fire prevention requirements for roads.

Road standards serve several purposes:

- Allow for well-planned, connected development to occur over time
- Protect public safety through emergency access and fire prevention, lessening strain on volunteer fire department
- Support municipal capacity by ensuring roads are well-constructed with plans for maintenance, and limit demand on public works, school busing, garbage collection, and other public services
- Proactive approach to prevent long-term issues of road quality and maintenance

A Planning Board workshop discussing draft ordinance standards was held at the April 11, 2024 meeting. The Board requested that the town's consulting engineer review draft technical standards before moving forward.

The following pages include proposed road standards developed by North Star Planning in consultation with Lisbon's Town Manager, Assistant Town Manager, Public Works, Fire Chief, and Code Enforcement Officer, as well as the technical standards (beginning page 5) developed with input from consulting engineer Mandy Holway, PE of Olver Associates.

<u>Proposed New Section 70: Zoning</u>

Sec. 70-617 Roads and Driveways

Definitions

Driveway means a route that provides access to no more than two lots from either a public or private right-of-way. A driveway shall not be used to provide frontage.

Street means public or private roads or ways such as alleys, avenues, boulevards, highways, roads, and other rights-of-way, as well as areas on subdivision plans designated as rights-of-way for vehicular access other than driveways.

Street Classification

Arterial Street means a public roadway classified on the most recent functional classification map generated by the Maine Department of Transportation as a major or minor arterial street. These are streets which serve primarily as major trafficways for travel between and through towns.

Collector Street means a public roadway classified on the most recent functional classification map generated by the Maine Department of Transportation as a collector street. These streets serve as feeders to arterial streets, as collectors of traffic from minor streets and for circulation and access in commercial and industrial areas.

Dead end street means a street with a single common ingress and egress.

Local street means a street designed for public acceptance or a public roadway shown on the most recent functional classification map generated by the Maine Department of Transportation as a local street providing direct access within identifiable neighborhoods and lands, where through traffic is usually discouraged, and carrying a low volume of traffic.

Major Street means a street that complies with the standards in Table [reference] and serves more than 10 lots.

Minor Street means a street that complies with the standards in Table [reference] and serves less than 10 lots.

Private Way means a street that was constructed prior to [DATE], that does not meet the specifications for private roads in [reference], and that has not been accepted by the Town of Lisbon. Private ways do not include accessways typically referred to as "tote roads" or "woods roads."

General Standards

- Streets must be designed to integrate with the topography and natural features and provide safe travel for all users of the street.
- Streets shall be designed to move vehicle and pedestrian traffic safely.

- Any new street or road approved through the development review process shall be based upon the written recommendations of the Public Works Director, Fire Chief, and Police Chief, who shall review the project for safety and the capacity to serve all users.
- Design of streets shall address pedestrian and bicycle safety and movement.
- Permanent survey monumentation (four-inch by four-inch by four-foot granite monument or approved equal) is to be provided and set by a State of Maine Professional Land Surveyor along the street at all changes in direction (including point of curvature and point of tangency for curved) on both sides of the street parcel. Monument location and type at all other points must conform to standard State of Maine survey practices.
- Performance bond. For collector, major, and minor streets, the developer shall provide an itemized cost estimate for the street and related improvements.
    - The applicant shall tender either a certified check payable to the town or a faithful performance bond running to the town in an amount of money to be determined by the town manager to be equal to the costs of furnishing, installing, connecting and completing all aspects of the street grading, construction, all layers of paving, storm drainage and utilities required within one year from the date of the check or bond.
    - This bond may be renewed for one additional year at the discretion of the town manager.
- Inspections. The developer shall coordinate the construction of streets, drains, sewers, and utilities with the responsible agencies.
    - The Code Enforcement Officer and the town's consulting engineer shall work with the developer to schedule a preconstruction meeting. The developer shall present his construction program and schedule inspections. At a minimum, the Director of Public Works (and/or designee), the Code Enforcement Officer (and/or designee), and the town's consulting engineer shall be contacted by the developer to schedule inspections.
    - When a minimum length of 300 feet (or the entire length of a street if it is less than 300 feet in length) has been excavated to subgrade and properly prepared for the placement of gravel, the Public Works Department must be called to perform an inspection and approval granted before gravel is placed. Gravel shall be placed in compacted layers of not more than 8 inches. Before any surface material is placed in any area, the work shall again be inspected by the Director of Public Works. The placement of bituminous concrete shall be in accordance with this chapter, and be inspected by the Department of Public Works.
    - Prior to any water or sewer construction, necessary permits shall be obtained from the Lisbon Water and Sewer Districts. A representative of the District shall be present whenever an existing sewer is to be cut, entered, or in any way disturbed. The Districts are to be notified immediately if any of its lines are damaged or in need of repair. All utilities must certify in writing that the work has been accomplished to their satisfaction prior to acceptance by the Town of any street or way.

Private streets

- For all streets not to be constructed for town acceptance, the roadway will be constructed to meet the private road standard in the below table as a minimum.
- No building permit shall be issued for a new primary dwelling unit with primary access from a private street serving a total of ten (10) or more lots, unless the street has been or will, as a

condition of approval, be built or upgraded to meet the Major Street standards. These standards may be modified only where (1) the easement serving the property was conveyed prior to [date] and is not of sufficient width or contains other restrictions which prevent the standards from being met; or (2) prior conveyances or construction abutting the private street make it impossible or an undue hardship to meet the standards.

- Private roads not part of a subdivision or site plan application.
    - Submission requirements. An application form and accurately scaled plan shall be prepared by a Maine licensed professional authorized by the State of Maine to design streets or roads. At a minimum, the plan shall include the location and width of the right-of-way, a plan view and profile view of the roadway, the location and size of culverts and proposed drainage features.
    - Review authority. All private roads application forms and plans shall be submitted to and approved by the Code Enforcement Officer or the Code Enforcement Officer's designated agent.

Dead end streets

- Cul-de-sacs and dead end streets that provide the sole vehicular access to improved or improvable land shall be provided with a suitable turning circle or turnaround, as applicable, at the closed end.
    - A hammerhead turnaround shall be constructed to specified street standards, whether temporary or permanent, for a distance of 50 feet from the roadway edge at ninety degrees (90°) to the street it serves. Larger dimensions may be required by the Code Enforcement Officer to accommodate larger design vehicles anticipated to use the turnaround.
    - All turning circles shall be paved to specified street standards and have the following minimum diameter:
        - Right-of-way: 100 feet.
        - Outer pavement edge: 85 feet.
        - Inner pavement edge: 65 feet.
- Temporary turnarounds may be allowed where future road extensions are planned if designed to allow discontinuance of the turning circle while not creating any lots with less than the required frontage for the zone in which located.
- Driveways shall not be located off the ends of hammerhead turnarounds.
- In the LR, GR, V districts, no dead end shall exceed 1,500 linear feet, or 15 lots.
- In the RR, LRR, ROS-I, and ROS-II districts, no dead end shall exceed 2,500 linear feet, or 15 lots.

Fire Prevention

- Streets with public water access shall provide fire hydrants every 1,000 feet.
- Streets without public water access shall provide a dry hydrant or fire pond, or all dwellings beyond 1,000 linear feet from the fire hydrant shall have a National Fire Protection Association (NFPA) 13D monitored sprinkler system installed. Hydrants, ponds, and sprinklers shall be approved and inspected by the Lisbon Fire Chief.

- Dead-end private roads not supplied with public water shall have hammerhead turnarounds installed every 1,000 linear feet.

Driveways

- The maximum length shall not exceed 1000 feet.
- All driveways serving more than 1 dwelling unit in excess of 150 feet shall contain at least turnaround. The exact location shall be reviewed by the Fire Department.

Design & Construction Standards Table

	Collector Streets	**Major Street**	**Minor Street**
Road Type	Paved	Paved	Paved or Gravel
Maximum lots on dead-end street	15	15	10
Minimum width right-of-way	60 feet	50 feet	50 feet
Minimum width of travel way	20' (add 8' of width for each lane of on-street parking)	18'	16'
Shoulder type	paved	paved	gravel
Shoulder width	5 feet	3 feet	2 feet
Sidewalks	Both Sides	One Side	None
Sidewalk Width Minimum (where required)	5 feet	5 feet	5 feet
Technical Standards			
Minimum grade	0.50%	0.50%	0.25%
Maximum grade	8%	8%	8%
Maximum grade at intersection and turnarounds	3 percent within 75 feet of intersection or turnarounds		
Minimum angle of intersections	90 degrees	90 degrees	70 degrees
Minimum tangent length between reverse curves	200 feet	100 feet	0 ft

Bituminous paved:			
Surface compacted	1 1/2 inch	1 1/2 inch	1 1/2 inch (if paved)
Base compacted	2 1/2 inch	2 1/2 inch	2 inch (if paved)
Road crown (minimum)	1/4"/ft.	1/4"/ft.	1/4"/ft.
Shoulder slope	3/4 inch—1 inch	3/4 inch—1 inch	3/4 inch—1 inch
Side slopes (drop to run)	1—3 min.	1—3 min.	1—3 min.
Base course (gravel)*	24 inches	18 inches	18 inches
Design speed	45 mph	25 mph	25 mph
Radius of turnaround at enclosed end:			
Property line (minimum)	65 feet	65 feet	65 feet
Pavement (minimum)	65 feet	65 feet	65 feet
Property line radii at intersection (minimum)	20 feet	20 feet	20 feet
Curb radii at intersections:			
90 degree intersections	25 feet	25 feet	25 feet
Less than 90° intersections	30 feet	30 feet	30 feet

*Soil conditions and traffic volumes will factor into gravel thickness.

~~Sec. 66-187~~. – Sec. 70 -## Typical street cross section, underdrain.

In lieu of an enlarged right-of-way, or drainage easements along the proposed street right-of-way, an underdrain may be used to provide drainage for surface water and/or water from the subbase of the street. Included with the submittal of the preliminary plan shall be a profile and cross section of the underdrain system and arrangement of the filter media surrounding the pipe. Selection of drain size and arrangement of the surrounding filter media shall be designed by a licensed professional engineer, and the engineer's statement to this effect shall accompany the plan for approval. When underdrain is used, the base and subbase as much as possible shall extend to the right-of-way line. It should be understood that surface drainage will still have to be handled satisfactorily and separate from the underdrain.

~~Sec. 66-188~~. Sec. 70-##. - Bases and pavement.
Specification of materials.

(a) *Sub-base*. The aggregate sub-base course shall be sand or gravel of hard durable particles free from vegetative matter, lumps, or balls of clay and other deleterious substances. Aggregate for the sub-base shall contain no particles of rock exceeding 6 inches in any dimension. The gradation shall meet the following grading requirements.

Sieve Designation	**Percentage of Weight Passing Square Mesh Sieves**
4-inch	100%
¼-inch	25—70%
No. 40	0—30%
No. 200	0—7%

(b) *Base*. The aggregate base course shall be sand or gravel of hard durable particles free from vegetative matter, lumps, or balls of clay and other deleterious substances. Aggregate for the base shall contain no particles of rock exceeding three inches in any dimension. The gradation shall meet the following grading requirements.

Sieve Designation	**Percentage of Weight Passing Square Mesh Sieves**
3-inch	100%
1/2 inch	45—70%
¼-inch	30—55%
No. 40	0—20%
No. 200	0—5%

(c) *Pavement*.

1. *Base mix.* A base mix layer is required which meets the most recent MDOT Standard Specifications for plant mix grade B.

2. *Surface mix.* A surface mix layer is required which meets the most recent MDOT Standard Specifications for plant mix for grade C or grade D and liquid asphalt.

Additions to Sec. 66: Subdivision Standards

66-204 Privately Owned Streets

Maintenance agreement.
The applicant shall provide evidence that the private road shall be maintained either by the applicant or by the lot owners or a homeowners' association. Proof may consist of a declaration of covenants that will be recorded and become part of each deed and specify how the costs of maintenance will be apportioned among the lot owners, or appropriate homeowners' association documents. In the event that a homeowners' association is formed, each lot deed shall refer to the association and shall require the lot owner to be a member of the association. No private road will be maintained by the Town until the Town has accepted the road. No private road shall be offered to the Town for acceptance until it meets the design requirements in Sec. 70-617.

66-176 Dead End Streets
All proposed roads shall be designed as through roads, and shall connect at both ends to different public roads or provide an easement to allow a future connection. This provision may be waived by the Board under the following circumstances:

- Lot location and/or configuration does not provide for connection to an existing public road;
- Constraints on the subdivided parcel are such that no connections to existing public roads can be made;
- Existing natural features and resources are located in such a fashion to prevent connections to a public road; or
- Valuable open spaces or natural resources can be preserved by eliminating a second entrance into the property.

When the Board waives the dead-end restriction, the following standards shall apply:

1. In the LR, GR districts, no dead end shall exceed 1,500 linear feet, or 15 lots.
2. In the RR, LRR, ROS-I, and ROS-II districts, no dead end shall exceed 2,500 linear feet, or 15 lots.
3. Dead ends shall be designed with a hammerhead or cul-de-sac turn around. Dead ends shall include 50 foot wide right-of-way extensions to adjoining parcels at the approximate half way point, and at the end of the dead end.
4. Driveways shall not be located off the ends of hammerhead turnarounds.