

Transportation



TRANSPORTATION

Introduction

Transportation networks tie a community together and link the town to the surrounding region. Local roads should provide safe, reliable access to work, schools, shopping and residences. The livelihood of the town depends on how goods and services are imported and exported. In addition, the location and size of the town affects the modes of transportation available for traveling long distances.

Patten is a gateway community and a regional transportation hub. The town has major transportation routes, specifically State Highway Route 11 north/south (known locally as South Patten Road, Main Street, and North Road) and Route 159 (Crystal Road and Houlton Street to the East, Shin Pond Road to the west) that runs east/west right through the center of Patten. These highways are vital corridors for commerce and for residents traveling to and from work and other daily needs. While Interstate 95 does not run through town, Patten is accessible from exits 264 and 276.

Recently issues related to different modes of transportation other than automobile have arisen. These include horse and buggy, bicycles and pedestrian traffic. In 2016 Patten designated all roads as ATV Access Routes. Local roads, collector roads and arterial roads serve the needs of residents. The town is responsible for maintaining 20.3 miles of paved and gravel roads (16.1 miles in the summer with an additional 4.2 during the winter).

Transportation networks are also important to the economic growth of the community in providing needed access to goods and services not found in the town. Roads into and out of the town are the main mode of transportation in nearly all rural areas and the condition of these roads is very important. Lately, the state government has realized the great expense needed to improve our interstate highways. If the condition of any state highway or bridge is not adequate, then it is up to the community to make its needs known to the state highway department and state representatives. The information provided in this section will assist the town of Patten in accessing those needs.

A safe, efficient transportation system is essential to the smooth functioning of the community. The location and quality of the local street system will have a major impact on where future growth is likely to occur. Transportation links to the outside world greatly influence the potential for economic growth, as the costs of transportation are an important factor for new businesses in searching for a location.

In the land use planning process, community transportation issues can be complex and challenging. Transportation weighs heavily in planning for local fiscal capacity and future land uses. It is important to stay focused on safety, efficiency of movement, energy efficiency and conservation, cost effectiveness and the local need and interest in different modes of travel. Several transportation related problems and issues have been identified and are explained here. The locally acceptable approaches for avoiding problems and meeting the future transportation demands of Patten are identified in the Goals, Policies, and Strategies section.

Patten Roadways

Public roads in Maine are classified into three categories based on the needs served by those roads. They are local, collector and arterial. In total, there are approximately 31.8 miles of roadway in Patten. Until 2016, most roads in Patten have been graded as being in poor condition due mainly to the Town not budgeting for capital improvements. However, in 2016, MaineDOT completed 9.35 miles of highway preservation paving on Route 11 beginning in Sherman and extending to the Shin Pond Road. State Highways Route 11 and Route 159 are traveled by heavy haul truckers. A truck overload provision has been considered through Patten in an attempt to preserve the existing highways.

The remaining State Roads continue to be in need of repair. The Shin Pond Road (Route 159 west) is a gateway to Baxter State Park, the Katahdin Woods and Waters Scenic Byway, and the Katahdin Woods and Waters National Monument. It is also heavily utilized by residents of Mount Chase and visitors to the region to access regional recreational opportunities. MaineDOT classifies this route as a Priority 4 meaning that it is not high on the list for construction or maintenance projects. Route 159 between Patten and Island Falls is also in poor condition and in need of preservation paving at a minimum. While significant work was completed by MaineDOT in 2015, poor drainage has caused deterioration of the road surface. This is a Priority 3 corridor for the MaineDOT.

Local roads

There are 16.1 miles of local roads in Patten and the Town is responsible for snow plowing an additional 4.2 miles of State Aid Road (Shin Pond Road). Local roads are described as town roads including public roads not within the arterial or collector road categories. These roads are maintained by the town of Patten for local service use to adjacent land areas and usually carry low volume of traffic.

Local roads in Patten are identified as being in poor condition. MaineDOT Title 23, Section 3651 states that any legally established highway, townway or street shall be opened and must be kept in repair so as to be safe and convenient for motor vehicles. If these conditions are not met than the liable parties can be indicated, convicted and fined. MaineDOT Title 23, Section 3655 is the pothole statute. This statute states that persons who suffer bodily injury or damage to personal property resulting from any defect or want of repair in any highway, townway, causeway or bridge may bring a civil suit within one year from the date of occurrence against the county or municipality that is obliged to maintain or repair the highway, townway, causeway or bridge. In addition, a claim must be received within 180 days after the incident. The liability is dependent on whether the county commissioner, town officials, road commissioner or any other authorized person received 24 actual notice of the defect or want of repair. Actual notice can mean a telephone call, verbal notice or written letter to a town official.

Local Road Update

Road repair had not been budgeted for in Patten since 2004 and as a result, the condition of most local roads has deteriorated. Residents voted in 2016 to allocate \$50,000 for to complete highway

capital improvement but due to budget constraints, this funding was eliminated. As residents and town officials are discovering, road maintenance and reconstruction projects are very expensive, especially when maintenance has been deferred for many years. Therefore, due to limited resources and funds only a very few roads will be upgraded.

Patten intends to spend between \$3 and \$4 million on road improvement projects in the next 20 years.

A seven (7) year Capital Improvement Plan was approved by residents in 2017. Town officials are allocating \$100,000 of excises taxes to begin to implement the plan. This level of funding will increase each year and Town officials are currently looking to improve as many roads as possible beginning with the Happy Corner, Waters Road, and Barleyville Roads. These local roads could potentially have future connection to the National Monument especially where they connect to the American Thread Road. Regardless of the status of the Monument, the Happy Corner Road, especially the first 2,000 feet west of Route 11, has been identified as the road in the worst condition in Patten.

After further review in the spring and summer of 2017, Town officials are working to develop a 7 to 20 year plan for highway improvements. Residents need to realize that the cost of improvements can be very expensive and time consuming. The Town plans to complete as much ditching as possible in 2017 and 2018 in anticipation of paving in 2019, starting with the Happy Corner Road.

Collector Roads

Collector roads, sometimes referred to as feeder roads, are major roads that collect or feed traffic to the arterial roads and are maintained by the State. These roads serve locations of lower population densities and are somewhat removed from main travel routes. There are approximately 12.1 miles of collector roads identified in Patten as Route 11 north/south (South Patten Road, Main Street, and North Road) and Route 159 east/west (Houlton Street). Route 159 west is also known as Shin Pond Road.

Arterial Roads

Arterial roads are identified by MaineDOT as the most important roads in the State. These roads are designed to carry significant high speed long distance traffic. There are no arterial roads in Patten. The closest arterial is Interstate 95 with both north and south bound access in Island Fall (exit 276) and Sherman (exit 264). The speed limit on I-95 is 75mph from Orono north with reduced speeds in areas of city limits (60-70mph). Patten is easily accessible from I-95 via the Island Falls and Sherman exits, both of which are approximately 10 miles away.

Patten Streets and Roads

There are 26 connector streets and roads in the community of Patten. These streets and roads are all considered local roads and consist of a total of 16.1 miles. The streets are in generally good condition while the roads are considered in poor condition by MaineDOT and town standards. The 26 connector streets and roads are maintained by the Town throughout the entire year.

In 1993 the town undertook a roadway improvement project. The roadway improvements consisted of existing surface demolition and base construction of approximately 6,465 feet of roadway. Road improvements were made on Main Street, Katahdin, Rogers, Dearborn, High, Founders, Willow, Heald, Gardner and Pleasant Streets. These streets were improved with a new storm drainage system and new road reconstruction.

As stated above, in 2017 Patten residents approved funding to begin the completion of road projects. Prior to that, the last planned road work was done in 2004, except for emergency work after flooding in 2012 and ditching, culverts, and cold patch. Local roads are considered to be in fair to poor condition, town officials and the Highway Department Director are working to develop a road improvement plan.

While the Roads Committee is in the process of completing a 20-year road plan, the Maine DOT Local Roads Center provides a “Road Surface Management for Maine Towns” training program,



including Road Surface Management System (RSMS) software to identify which road maintenance techniques should be considered for individual roads or streets in a local street network. Introduced in 1990, it is being used by many communities to inventory their road network, record road surface condition data, interpret the surface distress information gathered, and “defend” their road maintenance budgets. The system is generic and provides an objective tool that a municipality can “customize” with its own repair techniques and local costs. The RSMS program

provides a report where the highway department can prioritize projects and develop detailed budgets. There may be assistance through the University of Maine’s Engineering Schools to assist Patten with road surveys.

Residents approved funding to complete road projects in 2017 and ongoing, utilizing excise taxes for road repairs. An ad hoc Roads Committee made up of residents, Highway Department staff, and the Town Manager, is developing a Capital Improvement Plan. The committee initially utilized the following assumptions:

- a. Recognize that the Town last spent a significant investment in roads in 2004
- b. Large road/bridge costs in 2012 because of flooding.
- c. Putting down a $\frac{3}{4}$ inch layer of black top.
- d. This basically assumed 3 miles of road per year.
- e. Working on the worst roads first.
- f. Start with 100k of excise taxes in 2017, increasing by \$20,000 per year until 100% of excise taxes used per year.
- g. Repair the bridge on Waters Road.
- h. The plan would cover all roads, including dirt roads, in 7 years (or 2023).

A concern around that original plan was developed over a seven (7) year timeframe but has been now been extended to 20 years increasing the scope of repairs in order to ensure that construction

is properly completed. New road construction specifications include rebuilding sections of certain roads, grinding and repaving other sections, and adding up to 3 inches of additional materials where needed. Town officials should consider an 8-10 plan for road maintenance and capital improvements with a continued longer-term review of road inventories to add to the 8-10-year cycle.

The following is Patten’s Road Inventory as of August 2017.

Road Name	Paved	Gravel	Road Name	Paved	Gravel
Shin Pond Road	4.3	0.0	Waters Road	2.4	0.0
Happy Corner Road	3.9	0.5	Barleyville Road	1.6	0.5
Lovejoy Road	0.6	0.0	Clark Road	0.6	0.5
Park Street	0.1	0.0	Carver Street	0.1	0.0
Valley Street	0.1	0.0	Gardner Street	0.6	0.0
Hall Street	0.0	0.0	Potato Row (private)	0.0	0.0
Station Street	0.2	0.0	Spruce Street (private)	0.0	0.0
Mill Street	0.2	0.0	Gifford Street	0.1	0.0
Dearborn Street	0.2	0.0	High Street	0.1	0.0
Rogers Lane	0.1	0.0	Katahdin Street	0.3	0.0
Founders Street	0.1	0.0	Willow Street	0.2	0.0
Pleasant Street	0.4	0.0	Heald Avenue	0.1	0.0
Church Street	0.1	0.0	Scribner Street	0.3	0.0
Frenchville Road	1.0	1.3			
Total	11.3	1.8		6.3	1.0

Source: Town of Patten, 2017

Problem areas located on local roads include:

Intersection/Road	Safety Issue	Cause of Issue	Possible solution
Shin Pond Road/Route 11	Pedestrian Crossing to Park	Pedestrians crossing from Park to Take Out restaurant	Marking of Crosswalks/ Pedestrian Crossing signage
All crosswalks	Improperly located	Designated where pedestrians cross rather than safe locations	Move and properly mark.
Main Street (Route 11)	Speed in downtown	Road configuration	Increased enforcement. Development of traffic calming measures in the area of the Post Office and Ellis Market.
Parking on Main Street	Vehicles park in wrong direction		Education

Source: Town of Patten, 2017

Private Roads

Private roads in Patten are A Frame Road, Birch Drive, Hollis Lane, Hillside Drive, Longview Drive, Maple Drive, Meadowbrook Drive, Mount View Lane, Stone House Drive, West End Road, Wild Flower Lane, Windy Drive, Winding Hill Road, Chickadee Lane, Hill Road, Potato Row, and Kellogg Road. All but Potato Row are maintained by the homeowners. Potato Row is plowed by the Town due to the Ambulance Service being located there.

Katahdin Woods and Waters Scenic Byway

The Katahdin Woods and Waters Scenic Byway is 89 miles long and offers views of Mount Katahdin and parts of the Appalachian Chain. These are some of the most scenic views located in northern Maine. In 2008, the State of Maine designated the portion of Route 11 from Medway to the North Entrance of Baxter State Park as a scenic byway, at the time called the Grindstone Scenic Byway. In 2011, the southern portion of the route was added (Medway to the South Entrance of Baxter State Park). In April 2012, the Grindstone Scenic Byway was renamed the Katahdin Woods & Waters Scenic Byway.

The Katahdin Woods and Waters Scenic Byway is one of Maine's newest Scenic Byways.

The Katahdin Woods and Waters Scenic Byway runs both north and south from points of origination along Interstate 95, one in the town of Medway (Exit 244) (convergence of the East

and West Branches of the Penobscot) and the other in the town of Sherman (Exit 264), gateway to the agricultural lands of southern Aroostook County.

The more northerly leg reaches through Patten and on to Shin Pond and Grand Lake Matagamon, offering views of Katahdin to the west and, further on, access to recreational opportunities associated with many remote rivers, lakes, and streams. This leg ends at Baxter State Park's north gate.

The southern leg passes through the industrial towns of East Millinocket and Millinocket before heading north and west to "the Lake" (convergence of Ambejejus Lake and Millinocket Lake). This leg of the Byway ends at Baxter State Park's south gate.

The Corridor Advocacy Group (CAG) has identified a "service corridor" running from Medway to Millinocket, with Millinocket representing the area's primary service center (retail, hospital, etc.).

Patten serves as a secondary service center for the more northern part of the corridor, with other communities offering various levels of visitor service at several points along the length of the Byway. The CAG has broken up the corridor into a number of segments as defined by terrain and general travel experience.

Except for Patten, Mount Chase, and Shin Pond, a large portion of the northern segment is largely undeveloped, wooded, remote, offering occasional intermediate views, including one potential intermediate view at Hurricane Deck. The segment provides access to rest areas, boat and canoe launches (Grand Lake Matagamon, East Branch of the Penobscot, Seboeis River, Shin Pond), opportunities for short hikes to points of visual interest (Haskell Rock, Grand Pitch, Shin Falls) and longer ones (International Appalachian Trail). Service points along this segment include Shin Pond and Matagamon.

A second corridor section runs from Patten to Stacyville and includes the Sherman gateway. This section traverses an agricultural landscape (open fields), passing through a limited number of traditional rural settlements (Patten, Sherman, Stacyville) offering varying levels of visitor services, with Patten serving as a primary service center. In this section of the Byway, in addition to intermediate views of farm fields, there are two identified high value views of the Katahdin Range, one at Ash Hill (Patten) which also includes views to the east including the windfarms in Oakfield and a second at the Summit Farm (Stacyville).



Recreational access along this stretch includes, in addition to snowmobile trail heads, a multimodal trail running from Patten to Sherman through Crystal Bog and seasonal road access to Whetstone Falls and bridge on the East Branch. Heritage sites in this segment include, notably, the Patten Lumberman's Museum.

A Corridor Partnership Plan was created by the CAG with the assistance of the MaineDOT and Eastern Maine Development Corporation. The Plan contains background information on the infrastructure, scenic, cultural, recreational, archaeological and historic resources along the byway. The plan also provides an assessment of market opportunities and identifies a number of strategies for attracting visitors to the byway.

Ash Hill is located south of Patten’s downtown on Route 11 and offers stunning panoramic views of Baxter State Park to the west and Oakfield, Island Falls, and Dyer Brook to the east. The Corridor Partnership plan identified Ash Hill as one of several “impressive long views” of the Katahdin area and offers a “wow” factor for travelers. MaineDOT owns approximately 20 acres on the west side of Route 11 and an additional 20 acres on the east side. Plans for the site include the development of a scenic turnout and potential visitors center.

The Upper Valley Economic Council and Eastern Maine Development Corporation have applied for grants to construct a turnout that included the construction of kiosks and informational signage while the MaineDOT is working with the Maine National Guard to help offset costs of the project.

Bridges

There are 351 bridges in the northern Maine area, five (5) of which are located in Patten. All municipalities should conduct annual inspections of their local bridges and budget for maintenance, repair and replacement if needed. Patten’s Road Commissioner is responsible for inspecting all bridges. The location of bridges in Patten are as follows:

Bridge Inventory, 2016

Name	Number	Owner	Route	Year Built	Deck Condition	Channel Condition	Culvert Condition
Fish Stream	3896	Patten	Waters Road		N/A	8	6
Leslies	5549	Patten	Waters Road		N/A	8	6
Peasley	3898	DOT	159	1978	N/A	6	5
Fish Stream	3122	DOT	Route 11	1934	6	7	N/A
B.A.R.R Station	3626	Patten	Station Street	1930	8	4	N

Source: MaineDOT, 2016

Bridges in Patten are generally in a good state of repair.

Culverts

Culverts are used for drainage. Patten maintains standards for driveway culverts along town roads and the town assumes responsibility for the replacement and repair of properly installed driveway culverts. The culverts in Patten are in fair to good condition. Town officials have developed a plan to replace several culverts located in the first 2,000 feet of the Happy Corner road and have set funding aside in the 2017 budget.

The MaineDOT has identified four (4) large culverts in town. MaineDOT defines a large culvert as a pipe or other structure that has a clear span between 5 and 10 feet, or multiple pipes or structures with a combined opening between 19 and 80 square feet in area. They were formally known as a “strut.” The following large culverts are located in Patten.

Culvert ID	Roadway	Type	Condition
986638	Route 159	Concrete Box	Poor
898487	Route 159	Concrete Box	Good
282919	Route 11	Corrugated metal	Fair
46550	Route 159	Corrugated Metal	Fair

Source: MaineDOT 2016

MaineDOT plans to replace the large culvert at Webb Brook on Route 11 (Main Street) in 2018 with an open bottom box culvert to allow fish passage. This is a large project and may result in lane closures in Patten’s downtown for a portion of the summer. Patten’s Water Department has used the MaineDOT right-of-way for a water main and will be replacing that main as part of the project. The estimated cost to the Town is nearly \$48,000 and includes the installation of a new 10-inch main.

Traffic Flow and Counts

The MaineDOT’s Traffic Engineering Division and Traffic Monitoring Section, is responsible for the collection of all types of traffic data and maintenance of a statewide traffic volume database. The reduction and reporting of traffic volumes and vehicle classification data are accomplished through two types of count programs.

The following tables show traffic counts for Patten. In 2012 and 2015, MaineDOT completed counts on thirteen (13) different routes in town. Route 11 and Route 159, on average, had the highest traffic counts. Route 11, north of the intersection with Route 159, had the highest Average Annual Daily Traffic (AADT) count with 3,100 with the area just north of Katahdin Street having the second highest at 2,300 AADT. Route 11 serves as Patten’s Main Street and contains the business district which accounts for much of the traffic generated on the Route. In 2016, Patten received a MaineDOT grant to purchase and installed a radar sign in the downtown.

Route 159 has, on average the second highest traffic counts in town with an AADT of 1,650 just east of the intersection with Route 11. Route 159 serves several of Patten’s residential neighborhoods and serves the north entrance to Baxter State Park, Shin, Pond, and parts of Mount Chase.

Other smaller roads are also counted by MaineDOT. Most have AADTs of less than 300. Except for a couple of sites on Route 11 and one site on Route 159, traffic has generally decreased in Patten. Traffic counts have remained relatively stable or declined in volume between 2012 and 2015.

Road	Location	2012	2015	Percent Change
Route 11	North of Route 159 Intersection (Houlton Street)	3,080	3,100	0.64
Route 11	South of Route 159 Intersection (Houlton Street)	2,200	2,200	0
Route 11	South of Spruce Street	2,200	2,270	3.18
Route 11	North of Katahdin Street.		2,300	
Route 11	North of Route 159 Intersection (Shin Pond Road)	1,490	1,210	-18.79
Route 11	South of the Route 159 Intersection (Shin Pond Road)	2,660	2,050	-22.93
Route 11	North of Carver Street.	1,310		
Route 11	At Weeks Brook	1,120	1,020	-8.92
Route 11	North of Happy Corner Road	1,990	1,860	-6.53
Route 11	At Stacyville Townline	1,760	1,600	-9.09
Waters Road	West of Route 159	190	100	-47.36
Happy Corner Road	West of Route 11	200	N/A	
Lovejoy Road	Southeast of Station Street		170	
Station Street	South of Lovejoy Road.		40	
Station Street	South of Route 159 Intersection	360	250	-30.55
Dearborn Street	West of Route 11	200	200	0
Founder Street	West of Gardner St		300	
Katahdin Street	West of Route 11/159	330		
Church Street	East of Route 11/159		190	
Scribner Street	East of Gardner St		130	
Scribner Street	West of Gardner St.		240	
Pleasant Street	North of Route 159	250	150	-40
Gardner Street	North of Route 159		290	
Gardner Street	North of Scribner St.		220	
Gardner Street	South of Scribner St.		210	
Route 159	East of Route 11	1,570	1,650	5.09
Route 159	West of Station St.	1,310	1,310	
Route 159	At Weeks Brook	1,050	1,030	-1.90
Route 159	West of Route 11/159	1,040	880	-15.38
Route 159	Northwest of Waters Rd.	750	620	-17.33

Source: MaineDOT, 2016

Speed Limits

The speed limit in the Patten's downtown is 25 mph. On the outskirts of town, speed limits range from 35 mph to 45 mph with 50 mph in rural areas between towns. Speed is monitored by the Maine State Police and the Penobscot County Sheriff's Department.

Speeding has been identified as a concern in the downtown and to reduce speeding Patten applied for, and received, a grant from the MaineDOT to purchase and install a radar speed limit sign in the downtown. This sign is designed to be moved to various locations throughout the community. There is also the need for traffic calming measures around the Post Office and Ellis Market.

Traffic Lights

There are no traffic lights in the town of Patten and none are planned for the next 10 years.

Traffic Signs

Traffic signs are located strategically throughout Patten at strategic locations, specifically at intersections of Route 11 and Route 159. There are Stop signs located at the end of town streets that intersect with Route 11 and Route 159. Traffic signs are important to the safety of town residents and assist with smooth traffic flow. More recently the MaineDOT has installed Share the Roads in areas of high horse and buggy usage. There are also Share the Road signs indicating the potential presence of bicyclist.

One area of concern is the lack of pedestrian crossing signs in the downtown. Town officials will work with the MaineDOT to determine locations for the placement of these signs.

Access Management

Patten does not have a townwide Zoning Ordinance and there have not been corridor management planning efforts completed for the road system. Therefore, unregulated development that does not trigger a subdivision review could potentially harmfully impact the carrying capacity of roads in town. Slow, incremental development is often not perceived to be a problem until speed limits must be lowered or development begins to impact the scenic qualities of a road.

MaineDOT has established standards, including greater sight distance requirements for the permitting of driveways and entrances for three categories of roadways: retrograde arterials, mobility arterial corridors, and all other state and state-aid roads. Due to the low volume of traffic in the northern portion of Penobscot County, there are no roads in the retrograde arterial category. However, Route 11 is a designated mobility corridor and comes under stricter access management standards.

To maintain and improve traffic flows, the Land Use section of this plan and future Land Use Ordinances will include access management performance standards that are in accordance with current law. These standards do not have to be dramatic or overly prohibitive but can help guide project development as well as control costs.

Sidewalks

Sidewalks in the town of Patten are located in the business district only. There are pedestrian paths elsewhere throughout the town. According to MDOT Title 23, Section 3658 the town is not liable for damages to any person on foot because of snow, ice or slippery conditions of any sidewalk or crosswalk. Currently, each business in the town of Patten provides sand and salt to the sidewalks adjacent to the entrance and exit of their establishment. Snow and ice clearing of these sidewalks are also handled by individual businesses.

In 1993 new sidewalks, pavement, subsurface storm system and curbing were completed as part of the roadway improvement project in the town of Patten. All sidewalks were replaced to allow diagonal parking on the east side of Main Street and parallel parking on the west side of Main Street. In 2000 Maine DOT reconstructed sidewalks from Patten Drug Store to Shin Pond Road.

For the most part, sidewalks are in fair to good condition. Town officials need to plan for the long-term maintenance of the sidewalk systems and should work with MaineDOT as issues arise.

Crosswalks

There are five existing crosswalks in the town of Patten. While they are repainted annually by the Highway Department, the paint wears quickly and they need repainting. Pedestrian safety includes walking on the sidewalks facing traffic, keeping eyes and ears open to traffic, being visible by wearing light clothing and reflector shoes while walking after dark with a flashlight.

A review of the crosswalks in 2017 show that none of the curb ramps are Americans with Disability complaint (ADA). In most cases there are no flush transitions or adequate detectable warnings. The one mid-block crossing is located in the middle of one entrance, crosses Route 11 (Main Street) and ends in the middle of a second entrance. This creates safety issues for those crossing at this location. Additionally, there is no signage located at any of the crosswalks warning motorists of pedestrian crossings. Town officials will work with MaineDOT's Bicycle and Pedestrian Program and Regional Manager located in Presque Isle to ensure ADA compliance as projects are completed.

Parking

There is no municipal parking lot or garages in Patten. Parking spaces at business establishments are lined but the lines need re-painting. Some stores have parking areas specifically for store customers. Businesses in Patten have ample parking available with parking on the street as the main source of parking in Patten. An empty lot at the corner of Maine Street and Katahdin Street in the center of town has been used for parking overflow but if this location is eventually developed as a business location or new structure, these parking opportunities will be lost.

There is an informal unmarked dirt area for parking at the intersection of Route 11 north/south and Route 159 west directly adjacent to the recreation field. This is an unmarked area and could be used in the future for a Park and Ride location if approved by State and town officials and so

marked. Town officials could also consider creating a parking area for horse and buggies with water troughs to water and animals and sawdust pads can be added to collect animal waste.

High Crash Locations

According to the MaineDOT, there are no high crash locations in Patten. High crash locations (HCLs) are identified by MaineDOT as being locations with eight (8) or more crashes and exceed the Critical Rate Factor (CRF) of 1.00 or greater within a three-year period. A highway location with a CRF greater than 1.00 has a frequency of crashes that is greater than the statewide average for similar locations.

Crash Data

Between January 1, 2007 and December 31.0, 2016 there have been 113 crashes in Patten. Passenger cars accounted for 55 percent of the vehicles involved in crashed, pickups 44 percent, and the remainder included a range of vehicles from snowmobiles, SUVs, medium and heavy trucks, and a school bus. During the time period, there was one fatality, 165 people reported no injury, 23 had non-incapacitating injuries, and 17 had possible injuries.

Eighteen (18) crashes occurred in December, twelve (12) each in November and June, and ten (10) each in January and February. Friday saw the most number of crashes at 24, followed by Sunday (20), Monday (18), and Saturday (15). Ten o'clock AM saw the highest number of crashes (12), followed by 5PM (10), and 6 PM (9).

Fifty (50) crashes involved vehicles that "went off the road," twenty-two (22) were "rear ending or sideswiped," and nineteen (19) involved animals (deer, moose, or other). Over 50 percent of the accidents occurred on roads that were dry, in clear weather, and in the daylight.

Safety Issues

There are several safety issues Town Officials are working to address.

An area of concern is wildlife/vehicle collisions. Nineteen (19) of the last 113 crashes in Patten have involved animals. Town officials have identified several areas where wildlife is seen in larger numbers and seen in and on roadways. These areas include swampy areas along Routes 11 and 159 within and outside the town limits of Patten.

A relatively new safety issue for Patten and several surrounding communities is the increased population of Amish and their mode of transportation. The Amish use of horse and buggies or walking along state and local roads has created some traffic conflicts in the town. Although use of lights and reflectors is increasing among the Amish community not all means of transportation contain sufficient safety warnings. The town may wish to work with the Amish population to develop a system of improving the visibility of Amish vehicles for passing motorists through the increased use of reflectors, safety (slow moving traffic) triangles, lanterns and other safety solutions.

In order to help minimize some of the issues associated with the traffic conflicts paved shoulders should be constructed along Route 11 south of Patten's downtown and Route 159 east toward Crystal where heavy Amish travel is noted. A second issue is to deal with animal waste left along the road sides. This waste can be dangerous to bicycles and pedestrians along transportation routes.

Heavy haul truck traffic, community events and general traffic flow has, at times, created a major transportation safety problem with numerous horse and buggies utilizing these roads. There are "Share The Road" signs posted on Route 11 south where there is a larger Amish farms and population.

Environmental Concerns

Habitat fragmentation can result from roads and other transportation facilities and is likely occurring in Patten. Poorly maintained culverts and water crossing structures can physically block fish passage and/or result in increased flow velocities that cause excessive channel scouring, bank slumping and flows that limit fish and aquatic invertebrate passage in streams and which can lead to local extinctions of fish species. Current practice calls for a doubling in the size of culverts when they are replaced to allow for fish passage and allowance for flooding clearance.

Maine Department of Inland Fisheries and Wildlife (IF&W) recommends, when repairing and replacing culverts, to do so with structures with a span of 1.2 times the bank's full width to comply with the Army Corps of Engineers category 1 permit requirement. In addition, IF&W recommends using bridges, three-sided box culverts and open bottom arch culverts instead of pipe style culverts because they utilize the brook's natural stream bottom and provide fish spawning and nursery habitat. The Town will implement these recommendations where feasible.

Beginning in 2007, the StreamSmart program at Maine Audubon and IF&W surveyed culverts on local and State roads and identified those which were blocking fish passage. Stream smart crossings are designed to provide enough capacity to pass sediment, debris, fish and high flows from extreme storm events without failure or damage to the structure.

Thirty-four (34) culverts were surveyed in Patten of which thirteen (13), or 38%, were considered to be blocking fish habitat. These culverts are located throughout the community with the highest percentage located along Weeks Brook and Fish Stream. In 2018, the MaineDOT will be replacing one of the culverts, located along Weeks Brook in the downtown on Main Street. Upon completion, the culvert will better mimic natural conditions and being constructed at 1.2 times bank width; this will improve its capacity to allow large flow volumes in extreme precipitation events and allow fish passage.

As part of their creation of the 20 Year Road Improvement Plan, Town officials are utilizing this data to upgrade and increase the size of culverts to improve stream flow and fish passage as part of their normal culvert replacement program. Town officials will prioritize stream crossings that have been identified as barriers to fish and wildlife passage. Town officials will apply for grant funding to help offset the cost of replace these crossings.

Noise-Related Concerns

There are a few hills on which trucks cause noise problems due to use of engine assisted brake mechanisms also known as “jake brakes.” Some complaints are received from property owners as trucks slow down before entering the town center from the south on Finch Hill, on the North Road entering town from the north, and on Houlton Street coming from the east.

The Noise Control Act of 1972 (now codified at 42 U.S.C. § 4917) authorizes the Environmental Protection Agency (EPA) to promulgate uniform national noise emission regulations for motor carriers engaged in interstate commerce. The federal statute expressly prohibits the states and their political subdivisions (including municipalities) from adopting or enforcing noise standards applicable to any motor carrier engaged in interstate commerce unless the standards are identical to the federal standards (see § 4917[c][1]). (The current version of the EPA’s regulations is codified at 40 C.F.R. § 202.20.) Therefore, unless the noise standards in an engine braking ordinance are identical to the federal standards, the ordinance is unenforceable as applied to motor carriers engaged in interstate commerce.

If a town does not adopt an ordinance and simply puts up a sign or two, the signs have no legal authority or enforceability. It is best to work on voluntary compliance and work with the trucking industry to attempt to reduce noise.

Capital Work Plan

The Maine Department of Transportation’s (MaineDOT) new Calendar Year 2017-2018-2019 Work Plan (Work Plan) supports the department's mission, "To responsibly provide our customers with the safest, most reliable transportation system possible, given available resources." The Work Plan contains projections of transportation resources (federal, state, other) and MaineDOT’s strategy to apply them to the planning, engineering, construction, operation and maintenance of transportation infrastructure of all modes throughout Maine. The Work Plan emphasizes focusing scarce transportation resources on existing critical infrastructure needs, primarily roads and bridges, to the greatest extent possible.

Patten regularly provides input to MaineDOT as to projects listed in the Plan. Every two years, municipalities are asked to submit prioritized lists of projects for potential inclusion in the Plan. There is one (1) project listed in the 2017-2019 Work Plan for Patten. The cost listed are the total cost of these projects, some of which may extend into neighboring towns. When asked, Patten Town Officials should continue to submit projects for inclusion in the Plan.

Planned Capital and Maintenance Work 2016-2018

Work Plan Year	Asset(s)	Description	Community (ies)	Estimated Funding
2018/19	Route 11 (Main Street)	Large culvert (#282919) located 0.01 miles south of Church Street	Patten	\$200,000

Source: Maine Department of Transportation 2017

Planned Federal Bike Route

Northern Maine Development Commission and the MaineDOT are working on a planning project that would create a federally designated bike route (Northern Maine US Bike Route) located in Penobscot and Aroostook Counties, Maine. The bike route designation would complement and connect to the existing US Route One Bike Route located in southern and Downeast Maine. The proposed route would be located on existing state and local roads and/or existing bike and pedestrian trails in the region. It is envisioned that the route will connect to the existing US Bicycle Route in Bangor and terminates at the international bridge in Fort Kent. A draft proposed route is approximately 320 miles and includes Route 11 south of the downtown and Route 159 east to Crystal.

The Northern Maine US Bike Route would be located in Penobscot and Aroostook Counties, Maine. Project would begin/terminate in Bangor at the intersection of the Federally designated US Route One bike route and head north through the larger communities of Orono, Old Town, Medway, Sherman, Patten, Island Falls, Houlton, Mars Hill, Presque Isle, Caribou, Van Buren, Madawaska, and terminate in Fort Kent at the international border crossing. The Northern Maine US Bike Route will be part of the United States Bicycle Route System (USBRs), which is the national cycling route network of the United States. It will be part of the interstate long-distance cycling routes and will utilize multiple types of bicycling infrastructure, including existing off-road trails, bicycle lanes, and low-traffic roads.

The Northern Maine US Bike Route is intended to traverse two rural counties in Maine (Penobscot and Aroostook) and connects to previously designated scenic byways (Katahdin Woods and Waters Scenic Byway and St. John Valley Scenic Byway and the Katahdin Woods and Waters National Monument). The route will begin/terminate at the international border crossing in Fort Kent, designated as America's First Mile of US Route One.

The Route will also highlight the region's cultural resources including, but not limited to, the Swedish Colony, Amish communities, Acadian heritage, the University System, and highlight the importance of agriculture and forestry to the regional economy.

Public Transportation

Taxi Service

The nearest taxi services are in Houlton and include Houlton Cab and Shiretown Taxi. There are no taxi services operating directly out of Patten.

Aroostook Regional Transportation System (ARTS)

There are no true public transit services in northern Penobscot or southern Aroostook Counties. The Aroostook Regional Transportation System (ARTS) provides general public transportation throughout Region 1 which includes Patten. Services are provided from each town in the County at least once a week to the nearest commercial center. Services are available to all members of the

general public from the outlying towns to the commercial center and pick-up services are available in-town to the elderly and handicapped only. Fares are charged to members of the general public and half fare is charged to the elderly and handicapped. No fare is charged to Medicaid clients going to Medicaid covered services or to the elderly and handicapped going to a medical appointment. Services are provided to individuals with special needs who attend daily work or rehabilitation programs. These daily runs are also available to the general public, but no deviation from the special runs can take place due to time limitations.

The general public is theoretically free to schedule rides with ARTS, although less than five percent of the current ridership is unsubsidized fare-paying customers. The average worker cannot use ARTS as a commuter service, because:

- a) General-public riders are taken on a space-available basis only, so even a ride scheduled well in advance will be bumped if the transit vehicle is at capacity with contracted clients; and
- b) Demand-response systems serve some rural communities just one day a week, with fluctuating departure and arrival times.

The sporadic nature of demand-response service eliminates public transit as an option for rural workers with inflexible hours, shift workers, and those with on-call or overtime work responsibilities.

Cyr Bus Lines

There is currently no bus stop serving the town of Patten. Cyr Bus Lines provides regional bus service from northern Maine to Bangor and points south with connections to the major national bus lines. The northern most pick-up point for the bus line is in Caribou. The closest pick up point for Patten both northbound and southbound is in the town of Sherman at the Irving Truck Stop on Route 11 just off the I-95 exit 264.

Railroads

There are no railroad lines located in Patten.

Airports

Patten does not have an airport. There is a grass runway strip located at The Hanger on Route 11 north of the business district of the town. This small aviation runway is not available for commercial aircraft but does accommodate small private airplanes. The Hanger is a restaurant and takeout food establishment with airplane décor. The two closest airports are Houlton International Airport and Millinocket Municipal Airport. A seaplane base is located at Shin Pond.

Houlton International Airport

The Houlton International Airport is a general aviation airport located adjacent to the Canadian Border and serves the southern Aroostook and Woodstock New Brunswick areas. The airport has

on 5,016 x 50 foot paved runway plus a 500 foot long stop way at the southerly end and a second 5,000 foot paved runway. A complete taxiway system has been built. The airport has been designated as an economic development airport in the State Aviation Systems Plan. Included in this plan are recommendations for a 500-foot runway extension and full precision instrument approach capability. Several navigation aids are available including very high frequency ONMI range distance measuring equipment (VOR, DME) and visual approach slope indicator (VASI) and high frequency runway end identifier lights (REIL) and a precision path indicator system.

Millinocket Municipal Airport

The Millinocket Municipal Airport has two paved runways. Runway 11/29 is 4,713 x 99 feet asphalt and in good condition and runway 16/34 is 4,000 x 100 foot asphalt in good condition. Runway 16/34 is closed during the winter months except for planes equipped with skis.

The airport features a paved tie-down area, 3 municipality owned hangars. 3 privately owned hangars, a main terminal, and paved airplane parking areas. Navigation aids include three instrument approach devices: VOR, LOC and non- directional beacon approach aids with visual assistance of a rotating light beacon. The airport has pilot activated VASI lighting and UNICOM. There is capacity for 10,000 gallons of aviation fuel. The airport has been designated as a priority airport for future upgrading through the State's Aviation Systems Plan.

Sea Plane Base

Shin Pond contains a sea plane base that is open to the public. The base is located approximately 8 miles northwest of Town and is privately owned. Aviation fuel is available in an emergency only.

Landing Strips

There are currently two unused landing strips in Patten. These small airstrips are basic but meet the most general requirements for accepting small general aviation aircraft operations. While the town does not have control over the use of these strips, they are transportation assets to the community and could potentially be an important asset in the future.

Alternate Transportation

With the field of computerized fast speed internet and cyberspace exchange of information and communication this area is included in the alternate form of transportation. For this reason, some residents may no longer need to commute to work by automobile travel daily but can work from home via the computer. Direct satellite broadcast signals make it possible for residents to attend meetings and take college courses anywhere without leaving home. If this is the wave of the future then the condition of roads and highways may deteriorate at a slower rate. This technology, however; has not had a major impact on the town of Patten in this present day.

Regional Transportation Issues

It is important that Patten continue to participate in regional transportation planning efforts. Municipalities can cooperate with neighboring communities and regional committees. The largest communities in southern Aroostook County and northern Penobscot County- Island Falls, Medway, East Millinocket, and Millinocket - have particularly significant transportation linkages that are all dependent on a shared labor force, retail services (in Millinocket and Houlton), regional education and health services, and the industrial forests located to the west.

As stated previously, transportation linkages in Patten consist of Routes 11 and 159. Route 11 runs north and south through Patten while Route 159 runs east and west. Route 11 contains areas of dispersed residential and light commercial/industrial development. Patten and the entire region are reliant on Routes 11 and 159 as the primary means of transportation movement

Transportation Analysis

Unrestricted access to a roadway ultimately results in traffic congestion and safety problems. Most growth in Patten occurs with single lot development along the collector or local roads and the effect of driveway traffic causing side friction that could impede traffic flow or cause a safety issue. Good access management and the careful planning of driveways and intersections can reduce accidents and prolong the useful life of the roadway. Regulations which control or manage access to a highway or main road are designed to avoid or resolve conflicts arising from the use of those properties abutting the roadway and the function of the roadway to swiftly and safely move vehicular traffic. How this will be accomplished will depend upon existing land use patterns, policies developed under this growth management program, land use plans and the priority given to the arterial and collector roads over other functions, such as providing access to local businesses and serving the needs of the town where the roadway also serves as the main street. Controlling accesses and land uses adjacent to roadways can be addressed through the development of the town's proposed land use plan.

At an increasing rate, there have been conflicts with horse and buggies and vehicles especially along Routes 11 south of Patten's downtown and Route 159 east toward Crystal. To date there have been no serious accidents or deaths resulting from traffic conflicts but these types of accidents can be catastrophic. Town officials may want to work the Amish community to develop an educational program. This could include the development of brochures or handouts proved to driver's education programs, local chamber of commerce, placed in local stores, and other locations. The program could also include working with some of the larger business and industry in the community to help inform drivers of the present of horse and buggies, bicyclist, and pedestrians.

While the transportation system in Patten is limited its infrastructure is extremely important to the town residents and the northern Maine region. The major north/south of Route 11 runs right through the Patten business district and serves as Main Street. For the most part, the roads in Patten are in poor condition with aged paved roads cracking and breaking up with numerous and many potholes in paved roads and dirt roads. With the road and highway budget of the town of Patten at

a limited amount the roads are deteriorating at a fast pace therefore costing more to improve in the future.

A goal for Patten is to develop a 7 to 20 year management plan for local road maintenance. This plan should include paving the Crossover road, also known as Frenchville Road, as two new families have moved onto the dirt portion of this road and another interested party was contemplating buying property on this road but the road condition at its current state was a drawback to this family. Included in the road maintenance plan is re-paving of Waters Road and Happy Corner Road especially with the designation of the Katahdin Woods and Waters National Monument. While the main access is located in Stacyville and the National Park Service's priority is the Swift Brook Road, access could be developed on the Happy Corner Road, Frenchville, and Waters Roads to the American Thread Road.

The residents of the town of Patten have pride in their community and seem genuinely concerned with the town's appearance including the condition of all town roads. Beautification projects can increase community spirit and support for other projects and activities and they send a clear message to visitors that the community is vibrant and active. Patten could propose a road side enhancement project to the Rural Planning Organization (RPO) which might include new sidewalks, curbs and landscaping on Route 11 in the village/business district to help improve the appearance of the town. Such a project could be proposed for inclusion in MaineDOT's Capital Work Plan.

Town officials should continue to work with the Corridor Advisory Committee, MaineDOT, UVEC, and Eastern Maine Development Corporation to implement the strategies located in the Katahdin Woods and Waters Scenic Byway plan. This includes the development of scenic turnout at Ash Hill, informational kiosks, and other road improvement and signage projects.

Town officials should also work with NMDC and MaineDOT during the creation of a Federal Bike Route. Officials should assist in the identification of a potential route through town as well as provide information regarding the amenities that long distance bicyclist should visit.

Town officials need to work with MaineDOT to help bring sidewalks and crosswalks to ADA compliance. As part of this project. town officials should work to identify locations where pedestrian signage is needed.

**TRANSPORTATION
Goals, Policies, and Strategies**

Strategies are listed in priority order.

State Goal

Plan, finance and develop an efficient transportation system to accommodate growth and economic development.

Local Goal

Maintain and develop a safe and efficient transportation system that meets the broad interests and needs of the community and fosters economic prosperity.

Policy	Strategy	Responsibility	Timeframe
Improve the safety and efficiency of traffic flow on all of Patten's roads.	Develop a Road Surface Management System (RSMS) plan. Update plan as projects are completed.	Town Officials	2018 and On-going
	Work with MaineDOT to identify areas along Route 11 and Route 159 where paved shoulders should be constructed.	Town Officials	2018
	Implement the road improvement plan developed by the Road Committee.	Highway Department, Town Officials	Annually
	Annually budget for road improvement projects	Town officials, Highway Department	Annually
	Work with major employers and trucking companies to educate heavy haul truck drivers of increased horse and buggy, bicycle, and pedestrian traffic.	Planning Board, Town Officials	2017 and on-going
	Convert part-time Highway Department staff to full-time position.	Town Officials	2018 and on-going
	Investigate grant opportunities that help meet the goals for the road improvement plan.	Highway Department, Town Officials	On-going
	Collaborate with the University of Maine Capstone Project when feasible.	Highway Department	On-going
	Work with MaineDOT to install pedestrian crossing signs at the intersection of Route 11 and 159 (east), near Academy Park.	Town Officials	2018

Policy	Strategy	Responsibility	Timeframe
	Add street lights within the populated residential areas of the designated Growth Area as needed.	Town Officials	2019
	Continue to use training provided by the MaineDOT Local Roads Center.	Highway Department, Town Officials	On-going
	Work with the Amish community on ways to reduce the amount of animal waste left alongside the roads.	Town Officials and MaineDOT	2017 and on-going
	Add additional "Share the Road" signage at strategic locations near Amish farms, recreational areas, and businesses.	Town Officials and MaineDOT	2018
	Work with MaineDOT to install anti-animal collision devises (reflector systems) along the swampy areas of Route 11 near the Mount Chase line.	Town Officials Planning Board, and MaineDOT	2018
	Plant trees in areas where snowdrifting is a problem.	Town Officials and MaineDOT	2018
	Require proof of MaineDOT highway entry permit for new developments along state roads. Check with MaineDOT on compliance with required standards.	Planning Board	2018 and on-going
	Monitor the amount and type of traffic roads such as the Happy Corner, Waters, and Frenchville Roads and develop as part of the town's RSMS program, a maintenance plan should heavy truck traffic increase.	Town officials	2017 and on-going
	Continue to submit projects for inclusion in the MaineDOT's Capital Work Plan.	Town Officials	On-going
	Work with the Penobscot County Sheriff's Department and Maine State Police to enforce speed limits in the village area. Maintain the radar sign installed in the downtown.	Town Officials	On-going
Maintain and broaden local options for transportation alternatives and parking.	Work with MaineDOT to ensure ADA compliance of sidewalks and crosswalks	Town Officials and MaineDOT	2018
	Continue to fund the Aroostook Regional Transportation Systems for transportation services for the elderly and LMI populations.	Town Officials	On-going

Policy	Strategy	Responsibility	Timeframe
	Develop signage in the village area that directs snowmobilers, ATV's bicycling, and pedestrian to trail systems.	Town Officials, Recreation Dept. and Planning Board	2017
	Study the feasibility of constructing a parking area for horse and buggies with water troughs waste collection, and sawdust pads near Ellis Market and Richardson Hardware.	Planning Board, Highway Dept., and Town Officials	2017
	Continue to support ATV and Snowmobile Club efforts in trail development and safety education through the Recreational Trail Program and SCORP.	Recreation Dept., Clubs, and Town Officials	On-going
	Develop mapping and literature to support rural bike routes and mountain biking.	Recreation Dept.	2019
	Complete a walkability/bikeability evaluation of the community and respond to recommendations.	Planning Board	2018
	Seek grant funds and civic involvement for installation of bike stands at locations in the downtown, Academy Park, and at the Recreation Department	Town Officials, Recreation Dept. School Dept., and Planning Board	On-going
Maintain and strengthen regionally essential transportation systems including Maine Northern Railway, and Interstate-95.	Support work with surrounding communities and MaineDOT to upgrade the rail line and work with the rail provider to improve service to Patten's businesses and industry.	Town Officials and MaineDOT	2017
	Participate in all regional transportation planning initiatives including MaineDOT's Capital Work Plan, Penobscot County Emergency Management Planning efforts, and NMDC's regional transportation efforts.	Town Officials, Planning Board, Highway Dept. and Recreation Dept.	On-going
	Work with the Aroostook Regional Transportation Systems to assure Patten's residents are getting full benefit of the public transportation services offered	Town Officials	On-going

Policy	Strategy	Responsibility	Timeframe
	Devote substantial economic development effort to the agricultural and forest product and other industries that require rail or improved access to Interstate 95.	Town Officials	On-going
	Support and encourage the use of rail facilities by local companies. Work with those industries to apply for additional state and federal funding as rail projects, such as additional sidings are identified.	Town Officials	On-going
	Participate in a continuing dialogue between communities along Routes 11 and 159 to advocate further improvements to and address maintenance, planning priorities, and the impact of adjoining development along arterials.	Town Officials	On-going