

D. TRANSPORTATION and ROADS

1. Introduction

A transportation system is one of the most important factors influencing a town's growth. This section will discuss the major transportation issues facing Orland. Specifically, it will:

- a. discuss the extent, use, condition, and capacity of Orland's transportation systems;
- b. assess the adequacy of these systems to handle current and projected demands; and
- c. discuss any parking problems.

2. Key Findings and Issues

While Orland still has a relatively low volume of traffic when compared to much of coastal Maine, traffic has been increasing over the past 20 years as the town and region have grown. The most hazardous intersections are along Route 1. These include Upper Falls Road, Leach's Point Road, Route 15, Back Ridge Rd. and Fish Hatchery Road.

One potential traffic-related problem facing the town is continued commercial development along major highways. This is already a minor problem on certain portions of Route 1 and it could spread to Route 46. While the town's bridges are generally in good condition, the state-owned bridge on Route 175 over the Orland River needs to be replaced.

3. Public Opinion Survey and Community Workshop Results

About 44 percent of the respondents felt that road maintenance needed improvement while 40 percent felt it was adequate. Fifty-one percent felt that summer traffic was not a problem and 36 percent felt it was a problem. About 35 percent felt that public transportation was a problem compared to 29 percent who felt it was not a problem.

4. Classification of Roads

Roads are separated into both an administrative and functional classification. The administrative classification refers to who has responsibility for maintaining a road, while the functional classification refers to the function that the road serves. These two classifications are described in more detail below.

a. Administrative Classification

Administrative classification refers to who is responsible for maintaining a given road. The three major administrative categories are state roads, town roads, and private roads. State roads are further separated into state highways and state aid roads. The state assumes full responsibility for the maintenance of state highways.

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State aid roads are also maintained by the state with the exception of winter snow removal, which is the responsibility of the town. Towns assume complete responsibility for the maintenance of town roads. Maine Department of Transportation (MDOT) records show that there are approximately 51 miles of public road in Orland, of which 30 miles (59%) are town roads and the remaining are state roads (see Table D.1). With the recent naming of all roads in town, there are now more detailed road name data available from the town office. This information is not included here since the road mileage data for the renamed roads was not available at the time this plan went to press. Some roads, however, now have different names than those shown in Table D. The road mileage data on D.1 are important since they are used by the MDOT in determining the state road block grant to the town. The town may want to contact MDOT officials to assure that the state mileage figures are accurate.

b. Functional Classification

Roads are also classified according to their function. The three primary functional classifications used by the MDOT are arterials, collectors, and local roads defined as follows:

arterials Such roads connect major areas of settlement and are generally designed for high-speed travel with limited or restricted access carrying a high proportion of through traffic. Route 1 in Orland is an arterial.

collectors These roads handle internal traffic movements within a town or group of small, rural towns. They are designed for moderate-speed travel and carry a moderate proportion of through traffic. Routes 15, 46, 175, and 176 in Orland are collectors.

local These are lightly traveled streets whose primary purpose is to serve residential areas. They are designed for low-speed travel and to carry low volumes of traffic relatively short distances. The MDOT classifies all of Orland's 30 miles of town ways as local roads.

A road's functional classification is one of the factors that should be considered when planning growth and rural areas for the future development of the town. Local streets are best suited for either village-residential-type or very-low-density rural development. While some commercial and other non-residential development might be appropriate for collectors, it is important that such development be designed so that it minimally disrupts traffic flow.

Unrestricted development along an arterial often results in severe traffic congestion and safety problems. As growth occurs, the cumulative effects of numerous driveways along the road impede the flow of through traffic. Implementing appropriate access management, which is the careful planning of land uses, driveways, and intersections, can reduce safety hazards and prolong the useful life of a road. These factors should be kept in mind when planning for future commercial development along Route 1.

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MDOT #	Road Name	Arterial	Collector	Local	Total
0001X	Route 1 (Acadia Highway)	9.38	0	0	9.38
0015X	Route 15	0	3.09	0	3.09
00401, 00399	Leach's Point Rd	0	0	4.15	4.15
0399	Gross Point	0	0	1.2	1.2
01453	Old Route 1 (off Rt 46 to Route1)	0	0	.27	.27
0046X	Route 46	0	.14	0	.14
0175X	Route 175	0	6	0	6
0176X	Route 176 / Toddy Pond Rd	0	1.88	0	1.88
00317	Lower Falls Rd	0	0	1.06	1.06
00319	Johnson Rd	0	0	.97	.97
00321	Ginn Road	0	0	.82	.82
00322	Winkumpaugh Road	0	0	3.21	3.21
00323	North Orland Road	0	0	1.24	1.24
00324	Dodge Hill Road	0	0	.72	.72
00328	Joe Soper Road	0	0	.58	.58
00353	Happytown Road	0	0	1.71	1.71
00385	Hatchery Road	0	0	1.62	1.62
00388	Cedar Swamp Road	0	0	.92	.92
00389	Back Ridge Road	0	0	2.84	2.84
00391	Gilpin Road	0	.77	2.35	3.12
00398	Oak Hill Road	0	0	.6	.6
00630	Gray Meadow Road	0	0	.08	.08
01454	Gray Meadow Road	0	0	1.28	1.28
01323	Narramissic Drive	0	0	.86	.86
01329	Old County Rd	0	0	.32	.32
01460	Dunbar's Corner	0	0	.3	.3
01484	Old Route 1 (@Thompson	0	0	.36	.36
01486	Old Route 1 (Ellsworth town line)	0	0	.28	.28
01650	SchoolHouse Road	0	0	.27	.27
01650	Upper Falls Rd	0	0	2.31	2.31
01651	Old Cross Rd	0	0	.17	.17
01814	Old Church Lane	0	0	.07	.07
03245	Old Route 1 (@ Route 15)	0	0	.33	.33
Total		9.38	11.88	30.89	52.15

<p>*NOTE: Does not include private roads Source: MDOT and the Comprehen sive Plan Committee</p>

5. Road Conditions, Usage, and Capacity

With the exception of Route 1, most of Orland's roads are relatively narrow and winding. While traffic is forced to move slowly on unpaved town roads, vehicles tend to drive fast on the state highways. As will be seen in the discussion of accident data, inappropriate speed is a problem. There are limited data on road conditions in Orland. However, MDOT completed a study of the Route 15 corridor in 1995. This study contains detailed information on road conditions, and makes recommendations for future improvements.

An understanding of usage and capacity of Orland's roads is important in identifying potential congestion problems and traffic hazards. This information is important in planning for future growth in town. For example, a major subdivision may not be appropriate near a hazardous intersection. Similarly, stricter standards for access management in commercial development may be needed in areas with traffic congestion.

Since Orland is a rural town with a relatively low volume of through traffic, it does not experience the same level of traffic problems when compared to many coastal towns in Maine. Nowhere in town does the traffic level approach the capacity of the highways. This will be discussed below in the traffic count and automobile accident data.

a. Traffic Counts

The Maine Department of Transportation (MDOT) conducts periodic traffic counts in Orland using portable traffic counters for 24 or 48 hours. These counts are then factored for seasonal variations from counters that run 365 days a year on similar types of highways around the state. An estimate of Average Annual Daily Traffic (AADT) is then made.

Traffic count data are shown in Table D.3. As seen, the highest AADT in Orland was 8,780 vehicles in 1993 on Route 1 at the Bucksport town line. While these levels are relatively low by statewide standards (the nearest permanent traffic counters in Hancock and Bar Harbor had respective 1993 AADT's of 13,489 and 15,993), trend

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data show a steady increase in traffic.

For example, AADT on Route 1 at the Bucksport town line increased by nearly 32% from 1979 to 1993. During the same period traffic on Route 175 north of the Cranes Corner increased by 7%. On Route 176, south of Route 1, the increase from 1979 to 1991 was 81%.

These traffic increases are a reflection of the population growth and increased tourist activity in the region. While traffic flows in Orland are well below levels experienced by many coastal communities, increased traffic does affect residents. Traffic is a particular problem during the summer months.

Table D.3 Average Annual Daily Traffic Volume, 1979-1993					
Location	1979	1986	1988	1991	1993
Rte 1 Ellsworth City line	--	3,780	4,460	4,490	5,470
Route 1 near Heart Pond	--	4,250	4,630	5,080	5,730
Route 1 east of Route 15	--	6,180	5,190	5,520	5,890
Route 1 @ Bucksport town line	6,660	--	7,650	--	8,780
Route 175 north of Cranes Corner	1,880	--	2,210	2,120	2,010
Route 46 @ Bucksport town line	--	--	2,070	1,940	2,320
Route 176 south of Route 1	270	--	520	490	--
Source: MDOT 24- and 48-hour traffic counts factored for seasonal variations					

b. Accident Records and Road Safety

The MDOT compiles data from files for reported accidents. During the 1992-1994 period, 174 accidents were reported by the MDOT in Orland. There were 82 accidents (47%) on Route 1, making this road the most frequent site. There were 36 accidents on Route 175, 24 accidents on Route 15, 10 on the Back Ridge road, 6 on the Upper Falls Road, and 3 on Route 176.

Of the 174 accidents reported in Orland, records indicate that more than half (53%) were caused by improper driving, with unsafe speed, driver inattention and inexperience often cited as the cause of the accident. A number of accidents were also caused by animals in the road. Although 32 (18%) of reported accidents occurred at intersections, only the intersections at Route 1 and Upper Falls Road (blinking light) and Route 1 and the Castine and Leach's Point Road had at least 5 accidents each.

The Maine Department of Transportation evaluates the accident rate of a road segment through a critical rate factor (CRF). A segment with a CRF greater than 1.00 has an accident rate greater than an average comparable road segment elsewhere in Maine. In Orland, several sections of road had accident rates significantly higher than state averages for this type of road/intersection. However, there are many segments of road with high accident rates which have not been assigned a critical rate factor by MDOT (Table D.4).

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Table D.4 Orland Accident Summary for Roads with CRF >1, 1992-1994			
MDOT #	Road Segment	# Accidents	Critical Rate
7036	intersection of Route 1 and Upper Falls Road	5	1.46
7033	intersection of Route 1 and Leach's Point Road	5	1.13
2057	intersection of Cedar Swamp and Back Ridge Road	2	3.04
7045-7046	Route 1 south, just before the Surry Road (176)	7	1.31
7044-7045	Route 1 south after the Surry Road	7	--
7041-7042	Route 1 near Hart and Toddy Pond to East Orland	6	--
7274-7275	Route 1 from Back Ridge Road to Old Route 1	8	--
6044-6045	Route 15 Old Route 1 to Gilpin Road	3	2.5
6266-6267	Route 175 from the bridge to Narramissic Road	1	1.23
6265-6266	Route 175 Lower Falls Road to the bridge	2	2.45
6015-6262	Route 175 from School House Road to Old County Road	4	1.66
6012-6015	Route 175 Penobscot town line to School House Road	26	--
6045-7446	Back Ridge Road from Penobscot to Cedar Swamp Road	7	1.07
1425-6015	Dark Mountain to Route 175	1	2.95
Source: Maine Department of Transportation, Bureau of Planning			

The segment with the highest critical rate factor in Orland (3.04) is the intersection of the Cedar Swamp and Back Ridge Roads. The next highest (2.95) is the Dark Mountain Road near Route 175. Other segments with high c.r.f.'s include Route 15 between Old Route 1 and the Gilpin Road (2.5) and Route 175 from the Lower Falls Road to the bridge (2.45).

Most accidents nationwide are caused by speed, alcohol, or driver inattention. The road sections listed in Table D.4 should be examined for possible improvements to reduce the relatively high accident rates. Specifically, sharp curves could be eliminated. However, improvements in roadway design will not eliminate the danger of vehicle-animal collisions or the tendency for drivers to exceed the speed limit. For example, while there is a 25 m.p.h. limit on the Castine Road near its intersection with the Dark Mountain Road, local observers report drivers going at a very high rate of speed.

Since overall volumes of traffic in Orland are low and the MDOT faces a backlog of needed highway improvements, it is likely that the state will have a limited ability to

address the problems identified in this section. Therefore, it is important to identify priorities that can be discussed with the MDOT. It is also important to consider road safety conditions when reviewing various land development proposals. A development could aggravate traffic problems if driveways and/or access roads are poorly sited.

6. Bridges

Orland has 8 bridges, 7 of which are owned and maintained by the Maine Department of Transportation, and one is owned and maintained by the town (see Table D.5). All of the state owned bridges are in need of repair and qualify for replacement funding from the Federal Highway Administration (FHWA) if the state attempts to rehabilitate or repair the bridges first. None of these bridges are functionally or structurally obsolete. A bridge with a sufficiency rating of 81-100 is considered to be in good condition, 51-80 in need of repair, and 0-50 in need of replacement. As seen in Table D.5, the only bridge in need of replacement is that on Route 175 over the Narramissic River.

MDOT Bridge #	Name	Location	Year Built	Condition (sufficiency rating)
0448	Meadow Brook Bridge	1.1 miles south of Route 15 on Gilpin Rd	1975	good (86.9) town owned
2536	Meadow Brook	.1 mile south of Route 15 on Route 1	1964	needs improvement (64.1)
5892	Narramissic	1.2 miles east of Route 46 on Route 1	1961	needs improvement (67.2)
2632	Narramissic River	5 miles east of Route 1 on Route 175	1932	needs replacement (35.8)
2861	Toddy Pond #1	1.8 miles east of Route 15 on Route 1	1964	needs improvement (74.7)
5205	Toddy Pond #2	1.8 miles east of Route 15 on Route 1	1926	needs improvement (74.7)
3153	Upper Falls Road	.1 mile east of Route 15 on a town way	1934	needs improvement (76.8)
5494	Dead River Bridge (Moosehorn Stream)	Orland/Bucksport town line at Bald Mtn Road	1951	needs improvement (66.9)

Source: MDOT Bridge Data 1996

7. Parking

Parking is inadequate for certain businesses along Route 1 where customers often park along both sides of the highway. This is a particular problem during yard sales and flea markets. There is also very little off-street parking in Orland village. This situation could become more of a problem if more businesses locate or expand in the village area.

Most towns with town-wide zoning require that any commercial property (or other non-single family residential use) provide adequate on-site parking. These standards

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may include set-back requirements from the road as well as general landscaping standards. They can also assure that there is sufficient turning space on the parking lot so that vehicles do not back out into traffic.

8. Pedestrian and Bicycle Facilities

Although no firm numbers are available, Orland does attract considerable bicycle traffic in the summer. The town may want to explore ways to improve the separation of bicycle and vehicular traffic. Federal and state legislation usually provides some funding for such improvements.

One possible improvement could be the provision of bicycle lanes along some highways. The narrow shoulders mean that bicyclists have little room on the pavement when a motorist is passing. Pedestrian facilities could also be explored; increased traffic means that residents are less safe walking along the road. Pedestrian walkways would be particularly useful between Orland village and Bucksport.

9. Public Transportation Facilities and Services

There is no regular public transportation service in Orland. Limited service is provided by the Washington-Hancock Community Agency for eligible clients referred to them by the Maine Department of Human Services. The closest year-round scheduled intercity bus service is in Bangor. Greyhound Bus Lines has regular service to Portland and Boston and offers connections to Aroostook County and other locations. St. Croix Bus Lines provides year-round, daily (excluding Sundays) service between Machias and Bangor with a stop in Ellsworth. Concord Trailways also serves Bangor and points south.

Orland's small size limits the potential of any public transportation service. The town could explore the possibility of van pools, park and ride lots and other ride-sharing measures to reduce the amount of commuting to and from town. One possible venture could be vanpool service to the Champion International mill in Bucksport. Some help in promoting such measures may be available from the Region 2 Regional Transportation Advisory Committee (RTAC). This group is working with the MDOT in setting transportation planning priorities for Hancock and Washington Counties.

10. Airports

Bangor International Airport is the nearest major commercial and cargo airport. An 11,500-foot runway serves scheduled domestic flights and refuels flights from Europe and has customs facilities. There is also short-haul scheduled service to Boston available at the Hancock County Airport in Trenton.

11. Rail Service

The nearest freight rail service is in Bucksport and use is currently restricted to the Champion International mill. As of 1997, there is no regularly scheduled passenger service in Maine, although service is proposed between Boston and Portland. The future of the presently abandoned Bangor to Calais rail line, which passes through Ellsworth, is being debated while the Orland comprehensive plan is being prepared.

12. Local Transportation Issues

One local transportation issue is commercial development along Route 1, which could spread down Route 46. Orland has an opportunity to avoid the congestion-related problems that Bucksport and Ellsworth face from commercial strip development. This can be done through improved regulation of curb cuts, turning lanes, and encouraging commercial businesses to use shared access roads. Generally speaking it is easier to manage traffic impacts if there are fewer places where vehicles turn on or off the highway. The town may also want to consider restricting areas where commercial uses can locate.

Many small towns have found that their road costs have increased due to increased traffic and road maintenance associated with new subdivisions. It is possible through subdivision ordinances to address both on and off-site traffic impacts. For example, the ordinance could require that all subdivision roads be built to town standards. This would reduce the cost of maintaining such roads if they are ever accepted as town ways.

Subdivision ordinances can also address off-site traffic impacts. An increased flow of traffic from a given subdivision can often affect the capacity of a road. The ordinance should require that a traffic impact study be prepared by the developer to determine what specific road improvements may be needed. The developer can be asked to contribute the development's fair share of the costs needed for the improvements. Such measures can reduce the cost of future maintenance on Orland's nearly 30 miles of local roads.

The comprehensive planning committee believes that local road conditions in Orland are generally poor. Substantial reconstruction is needed on several roads. The Select Board is developing a five-year road improvement plan, which should help address these needs.

Another local road issue is damage caused by overweight trucks. Trucks that exceed federal load limits are allowed on local roads. Speeding is another problem, the limited State Police and County Sheriff's coverage makes it difficult to enforce speeding laws.

13. Regional Transportation Issues

Orland does not appear to face any serious regional traffic issues. However, traffic in town would be affected by any major land development activity along Route 1 in adjoining towns. Therefore, the planning board may want to implement access management standards along major corridors and ask the planning boards of neighboring towns for an opportunity to comment on any proposed subdivision located near the Orland town line. Similarly, the Orland planning board could share traffic impact information on any major proposals near the boundary of another town. This could allow the planning boards to cooperate in managing traffic impacts.