CHAPTER 10
CONGESTION MANAGEMENT SYSTEM

Introduction

The Code of Federal Regulations (CFR) defines congestion in 23 CFR Part 500.109 as “the level [of congestion] at which transportation system performance is no longer acceptable due to traffic interference.” Relatively speaking, the Syracuse Metropolitan Transportation Council (SMTC) area is not adversely affected by congestion. Other areas of the nation have serious difficulties not experienced here locally. Nevertheless, there are areas in need of improvement to reduce congestion and ease traffic flow.

SMTC Congestion Management System

The SMTC’s Congestion Management System (CMS) is a process for managing congestion that provides information on the performance of the transportation system. The CMS is designed to identify and monitor congestion annually at selected locations throughout Onondaga County and is required by federal legislation. This process aids in identifying locations that need improvements to relieve congestion.

The specific locations to be analyzed through the CMS were selected in the fall of 1997 by the CMS Working Group, which consisted of the following agencies:

- City of Syracuse Department of Public Works (DPW);
- Onondaga County Department of Transportation (OCDOT);
- Syracuse-Onondaga County Planning Agency (SOCPA);
- Central New York Regional Transportation Authority (CNYRTA);
- New York State Department of Transportation (NYSDOT); and
- New York State Thruway Authority (NYSTA).

Data collected for the CMS consisted of Average Annual Daily Traffic (AADT) counts at approximately one hundred road segment locations and turning movement counts at nineteen intersections. All counts will be collected on a recurring three-year cycle. The locations of the road segment and intersection traffic counts are found in Maps 10-1 and 10-2, respectively.
MAP 10-2: INTERSECTION COUNT LOCATIONS

Intersection Count Locations
Long Range Transportation Plan Update

Locations
Roads
City of Syracuse
Towns

Base map Copyrighted by NYSDOT
Data Source: NYSDOT, 1997-98
Prepared by SMTC, D. Zehlery
1/4/01, UPWP Number: 3700
CMS Process

Two tiers of analysis utilizing mathematical models are employed in the CMS process. The first level of analysis, Tier 1, consists of performance measures that are used to determine the volume to capacity (v/c) ratios at peak one-hour intervals. The CMS Working Group determined that if the v/c ratio was greater than (> 0.90, the location was considered to be congested.

The second level of analysis, Tier 2, consists of a more detailed performance measure, called excess delay. The Transportation Research Board defines excess delay as “the amount of time spent at a given location that exceeds the maximum amount of time that is generally considered acceptable.” Excess delay incorporates such variables as speed, volume, and directional capacity within its calculation.

CMS Analysis Results

For the 2000-2001 Unified Planning Work Program (UPWP) year, the two-tiered CMS analysis revealed that the following seven intersections, shown in Map 10-3, were congested:

- State Route 370/County Route 57/Old Liverpool Road;
- County Route 57/Tulip Street;
- Midler Avenue/James Street;
- Butternut Street/Lodi Street;
- Genesee Street/Erie Boulevard West;
- State Route 173 (East)/State Route 175; and
- Colvin Street/Comstock Avenue.

The same seven intersections were also determined to be congested in the 1999-2000 CMS report. This may change next year, when new traffic counts are utilized.

The CMS analysis also revealed that twenty-five road segments were congested (see Map 10-4). The three road segments with the highest level of congestion, known as excess delay, are shown in Map 10-5, and are listed below:

- I-690 from Access I-81 northbound to Access McBride St. eastbound
- I-81 from Junction Route 298 Bear St. to Route 370
- I-81 from Junction E. Adams St. to Access I-690

The same three locations were identified as experiencing excess delay in the 1999-2000 CMS report, which had noted that excess delay existed at four locations (the fourth location, State Route 92 from the end of the Route 5 overlap to Woodchuck Hill Road) no longer experiences excess delay). Again, when the traffic counts are updated for these road segments, this could change.
**Improvement Projects**

The SMTC will offer assistance to its member agencies to establish strategies for addressing congestion at the identified locations. These strategies could be included in various municipal capital programs, the SMTC Transportation Improvement Program (TIP) or the SMTC UPWP. The limited amount of capital resources and the need to maintain the existing infrastructure are major factors to consider when programming projects to relieve congestion. Table 10-1 identifies the projects which are located in close proximity to CMS identified congested locations that are programmed in the 1999-2004 SMTC TIP. Once completed, these projects should help to alleviate some of the congestion that has been identified through the CMS.

**Table 10-1**

<table>
<thead>
<tr>
<th>Route Number</th>
<th>Project Identification Number (PIN)</th>
<th>Project Name</th>
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<tbody>
<tr>
<td>5/92</td>
<td>303472</td>
<td>Routes 5 &amp; 92 Demonstration Project</td>
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<td>31</td>
<td>303753</td>
<td>Route 31, Route 481 to Henry Clay Boulevard, Part 1</td>
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<td>31</td>
<td>303756</td>
<td>Route 31 over Seneca River (Belgium Bridge)</td>
</tr>
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<td>I-81</td>
<td>350138</td>
<td>I-81 Intelligent Transportation System Downtown</td>
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<td>173</td>
<td>301912</td>
<td>Route 173 (West Genesee Street–Syracuse City Line)</td>
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<tr>
<td>173/175</td>
<td>301921</td>
<td>Route 173, Onondaga Community College (OCC) to Broad Street; Route 175, OCC to Route 173</td>
</tr>
<tr>
<td>631</td>
<td>380414</td>
<td>Baldwinsville Bypass, Phase 2</td>
</tr>
</tbody>
</table>

Source: SMTC 1999-2004 Transportation Improvement Program.

The recently completed Liverpool Area – Onondaga Lake Parkway Transportation Study, a 1999-2000 SMTC UPWP task, analyzed transportation and mobility issues within and surrounding the Village of Liverpool. Many of the congested road segment locations and intersections listed in the CMS for the Liverpool area were included as part of the study area for the Liverpool Area – Onondaga Lake Parkway Transportation Study. The SMTC’s consultant for this project analyzed
various alternatives and recommended that the following would be effective in addressing the needs presented in the Liverpool Area – Onondaga Lake Parkway Transportation Study:

- Alternative 6 – Onondaga County Settlement Plan with an effective Liverpool Bypass from NYS Route 370 to Electronics Parkway;
- traffic calming;
- pedestrian signal timings; and
- reduced speed limit on Onondaga Lake Parkway.

Alternative 6 meets all the needs of the Liverpool Area–Onondaga Lake Parkway Transportation Study by combining the benefits of the Onondaga County Settlement Plan along with the proposed bypass. The Onondaga County Settlement Plan, prepared by a consultant to Onondaga County, addresses the Village of Liverpool issues such as reducing congestion, strengthening the businesses and providing a pedestrian and bicycle friendly environment, while the proposed bypass will provide alternative commuter and truck routes. In addition to Alternative 6, traffic calming measures and accommodating pedestrians through the traffic signal timings will further meet the needs of the Village issues. The modifications proposed by the Onondaga County Settlement Plan for Onondaga Lake Parkway will also make the Parkway more conducive to a lower speed limit, which was also recommended.

If implemented, the recommendations listed above should assist in reducing congestion in the Liverpool area. Already, in late fall of 2000, the NYSDOT reduced the speed limit along Onondaga Lake Parkway from 55 miles per hour to 45 miles per hour from November 1st to April 1st.

**Plans for the Future**

The CMS is an ongoing project that is completed annually. Through this process, the SMTC will continue to collect and analyze data for the monitoring of congestion in the SMTC Metropolitan Planning Organization (MPO) area.

As there are some limitations to the current CMS process and product, the SMTC will be reexamining the CMS report with the assistance of its member agencies, particularly the NYSDOT, during the 2001-2002 UPWP year.