

Transportation

This chapter describes the transportation system, identifies deficiencies within the transportation facilities serving Belgrade, and provides general recommendations for meeting the existing and future needs for those facilities. This chapter also addresses how Belgrade can provide the most cost-effective transportation choices, while the Future Land Use Plan and Local Economy chapter address how the town can manage development to make the best use of the system.

As Belgrade becomes more complex and interwoven with neighboring communities, the need for a quality transportation system becomes more and more critical. Businesses need transportation to move products and draw customers. Commuters need a way to get to their jobs out of town, and employers need a way to get out of town workers here. Families need transportation to schools, services, shopping, and recreation. And tourists and summer residents need a way to get here.

Belgrade's Highway System

The backbone of Belgrade's transportation system is the state highway system, designed to accommodate large volumes of motor vehicles. "State highways" also include the category of state aid roads, maintenance of which is only partially borne by the state. Belgrade's state highways are:

State Route 27: Route 27 is the major arterial road through Belgrade, running from southeast to northwest. Although not considered by the state as one of the principal components of the statewide network, the highway does receive heavy usage by commuters into Augusta, tourists to western Maine, commercial traffic, local residents, and visitors. Traffic at the Sidney town line is almost double that at the Rome end, indicating that about half the traffic ends up locally.

State Route 11: State Route 11 separates from Route 27 near the Depot and runs northward along the western shore of Messalonskee Lake towards Oakland. Route 11 is classified as a major collector. This category permits a slightly lower construction standard and lower priority for investment, generally based on lesser traffic volumes. Route 11 does receive more traffic on average than Route 27 through Belgrade Lakes village, mostly due to rapid recent growth. The roadway is much narrower than Route 27, although having recently been rebuilt north of Route 8.

State Route 8: Although Route 8 originates in Augusta, it does not separate from the rest of the system until North Belgrade, branching off towards Smithfield. From that point, Route 8 is a "state aid" road, meaning that the state is responsible for maintenance and improvement of the roadway, but the Town is responsible for winter maintenance. The road is in good physical condition for the most part.

State Route 135: Route 135 originates at Route 11 near the depot, crosses Route 27, and proceeds south into Manchester. Route 135 is a minor collector, which puts it

even lower priority for improvement dollars. The Town would have to put up 1/3 of any improvement costs. Route 135 has seen a substantial increase in traffic over the past decade, primarily due to the development of southern Belgrade and Manchester. The roadway is in fair physical condition.

Castle Island Road: Castle Island Road originates along Route 27 about 1.5 miles south of Belgrade Lakes and runs west to Mount Vernon. Although not assigned a route number, Castle Island Road is in the same category for maintenance responsibilities (minor collector) as Route 135 and receives about the same traffic volume.

Town of Belgrade Roads

Belgrade has approximately 34 miles of town ways. The Town is entirely responsible for maintenance of these roads. The Town maintains a road and paving management plan for the purpose of identifying priorities in maintenance and upgrades. The large majority of town road length is paved. The plan calls for re-paving every eight years or so, but the variable cost of paving materials makes it hard to stick to that schedule.

The Town maintains a Road Maintenance Capital Reserve Account to even out annual appropriations. In 2023, the Town budgeted \$_____ for road maintenance and paving projects, \$_____ for general maintenance, and \$_____ for winter maintenance, making the road system second only behind education as the largest budget component of the Town. However, \$_____ of that came from the Reserve Fund, and the Town received \$46,756 in 2023 from Maine DOT local road assistance and over \$_____ a year in vehicle excise taxes, so very little road funding comes from property taxes. The DOT funds have not changed in over twenty years, but local excise tax revenues have more than doubled.

A large number and mileage of local roads are private ways, where the users are directly responsible for maintenance. Most of these are in the form of camp roads. Private ways are extremely variable in their quality. The Town has no standards for construction or maintenance of private ways. Two significant problems have been identified with private ways: 1) they are not constructed to permit emergency vehicles passage, and are not maintained in the winter, creating potential for delays in fire protection and public safety response. 2) Poorly constructed roads, especially leading in to lakefront camps, generate serious runoff and erosion problems, leading to pollution and phosphorous loading in the lakes.

Bridges

Out of necessity, Belgrade's road system includes a number of water crossings. Many of these are small culverts, which are the responsibility of the town to maintain. Culverts must be cleaned and inspected regularly and replaced as necessary. Crossings that have a span of 20 feet or greater are the responsibility of the State. The Maine DOT inventories all bridges on a regular basis.

Table 1: State Maintained Crossings

Local Name	Bridge ID #	Location	Notes
Crank Bridge	5254	Manchester Road	Built in 2003
Mill Bridge	3934	Smithfield Road	Built in 1947, in fair condition
Batchelders Road Crossing	3906	Manchester Road	Built in 1986, in satisfactory condition
Welman Bridge	2922	Manchester Road	Built in 1941, in satisfactory condition
Belgrade Lakes Bridge	2063	Main Street	Built in 1996, in good condition
Belgrade Bridge	2062	Augusta Road	Built in 1971, in satisfactory condition
Narrows East Bridge	0485	Castle Island Road	Built in 1986, it is in satisfactory condition

Source: Maine DOT Bridge Inventory

No work is contemplated on any bridges in the current published Maine DOT workplans. The location and maintenance responsibility of bridges is shown on the Transportation Map.

Traffic Controls

Traffic controls are infrastructure to help manage the flow of traffic. They range from STOP and YIELD signs to signals and raised islands.

Despite having state highways crisscross the town, the traffic counts in Belgrade do not yet warrant many traffic controls. There is one flashing yellow “caution” signal at the intersection of Routes 27 and 135. Most intersections are controlled only by “stop” or “yield” signs. Several intersections have traffic islands at the junction – notably Route 135 with 8/11, and 8/11 with 27 – but these are vestiges of earlier designs, not modern traffic controls. Due to safety concerns at the intersection of Routes 8 and 11, the DOT erected a reflectorized median strip to channel traffic but it was abandoned in 2013. It appears to have made some difference, combined with some shifting in alignment with the recent Route 11 improvements.

In Belgrade Lakes village there are a number of pedestrian crosswalks. These have been put in rather casually over the years, and do not meet modern DOT standards for safety. The Belgrade Lakes Streetscape Plan contains recommendations for reduction and improved design of new crosswalks for better pedestrian safety.

Traffic Volumes

The volume of traffic is a measure of the intensity of road use and the potential for traffic delays, congestion, or unsafe conditions. Economic developers also use traffic volumes to determine potential customer base. Historic traffic count data, measured in Average Annual Daily Traffic, equivalent to vehicles, per day, is compiled by Maine DOT.

Table 2: Traffic Counts

Location	AADT14	AADT17
IR 1375 (DEPOT RD) NW/O SR 8/11/27	1440	-
IR 1525 (KNOWLES RD) N/O IR 356(KNOWLES)	1040	-
IR 1525 (KNOWLES) E/O SR 135(MANCHESTER)	1180	930
IR 2076 (WINGS MILLS RD) W/O SR 135	830	780
IR 2254(TAYLOR WOODS) W/O SR 11(OAKLAND)	630	630
IR 2539 (BARTLETT RD) NW/O SR 135	630	480
IR 2589 (DUNN RD) SW/O IR 784 (WEST RD)	-	310
IR 2589 (WEST RD) NW/O IR 2667	-	680
IR 2589 (WEST RD) S/O IR 2667	-	580
IR 2589(WEST RD) S/O IR 1528(LAKE SHORE)	700	670
IR 2590 (POINT RD) N/O SR 27(AUGUSTA RD)	460	-
IR 2667 (CASTLE ISLAND RD) E/O IR 2589	1520	1350
IR 2667 (CASTLE ISLAND RD) W/O IR 2589	1540	1470
IR 2667(CASTLE ISLAND RD) @BR#0485(E BR)	1310	1320
IR 331 (MINOT HILL RD) E/O SR 135	760	720
IR 331 (WEST RD) W/O SR 135 (MANCHESTER)	790	910
IR 371 (MCGRATH POND RD) E/O SR 8	410	370
IR 799 (HORSE POINT RD) W/O SR 8	560	-
SR 11 NE/O SR 8 (SMITHFIELD RD)	2960	2630
SR 11(OAKLAND) NE/O IR 2254(TAYLOR WOODS	3540	-
SR 135 (MANCHESTER) S/O IR 331 (WEST RD)	1530	1450
SR 135 (MANCHESTER) SW/O SR 27 (AUGUSTA)	1510	-
SR 135 N/O IR 331 (MINOT HILL RD)	1410	1350
SR 135 NW/O SR 8/11	2400	2220
SR 27 (AUGUSTA) NW/O SR 135 (MANCHESTER)	5840	5700
SR 27 (AUGUSTA) SE/O SR 135 (MANCHESTER)	4510	-
SR 27 (MAIN ST) S/O IR 725 (HULIN RD)	3620	3970
SR 27 N/O IR 725 (HULIN RD) @BR# 2063	3290	3560
SR 27 NW/O IR 2667(CASTLE ISLAND RD)	3730	3650
SR 27 SE/O IR 2667 (CASTLE ISLAND RD)	4950	-
SR 8 NW/O IR 1334 @ SMITHFIELD TL	-	1340
SR 8(SMITHFIELD RD) N/O IR 1220 (WILDER)	1450	1580
SR 8(SMITHFIELD) N/O IR 2254(TAYLOR WOOD	1810	1950
SR 8/11 NE/O SR 135	4310	3890
SR 8/11 S/O SR 11	4300	-
SR 8/11 SW/O SR 135	2190	1980
SR 8/11/27 N/O IR 1375 (S JCT) @ RR XING	5750	5890
SR 8/11/27 S/O IR 1375 @ BR# 2062	6290	6490
SR 8/11/27 SE/O IR 2228(MILLS)@SIDNEY TL	6510	6570

Source: Maine Department of Transportation

Key For Table 2:

SW/O= southwest on
SE/O= southeast on
S/O= south on
NW/O= northwest on

NE/O= northeast on
N/O= north on
W/O= west on
E/O= east on

SR= state route
IR= inventory road
EB= eastbound
WB= westbound

Sidewalks

There are limited pedestrian options in town. The only sidewalks are located in Belgrade Lakes village. It has been in place for many years, is not maintained in the winter, and **does not meet standards for width or handicapped access**. A new sidewalk in the village could help to alleviate the parking problem and together with improved crosswalks could make the village more walkable. **These improvements were recommended in the Streetscape Plan and appear in the DOT's current plans for the village.**

Parking

Parking in Belgrade is traditionally provided by the business responsible for generating the demand. Except in Belgrade Lakes village, where land is at a premium, businesses provide their own on-site parking. Belgrade's Site Review Ordinance contains a comprehensive set of standards for off-street parking for new development.

No public parking is provided other than that associated with public facilities, such as the town office, school, and community center. Parking in Belgrade Lakes village is a continuing problem. On-street parking aisles are too narrow and spaces unmarked. The Town has discussed development of off-street municipal parking several times, without progress. The village area is so constrained for space, there are very few options. Even converting a private lot into parking could damage the charm of the closely-developed village.

Traffic Safety

A critical element in management of the transportation system is the safe movement of traffic. Records are kept of vehicle accidents and areas along the highway system are marked as High Crash Locations (HCL). Maine DOT defines an HCL as a roadway intersection or segment which experiences eight or more accidents in a 3-year period and has a Critical Rate Factor (CRF) more than 1.00. The CRF is a measure of the actual number of accidents compared to the theoretical accident experience that would normally be expected in that situation.

The intersection of Augusta Road, Cemetery Road and Manchester Road is the only location in Belgrade to have been designated a High Crash Location. From 2021 to the time of the writing of this plan, there were 10 total crashed with 6 injuries being reported.

There are several structural techniques that can "calm" traffic in a downtown. Shifting the curbing out into the roadway at pedestrian crossings is called a "neckdown" because drivers feel they must slow down to fit through a tighter space (the driving lanes are actually the same width). Pedestrians, meanwhile, feel safer with a shorter distance to

cross the road. Stamped pavement (imitation cobbles) and speed tables (not speed bumps) also cause drivers to slow. Street trees and other amenities make Main Street feel less like a highway.

Traffic and Development

The quality of the transportation system depends not only on its physical condition, but on the usage it receives. Government is generally responsible for the infrastructure itself, but in the past has not had much control over how it is used. Traffic levels are a function of the location of trip points (“traffic generators”); traffic conflicts (“crashes”) are often the unintended consequence of those locations. Major traffic generators in Belgrade, such as the Village area, the schools, the Depot area, tax the capacity of roads. The impacts are different; in the downtown, high traffic locations result in congestion and slow travel; on Route 27, local traffic generators produce potential conflict points.

Noise and light pollution can occur adjacent to roads; however the roads in Belgrade generally do not carry enough traffic to rise to a nuisance level. There has been some concern with noise from commercial vehicles in Belgrade Lakes village, where homes are so close to the road, but there is little to be done about it. The use of speed tables in the village to calm traffic was briefly considered, but rejected because of the noise potential. Light from development can also spill onto the roadways, creating a safety issue for motorists. Belgrade’s Commercial Development Ordinance contains standards limiting the light spilling from new development.

Town Ways

Transportation Choices:

Even though in today’s society, a huge majority of trips and miles travelled are by motor vehicle, there is still demand for alternatives. Some segments of the population (notably youth and elderly) cannot use motor vehicles to get around, and the increasing costs and impacts of energy consumption argues for reduced automobile use into the future. While we do not anticipate an enormous shift in demand over the period of this plan, transportation systems take an enormous amount of time and money to put in place and require planning well in advance.

Common alternatives to the car or truck in densely developed areas are the rail or public transit service; however, Belgrade does not have enough development density to support either. The rail line from Lewiston to Waterville (Pan Am Railways) runs through the eastern edge of town, with a siding at the Depot. While it is possible that this line could see restoration of passenger rail service, the chances of a stop in Belgrade are remote.

Public transit, either commercial or public bus lines, is not available in Belgrade. Kennebec Valley Community Action Program’s Transportation program is able to provide

limited services to residents and provides all transportation for those on MaineCare on an as needed and scheduled basis. Neighbors Driving Neighbors is a regional initiative where volunteers are available to provide rides within the communities of Belgrade, Vienna, Rome, Readfield, Fayette, and Mt. Vernon.

A variation on public transit is the use of carpooling or vanpooling. Some small towns have advocated for or developed park-and-ride parking lots, which allow commuters and others to consolidate their trips by sharing rides. In Belgrade, no park-and-ride is in place or proposed. This has not prevented residents from adopting their own practices, however; the census reports that roughly one in 14 Belgrade workers carpool to work. The attraction of carpooling is expected to rise consistent with the increase in gasoline prices. Bath Iron Works, located in Bath and Brunswick, employees commonly car-pool with some employees purchasing 15-passenger vans to transport coworkers.

Belgrade's 1998 and 2013 plans noted that there is good potential for a park-and-ride lot along Route 27 at some point. A park-and-ride lot could reduce traffic on the southern end of Route 27 and commuting costs. However, since the usual commute is just ten minutes or so into Augusta, it may not be utilized. A lot located near Belgrade Lakes village could double as public parking during the weekends, but finding a location poses the same problem.

Bicycle travel in Belgrade is limited to on-street routes or cross-country trails. The town has a lot of potential to develop biking as both transportation and recreation, through projects such as dedicated bike trails or dedicated lanes on roadways. Strategies could be as simple as facilities for bike storage at strategic locations. The town should identify bicycle-friendly destination points, such as the school, community center, and the village areas and target them for bike facilities.

There are a large number of active cyclists in town. Route 27 is the only road with shoulders wide enough to accommodate bikes, but the volume of truck traffic may intimidate some people, and the village area is so constricted, cyclists have to use the driving lane. Other local roads are not as busy but do not have decent shoulder width for bikes.

Bicycle touring is a large and growing component of tourism, especially in scenic areas such as Belgrade. Most of Belgrade's rural roads are narrow and the shoulders are too poor to permit safe biking (or walking), but traffic is low enough that it should not threaten bicycle touring by experienced riders. If interest exists, the town could designate a bike tour loop and post with signs to encourage use, possibly in conjunction with other lake towns.

There are no public airports in Belgrade. There is one private, unimproved airstrip off of Route 11. Augusta State Airport is the nearest airport.

A transportation system is a function of the usage it receives. Government has historically been responsible for maintaining the infrastructure, but until recently has not exerted

much control over how (and how much) it is used. In urban areas, we are seeing how lack of attention to land use patterns has overburdened transportation systems, leading to increased costs for safety, congestion, and added capacity.

Traffic levels grow continuously – a function of the economy and lifestyles. The price of gas coupled with the recession of 2008 generated a pause in traffic growth of only a couple years. Freight (truck) traffic continues to grow, a result of our increased standard of living (more consumer goods and food travelling longer distances) and an increasing reliance on roads by freight carriers.

In terms of road use, however, automobile traffic has the greater impact. Most trips originate in the residence and move to employment centers, schools, or shopping. Belgrade is an example of the “residential” end of traffic generators. Residential traffic is very dispersed, characteristic of the town’s pattern of development. There are few large businesses that draw a large number of employees or customers. The three largest are Hammond Lumber and Gagne Concrete, in the depot, and Tukey Lumber in North Belgrade. None of these are large enough to create congestion on their own. Belgrade Lakes has a cluster of small businesses and residents. Because of the road alignment, a good tourist day sees significant congestion.

Environmental Impacts of the Transportation System

We most often think of the transportation system as a means to move people and goods, and seldom consider how it affects our natural and built environment. We all know about air pollution, and how it would be nice if we drove less and in cleaner cars. But much closer to home is where we see how the transportation system produces both positive and negative impacts.

We think of Belgrade as a very scenic town, but for most of us, scenery is only accessible via the transportation system. Route 27 and several minor roads provide the panoramic views of lakes and bogs. There are no identified scenic overlooks or turnouts in Belgrade, though maybe there should be. Transportation improvements can often affect the built environment as well, with road widening impacting historic buildings, stone walls, or street trees, but there are no known issues with this in Belgrade.

By the very nature of its location and extent, the road system has great potential for impact on natural and environmental assets. In Belgrade, perhaps the most sensitive of these is the potential for stormwater runoff affecting lake water quality. Belgrade’s Commercial Development Review Ordinance has strong standards to protect waterbodies from private construction activities as well as post-construction runoff (erosion control and stormwater management standards). **Belgrade Regional Conservation Alliance has completed over 600 erosion control projects since 1995**, most along roadsides, especially private roads. Belgrade’s public works crew is trained and certified in “best management practices” for erosion control on road maintenance activities.

Transportation facilities can also impact wildlife habitat, including travel corridors. This can be particularly evident at stream crossings or near wildlife management areas. There are several wildlife areas in Belgrade adjacent to roads, but no recognized locations where wildlife movements have been impacted by existing roads. The town's road crew should continue to take training on environmentally sensitive road maintenance.

Analysis

- Runoff and erosion are serious problems that occur on many roads. The Belgrade Regional Conservation Alliance is working with road owners through educational and work projects.
- Belgrade has a Road Ordinance, which contains standards for roads proposed for Town acceptance. However, in order to be eligible to acceptance, a road must serve at least two year-round residences, so many camp roads would not qualify, even if they met the construction standard. The Town also has road standards in its Subdivision Ordinance, which apply to private roads as well as those proposed for acceptance; however, most camp subdivisions predate the ordinance.