

CHAPTER 4 - TRAFFIC RESEARCH

Table of Contents

4-1.00 INTRODUCTION	4-2
4-1.01 Purpose	4-2
4-1.02 Scope	4-2
4-2.00 ROLE OF TRAFFIC RESEARCH	4-2
4-3.00 TRAFFIC RESEARCH PROGRAM	4-2
4-4.00 INDIVIDUAL ROLES IN TRAFFIC RESEARCH	4-3

4-1.00 INTRODUCTION

Traffic research is critical to fully utilizing existing transportation facilities and associated devices as well as to the development of new methods and devices. This chapter introduces the general concept of traffic engineering research.

4-1.01 Purpose

The purpose of this chapter is to: (1) familiarize the reader with the responsibilities and capabilities of the traffic research coordinator, (2) describe the nature and use of traffic engineering research activities, (3) improve the effectiveness of the district traffic offices and the central office traffic sections by facilitating the use of special skills, services, and knowledge that are available from the [Research Services Section \(RSS\)](#), and (4) improve the quality of research done directly by districts or other sections.

4-1.02 Scope

This chapter will discuss: (1) the role of traffic engineering research, (2) research program availability, and (3) the standard research process. This chapter will not describe past, current, or future research projects. Information on current MnDOT research is available through the traffic research coordinator and at the [RSS](#) website.

4-2.00 ROLE OF TRAFFIC RESEARCH

Traffic engineering research may be defined as the careful, systematic and patient study of traffic engineering concepts, methods and products undertaken to discover or describe facts, techniques, or applications related to traffic engineering. Typical projects study an important gap in traffic engineering knowledge; have an immediate need for engineering data; and a unique Minnesota concern. Many projects consider new techniques, new traffic control devices, or new traffic engineering concepts.

The concepts and methods used for traffic research projects are similar to those used for typical traffic engineering or operation analysis studies; the primary differences being the degree of effort, the level of detail, and the use of the results. In the case of operational studies, just enough data is gathered to permit a decision-maker to answer a question by making assumptions and supplying judgment. This information is compared to known principles and standards and applied to real-time problems. For the traffic research project, the researcher must gather sufficient data to satisfy statistical tests to prove that the conclusions are correct. The researcher gathers the same information as the operations analyst, but the researcher collects data in greater detail to search for new innovative facts, concepts, principles and/or techniques for future use and to advance the "state-of-the-art."

4-3.00 TRAFFIC RESEARCH PROGRAM

There are literally thousands of people and numerous organizations involved in transportation and traffic research programs on the national and international levels. The Transportation Research Board (TRB), the Federal Highway Administration (FHWA), the Urban Mass Transportation Administration (UMTA), the American Association of State Highway and Transportation Officials (AASHTO) and the Institute of Transportation Engineers (ITE) sponsor hundreds of projects each year. In addition, there are many ongoing projects being done locally in cooperation with the Local Road Research Board (LRRB), Regional Transportation Management Center (RTMC), the Center for Transportation Studies at the University of Minnesota (CTS), other offices within MnDOT, and in partnership with various consulting firms.

4-4.00 INDIVIDUAL ROLES IN TRAFFIC RESEARCH

Effective traffic engineering research requires many people. The most important person in this process is the MnDOT technical lead. In many cases, the technical leads are people located in the districts who have the responsibility to deliver the improvement that is being evaluated. These technically minded people achieve the benefits for the department and actually create the situations that return the benefits from the research investments. All other persons in the process are designed to assist these technical lead persons. To become one of these people please submit your research ideas using the process located on the [RSS](#) website.

Every MnDOT research project is guided by a [Technical Advisory Panel \(TAP\)](#). Each member of the Panel has a particular role to play that is essential to the success of the research project.

TAPs guide the research, and review and approve deliverables. Every TAP is composed of at least three members: the principal investigator, who performs the research; the technical liaison, who is the champion for the research, and the project coordinator, who monitors the research contract. Additional members may also serve on the panel to bring needed expertise to the project. More information on the roles and responsibilities of the TAP members can be found on the [TAP](#) website.

If you are requesting a research project, you are likely a good candidate to serve on the TAP. Research Services can coach you on what is required. You can also learn more by watching the video series located on the [RSS](#) website.

The Office of Traffic Engineering has identified a [Traffic Research Director](#) to help assist with all of these processes and programs.