Congestion Management Process

Introduction

Congestion is the level at which transportation system performance is no longer acceptable due to traffic interference. The level of acceptable performance can vary by the type of transportation facility, by location within the region, and by time of day. For instance, commuters typically expect and are generally willing to accept a certain amount of traffic during morning and evening “rush hours”. However, they may not be willing to accept that same level of performance in the middle of the day.

In general, highway congestion results when traffic demand approaches or exceeds the available capacity of the highway system. The level of traffic demand can vary significantly depending on the season, the day of the week, and the time of day. Also, the capacity of the highway system, which is usually thought of as constant, can change because of weather, work zones, traffic incidents, or other non-recurring events.

What is a Congestion Management Process (CMP)?

Federal transportation legislation requires that each metropolitan planning area in the United States have what is called a Congestion Management Process, or CMP. The CMP is a regional program to address and manage congestion within the 10-county Southwestern Pennsylvania region in order to facilitate the movement of people and goods.

The CMP is a broad, regional level planning tool designed to help manage congestion by identifying congested corridors and recommending multi-modal strategies for congestion mitigation. The goal of the CMP is to provide information that helps transportation planners, professionals and others to understand the overall congestion climate in individual corridors and the region. Data on the congestion climate helps SPC, in partnership with other agencies, to formulate congestion management strategies. Data and information from the CMP benefits the transportation planning process by helping the region focus limited federal transportation dollars where they can have the greatest impact.

System Definition

The initial Congestion Management network for Southwestern Pennsylvania was defined in cooperation with an inter-agency task force made up of transportation professionals from the SPC region. The purpose of defining a CMP monitoring network is to identify corridors where existing congestion occurs and those where future congestion is anticipated. In addition to congestion impacts on automobile traffic, the network needs to be sensitive to its impacts on freight and transit service as well. The network also needs to be defined in a way that makes CMP data collection and monitoring reasonable and manageable within available resources.

The initial CMP monitoring network covered approximately 471 miles and has been updated and adjusted periodically since its inception in 1995. This included expanding the network to include corridors in new member counties (Greene, Indiana, Fayette, and Lawrence) as they joined SPC. Currently, the CMP network includes 113 corridors covering approximately 650 miles. These corridors include numerous interstates and principal arterials as well as a few minor arterials.

Each CMP corridor is divided into segments and nodes for the purposes of data collection and analysis. Nodes are typically located at major intersecting roadways or other significant features. These nodes, and the segments they define, are adjusted as necessary to facilitate data collection.