CHAPTER 5: TRANSPORTATION

Waterville's highways, streets, and bridges are the major components of the City's transportation system. Other elements include the Robert LaFleur Airport, two rail lines, transit and demand response systems operated by Kennebec Valley Community Action Program (KVCAP), taxis, sidewalks, trails, and bicycle lanes.

ROAD CLASSIFICATION

Federal Functional Classification

The federal government classifies roads in Waterville by function as follows:

1. **Principal Arterial**: Interstate- (6.0 miles)

2. **Minor Arterial**: Main Street, College Avenue (Route 201, Route 100), KMD (Route 137), Silver Street (Route 104), Elm Street (Route 11), Carter Memorial Drive/Bridge, Spring Street, Bridge Street, Front Street, and Chaplin Street

3. **Major/Urban Collector**: Armory Road, Hazelwood Street, Drummond Avenue (north of Armory Road), Eustis Parkway, Oak Street, Washington Street, Campus Drive, Mayflower Hill Drive (north side and between First Rangeway and the Messalonskee Stream on the south side; Colby College owns the middle portion), North Street, Pleasant Street, Gilman Street, Park Street, Appleton Street (between Elm Street and Main Street), Union Street, and Temple Street, Lincoln Street, Chase Avenue, First Rangeway, Western Avenue, Cool Street, Water Street, Grove Street, Airport Road, West River Road, Abenaki Road, and Webb Road (to Mitchell Road)

4. **Minor Collector**: Webb Road west of Mitchell Road

Road Length and Maintenance Responsibility

Table 5-1 shows lane miles and length of roads by road type and party responsible for maintenance. Map 5-1 provided by KVCOG depicts road jurisdictions, including State Highways in red and State Aid roads in green.

State Highways

State Highways include: Bridge Street, Chaplin Street, College Avenue (Route 201), Elm Street, Front Street, KMD (Route 137), Main Street (Route 104), Silver Street, and Spring Street.

State Aid Roads

State Aid roads include: Abenaki Road, Airport Road, Appleton Street, Armory Road, Armstrong Road, Chase Avenue, Colby Street, Cool Street, Drummond Avenue, Eustis Parkway, First Rangeway, Gilman Street, Grove Street, Hazelwood Avenue, Lincoln Street, Mayflower Hill Drive (to Colby College, but not including the portion on the Colby campus), North Street,

Oak Street, Park Street, Pleasant Street, Spring Street, Temple Street, Union Street, Washington Street, Water Street, Webb Road, Western Avenue, and West River Road

Urban Compact Area
Waterville's maintenance responsibilities differ within and outside of the State-designated urban compact area. Almost all of Waterville is within the urban compact area, the exception being Webb Road west of Mitchell Road and West River Road south of Thomas Drive.

Within the urban compact area, the City is responsible for the maintenance (plowing, crack sealing, shim/overlaying, and painting) of all public roads including State Highways and State Aid Roads. The City controls access to all roads in this area through its curb cut permits.

Outside of the urban compact area, the City plows the roads, but the State is responsible for summer maintenance. The State also issues curb cut (entrance) permits outside of the urban compact area.

In recent years, when roads have needed more than maintenance, the State has only repaired or rebuilt State Aid roads when the City has shared the cost. The Maine Department of Transportation (MDOT) does, however, still plan to fund work on State Highways in Waterville, including Main Street and College Avenue, without City assistance.

Interstate-95
In Waterville, Interstate-95 (I-95) runs 6 miles between the Sidney town line and the Fairfield town line. It is a limited access highway of four lanes, which is designated part of the Federal Interstate system. MDOT is responsible for maintaining I-95.

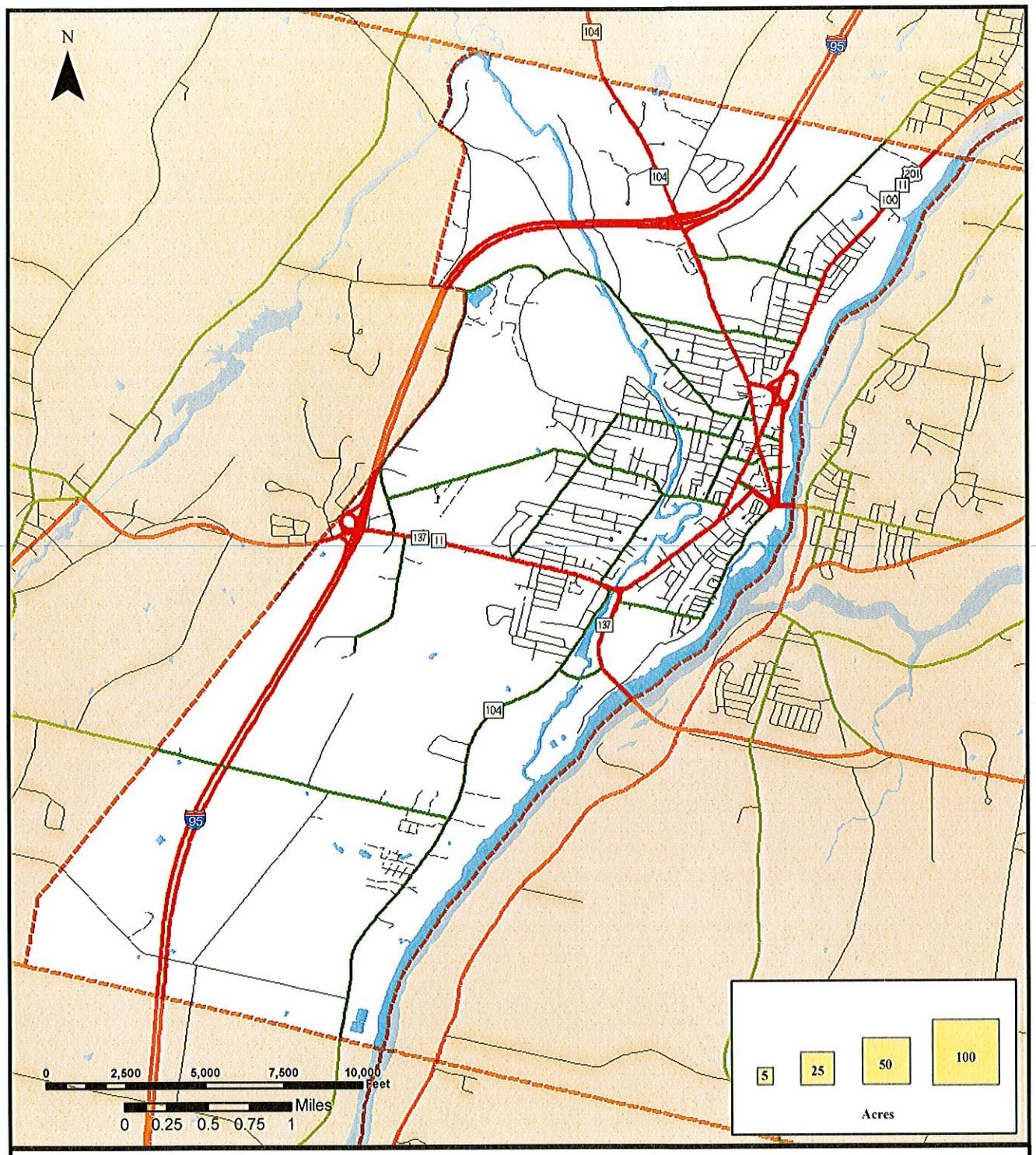
TABLE 5-1

MILES OF ROADS

BY ROAD TYPE AND MAINTENANCE RESPONSIBILITY

ROAD TYPE	RESPONSIBLE PARTY	LANE MILES	LENGTH IN MILES
State Highway	State	58.44	25.01
State Aid	State and City	40.21	19.98
City Streets	City	110.4	55.18
Private Ways	Property owners	1.11	.58

MDOT, 2009



City of Waterville

Kennebec County, Maine

Transportation Map
2012 Comprehensive Plan

MAP 5-1

Map Legend

Road Juristictions

- State Highway
- State Aid
- Minor Town Road
- Private Road

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TRAFFIC VOLUMES

The amount of traffic, expressed in terms of average annual daily traffic (AADT) that uses a road is a good indication of the road's importance. Map 5-2 provided by KVCOG shows current average daily traffic color-coded by traffic volume. Traffic counts, over time, show the rate of change in traffic on road segments and help determine the need for strategies to deal with growth and possible congestion.

Waterville Traffic Volumes Over Time

Table 5-2 shows traffic counts reported by MDOT at selected locations in Waterville between 1993 (or 1996 or 1997, whichever year data are available) and 2008. Traffic increased in some areas and decreased in others.

Between 1993 and 2008, two areas lost traffic. The Downtown lost 12,110 trips per day passing over the Waterville/Winslow Bridge and 810 trips per day traveling down the one-way portion of Main Street. College Avenue, historically a thriving commercial strip, also lost a significant amount of traffic, 4,080 trips per day.

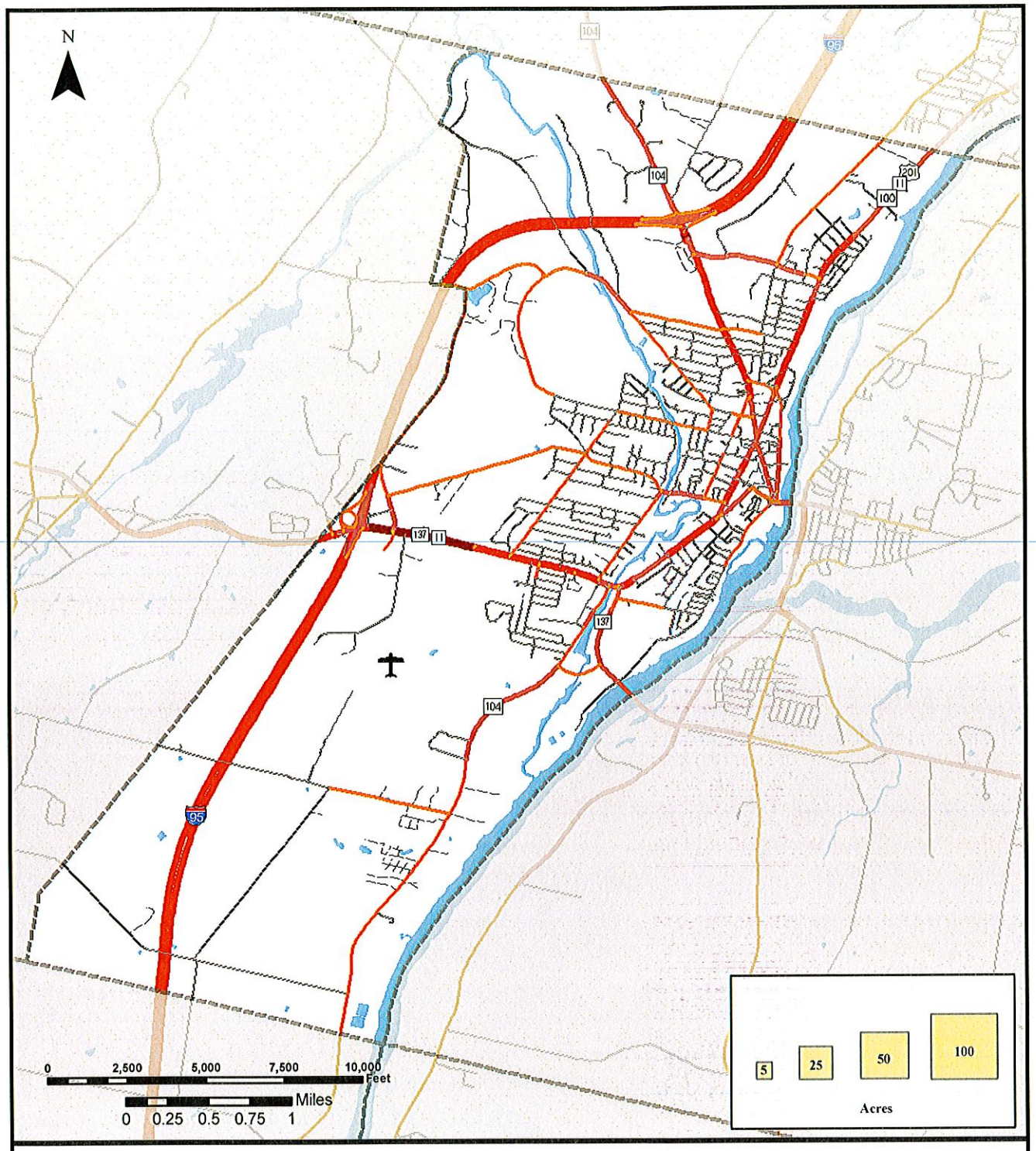
While the Downtown/Main Street and College Avenue commercial centers lost traffic, new commercial development on KMD and Upper Main Street, both of which connect to I-95 interchanges, generated new trips. The new Waterville Commons shopping center (completed in 2005) off of Upper Main Street accounts for many of the 2,710 new trips and KMD saw an increase of 1,150 trips.

The third road to see an increase in traffic, West River Road, has its highest traffic count between Webb Road and Abenaki Road. Clearly, much of the traffic is headed to and from the Carter Bridge. Anecdotally, a portion of the traffic on West River road is generated by drivers from Sidney using Webb Road to avoid traffic lights on KMD.

West River Road also has numerous trip-generators. Those include industrial uses at the old Wyandotte Mill, educational and athletic facilities at Thomas College and the Waterville Junior High School, athletic facilities at All-Pro Soccer and the City's Pine Ridge Recreation Area, and a large assisted living center at the Woodlands.

Recent development has occurred in part because of the existence of our road system, especially our two I-95 interchanges, bridges, and major arterials. That development, in turn, has had an impact on our roadways, contributing to increased traffic congestion in some areas and a decrease in traffic in other parts of the City. On Upper Main Street, in particular, congestion has reached the level at which MDOT no longer will issue traffic movement permits for large scale developments unless developers make significant enhancements to traffic flow.

See Chapter 3: Local Economy for a description of constraints on development and Chapter 10: Existing Land Use for a list of development projects constructed between 1996 and 2012.



City of Waterville

Kennebec County, Maine

Transportation Map
2012 Comprehensive Plan

MAP 5-2

Map Legend

Daily Traffic Counts

- 0 - 2500
- 2501 - 6000
- 6001 - 12000
- 12001 - 20000
- 20001 - 40000

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TABLE 5-2

AVERAGE ANNUAL DAILY TRAFFIC

CHANGE OVER TIME

LOCATION	1990s AADT	2008 AADT	CHANGE 1990s- 2008	ANNUAL PERCENT CHANGE
Waterville/Winslow Bridge	30,000 (1993)*	17,890 (2008)	**(12,110)**	**-2.69%**
Carter Memorial Bridge	7,190 (1997)*	11,160 (2008)	**3,970**	**+5.01%**
Two Kennebec Bridges Combined*	30,000 (1993)*	29,050 (2008)	**(950)**	**-0.21%**
KMD (Route 11/137) I-95 Exit 127	20,300 (1996)	21,450 (2008)	**1,150**	**+0.47%**
College Avenue	15,580 (1996)	11,500 (2008)	**(4,080)**	**-2.18%**
Main Street (just north of its intersection with College Avenue)	11,650 (1996)	10,840 (2008)	**(810)**	**-0.57%**
Upper Main Street/Route 104 (just south of I-95 Exit 130)	15,420 (1993)	18,130 (2008)	**2,710**	**+1.17%**
Main Street (north of I-95)	7,400 (1993)	7,710 (2008)	**310**	**+0.27%**
West River Road	4,280 (1996)	6,200 (2008)	**1,920**	**+3.73%**

* Note that 30,000 trips were generated on the Waterville/Winslow Bridge in 1993, before the Donald V. Cater Memorial Bridge was opened in June of 1997.

Source: MDOT Traffic Volume Counts Annual Reports, 1997 Waterville Comprehensive Plan, and Multi-Modal Corridor Management Plan for the Lower Kennebec Corridor, prepared by KVCOG Planning Director Chris Huck in 2011 (available on both the City and KVCOG web pages).

Private Vehicle Use
As of February 2013, Waterville had 7,981 registered vehicles (source: City of Waterville Finance Department) and 6,370 households. This is an average of 1.25 vehicles per household.

Vehicle miles driven over the last half century have increased in part because of single-occupancy vehicle use. Table 5-3 shows that Waterville commuters fit this profile: 71.3% commute alone to work, compared to 78.6% for the State and 81.3% for the County. Waterville differs from many towns, however, in that 10.9% walk to work (compared to 3.2% and 4.1% at the County or State levels).

Commuting Balance
In 2011, of the 10,173 jobs in Waterville, 8,454 jobs (or 83.1%) were filled by persons commuting into Waterville. Only 1,719 jobs in Waterville (or 16.9%) were filled by Waterville residents.

Of the 5,220 Waterville residents employed in 2011, 3,501 (or 67.1%) commuted out of Waterville to work. As stated above, 1,719 Waterville residents remained in Waterville to work.

In 2011, 8,454 persons commuted into Waterville, while 3,501 commuted out. 4,953 more persons commuted into Waterville than drove out of town to work.

For more information concerning commuters, see Chapter 3: Local Economy.

TABLE 5-3

MEANS OF COMMUTING TO WORK

2006-2010 American Community Survey 5-Year Estimates

Category	Waterville	Kennebec County	State
Commuters, 16 years and over	6,782	58,044	641,796
Percent Driving Alone	71.3%	81.3%	78.6%
Percent Using Public Transportation	0.1%	0.1%	0.6%
Percent Using Other Means	2.8%	1.7%	1.5%
Percent Walking	10.9%	3.2%	4.1%
Working at Home	5.3%	4.5%	5.1%
Mean Travel Time to Work (Minutes)	16.7	22.4	22.8

Source: 2006-2010 American Community Survey 5-Year Estimates

HIGH ACCIDENT LOCATIONS

MDOT identified 13 high crash points and 7 high crash road sections in Waterville. Those are shown on Map 5-3 provided by KVCOG.

Those high accident locations include the following:

- KMD from I-95 to Airport Road
- KMD and First Rangeway
- KMD, Silver Street, and Carter Drive
- First Rangeway and Chase Avenue (Scheduled for mitigation in 2014)
- Silver Street and Western Avenue
- Front Street and Temple Street
- Pleasant Street and North Street
- Main Street and Pleasant Street
- Main Street from its intersection with Elm Street and College Avenue to Getchell Street
- Main Street from Armory Road to I-95
- Armory Road and Drummond Avenue
- College Avenue from its intersection with Elm Street and Main Street to Getchell Street
- College Avenue at Dunkin' Donuts and Colby Street Connector
- College Avenue from Britt Street to Mount Pleasant Street and Allen Street
- I-95 north from KMD to Main Street, including the northbound ramp to Main Street

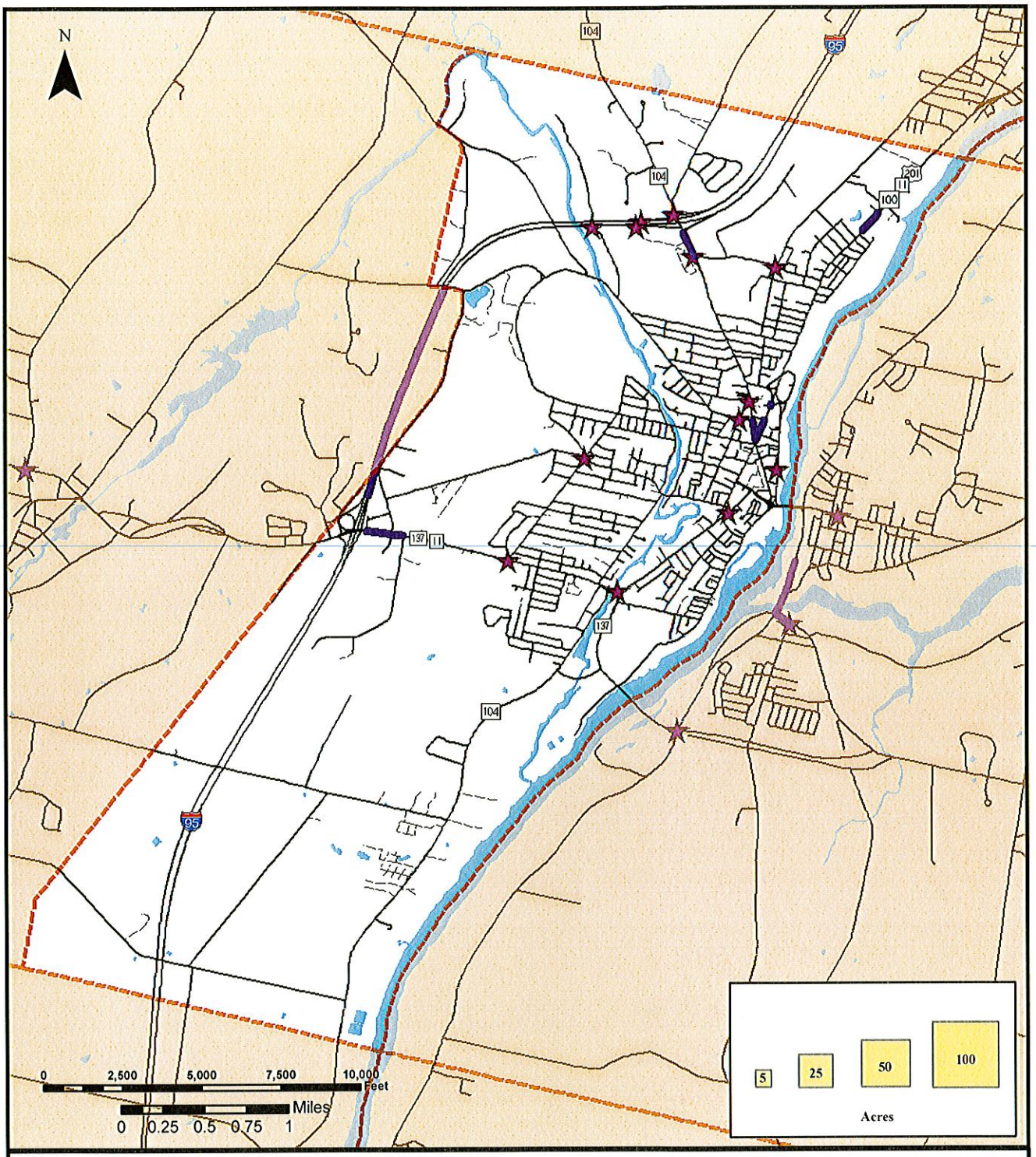
In 2013, one of the highest accident locations is the intersection is First Rangeway, Chase Avenue, and Western Avenue which is scheduled for mitigation in 2014. A road connecting Chase Avenue and Upper Western Avenue will be constructed on a parcel of land recently purchased for that purpose. The southerly end of Upper Western Avenue will be closed to through traffic at First Rangeway.

BRIDGE CONDITIONS

Map 5-4 provided by KVCOG shows the location of all twenty-eight bridges in Waterville.

The MDOT has a bridge inventory on its web page [click on Quick links, Bridge Information, Public Bridges Inventory, Find a Bridge in Your Municipality, Waterville, Go]. The site includes information concerning the condition of bridges and the party responsible for their maintenance. MDOT is responsible for maintaining all bridges in Waterville with the exception of four railroad bridges.

Six bridges in Waterville have low federal sufficiency ratings (below 50). Four of those bridges in need of repair are railroad bridges. (Work needed includes the deck of the Marston Road bridge over the railroad tracks). Other repair projects identified are the substructure of the Armstrong Road bridge over I-95 and the deck of the Western Avenue bridge over Messalonskee Stream (scheduled for replacement in 2014).



City of Waterville

Kennebec County, Maine

Transportation Map
2012 Comprehensive Plan

MAP 5-3

Map Legend

High Crash Locations (Road Sections)

High Crash Locations (Points)

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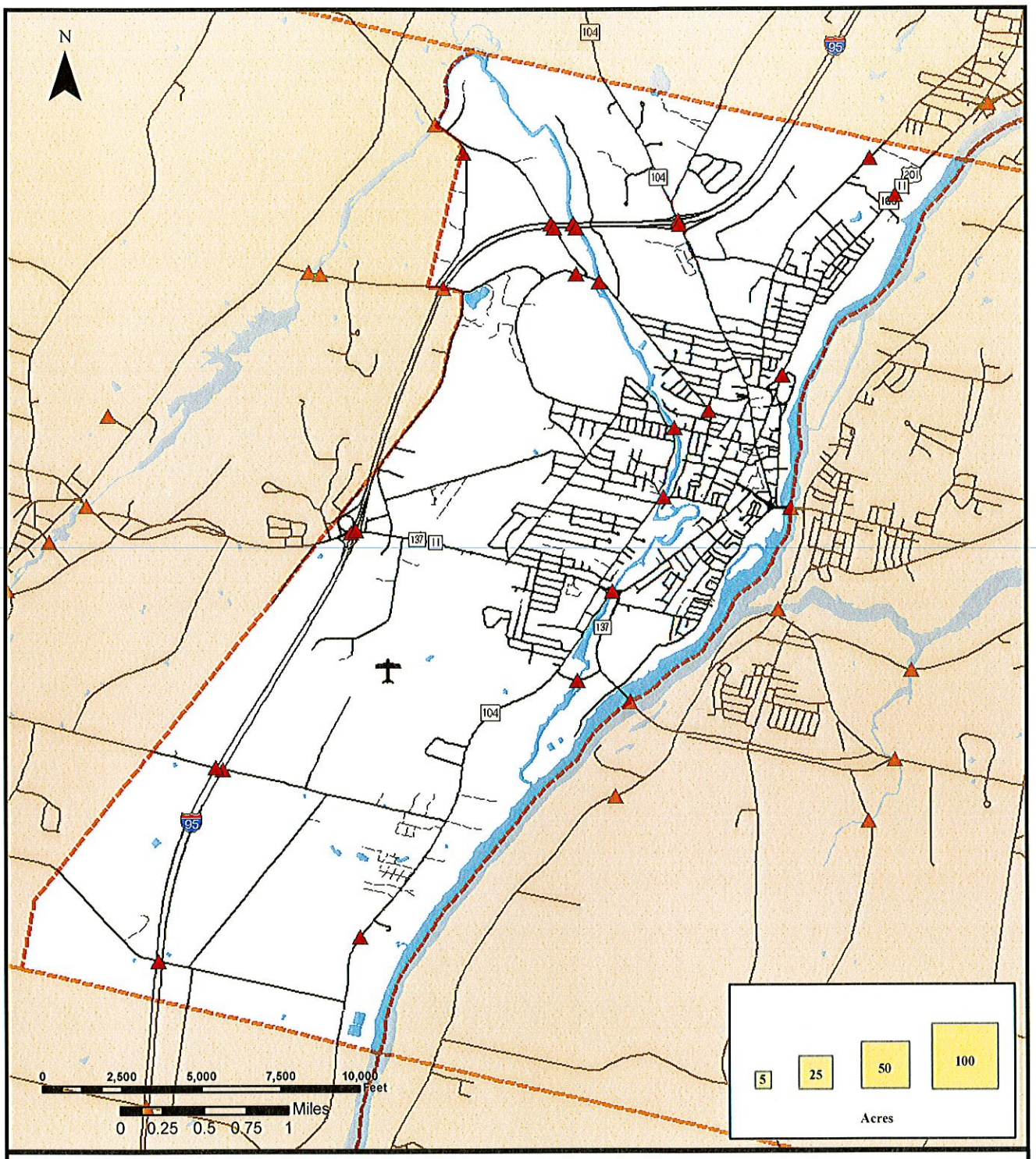

City of Waterville

Kennebec County, Maine

Transportation Map
2012 Comprehensive Plan

MAP 5-4

Map Legend
- Roads
- State Bridges
- Airports

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Created 10-24-2012 by JG

BUS SERVICE

Kennebec Explorer

KVCAP operates the Kennebec Explorer which provides low-cost fixed route community bus service for Waterville, Fairfield, Augusta, Gardiner, Randolph, and other nearby communities. The service receives funding from MaineGeneral Health, the University of Maine at Augusta, Waterville and Augusta employers, Inland Hospital, municipalities, and the Maine Department of Transportation.

KVCAP intends to increase the service area, hours, and frequency in Waterville to provide enhanced availability for commuters and students. Plans include:

- adding another bus to provide service to Colby College, Thomas College, and the Western Avenue corridor,
- increasing the service hours of the bus linking Waterville and Augusta to allow intercity commuter access and increased access to the new MaineGeneral facility,
- providing public transit service linking Waterville to the Skowhegan-Madison region to provide greater access to Kennebec Valley Community College (KVCC) facilities at Hinckley and access to Waterville based businesses and services from Somerset County, and
- extending routes into Somerset County with connections to the Waterville system to improve intercity access.

The Kennebec Explorer public transit system, which provided 64,329 rides during 2012, is intended to serve commuters. Routes and schedules are posted on the Internet.

Para-Transit Service

KV Van offers door-to-door van and volunteer driver service to eligible passengers including those served by social service organizations, disabled, elderly and low-income clients in both Kennebec and Somerset counties needing transportation to Waterville. Destinations are doctors' offices, adult day-care, mental health facilities and other Medicaid service centers.

The KV Van system provided over 375,000 rides and transported Kennebec and Somerset County passengers over 8.7 million miles during 2012.

SIDEWALKS

Walking is an important part of a healthy life-style and offers the added benefits of helping to decrease traffic congestion, air pollution, and the need for parking spaces. Waterville residents walk to school, shopping, services, and, as Table 5-3 indicates, 10.9% of Waterville's workforce walks to work.

Many walk by choice, but others walk by necessity. Some do not own cars, are too young or too old to drive, or find public transportation too expensive or inconvenient.

Residents walking by choice, presumably, are more likely to walk, the closer they live to their destinations and the better maintained and plowed in the winter-time the sidewalks are. Currently, the City plows only 50% of our sidewalks. [By ordinance, downtown merchants are required to shovel the sidewalks in front of their stores.]

Sidewalks receiving the most use should have the highest priority for maintenance and plowing. Those include sidewalks in the downtown and in the densely developed residential areas surrounding the downtown, east of the Messalonskee and within roughly three-quarters of a mile of the Kennebec River.

The highest residential density in the City is in the South End. The South End, an area of about a third of a square mile (.32 square miles) with a 2010 population of 2,316 persons, holds 14.7% of the City's population on 2% of its land area. By way of comparison, the City as a whole has 15,722 persons on 13.59 square miles of land, an average of 1,156 persons per square mile. The South End has a population density roughly 6 times that of the City as a whole.

Waterville has about 40 miles of sidewalks. For the most part, sidewalks in the central downtown area are in good to excellent condition, but no accurate picture of the condition of neighborhood sidewalks is available. Typically, the City repairs sidewalks in conjunction with roadwork.

TRAILS

At present, most of Waterville's trails are not connected to other trails. Two notable exceptions are the Inland Hospital trail which connects to the Pine Ridge Trail, the Junior High (Butch Merritt) Trail, and the Thomas College Trail, and the trail behind North Street Park and the Alfond Youth Center which connects via streets and sidewalks to the Two Cent Bridge and to the Quarry Road trails.

Trails are described in Chapter 7: Recreation Facilities.

BICYCLE ROUTES

For the same reasons that sidewalks are important, safe routes for both bicycle commuters (utility riders) and recreational riders and bike racks at destinations must become a priority for the City. At the present time, the only dedicated bicycle lanes in Waterville are on Mayflower Hill Drive and on roads connecting the North Street Park trail to the Head of Falls. However, the Greater Waterville Bicycle and Pedestrian Advisory Committee in conjunction with Sustain Mid-Maine and KVCOG is developing a plan to improve safety.

DOWNTOWN PARKING

Parking within the immediate downtown area (defined by the Kennebec River, Spring Street, Elm Street, and Union Street) has been studied several times over the past couple of decades. Issues addressed were:

- **Amount of parking**: there is just about enough parking to satisfy current needs, but if more development (or greater use) occurs, there will be a shortage;

- **Hours of use**: some prime, short-term shopper parking is being used by employees and owners as long-term parking, although stricter police enforcement and efforts by Waterville Main Street have helped to lessen the problem. Stars were painted on long term parking spaces.

- **Location of parking**: additional parking is available at the Head-of-Falls, but, because of distance and concern about security in this currently somewhat isolated area, it remains underused.

Two solutions have been proposed: a parking garage in or near the Concourse and a shuttle bus loop to waterfront parking lots.

RAILROAD TRANSPORTATION

Two branches of Pan Am's rail right-of-way cross Waterville:

The east branch extends from the rail yard off of College Avenue through the Head-of-Falls (Downtown). From there it crosses the Kennebec River into Winslow and heads south to Augusta. Historically, it was called "the lower road" as it connected through Brunswick to Portland.

The west branch (also called the back road) was the Springfield Terminal Company's main line. It extends from Bangor (and points north) to Fairfield and south and west across Waterville and then northwest along Messalonskee Stream to Oakland, Leeds, and Lewiston (and points south).

Freight

The west branch, the link between northern and southern Maine, carries larger volumes of freight than the east branch which ends in Augusta. Pan Am operates both branches out of its main freight marshaling and "train building" yard in Waterville, between College Avenue and the Kennebec River. Pan Am repairs and rehabilitates cars and locomotives there as well.

Track Conditions

Railroad track conditions vary through Waterville. Pan Am's branch line to Augusta is rated by the Federal Railroad Administration (FRA) as Class I, meaning it is in fair condition, at best. Freight trains are expected to adhere to a 10 mph limit. The main (Lewiston/Bangor) line through Waterville is in better condition with most segments rated as Class II or III, fair to good.

Rail Passenger Service

Train passenger service extends as far north as Brunswick and its further extension would be a boon to Waterville. However, at this time, it is not clear when passenger service will come to Waterville, over which line, and where the train station will be located.

AIR TRANSPORTATION

The municipally owned and managed Robert LaFleur Airport opened in 1931 and is located east of I-95 and south of Kennedy Memorial Drive, off of Airport Road. It is comprised of

approximately 368 acres, two runways (designated 5-23 and 14-32), aircraft parking aprons and various taxiways, publicly- and privately-owned aircraft hangars, utilities, and navigational aids that support aviation activity. The two runways intersect at the northern end of the Airport.

In 2012, the City adopted an update of the 1996 Airport Master Plan. That study, posted on the City's web site, describes all of the facilities and their condition.

TRANSPORTATION IMPROVEMENTS

Recent MDOT Projects in Waterville

In 2011 and 2012, the State:

- Inter-connected and coordinated all of the traffic lights in Waterville
- Participated in the reconstruction of Campus Drive
- Provided funding to construct a road across land purchased from Mount Merici Academy [The new road will run between the Kennebec Water District pumping station on Chase Avenue and upper Western Avenue, east of Charland Terrace. The portion of Western Avenue between the new road and First Rangeway will be closed to through traffic, providing access only to the few homes on that road segment. Eliminating the fifth leg of the intersection of Chase Avenue, Western Avenue, and First Rangeway will improve traffic safety.]
- Provided funding for the construction of a bicycle/pedestrian trail from the Alfond Youth Center, along the Messalonskee Stream and local streets, to the Head of Falls.
- Paved Eustis Parkway, Grove Street, and Water Street.
- Repaved a portion of Carter Memorial Drive.

City Road Improvement Program

The Public Works Department assessed the condition of public roads and entered that information into Road System Management Software 11 (RSMS 11) to create a five-year pavement maintenance program shown in Table 5-4 below.

TABLE 5-4

PAVEMENT MAINTENANCE PLAN

2013-2017*

STREET NAME	YEAR	METHOD OF REPAIR
Drummond Avenue 1&2	2013	Shim/Overlay &Reclaim
Pleasant Hill Drive	2013	Reclaim
Blue Jay Way	2013	Reclaim

Penny Lane	2013	Reclaim
Drummond Avenue 3	2013	Reclaim
Ticonic Street	2013	Mill/Fill
Cool Street	2014	Mill/Fill
Patricia Terrace	2014	Reclaim
Greenwood Street	2014	Reclaim
Wolfe Street	2014	Reclaim
Central Avenue	2015	Reclaim
Highwood Avenue 2	2015	Reclaim
Cleveland Place	2015	Reclaim
Coolidge Street	2015	Reclaim
Jackson Street	2015	Reclaim
North Second Rangeway	2015	Shim/Overlay
Aubrey Street	2015	Crack Seal
Ursula Street	2015	Crack Seal
Martin Avenue	2015	Crack Seal
Cherry Hill Terrace	2016	Shim/Overlay
Cherry Hill Terrace	2016	Reclaim
Cherry Hill Drive	2016	Reclaim
Eaton Drive	2016	Reclaim
Westview Drive	2016	Reclaim
Sawyer Street	2016	Reclaim
Crestwood Park	2016	Shim/Overlay
Evergreen Drive	2016	Shim/Overlay
Gilbert Street	2016	Crack Seal
Morgan Street	2016	Crack Seal
Sterling Street	2016	Crack Seal
Rideout Street	2016	Crack Seal
Franklin Street	2016	Crack Seal
Oakland Street	2017	Reclaim
Mathews Avenue	2017	Mill/Fill
Violette Avenue	2017	Mill/Fill
Aubrey Street	2017	Shim/Overlay
Ursula Street	2017	Shim/Overlay
Martin Avenue	2017	Shim/Overlay
Gilbert Street	2017	Shim/Overlay
Morgan Street	2017	Shim/Overlay
Sterling Street	2017	Shim/Overlay
Rideout Street	2017	Shim/Overlay
Franklin Street	2017	Shim/Overlay

*This information is subject to change, depending upon variables such as utility work scheduled, current condition of roads, location of roads, cost of pavement, and funding.

► Crack Seal (Routine) – A polymer modified liquid is applied to cracks to seal them and prevent water infiltration into the road base.

► Shim (Preventative) – A thin layer of pavement, usually less than 1 inch, is dragged to fill in depressions and ruts.

► Shim/Overlay (Preventative) – Existing pavement surface is left in place and an average 1/2 inch shim coat of pavement is applied to fill cracks and level any low spots along curb lines. Finally, a 1+ inch overlay application of surface mix is applied.

► Reclaim (Rehabilitate) – Existing pavement material is ground and reshaped to provide optimum pitch, elevation and contour before receiving, typically, a 2 inch base layer of binder asphalt material and a 1+ inch overlay application of surface mix.

► Mill & Fill (Rehabilitate) – Several upper layers of pavement are planed off to lower and add the correct shape to the road. Finally, a variable depth base layer of binder asphalt material and a 1+ inch overlay application of surface mix is applied.

► Full Reconstruction (Reconstruct) – Pavement and deficient sub-base materials are completely removed, new gravel is placed over the remaining sub-base and reshaped and graded. Finally, a 3 inch base layer of binder asphalt material and a 1+ inch overlay application of surface mix are applied. Typically, reconstruction projects involve substantial utility and drainage upgrades, sidewalk and esplanade improvements, and new signs, street striping and safety enhancements.

All of the information above concerning the City's road improvement program was provided by Engineer John Lombardi of the City's Public Works Department

ISSUES AND NEEDS

1. Transportation Funding. Waterville needs to take steps to ensure Federal and State funding to support a wide range of transportation projects.

2. Airport. There is a need to maintain the airport as an important regional transportation and economic asset.

3. Road/Sidewalk Maintenance. There is a need to provide for cost effective maintenance of the City's roads and sidewalks.

4. Alternative Modes. There is a need to plan for and fund/support bike lanes, pedestrian safety, trails, public transportation and rail transportation.