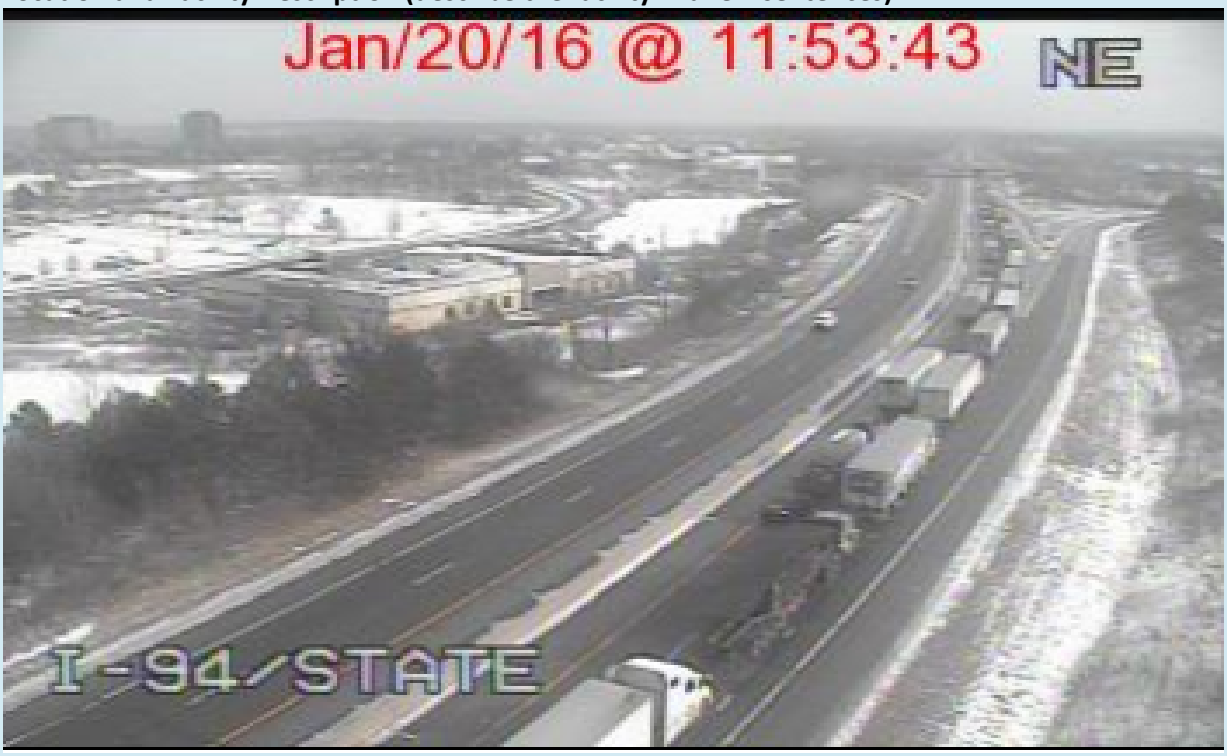
Project/Analysis Type
Corridor Study

Facility Type(s)
Select HCM procedures used:

Freeway Facility	Freeway and Multilane Highway Segment	Freeway and Multilane Highway Segment

Mode(s)
☐**Bicycle** ☐**Pedestrian** ☐**Transit** ☒**Vehicle** ☐**Other:**

Location and Facility Description (describe the facility in a few sentences):



I-94 Freeway in Washtenaw County, south of Ann Arbor, Michigan

Purpose of the Analysis
To determine the Level of Service (LOS) of the I-94 freeway corridor with the addition of an auxiliary lane between the US-23 interchange and the State Street interchange, the HCM methodology was used. As proposed, the existing two general purpose lanes with 12 foot standard lane widths would be complimented with a new 12 foot auxiliary lane between the interchange on-ramps and off-ramps. To determine if the auxiliary lane would effectively relieve congestion and improve Level of Service, the Highway Capacity Manual was used for part of the analysis.

Inputs for the Analysis

Input	Default Used	Non-Default Value Used
Free Flow Speed: SL+5=75mph	☒	
# Mainline Lanes = 2	☒	
Area Type: Urban/Suburban	☒	
Entry Mainline Traffic Volume	☐	Traffic Volumes Measured in Field
Lane Widths	☒	12 foot lane widths used
Heavy Vehicle %	☒	% Measured in Field
Jam Density	☒	Field Data
Weaving demands on segment	☐	Traffic Volumes Measured in Field
On-ramp & Off-ramp demands	☐	Traffic Volumes Measured in Field
Projected future growth rate	☐	Predicted values from MPO

Procedures Used from the Highway Capacity Manual

Several procedures from Chapter 10 of the Highway Capacity Manual were used for the analysis. In particular, Equations 10-1, 10-2, 10-3, 10-4, 10-5, and 10-6 were used. Exhibits 10-6, 10-7, 10-8, 10-9, 10-11, and 10-12 were also used. Also, the methodologies described in Chapter 10 were applied in evaluating the operation of the proposed auxiliary lane.

The analysis used HCM methodologies for a traditional general purpose lane in the portions of the auxiliary lane segment between the merge and diverge segments, as the section link between the off-ramps and on-ramps was significantly greater than 2000 feet. However, the weaving characteristics were studied for the merge behaviors after the on-ramps and the diverge behaviors before the off-ramps in those particular areas.

Results of the Analysis

Interpretation of the results:

The analysis concluded that with the addition of the auxiliary lane, the freeway would be able to operate with an acceptable Level-Of-Service during peak traffic periods. This finding helped convince the Michigan Department of Transportation to spend additional time and effort in investigating whether funding would be available to move forward with the project.

How did this analysis fit into the project?

The analysis was used to provide a cursory review to determine whether the auxiliary lane concept warranted further analysis, and whether the department should move forward in developing a cost estimate to build such a project. The findings indicated that additional investigation was merited.