

## 3.0 FUTURE TRANSPORTATION CONDITIONS

### 3.1 Future Traffic Volume Forecast Methodology

Traffic forecasts for the U.S. Route One/Bath Road Master Plan were developed with the aid of computerized travel demand models for the region and for the State of Maine. The Maine Statewide Model provided information on through traffic growth in the study corridor. A subarea model of Wiscasset and its surrounding towns was used to estimate side street volumes and turn movements at intersections based on an anticipated 30 percent growth in residential dwelling units and 75 percent growth in commercial development within Wiscasset.

Growth assumptions in the traffic model included retail employment, non-retail employment, and residential dwelling unit construction. For the Bath Road Master Plan area (along Bath Road), the model included the following types and sizes of development:

- Non-Retail Land Uses – 323 new employees – 100,000 square feet of new office space
- Retail Uses – 100 new employees – 50,000 square feet of new retail space
- Residential – 60 new residential units

The above land use types and sizes were based upon a review of model assumptions for parcels of land abutting Bath Road within the study area. For Retail and Non-Retail uses, employee data was converted to a building area according to data from the Institute of Transportation Engineers. Residential land use data in the model were specified as units and no conversion was necessary.

### 3.2 Historical Building Permits

Prior development activity in the study corridor was determined from a review of building permits issued between 2003 and 2012. **Table 3-1** lists 73 general building permits issued by permit type over the 10 year period. Although the table lacks detail, it does provide a general example of development activity.

<b>Table 3-1 Building Permits between 2003 and 2012</b>				
<b>Date</b>	<b>First Name</b>	<b>Last Name</b>	<b>St.#</b>	<b>Type</b>
10/3/2012	Cecilio	Juntura	306	roof
11/1/2012	Robert H.	Rogers, Sr	760	Storage Addition
7/21/2011	Mark	Welborn	19	Shed
7/25/2011	Herbert	Register	19	Remodel
7/27/2011	Wendy	Ross	21	Rehab
8/1/2011	Robert	Nesbitt	304	Remodel - bath
8/2/2011	Mark	Welborn	19	Deck
8/2/2011	Diane	Robinson	519	Home/shed
8/3/2011	George & Marjorie	Knight	181	Modular
8/3/2011	Richard	Forrest	20	Deck add
8/9/2011	George & Marjorie	Knight	183	Garage
8/9/2011	Kyle	Yacoben	277	Remodel

**Table 3-1 Building Permits between 2003 and 2012**

<b>Date</b>	<b>First Name</b>	<b>Last Name</b>	<b>St.#</b>	<b>Type</b>
2/8/2010		Gaftek, LLC (Circle K)	639	Remodel
3/23/2010	Maine Adventure Course LLC		698	Challenge Course
3/31/2010	Daniel	Chapman	568	Remodel
4/6/2010	Barry	Miete	510	Sign Structure
10/4/2010	Kyle	Yacoben	279	Shed
10/28/2010		Two Bridges Jail	522	Storage Bldg
11/3/2010	Bob	Rogers	762	Canopy
6/10/2009	Barry	Miete	510	Addition/alterations
11/4/2009		Wiscasset Holdings		Gas station, bank, car wash
11/18/2009	James	Seigars	320	Metal bldg
11/18/2009	James	Seigars	320	40 Box trailer
12/3/2009	Norman	Sherman	744	New storage building
2/27/2008	David	Jewell		Warehouse
3/26/2008	Ron	Finley	103	Screen Room
4/7/2008		A T & T Mobile	432	Equip placement
5/19/2008	Doug & Fale	Chick	229	Porch
7/23/2008		Northern Pride Communications	438	Upgrade
9/29/2008	Augustine	Lett, Sr.		Storage bldgs
4/23/2007		Irving Oil Corp	639	Alteration
6/8/2007	William R	Gillies	596	Rooms, 5 motel
6/8/2007	Kyle	Yacoben	279	Alteration
7/6/2007	Jess & Janasa	Herndon	510	Alteration
7/6/2007	Jess & Janasa	Herndon	510	Alteration
7/31/2007	John	Kazalski	721	Alteration
9/24/2007		Irving Oil Corp	639	Alteration
10/9/2007	Danny	Grover	342	Garage addition
5/18/2006		Lee Properties, LLC	681	Alterations
9/20/2006		Unicel		Dish Antenna
10/4/2006	James	Leclair	107	Deck
10/31/2006	Karen	Bloom	762	Relocation
4/12/2005	Jim	Collins	195	Shed & alterations
5/12/2005		Lincoln/Sagadahoc Jail	522	Jail
5/20/2005		American Tower		Shed & antenna
7/22/2005		Lincoln/Sagadahoc Jail	522	Garage, 3 bay
7/26/2005		D & M Marine	588	Shed
8/23/2005	Norman	Sherman	744	Storage building
10/20/2005	Jospeh H.	DeRosa	632	Business
1/12/2004		Shaw's Supermarket Inc	670	Alterations
3/26/2004	Francis S.	Soule, Jr.	432	Relocate storage bldg
5/4/2004		Ames Supply	399	Store
6/2/2004	Robert H.	Rogers	754	Roof over deck

**Table 3-1 Building Permits between 2003 and 2012**

Date	First Name	Last Name	St.#	Type
9/13/2004	Erwin & Pearl	Skillin	625	Deck & steps
9/27/2004		Wiscasset, Town of	51	Alterations
10/7/2004	John	Stone	681	Store
10/22/2004	William R	Gillies	596	Rooms, 5 motel
11/9/2004	Thomas P.	Nadeau, O.D.	165	Addition
11/18/2004	Robert	Rogers	754	Roof & kayak racks
3/14/2003	BILL	GILLIES	596	RELOCATION
4/4/2003		ISLAND TEAK CO	681	STORAGE & AWNING
6/16/2003	JOHN	NICHOLS	187	SHED
7/25/2003	STEPHEN	KENT		ALTERATIONS
8/12/2003	NORMAN	SHERMAN	734	SHOP/SALES OFF
9/2/2003	NORMAN	SHERMAN	744	STORAGE
9/4/2003	DENNIS	ANDERSON		SEE NOTES
9/19/2003	PENNEY	SKILLIN		MH
9/23/2003	ELEANOR	CUNNINGHAM	276	RAMP
10/29/2003		LINCOLN COUNTY OF		STORAGE SHED
11/13/2003	FRANCIS	SOULE, JR	436	ALT/GARAGE
11/14/2003		US CELLULAR		BLDG/ANT/BASE
12/10/2003	ERNEST	GROVER, JR	342	STORAGE BLDG
12/12/2003	ALLEN	COHEN	298	STORAGE BLDG

### 3.3 Future Intersection Turning Movement Volumes (2030)

Future traffic volumes were forecasted at the following study intersections for the year 2030 for the weekday PM peak hour:

- Bath Road and Route 144
- Bath Road and Shaw's/Marketplace Shopping Center
- Bath Road and Old Bath Road (S)
- Bath Road and Birch Point Road
- Bath Road and Old Bath Road (N)

**Table 3-2** presents a comparison between existing (2012) and future (2030) PM peak hour traffic volumes. As noted in the table, traffic growth along Bath Road within the Master Plan area is expected to increase between 14 and 22 percent over the next 18 years. For streets intersecting Bath Road the percentages of growth are generally expected to be greater, with the following key points:

- Birch Point Road is projected to experience significant growth in traffic volumes primarily due to development activity at Mason Station and at the Industrial Park.
- Route 144 is also projected to experience significant traffic growth primarily associated with development activity at the Industrial Park.

<b>Table 3-2 Existing and Future Traffic Volume Comparison Weekday PM Peak Hour</b>			
<b>Location</b>	<b>Existing Volume</b>	<b>Future Volume</b>	<b>% Change</b>
<b>Bath Road and Birch Point Road</b>			
Bath Road south of intersection	1843	2225	+21%
Bath Road north of intersection	1891	2313	+22%
Birch Point Road	94	288	+206%
<b>Bath Road and Old Bath Road (N)</b>			
Bath Road south of intersection	1870	2247	+20%
Bath Road north of intersection	1901	2277	+20%
Old Bath Road (N)	49	74	+51%
<b>Bath Road and Old Bath Road (S)</b>			
Bath Road south of intersection	1577	1824	+16%
Bath Road north of intersection	1513	1775	+17%
Old Bath Road (S)	86	129	+50%
<b>Bath Road and Shaw's/Marketplace Shopping Center</b>			
Bath Road south of intersection	1624	1850	+14%
Bath Road north of intersection	1748	1987	+14%
Shaw's	180	190	+6%
Marketplace	46	50	+9%
<b>Bath Road and Route 144</b>			
Bath Road south of intersection	1703	1950	+15%
Bath Road north of intersection	1745	1986	+14%
Route 144	250	372	+49%

*Figure 3-1* presents future 2030 weekday PM peak hour volumes for the study area intersections.

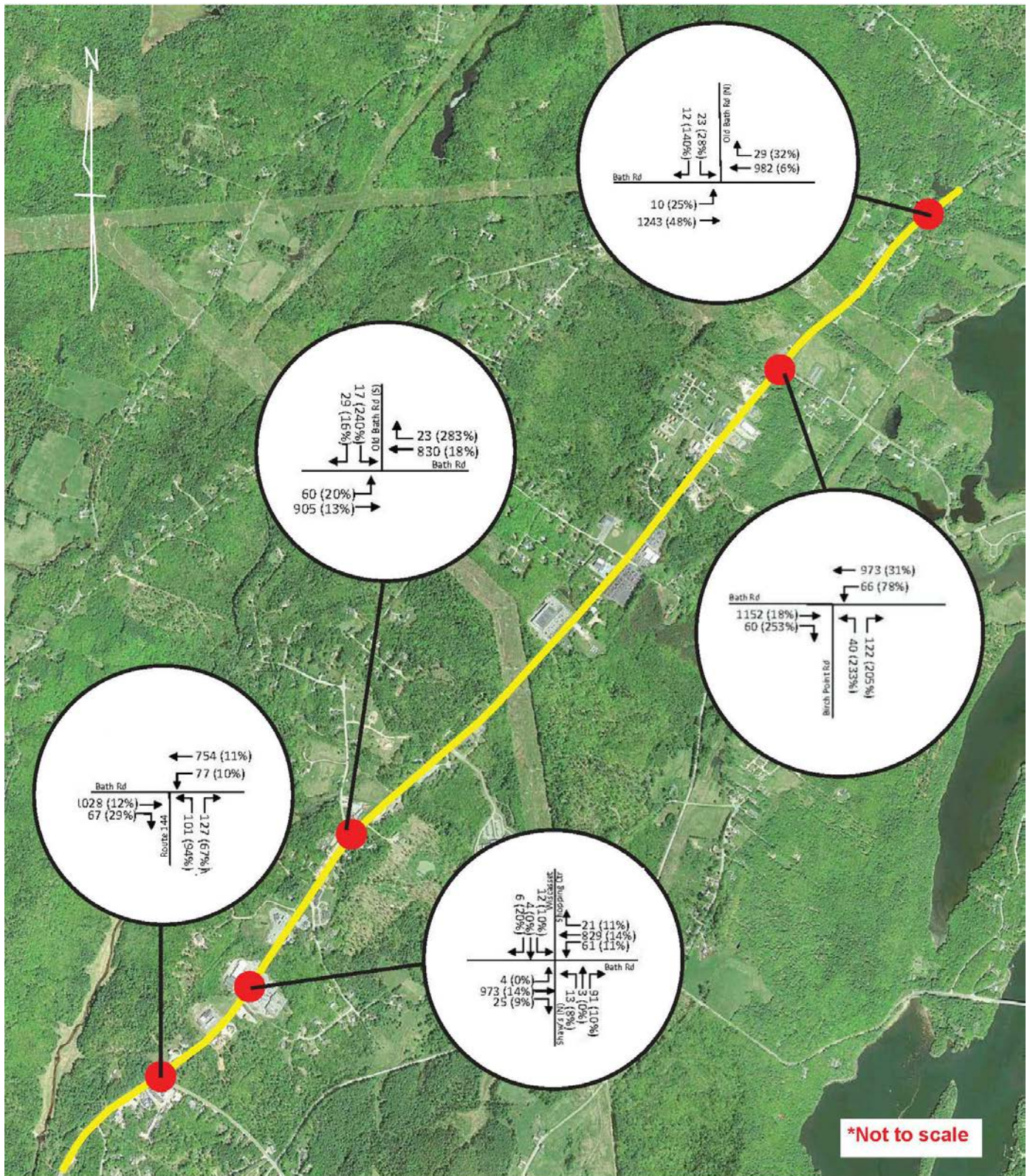
### 3.4 Future (2030) Level of Service

The standard used to evaluate traffic operating conditions of the transportation system is referred to as the Level of Service (LOS). This is a qualitative assessment of the quantitative effect of factors such as speed, volume of traffic, geometric features, traffic interruptions, delays, and freedom to maneuver. LOS analysis was based upon procedures detailed in the Transportation Research Board's 2010 Highway Capacity Manual. One of the standard programs used in traffic modeling – Synchro – was used to perform this analysis. Refer to Section 2.1.11 for further LOS methodology information.

**Tables 3-3 through 3-7** summarize each intersection and movement - providing the Level of Service (A-F) followed by the delay (in seconds per vehicle) and queue (in feet). An overall Level of Service and delay for each intersection is also provided. The analysis was conducted for the weekday PM peak hour.



Figure 3-1 2030 PM Peak Intersection Turning Movement Volumes



The analysis concludes that little vehicle delay occurs in both northbound and southbound directions but that traffic turning onto Bath Road has significant delays. It should be noted that traffic conditions on Bath Road are poor during peak summer time periods due to traffic delays in Wiscasset Village. Those conditions are not represented in the analysis. The source of traffic congestion is generally not related to capacity issues at intersections within the Master Plan corridor, but from congestion spilling back from the Village. In order to achieve a minimum overall LOS of D or better at all intersections, the addition of a separate right and left turn lane from Birch Point Road onto Bath Road and a signalized intersections at Route 144 and Birch Point Road were also analyzed. The results are provided below and show that these upgrades would provide significant improvements at each intersection.

<b>Table 3-3 Future (2030) PM Peak Hour – Capacity Analysis Bath Road @ Route 144</b>						
<b>Movement</b>	<b>Existing Conditions Future Volumes</b>			<b>Signalized Intersection Future Volumes</b>		
	<b>Level of Service</b>	<b>Delay (sec/veh)</b>	<b>95<sup>th</sup>% Queue (feet)</b>	<b>Level of Service</b>	<b>Delay (sec/veh)</b>	<b>95<sup>th</sup>% Queue (feet)</b>
Route 144 Left/Right	F	980.0	644	C	34.7	92
				B	10.8	45
Bath Road NB Thru/Right	A	0.0	0	B	15.4	738
Bath Road SB Left	B	11.8	12	C	21.4	94
Bath Road SB Thru	A	0.0	0	A	7.1	264
Overall	F	112.4	N/A	B	13.3	N/A

<b>Table 3-4 Future (2030) PM Peak Hour – Capacity Analysis Bath Road @ Shaw’s/Marketplace Shopping Center Plaza</b>				
<b>Movement</b>	<b>Level of Service</b>	<b>Delay (sec/veh)</b>	<b>95<sup>th</sup>% Queue (feet)</b>	
Marketplace Left/Thru/Right	F	441.3	92	
Shaw’s Left/Thru/Right	F	59.4	86	
Bath Road NB Left/Thru/Right	A	0.2	0	
Bath Road SB Left/Thru/Right	B	11.5	9	
Overall	A	9.8	N/A	

<b>Table 3-5 Future (2030) PM Peak Hour – Capacity Analysis Bath Road @ Old Bath Rd (S)</b>			
<b>Movement</b>	<b>Level of Service</b>	<b>Delay (sec/veh)</b>	<b>95<sup>th</sup>% Queue (feet)</b>
Old Bath Road Left/Right	F	140.7	111
Bath Road NB Left/Thru	A	3.9	9
Bath Road SB Thru/Right	A	0.0	0
Overall	A	6.5	N/A



<b>Table 3-6 Future (2030) PM Peak Hour – Capacity Analysis Bath Road @ Birch Point Rd</b>						
<b>Movement</b>	<b>Existing Conditions Future Volumes</b>			<b>Separate Turn Lanes on Birch Point and Bath Rd SB, Signalized Future Volumes</b>		
	<b>Level of Service</b>	<b>Delay (sec/veh)</b>	<b>95<sup>th</sup>% Queue (ft)</b>	<b>Level of Service</b>	<b>Delay (sec/veh)</b>	<b>95<sup>th</sup>% Queue (ft)</b>
Birch Point Road Left	F	N/A	N/A	D	36.3	48
Birch Point Road Right				C	26.7	65
Bath Road NB Thru/Right	A	0.0	0	C	27.6	1023
Bath Road SB Thru	A	5.3	12	E	58.7	66
Bath Road SB Left				A	7.6	406
Overall	F	818.2	N/A	C	21.1	N/A

<b>Table 3-7 Future (2030) PM Peak Hour – Capacity Analysis Bath Road @ Old Bath Rd (N)</b>			
<b>Movement</b>	<b>Level of Service</b>	<b>Delay (sec/veh)</b>	<b>95<sup>th</sup>% Queue (feet)</b>
Old Bath Road Left/Right	F	230.6	102
Bath Road NB Thru/Left	A	0.9	1
Bath Road SB Thru/Right	A	0.0	0
Overall	A	5.1	N/A

In most cases the traffic flow along a roadway corridor is a function of how well major intersections work. Accordingly, intersection capacity analysis is a key determinant of corridor operations. Roadway segment capacity analysis methods are also available to assess general corridor capacity. Two-lane highways have high capacities and are rarely observed. A two-lane segment analysis of Bath Road was performed according to methods contained in the Highway Capacity Manual. As with the current conditions, the analysis concluded that given the number of lanes, passing opportunities, and geometry, Bath Road will operate at a level of service E, with a less than 3 second delay in free-flow speed over current conditions. Current field observations, combined with intersection capacity analyses do not support this conclusion and it is thought the corridor will operate at a better LOS with the outlined future volumes – not taking into account summer peaks north of the project study area causing delays in the corridor.