

experiences traffic flow that is close to capacity, with a v/c ratio of 0.92, as the following table shows.

US 202 Current Hourly Volumes and Capacities			
Posted Speed: 45 mph		Current Lanes	
		1 WB, 2 EB	
		Eastbound	Westbound
AM Peak	Volume (vph)	1180	458
	Capacity (vph)	2993	1191
	V/C Ratio	0.39	0.38
Early PM	Volume (vph)	679	741
	Capacity (vph)	2517	1412
	V/C Ratio	0.27	0.52
PM Peak	Volume (vph)	680	1382
	Capacity (vph)	2725	1496
	V/C Ratio	0.25	0.92

The speed-delay study of this segment, conducted on April 1 and 2, provided observations of existing speeds and levels of service, which are based on the percentage of the posted speed attained by traffic. Between Old Winthrop Road and Pelton Hill Road, the posted speed is 45 mph. Beyond those intersections, the posted speed is 35 mph. The following criteria were used to determine level of service:

% of Posted Speed	LOS
91.7 or more	A
83.3 to 91.7	B
75.0 to 83.3	C
66.7 to 75.0	D
0.0 to 66.7	E
V/C Ratio greater than 1.00	F

As the following tables show, the levels of service (LOS) on US 202 range from A to E. In the 45 mph segment, the eastbound LOS is mostly A, with LOS B between the cemetery and Prescott Rd in the AM peak. This portion of the three-lane segment has several commercial driveways on the north side of the roadway. In the westbound direction, the 45 mph segment has mostly LOS is A on most portions, except west of the cemetery in the PM peak, when the LOS is B to Old Winthrop Rd. West of Old Winthrop Rd, where the speeds are influenced by signal delays in Manchester village, the LOS is E during the PM peak.

US 202 Eastbound Observed Speeds and Levels of Service								
		<i>Granite Hill Rd</i>	<i>Old Winthrop Rd</i>	<i>Bowdoin St</i>	<i>Range Way</i>	<i>Cemetery</i>	<i>Pelton Hill Rd</i>	<i>Prescott Rd</i>
Posted Speed		35	45	45	45	45	35	
								Overall
AM	Speed	39.4	45.7	49.2	48.9	39.8	30.6	41.1
Peak	LOS	A	A	A	A	B	B	
Early								
PM	Speed	34.6	43.3	49.4	43.4	48.3	39.1	43.3
	LOS	A	A	A	A	A	A	
PM								
Peak	Speed	33.3	43.9	49.2	43.7	48.8	38.6	43.2
	LOS	A	A	A	A	A	A	

US 202 Westbound Observed Speeds and Levels of Service								
		<i>Granite Hill Rd</i>	<i>Old Winthrop Rd</i>	<i>Bowdoin St</i>	<i>Range Way</i>	<i>Cemetery</i>	<i>Pelton Hill Rd</i>	<i>Prescott Rd</i>
Posted Speed		35	45	45	45	45	35	
								Overall
AM	Speed	26.3	40.7	45.4	43.4	49.0	38.9	40.9
Peak	LOS	C	B	A	A	A	A	
Early								
PM	Speed	25.1	41.5	46.2	45.7	48.3	37.7	40.9
	LOS	D	A	A	A	A	A	
PM								
Peak	Speed	18.3	40.7	41.0	38.1	41.8	38.4	35.8
	LOS	E	B	B	B	A	A	

Proposed Conditions

Conversion of the inside eastbound lane to a TWLTL would have an impact on traffic safety and eastbound capacity. Both directions of traffic should benefit from the reduced likelihood of rear-end crashes involving left turns. Eastbound capacity on US 202 would be reduced by about 50%, but, as the following table shows, the remaining capacity should be adequate for AM peak eastbound volumes.

US 202 Proposed Hourly Volumes and Capacities			
Posted Speed: 45 mph		Proposed Lanes	
		1 WB, 1 TWLTL, 1 EB	
		Eastbound	Westbound
AM Peak	Volume (vph)	1180	458
	Capacity (vph)	1496	1191
	V/C Ratio	0.79	0.38
Early PM	Volume (vph)	679	741
	Capacity (vph)	1259	1412
	V/C Ratio	0.54	0.52
PM Peak	Volume (vph)	680	1382
	Capacity (vph)	1362	1496
	V/C Ratio	0.50	0.92

Eastbound travel speeds would also likely to be affected by the conversion. Because eastbound passing lane would be eliminated, traffic speeds would be moderated in those portions of the segment where speeds are relatively high. Little change would be expected in the speed of westbound vehicles.

Potential Benefits

The lane conversion can be expected to provide significant safety benefits for travelers on US 202. The frequency of crashes would be expected to be reduced by at least 20% in the eastbound direction and 5% in the westbound direction, based on national experience with implementation of TWLTLs. Because of the dominance of left-turn rear-end crashes on this segment of US 202, the crash reduction from the conversion could be higher.

