

SCENARIO F08
NON-ROAD CONSTRUCTION COMBINATION IMPROVEMENTS:
TRAVEL DEMAND MANAGEMENT, MODIFIED LAND USE,
AND LIGHT RAIL TRANSIT

This scenario studies the effects of combining three non-road construction improvements involving TDM incentives, land use changes, and light rail transit service.

Carpool and walk/bike incentives to employers having 400 or more employees are provided. The Lehigh Valley region is divided into 354 traffic zones for analysis purposes. Of those, 29 traffic zones are given TDM incentives in this scenario. 75 percent of all eligible employees in these 29 traffic zones are given carpool incentives and 25 percent of all eligible employees are given walk and bike incentives.

Future household growth is contained to the urban areas.

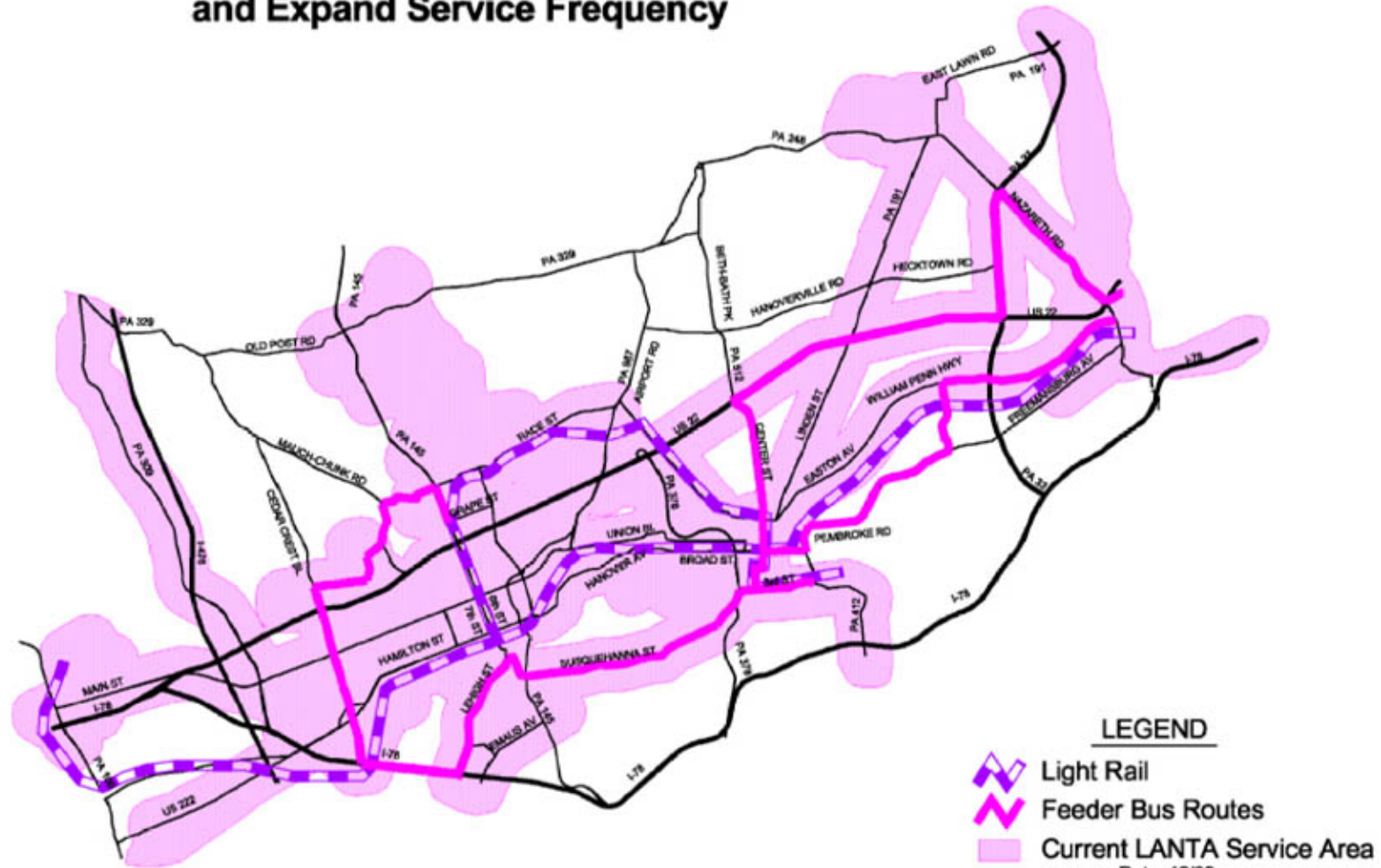
The light rail line begins in the Iron Run Industrial Park area, north of U.S. Route 22, in the western portion of Lehigh County and ends in downtown Easton in the eastern portion of Northampton County. Between these two points the line passes through Air Products & Chemicals, Inc., Lehigh Valley Hospital, South Mall, downtown Allentown, Bethlehem, Northampton County Community College, and downtown Easton.

A second LRT line covers the areas of Lehigh University, the proposed Bethlehem Works site, downtown Bethlehem, Lehigh Valley Airport, Lehigh Valley Mall, and stops at downtown Allentown. Two new feeder express bus routes are also proposed. The bus routes are used to attract riders not living in the direct vicinity of the LRT line to get to and from the LRT line stops.




In addition to the express bus routes, the frequency of the existing bus routes has been increased to 10 minutes in the morning and evening peak periods, 6-9 AM and 4-7 PM, respectively, and 20 minutes in the off-peak periods.

Scenario F08

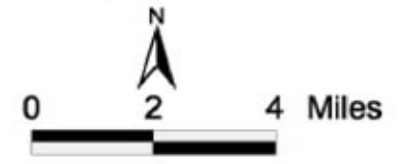
Combination Improvements: Modified Land Use, Implement TDM, Light Rail with Two Feeder Bus Routes and Expand Service Frequency



LEGEND

-  Light Rail
-  Feeder Bus Routes
-  Current LANTA Service Area

Date: 12/99



Prepared by: Lehigh Valley Planning Commission

SCENARIO F08: MEASURES OF EFFECTIVENESS RELATING TO PROJECT NEEDS

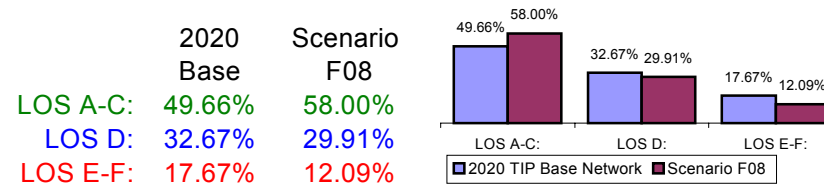
Improve Safety on U.S. Route 22

The goal of this scenario is to reduce the single occupancy vehicle trips as well as the travel time between trips. The less vehicles on the road the less likelihood of crashes occurring, thereby increasing safety on U.S. Route 22. However, the travel demand model run results indicate that this scenario increases the traffic on U.S. Route 22. This is due to the household growth being limited to the urban core area and the main highway through this area is U.S. Route 22. The traffic finds U.S. Route 22 to be the most convenient route for travel. The attractiveness of U.S. Route 22 without any improvements to the road itself will not improve safety.

IMPACT: Neutral

Reduce Congestion on U.S. Route 22

**Percent of Vehicle Miles of Travel (VMT) by Level Of Service (LOS)
Route 22- PM Peak Hour**

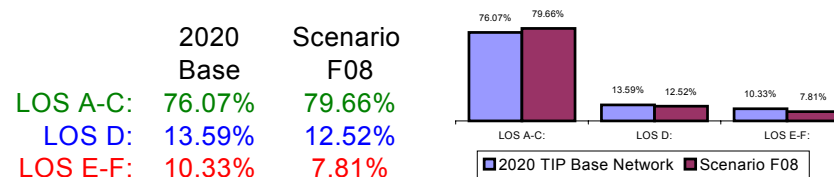


- Comparing the 2020 TIP base year with the TDM incentives scenario, the level of travel occurring under desirable traffic conditions of LOS A through C in the afternoon peak hour has improved by 8 percent and a reduction of 6 percent is achieved in the breakdown traffic conditions of LOS E and F on U.S. Route 22.

IMPACT: Marginal

Recommended improvements must not increase congestion on regional road network

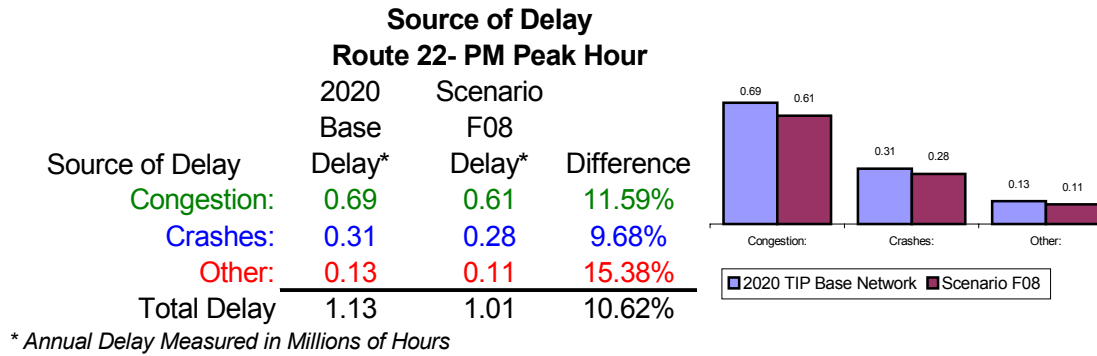
**Percent of Vehicle Miles of Travel (VMT) by Level Of Service (LOS)
All Lehigh Valley Region Roads - PM Peak Hour**



- As indicated by the above chart, the level of travel occurring under desirable traffic conditions of LOS A through C in the afternoon peak hour shows an improvement of less than 4 percent in the overall Lehigh Valley roads and a reduction of 2.5 percent is achieved in the breakdown traffic conditions of LOS E and F in the Lehigh Valley region.

IMPACT: Positive

Reduce Impacts of incidents on U.S. Route 22 traffic flow



- The source of delay due to various types of incidents is used to gauge the progression of traffic on U.S. Route 22 and is measured in millions of hours per year for this scenario. Annual delay caused by congestion has decreased by 12 percent on U.S. Route 22, delay due to crashes has also decreased by approximately 10 percent, and delay due to breakdowns decreased by 15 percent on U.S. Route 22.
- Total delay due to all incidents on U.S. Route 22 has been reduced by approximately 11 percent from the “no-build” condition.

IMPACT: Positive

Support Land Use and Redevelopment Goals of Regional Comprehensive Plan

Many goals of the comprehensive plan are supported by this scenario. This scenario meets the objectives of providing adequate mobility for the elderly, the handicapped, the poor, and those who do not own automobiles. The TDM incentives will encourage more involvement in carpool/vanpool and walk/bike programs by employees therefore reducing morning and evening vehicle work trips. Also, the farmland preservation goals of the comprehensive plan are supported with this scenario.

IMPACT: Positive

FINDINGS/CONCLUSIONS

This scenario is not beneficial in reducing major congestion and safety on U.S. Route 22. The addition of light rail transit line and improvements to the bus service increases ridership on these systems. However, these transit riders are not coming from U.S. Route 22.

It is highly unlikely that the pattern of development can be completely changed from its current path. Also, a maximum participation in the Travel Demand Management programs was assumed in this scenario. Even with these efforts, very little change occurred in U.S. Route 22 travel. These improvements, even if they were implemented to their fullest extent, do not adequately address the traffic problems plaguing U.S. Route 22. This scenario does not adequately meet all five needs.