TRAFFIC CIRCULATION PLAN[1]

The prior "Traffic Circulation Plan Element" portion of the East Windsor Township Master Plan was adopted by the Planning Board on October 4, 1993 and later amended during 1998. The prior "Traffic Circulation Plan" was based upon a 1990 "Traffic Infrastructure Impact Analysis" report which was prepared by T&M Associates.

Since the adoption of the "Traffic Circulation Plan Element", East Windsor Township has continued to grow as a suburban community offering an ideal environment in which families, as well as businesses, can grow and prosper. The residents of the Township have a highly rated school system and excellent recreational facilities. Additionally, the Township is conveniently located less than an hour from New York City, Philadelphia and the New Jersey shore area. Moreover, Princeton, Trenton and New Brunswick offer a wide array of nearby cultural, historical and recreational resources.

Furthermore, East Windsor Township is located adjacent to and has direct vehicular access to the New Jersey Turnpike, which serves as a major thoroughfare between New York City and Philadelphia, and the Township attracts commercial enterprises that depend upon the Turnpike for mobility to their markets.

East Windsor Township's attractiveness to both residents and commercial enterprises has resulted in continued economic growth which, eventually, could place a burden on the existing traffic circulation network serving the Township unless the Township continues to plan for required improvements. It the purpose of this updated "Traffic Circulation Plan" to plan for improvements to the Township's traffic circulation network so that the improvements can be accomplished as future development occurs.

This "Traffic Circulation Plan" is based upon a "Transportation & Community Development Initiative Study" (TCDIS), prepared on behalf of East Windsor Township by Maser Consulting, which is attached to this "Traffic Circulation Plan" by reference and which is hereby made part of the East Windsor Township Master Plan.

The TCDIS study area includes thirty-three (33) roadways and forty-four (44) intersections. The methodology used to conduct the TCDIS included the following eight (8) steps of data gathering, analysis and recommendations:

1. Determination of Existing Conditions: Existing and newly collected traffic volume counts were obtained for the forty-four (44) signalized and unsignalized intersections within East Windsor Township included within the study. From this data, future traffic volumes were projected. The configuration of the intersections and the timing/phasing of traffic signals were documented from field analyses.

[1] This "Traffic Circulation Plan Element" portion of the East Windsor Township Master Plan is paraphrased from information contained in the "Transportation & Community Development Initiative Study" which was prepared on behalf of the Township by Maser Consulting. The study is attached to this document by reference and is hereby made part of the East Windsor Township Master Plan.

2. Development Of A Traffic Network Model: Utilizing traffic simulation computer software, a roadway network model was developed for the forty-four (44) intersections.

3. Identification Of Vacant & Underutilized Land Use Parcels: Utilizing orthophotography of the Township and a software computer program, a build-out projection of additional growth in the study area was determined.

4. Estimation Of Potential Land Use Trip Generation: Using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 7th Edition*, an estimate of the additional traffic to be added to the network from additional development was determined.

5. Evaluation Of Future Traffic Conditions & Improvement Options: With the additional traffic volumes added to the existing volumes, the effect upon traffic operations and conditions was evaluated and options for necessary improvements to the network were developed.

6. Recommendations For Roadway & Intersection Improvements: Based upon the information documented, an evaluation of intersections and roadway segments was made in accordance with the following hierarchy:

   - Low-level improvements, such as changes in signal timing, lane use assignment, signing, pavement markings, and changes to traffic regulations.

   - Mid-level improvements, such as signal revisions and minor road widenings.

   - High-level improvements, such as right-of-way takings, substantial road widenings, and new traffic signals.

7. Improvement Recommendations & Estimated Costs: A table is included in the TCDIS indicating the recommended conceptual improvements and the associated design and construction costs.

8. Allocation Of Costs To Land Use: The costs of the recommended improvements were apportioned to future development within the study area.

The thirty-three (33) roadways included in the study area are as follows, with notations regarding government jurisdiction, roadway classification, number of travel lanes and the posted speed limit:

ROAD NAME	JURISDICTION	CLASSIFICATIONS	NO. OF LANES	SPEED LIMIT
NJ Turnpike (I-95)	Turnpike Authority	Urban Interstate	6	65 mph
US Route 130	NJDOT	Urban Principal Arterial	4-6	45-55 mph
Rte 33/Mercer St/Franklin St	NJDOT	Urban Principal Arterial	2-3	25-50 mph
Route 133 Bypass	NJDOT	Urban Principal Arterial	4	50 mph
Rte 535/Old Trenton Rd	Mercer County	Urban Minor Arterial	2	40-50 mph
Rte 539/Old York Rd/N. Main	Mercer County	Rural Major Collector Urban Collector Urban Minor Arterial	2	25-50 mph
Rte 571/Etra Rd/Princeton-Hightstown Rd	Mercer County	Rural Major Collector Urban Collector Urban Minor Arterial Urban Principal Arterial	2-3-4	25-50 mph
Rte 630/Windsor-Perrineville Rd	Mercer County	Urban Collector Rural Major Collector	2	40 mph
Rte 633/Monmouth St	Mercer County	Urban Collector	2	25 mph
Airport Rd	East Windsor	Local Minor Collector	2	25 mph
Cedarville Rd	East Windsor	Local	2	25 mph
Conover Rd	East Windsor	Local Minor Collector	2	25 mph
Cranbury Station Rd	East Windsor	Local	2	25 mph
Davison Rd	East Windsor	Local	2	25 mph
Disbrow Hill Rd	East Windsor	Local	2	25 mph
Dutch Neck Rd	East Windsor	Urban Minor Arterial	2	25 mph
Feldsher Rd	East Windsor	Local	2	25 mph
Hankins Rd	East Windsor	Local	2	25 mph
Hickory Corner Rd	East Windsor	Local Minor Collector	2	25 mph
Lake Drive	East Windsor	Local Minor Collector	2	25 mph
Lanning Blvd	East Windsor	Local	2	25 mph
One Mile Road	East Windsor	Urban Local Urban Collector	2	25 mph
Milford Rd	East Windsor	Urban Minor Arterial	2	50 mph
Millstone Rd	East Windsor	Local Minor Collector	2	25 mph
Old Cranbury Rd	East Windsor	Local Minor Collector	2	25 mph
Probasco Rd	East Windsor	Urban Collector	2	40 mph
Town Center Rd	East Windsor	Local Minor Collector	2-3	25 mph
Twin Rivers Dr North	East Windsor	Urban Collector	2	25-35 mph
Twin Rivers Dr	East Windsor	Urban Collector	2	35 mph
Ward Street	East Windsor	Urban Collector	2	25-40 mph
Windsor Center Dr	East Windsor	Local Minor Collector	2-4	25 mph
Woodside Ave	East Windsor	Local	2	25 mph
Wyckoffs Mill Road	East Windsor	Urban Collector	2	40 mph

The "Transportation & Community Development Initiative Study" (TCDIS) included a safety analysis, and identified five (5) intersections and two (2) shopping center parking lots which are recommended to be improved to increase the safety of motorists and reduce accidents. The subject intersections and parking lots, the identified problems, and the recommended solutions are briefly summarized as follows:

1. Old Trenton Road (CR 535) & Millstone Road

   Problem: The northbound left-turn from CR 535 onto Millstone Road experiences a very high accident rate. Over a two (2) year time period, left-turn accidents accounted for forty-three percent (43%) of all the accidents occurring at the intersection.

   Solution: Installation of a traffic signal, a realignment of Millstone Road to intersect CR 535 further north of CR 571, and a far side jughandle to be located on the northwest corner of intersection. In the interim, warning signs could be installed. Additional details regarding this improvement are included in Section XI of the TCDIS report.

2. Princeton-Hightstown Road (CR 571) & One Mile Road

   Problem: The eastbound approach of CR 571 experiences a high number of rear-end type accidents, accounting for sixty percent (60%) of all accidents at the intersection.

   Solution: The northern and southern legs of One Mile Road should be realigned to intersect with CR 571 at right angles.

3. Old Trenton Road (CR 535 & Princeton-Hightstown Road (CR 571)

   Problem: Two (2) types of accidents primarily occur at this intersection, including rear-end and left-turn types. Left-turn accidents accounted for twenty-four percent (24%) of all accidents at the intersection during 2003, while rear-end accidents accounted for fifty-seven percent (57%) of all accidents during a two (2) year time period. The Route 133 Bypass has added unanticipated addition traffic to the intersection, and more accidents occur at this intersection than at any other intersection in East Windsor Township.

   Solution: Road widening of both roadways, and modified traffic signal operation. Additional details regarding this improvement are included in Section XI of the TCDIS report.

4. Dutch Neck Road & One Mile Road

Problem: A high percentage of accidents have occurred at this intersection during wet conditions. Over a two (2) year time period, thirty percent (30%) of all accidents at the intersection occurred when the roadway was wet. Many of the accidents occurred from drivers accelerating from a stopped condition on One Mile Road and being hit from motorists traveling on Dutch Neck Road.

Solution: The intersection is at a topographic low point and, during heavy rains, storm water collects at the intersection which creates traffic safety problems. However, the intersection operates at a failing level of service during the PM peak hour, and roadway improvements to better handle the wet conditions will not rectify the failing level of service. Therefore, the operational deficiency of the intersection can only be mitigated by the installation of a traffic signal.

5. Dutch Neck Road & Oak Creek Road

Problem: Over a two (2) year time period, approximately thirty-six percent (36%) of all accidents at the intersection occurred after dusk and before dawn. During 2004, forty-three percent (43%) of the accidents at the intersection occurred during the nighttime.

Solution: Clear some vegetation to provide adequate sight distances. Additionally, enhance the lighting at the intersection by upgrading the existing light fixture and adding a second fixture on the northwest corner.

6. Town Center Plaza/Windsor Heights Center Parking Lots

Problem: A high number of accidents have occurred at both the Town Center Plaza and the Windsor Heights Center, both of which were designed and constructed more than twelve (12) years ago. Over a two (2) year time period, sixty-one (61) accidents occurred in Town Center Plaza, and forty-four (44) accidents occurred in the Windsor Heights Center.

Solution: Increase the aisle widths to at least twenty-five feet (25'), where necessary, in order to decrease the number of backing and/or parked car accidents. Additionally, traffic calming devices could be installed to decrease speed and increase driver awareness.

Additional intersection and roadway improvements are recommended in the "Transportation & Community Development Initiative Study" (TCDIS) in consideration of existing conditions and a projected or hypothetical development of currently vacant and underutilized land parcels and a projection of the levels of service at the intersections within the study area. The following is a brief summary of the seven (7) "Signalized Intersection Improvements", the five (5) "Unsignalized Intersection Improvements", and the seven (7) "Roadway Improvements" recommended in the TCDIS report:

Signalized Intersection Improvements

1. Route 130 & Hickory Corner Road
   It is recommended that the existing exclusive westbound left-turn lane on Hickory Corner Road be converted to a left-turn/through lane, and that the existing through/right-turn lane be converted to an exclusive right-turn lane. Also, modifications to the timing and phasing of the traffic signal are recommended.

2. Route 130 & Dutch Neck Road
   It is recommended that modifications to the timing and phasing of the traffic signal be made to optimize its operation. Moreover, an additional fifty feet (50') is recommended to be added to the southbound left-turn lane on Route 130.

3. Route 130 & Old Cranbury Road
   It is recommended that an exclusive eastbound right-turn lane and an exclusive westbound left-turn lane be added to Old Cranbury Road. Also, the capacity of the left-turn storage lanes on Route 130 are recommended to be increased; by one hundred fifty feet (150') for the northbound left-turn lane and by two hundred seventy-five feet (275') for the southbound left-turn lane.

4. CR 539 (North Main Street) & Old Cranbury Road
   It is recommended that a one hundred fifty foot (150') exclusive eastbound right-turn lane be added on Old Cranbury Road. Additionally, it is recommended that changes be made to the timing operations of the traffic signal.

5. CR 571 & CR 535
   It is recommended that a one hundred fifty foot (150') exclusive right-turn lane be added to both the eastbound and the westbound approaches of CR 571, as well as to the northbound approach of CR 535. Also, the capacity of the left-turn storage lanes on CR 571 should be increased by one hundred seventy-five feet (175') for both approaches. Moreover, the capacity of the southbound left-turn storage lane on CR 535 should be increased by one hundred fifty feet (150'). Finally, timing operation changes to the traffic signal also are recommended.

6. CR 571 & Route 130
   Two (2) options are recommended for consideration.

   The first option includes the improvements necessary to alleviate the failing levels of service. A second northbound left-turn lane of Route 130 and a second westbound through lane on CR 571 would have to be added. Also, the capacity of the left-turn storage lanes would be increased by two hundred twenty-five feet (225') for the northbound left-turn lane on Route 130, by one hundred feet (100') for the westbound left-turn lane on CR 571, and by two hundred fifty feet (250') for the eastbound left-turn lane on CR 571.

The second option limits the amount of intrusion upon the businesses located at the intersection. Recommendations include an increase of two hundred twenty-five feet (225') to the northbound left-turn lane on Route 130, a lengthening of the eastbound and the westbound left-turn lanes on CR 571 to the extent the existing right-of-way will allow, and the addition of a one hundred foot (100') exclusive westbound right-turn lane on CR 571.

7. CR 571 & One Mile Road
It is recommended that the existing exclusive westbound right-turn lane on CR 571 be converted to a through/right-turn lane and that a second through lane be added. Additionally, the northbound left-turn lane on One Mile Road should be increased by seventy-five feet (75'). Finally, the traffic signal equipment should be upgraded to include LED's for the yellow and green indications.

Unsignalized Intersection Improvements

1. Route 33 & Airport Road
It is recommended that the intersection be signalized and that an exclusive, fifty foot (50') long right-turn lane be added on Airport Road.

2. Route 130/33 & Conover Road
It is recommended that the intersection be signalized and that Conover Road be realigned to intersect with Route 130 further south, across from Hankins Road.

3. CR 535 & Millstone Road
It is recommended that the intersection be signalized and that Millstone Road be realigned to intersect with CR 535 further to the north.

4. CR 535 & One Mile Road
It is recommended that the intersection be signalized. Additionally, a fifty foot (50') northbound right-turn lane should be added on One Mile Road. Also, a one hundred fifty foot (150') eastbound right-turn lane and a fifty foot (50') westbound left-turn lane is recommended to be added on CR 535.

5. Dutch Neck Road & One Mile Road
It is recommended that the intersection be signalized and resurfaced.

Roadway Improvements

1. Lanning Boulevard Extension To Route 130
It is recommended that Lanning Boulevard be extended to the south, across CR 571, in order to improve traffic flow and circulation between CR 571, the Windsor Heights Shopping Center and the Target Shopping Center. Both a short-term/intermediate scenario and a long-term/full extension scenario are proposed.

The short-term/intermediate scenario will link Lanning Boulevard to the Windsor Heights Shopping Center by making use of the by-pass lane of the existing bank located at the northerly end of the shopping center. Appendix G of the TCDIS report contains a full sketch of the planned extension.

The long-term/full extension scenario will extend Lanning Boulevard to Route 130 over vacant land and an underutilized parking lot located behind the shopping center. When the long-term/full extension scenario is accomplished, the short-term/intermediate scenario will be altered to only serve traffic traveling to the north or exiting the parking lot. Appendix G of the TCDIS report contains a full sketch of the planned extension.

2. Town Center Road Extension To Wyckoffs Mill Road
The Town Center Road extension to Wyckoffs Mill Road will offer the residents in the northeast portion of East Windsor Township a more direct route to the Town Center Plaza and other shopping areas.

3. Airport Road Extension To Route 130
The Airport Road extension to Route 130 across Route 33 will provide motorists from the east with more direct access to Route 130.

4. Realignment Of Conover Road To Hankins Road
As previously noted, the realignment of Conover Road to Hankins Road will bring Conover Road to the south in order to intersect with Route 130 across from Hankins Road.

5. Hickory Corner Road Extension To Conover Road
The Hickory Corner Road extension to Conover Road will alleviate traffic volumes at several intersections along both Route 130 and Route 33 and will decrease traffic volumes along the highways.

6. Realignment Of Millstone Road At CR 535
The realignment of Millstone Road is recommended to improve the operational efficiency of the intersection and to improve safety conditions. Two (2) realignment options are proposed for consideration.

One option proposes moving the Millstone Road/CR 535 intersection approximately three hundred feet (300') to the north, opposite the driveway providing access to the First Washington State Bank.

The other option also moves the Millstone Road/CR 535 intersection approximately three hundred feet (300') to the north, opposite the driveway providing access to the First Washington State Bank. However, this option also provides for an extension of the Shiseido Corporation driveway to CR 571.

7. Route 130 & Maple Stream Road
It is recommended that a one hundred fifty foot (150') northbound left-turn lane be added on Route 130.