

ADAMS COUNTY CONGESTION MANAGEMENT SYSTEM

Prepared for:

Adams County
Planning Commission

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of Transportation and the
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OVERVIEW

This report has been prepared by the Pennsylvania Department of Transportation (PennDOT) in cooperation with the Adams County Office of Planning and Development and the Adams County Planning Commission and to meet federal regulations and PennDOT policies.

The Congestion Management System (CMS) is designed as a systematic process that will assist in identifying existing and potential congestion and to develop strategies and alternatives to alleviate present day and future congestion and enhance the mobility of people and goods. CMS is to be used as a decision support tool.

While many CMS activities are typical of traditional transportation planning, the process does provide for continuous monitoring and evaluation of the transportation system. In addition, it provides for information to be collected on the effectiveness of strategies that were implemented.

The report includes the following elements from the work plan tasks.

- Create Organizational Structure
- Define Congestion
- Establish Goals and Objectives
- Identify Network
- Select Performance Measures
- Collect Data and Monitor System
- Analyze Data and Evaluate Needs
- Identification and Evaluation of Proposed Strategies
- Implementation of Strategies
- Evaluation of the Effectiveness of Implemented Strategies

INTRODUCTION

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 established six management systems. The management systems provide information concerning the condition and the performance of the existing and future transportation systems. The role of the management systems is the development of information and strategies to improve the performance of the existing and future facilities and to provide information to the planning process. Six components are: Pavement Management System (PMS), Bridge Management System (BMS), Safety Management System (SMS), Congestion Management System (CMS), Public Transportation Management System (PTMS) and Intermodal Management System (IMS). The management systems provide information concerning both the condition and the performance of the existing and future transportation systems. The strategies identified by these systems are then considered in developing the metropolitan, rural and statewide transportation plans and improvement programs.

ORGANIZATIONAL STRUCTURE

An organizational structure for CMS is established to guide the development of the system and to support its implementation. The CMS for Adams County will be developed and monitored by the PennDOT Center for Program Development and Management in conjunction with PennDOT District 8-0 and in cooperation with the Adams County Office of Planning and Development and Adams County Planning Commission. The Adams County Office of Planning and Development and Adams County Planning Commission will assist PennDOT by providing input to establishing and monitoring the CMS network and will review reports and planning activities prepared to comply with ISTEA regulations and/or PennDOT policies.

DEFINITIONS OF CONGESTION

As taken from Subpart E. 500.503 of the Intermodal Surface Transportation Efficiency Act (ISTEA):

"Congestion means the level at which transportation system performance is no longer acceptable due to traffic interference. The level of acceptable system performance may vary by type of transportation facility, geographic location (metropolitan area or subarea, rural area) and/or time of day."

PennDOT has recommended the following definition of congestion:

"An imbalance between transportation flow and capacity that causes increased travel time, cost and possible modification of behavior for the movement of people and goods."

Congestion Management System (CMS) means a systematic process that provides information on transportation system performance and alternate strategies to alleviate congestion and enhance the mobility of persons and goods. The CMS includes methods to monitor and evaluate performance, identify alternate actions, assess and implement cost effective actions, and evaluate the effectiveness of implemented actions.

As taken from the Pennsylvania Department of Transportation's *Traffic Congestion Management System Guide*:

Recurring Congestion is generally predictable and typically occurs regularly such as during weekday work commuter period.

Non-recurring Congestion is often unpredictable and results from random events such as accidents, roadway hazards, construction, special events and adverse weather conditions.

Special Events are a type of non-recurring congestion that is predictable. These events can be, but are not limited to, festivals, sporting events, fairs and shows.

Highway construction/reconstruction often causes congestion to occur.

NHS stands for the National Highway System. ISTEA states that the purpose of the NHS is to provide an interconnected system of principal arterial routes that will serve major population centers, international border crossings, (air)ports, public transportation facilities, intermodal transportation facilities and other major transportation destinations; meet national defense requirements; and serve interstate and interregional travel. The NHS is an important part of the transportation system and all segments should be included on the CMS network.

GOALS AND OBJECTIVES

The Commonwealth of Pennsylvania's Transportation Policy Plan and the Adams County Comprehensive Plan are the basis for setting the goals and objectives for addressing transportation issues in Adams County.

The following two goals and one objective were taken from the Commonwealth of Pennsylvania's Transportation Policy Plan:

GOAL:

Maintain, manage, and improve Pennsylvania's transportation systems to meet the needs and requirements of people and goods movements in rural regions. Provide transportation choices where appropriate and feasible.

GOAL:

Maintain, manage and improve a transportation system which preserves and reinforces environmental quality and livable communities. Provide access to Pennsylvania's recreational, natural and historic/cultural resources.

OBJECTIVE:

1. Promote those transportation modes and practices which best achieve compliance with clean air, noise and water standards, reduce congestion and promote energy efficiency.

The following goals and objectives were taken from the Adams County Comprehensive Plan:

GOAL:

Achieve a safe, efficient, mostly congestion-free circulation system that will best serve business, agriculture-related, institutional, and personal trips.

OBJECTIVES:

1. Improve safety and efficiency for all intracounty, intercounty, and regional through-county vehicular trips.
2. Encourage regionally-oriented traffic to utilize regional arterial highways and discourage this traffic from using locally-oriented collector roads.
3. Identify existing and potential future deficiencies in the county's major roadway network, along with methods of eliminating these deficiencies.
4. Encourage traffic flow improvements and the implementation of design standards that are based on a functional classification of roadways.
5. Identify and generally set priorities for projects which are appropriate for inclusion on PennDOT's Twelve-Year Program.
6. Identify Transportation Systems Management (TSM) activities which can be implemented to improve efficiency and safety.
7. Reduce truck traffic through the center of Gettysburg and other boroughs and villages.

GOAL:

Provide a circulation system that makes special provision for tourists.

OBJECTIVES:

1. Identify scenic excursion routes and other roadways with particularly strong visual characteristics as well as outstanding scenic vistas that are worthy of special preservation efforts.
2. Identify the long-range implications of extensive development in the Gettysburg area on National Park Service avenues.
3. Locate areas appropriate for tourist-oriented development and identify circulation improvements needed to serve these areas.
4. Discourage development of potentially-intrusive, large-scale tourist-oriented enterprises in areas where the roadway network (and other infrastructure) cannot support such uses.

GOAL:

Consider the long-range potential for reducing reliance on the automobile.

OBJECTIVES:

1. Encourage ride-sharing among local residents and identify areas that might be used for long distance and commuter parking areas.
2. Establish criteria upon which the need to establish future mass transit opportunities might be based.
3. Encourage mixed-use development, especially near the interchanges of major arterial roadways.
4. Consider low-cost physical improvements to new roads and roads undergoing upgrading to accommodate bicyclists.

CONGESTION MANAGEMENT SYSTEM NETWORK

To identify the initial CMS network, PennDOT in cooperation with Adams County, used a combination of qualitative and quantitative techniques. The corridors and facilities were initially identified by PennDOT and Adams County Office of Planning and Development staff based on judgement and recently prepared transportation studies. Quantitative analysis involved evaluating available data in a manner consistent with the performance measures chosen. This is further described in the performance measure section of this report.

Guidance prepared by PennDOT and FHWA recommends that the network contain, at a minimum, the National Highway System (NHS) and all major transit routes. The network may also contain links or facilities where there is no existing congestion but it is desired to monitor for possible future congestion. Special events or major traffic generators should also be considered for inclusion.

The CMS network for Adams County consists of the proposed National Highway System (NHS), and other congested or potentially congested corridors, intersections and the activity centers. It also contains the roadway network associated with the Gettysburg National Military Park, a major traffic generator for the county. Future potential congestion will be considered as the CMS process develops. The majority of arterials in Adams County are arranged in a radial pattern with Gettysburg Borough at the hub. The network is shown on Figure 1.1- CMS Network, and is described in the following table. A description of each facility, including current traffic conditions and planned and programmed improvements, is provided in the facility evaluations section.

ADAMS COUNTY CONGESTION MANAGEMENT SYSTEM

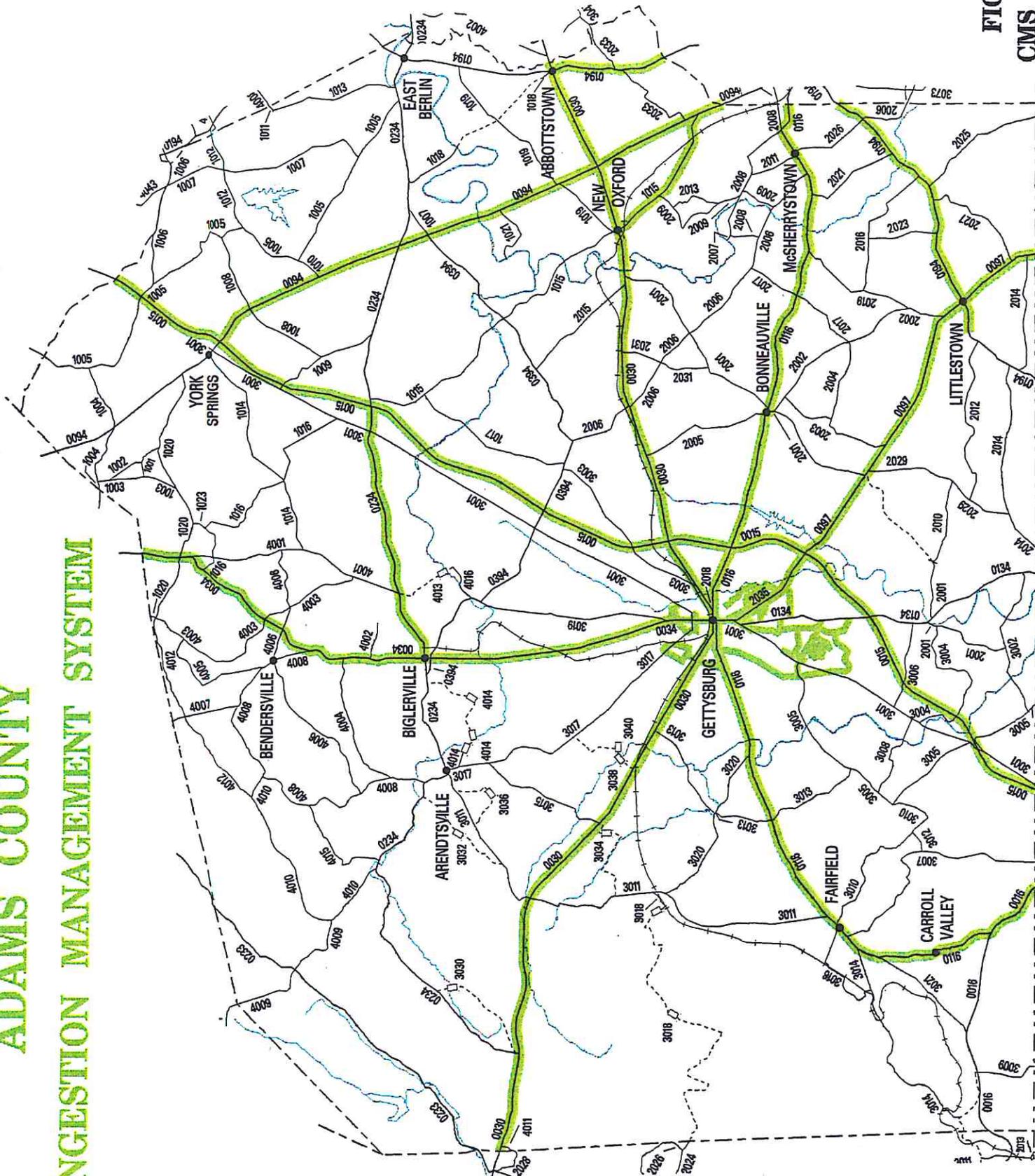


FIGURE 1.1
CMS NETWORK

CMS Network

Location	Limits	Type of Congestion	Level of Congestion
1. US 15 (NHS)	York County to Maryland	Non-recurring - special event, construction	Minimal
2. US 30 (NHS)	York County to US 15	Recurring - peak hour, & non-recurring - special event	Moderate to Severe
3. US 30 (NHS)	US 15 to Gettysburg Square	Recurring - peak hour and park and shopping related & non-recurring- special event	Moderate to Severe
4. US 30 (NHS)	Gettysburg Square to Knoxlyn Road	Recurring - peak hour and park related & Non-recurring - special event	Moderate to Severe
5. US 30 (NHS)	Knoxlyn Rd to Franklin County	Non-recurring - special event	Minimal to Moderate
6. Gettysburg	Borough of Gettysburg	Recurring- peak hour and park and shopping related & non-recurring- special event	Moderate to Severe
7. PA 94	US 15 to US 30	Non-Recurring	Moderate
8. PA 94 (NHS)	US 30 to York County	Recurring - peak hour and shopping related	Moderate to Severe
9. Hanover	Hanover downtown area/McSherrystown	Recurring - peak hour	Moderate to Severe
10. PA 116	PA 16 to Park Road and Willoughby Run Road	Recurring - peak hour	Moderate
11. PA. 116	Park Road and Willoughby Run Road to Hanover Street	Recurring - peak hour	Severe

Location	Limits	Type of Congestion	Level of Congestion
12. PA 116	Gettysburg Borough to Littlestown Rd	Recurring - peak hour	Moderate
13. PA 116	Littlestown Rd to Hanover	Recurring - peak hour	Moderate to Severe
14. PA 194	Abbottstown to Hanover	Recurring - peak hour	Moderate to Severe
15. PA 194	Hanover to Littlestown	Recurring - peak hour	Moderate to Severe
16. Hanover Street SR 1015	New Oxford Borough to PA 94	Recurring - peak hour	Moderate to Severe
17. Baltimore Pike SR 2035	Bus. 15 to US 15	Recurring - peak hour and park related	Moderate
18. PA 97	US 15 to Maryland State line	Recurring - peak hour	Moderate
19. Littlestown	Littlestown Borough	Recurring - peak hour and shopping related	Moderate to Severe
20. PA 16	Carroll Valley to Maryland State line	Recurring & Non-recurring	Moderate
21. PA 234	Biglerville to US 15 (Tyrone Township)	Recurring & Non-recurring	Moderate
22. PA. 34	Biglerville to Gettysburg Square	Recurring & Non-recurring	Moderate
23. PA. 34	Cumberland County to Biglerville	Recurring & Non-recurring	Minimal to Moderate
24. National Military Park	Gettysburg - park roads	Recurring - peak hour, park related and special events	Moderate to Severe

Special Events

Special events or major traffic generators often contribute to or cause congestion. Special events occurring in Adams County that contribute to congestion include:

Special Event	Time of Occurrence	Location
Gettysburg Bluegrass Festival	May	Gettysburg
Apple Blossom Festival	May	Arendtsville
Gettysburg Outdoor Antique Show	May and September	Gettysburg
Civil War Relic & Collectors Show	June	Gettysburg
Gettysburg Civil War Heritage Days	July	Gettysburg
Quilt Auction	August	New Oxford
Gettysburg Bluegrass Festival	August	Gettysburg
South Mountain Fair	August	Arendtsville
Pippinfest	September	Fairfield
Apple Harvest Festival	October	Arendtsville

Land Use

The transportation network is closely linked to land use. Major changes in land use can have an effect on traffic conditions. Large development proposals approved, under construction or recently completed for Adams County include the following:

Project	Location	Status	Description
Hunter's Crossing	Straban - US 30	Under Construction	75 D.U.
Hampton Inn	Straban - US 30	Under Construction	75 unit hotel
Kuhn Trucking	Straban - US 30	Recently Completed	@ 10 acre truck terminal
South Branch Estates	Oxford - US 30	Under Construction	140 D.U.
Colonial Estates	Oxford - US 30	Under Construction	167 D.U.
Wampler Longacre	Oxford - US 30	Recently Completed	@ 10 acre refrigerator plant
Heritage Estates	Oxford - US 30	Recently Completed	65 D.U.
Hollywood Estates	Oxford - US 30	Under Construction	55 D.U.

PERFORMANCE MEASURES

Performance measures are used to identify/quantify congestion, target an appropriate strategy for congestion mitigation and to aid in evaluating the effectiveness of implemented strategies. Selection of performance measures must balance data availability, ease of understanding and ability to target congestion and define needs. Performance standards, the point when a facility is perceived to become congested, must also be determined.

The following describes the performance measures that will be utilized in the Adams County CMS. Some measures will need to be phased in over time as data is collected or becomes available and some measures may be further refined as the process moves forward.

A qualitative related performance measure was used to initially identify the CMS network. In an effort to quantify congestion, the volume to capacity (v/c) ratio has been selected as one of the performance measures. In addition to these performance measures, others contained in the recent transportation studies may also be used. The methodology for calculating an approximate v/c ratio is similar to methods being utilized by other planning regions in the Commonwealth. This methodology is an efficient way to quantify recurring congestion at a regional/sketch planning level. It is used to identify congestion on roadway links but does not include an analysis for intersections. Capacities used in this method are approximate and may need to be adjusted for local conditions. These v/c ratios should be used as a relative measure of identifying and quantifying congestion only. The methodology for calculating the approximate v/c ratio is contained in Appendix A.

Once congestion has been identified, a detailed capacity analysis such as the method presented in the Highway Capacity Manual (TRB Special Report 209) may be appropriate. Intersections may become congested before their corresponding links. Intersections can be analyzed using Highway Capacity Manual methods or by measuring delay in the field. In addition to this method, the recent transportation studies prepared in the area contain additional data and detailed analysis results. The *Adams County Comprehensive Plan* analyzed 28 intersections along the CMS network.

Capacity analysis is a set of procedures used to estimate the traffic carrying ability of a facility over a range of defined operational conditions. The capacity analysis used Levels of Service to describe the operational conditions.¹

Level of Service A (LOS A): A condition of free flow of traffic. No vehicle waits longer than one signal indication.

Level of Service B (LOS B): Stable flow of traffic with negligible impact from other vehicles in the traffic stream.

¹Highway Capacity Manual, Transportation Research Board, Washington D.C., 1985

Level of Service C (LOS C): Stable flow of traffic, but ability to select operating speed and maneuver is restricted. Drivers may intermittently wait through more than one signal indication and backups may develop behind left turning vehicles.

Level of Service D (LOS D): Approaching instability; drivers restricted in their freedom to change lanes. Delay of approaching vehicles may be substantial during peak hour.

Level of Service E (LOS E): Traffic volumes are near or at capacity on the arterial. Long queues of vehicles may create lengthy delays especially for left turning vehicles.

Level of Service F (LOS F): Congestion condition of traffic flow with stop and go conditions. Queued backups from locations downstream restrict or prevent movement of vehicles out of the approach, creating a storage area during part or all of the peak hour.

Performance Measure	Performance Standard
Time Related Measures	
Average Speed vs. Posted Speed	Avg. speed is 10 mph less than posted speed.
Volume Related Measures	
Annual Average Daily Traffic	For monitoring purposes
Peak Hour Volume	For monitoring purposes
Level of Service/Capacity Related	
Volume to capacity ratio (v/c)	<p>< .60 - acceptable level - congestion may be slight.</p> <p>.60 - .80 - acceptable level - congestion may be moderate.</p> <p>.81 - .99 - approaching unacceptable level</p> <p>≥ 1.0 - unacceptable level of congestion</p>
Level of Service (LOS)	<p>LOS C, urban</p> <p>LOS D, rural or suburban</p>
Transit/Intermodal Related	
Truck Percentage	For monitoring purposes
Ridership on Trolley/Bus	For monitoring purposes
Qualitative Related	
Perception of Congestion	To assist in identifying locations

COLLECT DATA AND MONITOR CMS

The data collection and transportation system monitoring are part of the ongoing CMS process. The data collected has been utilized for network identification and analysis of the transportation system. All of the data collected to date consists of existing data. This data includes Roadway Management System (RMS) data obtained from PennDOT and data contained in recently prepared transportation studies. Meetings and telephone conversations have also taken place to gain input and insight into the congestion issues associated with Adams County with:

Adams County Planning Commission,
Adams County Office of Planning and Development,
Gettysburg National Military Park, and
Gettysburg Tour Center.

PennDOT has prepared a special report of RMS data items to display traffic volumes and roadway features. The recently prepared transportation studies utilized include:

Comprehensive Plan, Adams County Pennsylvania, Norman Day Associates, 1992

Project Locations Study, US Route 30, Section S01 Franklin, Adams and York Counties, Gannett Fleming, 1993

Southeast Adams County Transportation Study, Skelly and Loy, 1995 - not yet completed

Borough of Littlestown Comprehensive Traffic Study, Herbert, Rowland, & Grubic, Inc., 1992

PA 97 Traffic Study - Mt. Joy Township, Herbert, Rowland, & Grubic, Inc., 1991

Environmental Assessment - Rehabilitation of Park Roads - Gettysburg National Military Park, National Park Service, 1994

Lincoln Highway Corridor Plan
Straban Township, Urban Research & Development Corporation, 1995

Additional data may need to be collected as the process continues. In areas where congestion has been identified, it may be beneficial to collect and analyze some travel time and delay information.

DATA ANALYSIS AND EVALUATION OF NEED

The purpose of data analysis is to confirm initial identification of congestion and to assist in quantifying the congestion. A cause can then be determined and appropriate strategies selected for mitigation and inclusion in the planning and programming process. The RMS data collected contains information on Annual Average Daily Traffic volumes, peak hour traffic volume percentage, directional distribution, and truck percentages. This data has been utilized in calculating the approximate v/c ratio for the network facilities. A table of the results is presented in Appendix B. Recently prepared studies have also been reviewed for pertinent information. A summary of the report recommendations is included in Appendix C. The following facility evaluations have been prepared to summarize the data collection and analysis completed to date. The planned and programmed improvements were taken from the Twelve Year Program (1994 - 2006).

IDENTIFICATION AND EVALUATION OF PROPOSED STRATEGIES

Land Use Controls

To preserve the free flow of traffic, the municipalities should consider strengthening subdivision, land development and zoning ordinances to implement the *Adams County Comprehensive Plan* and any local comprehensive plans. These controls may include; access design and location requirements, shared access, frontage streets, increased setbacks, land use density, uses by special exception, conditional use and performance zoning, etc. Increase coordination for the Highway Occupancy Permit between the Department of Transportation and local governments is essential to be successful.

Access Management

Similar to land use controls, local governments have the ability to manage the extent and locations of access to state and local highways. Access management techniques include frontage roads, shared access, controlling the number of access points, etc. To be successful, these strategies must be part of a long range planning effort.

Parking Management

In the borough areas, parking can cause significant problems that may create and/or worsen congestion. This is because the streets are narrow, vehicles park on the streets and traffic volumes are higher. Parking management strategies can range from eliminating parking, eliminating parking during peak hours or providing off-street parking. For the purposes of

this report, the boroughs and other areas should consider initiating a detailed parking study to determine if changes to parking will help to reduce congestion and increase safety.

Bicycle and Pedestrian Programs

Bicycling or walking represents an alternative to the use of a vehicle for short trips within borough areas, such as Gettysburg and New Oxford. Improvements to enhance the bicycle and pedestrian travel in the borough areas and adjoining new development should be explored. To increase bicycle and pedestrian travel, safety, security, convenience, continuity, system coherence and attractiveness should be explored.

Transit

The provision of transit services can play a significant role in reducing and managing congestion. Adams County should explore the feasibility and need for transit service in congested areas.

Express Bus Service and Van Pooling

This strategy is the provision of express bus service and van pooling to regional employment areas such as Harrisburg, York, Frederick, etc.

Park and Ride Lots

Park and ride locations along major corridors could be provided to facilitate car or van pooling and express bus service and/or transit.

Special Events Coordination

Since special events are a significant cause of congestion in Adams County, increased coordination between the event sponsor and state and local government should occur to address specific congestion reduction measures. Actions that may be taken to facilitate traffic movement at special events include estimating what the level of demand will be before the event, parking management, remote parking, increased transit and shuttle service and special communication of information through the use of brochures, signage or radio. Permanent locations for special events should be explored.

Signalization

The upgrading or revising of traffic signals can have a profound effect on alleviating traffic congestion. Traffic signals should be modernized and interconnected where appropriate along key corridors to facilitate traffic flow.

Turning Lanes and Shoulder Upgrades

Providing turning lanes to separate turning movements from through traffic decreases congestion and increases safety. These lanes can include continuous center turn lanes or right and left turn lanes at intersections. Developers can incorporate turning lanes into the site design of the development entrances to alleviate congestion. In addition, the provision of adequate shoulder widths increases the capacity of highways which may decrease congestion.

Right of Way Preservation Program to ensure Local Road Continuity

To insure system continuity, the County and municipalities should examine the need for providing interconnections between existing neighborhoods to provide better traffic circulation. Efforts should be made to preserve the future right-of-way for these connections. The techniques such as official maps, that are included in the Municipalities Planning Code should be explored.

Lighting

Illuminating intersections will enable drivers to identify intersections. This will reduce congestion and increase safety. Local governments should investigate the need for providing lighting at key intersections.

Destination Signing

The provision of destination signing for the various attractions in Adams County can reduce driver confusion which reduces congestion and increases safety. Destination signing will particularly aid the visitors who are not familiar with the area.

IMPLEMENTATION OF STRATEGIES

The strategies will be implemented through the normal Adams County Office of Planning and Development procedures and the Commonwealth's Twelve Year Program.

EVALUATION OF THE EFFECTIVENESS OF IMPLEMENTED STRATEGIES

These strategies will be evaluated through the normal roadway management procedures by the Adams County Office of Planning and Development and the Pennsylvania Department of Transportation.

FACILITY EVALUATIONS

Facility evaluations have been prepared for each network element to briefly describe existing conditions as they relate to congestion. Data utilized to prepare these include PennDOT's

Straight Line Diagram, Roadway Management System data, Twelve Year Program (1994 - 2006) and recently prepared transportation studies.

Each section includes the following headings: Congestion Summary, Current Traffic Condition and Mixes, Strategies for Future Consideration, Planned and Programmed Improvements and Recommendations from Recent Studies.

Most of the volumes presented in the current traffic condition section are Annual Average Daily Traffic volumes obtained from PennDOT's RMS. These volumes have been adjusted by PennDOT to represent an average day in the current year. Traffic volumes collected and reported in recent traffic studies may differ but can be used to supplement the RMS data.

TRANSIT

Adams County Transportation Authority

Adams County Transportation Authority, (formerly provided by Apple Line Transportation) serves the paratransit needs of the Gettysburg Area. Service is provided on a demand responsive basis. Four to five hundred (400-500) trips are serviced a day. The majority of the patrons are senior citizens and persons with physical or mental handicaps. Service is provided to other citizens of Adams County for full fares.

Gettysburg Tour Center Trolley

The Trolley runs from April to October to serve the needs of tourists during the peak season. There are two routes running every other hour from 10:00 AM to 5:00 PM daily. Each route takes one hour, or both routes can be combined. A fare of \$.50 per ride, or \$2.00 per day is charged. The route that runs on the even hours provides service to the east and north of Gettysburg Square. There are fifteen stops on the northeast route, including the Walmart and Peebles Shopping Centers and Gettysburg College. The route that runs on the odd hours provides service to the south and west of Gettysburg Square. There are fifteen stops on the southwest route, including the General Lee Restaurant and the Cyclorama. The majority of the patrons are visitors to the area.

Wolf's Bus Lines

Commuter service is provided once daily to and from Harrisburg from York Springs.

1. US 15, York County to the Maryland State line

Congestion Summary

This segment of US 15 is an expressway running 26.5 miles from York County to the

Maryland State line. US 15 is part of the National Highway System (NHS), which qualifies it for inclusion on the CMS network. There are few existing congestion problems on this section of US 15. Non-recurring congestion does occur. Most often the congestion results from incidents and special events, but also may occur during highway construction.

Land use adjacent to the facility is mostly agricultural (farmland and orchards) and residential. There are also some wooded areas.

Current Traffic Condition and Mixes

US 15 travels in a northeast-southwest direction, linking Harrisburg with Gettysburg and Frederick, MD. The roadway is limited access from York Springs to Maryland. It connects with seven interchanges including: PA 234, PA 394, US 30 (Lincoln Highway), PA 116, PA 97, PA 134 and Business 15. Business 15 runs parallel to US 15. North of York Springs US 15 is controlled access connecting to Mountain Road, Bonners Hill Road, Old Route 15, Ridge Road and an interchange at PA 94.

Traffic volumes obtained from PennDOT's Roadway Management System (RMS) indicate that annual average daily traffic (AADT) volumes range from 9,388 (north of Bus. 15) to 17,056 (north of PA 94). Truck percentages ranged from 7% (between PA 394 & PA 294) to 15% (between PA 97 & PA 116).

Approximate v/c ratios were calculated for various segments along US 15 during the peak hour. V/C ratios were below the congestion threshold. V/C ratios were found to range between .13 (north of Business 15) and .31 (north of PA 94).

Strategies for Future Consideration (For Interchange Areas)

- Land Use Controls
- Express Bus Service and Van Pooling
- Park and Ride Lots
- Special Events Coordination
- Lighting

Planned and Programmed Improvements

There are no planned or programmed improvements for this facility at this time.

Recommendations from Recent Studies

The *Adams County Comprehensive Plan* suggests improvements at the following US Route 15 interchanges:

PA Route 97
PA Route 116
US Route 30
Goldenville Road
PA Route 94

2. US 30, York County to US 15

Congestion Summary

This section of US 30 is an undivided principle arterial, providing the most direct east-west route connecting Gettysburg with York. It is called the Lincoln Highway. This section is 12 miles long and is part of the NHS. Congestion on this section is both recurring and non-recurring. Recurring congestion occurs at the rotary intersection at New Oxford Borough. The rotary is a large circular center island with landscaping. On street parking is allowed in each quadrant of the square. Flashing yellow signals warn motorists at the intersections of the square. Congestion is also caused by motorists accessing businesses along the section of roadway near New Oxford .

Land use is predominantly a mixture of residential and commercial. Large commercial development in the area includes Morton Building and Wampler Longacre. Both of these facilities generate truck activity. The Conewago Valley School District's elementary school in New Oxford also generates traffic including significant school bus activity.

Congestion also occurs at the intersection of US 30 and PA 94. This is a signalized intersection with some commercial development.

Granite Station Road is an unsignalized intersection with congestion occurring when traffic tries to merge onto US 30.

Abbottstown Square, which is the intersection of US 30 and PA 194 is a rotary intersection. A single lane approach is provided in each direction. Right-of-way is given to US 30 while the minor approaches are controlled by stop signs. The center island is not large, but does contain directional signs. On street parking is provided in each quadrant of the square.

Current Traffic Conditions and Mixes

This section of US Route 30 consists of a 2-lane highway with a center turn lane in some areas and no access control. This route connects with PA 94, PA 194, US 15 and numerous local roads. Average annual daily traffic volumes obtained from RMS range from 10,959 (east of US Route 15) to 18,189 (west of PA Route 94). Truck percentages were found to range between 6% (west of PA Route 94) to 16% (west of the New Oxford Square).

Approximate v/c ratios were calculated. Segments congested during the peak hour include:

US 30 between SR 2001 and the New Oxford Borough rotary (.86), is considered to be congested. The truck percentage is 16%, and

US 30 west of PA 94 (1.09).

The *Adams County Comprehensive Plan* indicates that the intersection of US 30 and US 15 interchange ramp experiences LOS E during the PM peak hour.

Strategies for Future Consideration

- Land Use Controls
- Access Management
- Parking Management
- Bicycle and Pedestrian Programs
- Destination Signing

Planned and Programmed Improvements

U.S. 30 Passing Lane

Add passing lanes in the section from T-514 to Abbottstown Borough. Two sections, .8 miles in length, will be added in the location of Mt. Pleasant, Hamilton, and Berwick Township. Preliminary engineering studies are being conducted on this project.

Twelve Year Program Status:

- Engineering - first four years
- R.O.W. - second four years
- Construction - second four years

Recommendations from Recent Studies

A *US Route 30, Section S01* study prepared in 1993 recommends signaling the US Route 15

ramp intersections with US Route 30. The study also recommends providing an eastbound passing lane east of Swift Run Road and a westbound passing lane west of SR 2031.

The *Adams County Comprehensive Plan* recommends to plan for and phase construct as needed a US Route 30 relief route north of Gettysburg between Cashtown and Abbottstown.

Lincoln Highway Corridor Plan recommends traffic and access controls for future land use.

3. US 30, US 15 to Gettysburg Square

Congestion Summary

This section of US 30 is 2.21 miles long. This is a principle arterial connecting Gettysburg to US 15. This section is part of the NHS. There is very dense commercial development along the section with some new commercial development occurring adjacent to US 15. A large portion of the development is related to the tourist industry. The ten intersections in addition to the numerous driveways create congestion. Truck traffic travelling through the borough adds to the congestion.

The intersection of US 30 and US 15 in Straban Township experiences congestion and should be considered for improvements because it is the intersection of two major arterials. The intersection is a grade separated, partial diamond interchange, resulting in two unsignalized intersections, controlled by stop signs on the US 15 approaches to US 30.

Current Traffic Conditions and Mixes

This section of US 30 consists of a 2-lane highway with no access control. The section becomes a three-lane cross section with a center turn lane in Straban Township. There are five cross intersections, which are Stratton Street, 3rd, 4th, 5th and 6th Street. There are four T-intersections, which are Shealer Road, Natural Springs Road, Hunterstown Road and Liberty Street. Hanover Street intersects US 30 at a "Y" just east of Gettysburg Square.

The AADT just west of 4th Street is reported at 13,756 vehicles. The truck percentage was found to be 8%. The approximate peak hour v/c ratio was calculated to be 1.24 which indicates that congestion is present. The *Adams County Comprehensive Plan* has determined that the following intersections operate at LOS E:

- US 30 at US 15 interchange ramps
- US 30 at Shealer Road

Strategies for Future Consideration

- Land Use Controls
- Access Management
- Transit
- Bicycle and Pedestrian Programs
- Special Events Coordination
- Signalization
- Turning Lanes/Shoulder Upgrades
- Destination Signing

Planned and Programmed Improvements

Gettysburg Improvements East

Study the feasibility and need for widening and adding a center turn lane to create 5 lanes for 1.7 miles in Straban Township, on the section between the Gettysburg Borough line to US 15. There has been no activity on this project.

Twelve Year Program Status:

Engineering - first four years

R.O.W. - second four years

Construction - second four years

Gettysburg Borough - SAMI project

As part of a Safety and Mobility Initiative (SAMI, formerly ECONS) program to increase safety and improve traffic flow, a signal improvement program is under design for Gettysburg Borough. This includes upgrading signals at 11 intersections and installing a computerized signal system. Preliminary engineering is being conducted on this project.

Twelve Year Program Status:

Engineering - first four years

R.O.W. - first four years

Construction - first four years

Recommendations from Recent Studies

The *Adams County Comprehensive Plan* recommends the planning for and construction of a US Route 30 relief route north of Gettysburg between Cashtown and Abbottstown.

The *US Route 30, Section 501* study recommends signalizing the intersection of US 30 and PA 116. It also recommends signalizing the intersection of US 30 and SR 3001 (Gettysburg Square); however, this is unacceptable to local officials.

4. US 30, Gettysburg Square to Knoxlyn Road

Congestion Summary

US 30 is a principle arterial which is part of the NHS. Typical sections are comprised of: two-lane facility with parking in the borough, and two travel lanes just outside the borough in the vicinity of the Gettysburg National Military Park. The concentration of intersections and driveways contributes to congestion within Gettysburg Borough. Recurring congestion occurs adjacent to and within the Gettysburg Borough on this section of US 30. Congestion tends to be non-recurring outside of the Gettysburg Borough.

Special events associated with the Park can also contribute to congestion on this facility. Traffic traveling on the Park roads cross US 30 on Reynolds Avenue. The type of traffic touring the Park (slow moving, frequent stops) conflicts with thru traffic (commuter type). Visitors park vehicles on the opposite side of US 30 to access the small Park Service Visitors Center on US 30 just west of the intersection of Reynolds Avenue. Although the intersection is signalized pedestrians were noted crossing mid-block.

Current Traffic Conditions

This section of US 30 through the borough and just east of the Park is heavily commercialized. Two four legged intersections and nine T-intersections are closely spaced within Gettysburg Borough. There are also numerous driveways with direct access to US 30.

From the RMS data an AADT volume was found to be 7,130 (just east of SR 3015). Approximate peak hour v/c ratio calculated for this segment was found to be .29. The truck percentage just east of SR 3015 was reported at 10%. (Other traffic data is forthcoming from the Gettysburg National Military Park.)

Strategies for Future Consideration

- Parking Management
- Transit
- Bicycle and Pedestrian Programs
- Special Events Coordination
- Signalization
- Destination Signing

Planned and Programmed Improvements

Gettysburg Borough - SAMI project

As part of a Safety and Mobility Initiative (SAMI, formally ECONS) program to increase safety and improve traffic flow, a signal improvement program is under design for Gettysburg Borough. This includes upgrading signals at 11 intersections and installing a computerized signal system. This project is currently in the preliminary engineering process.

Twelve Year Program Status:

Engineering - first four years

R.O.W. - first four years

Construction - first four years

Recommendations from Recent Studies

The *US Route 30, Section S01* study recommends signalizing the intersection of US 30 and Herrs Ridge Road. The study also recommends signalizing the intersection of US 30 and SR 3001 (Gettysburg Square); however, this is unacceptable to local officials.

The *Adams County Comprehensive Plan* recommends the planning and construction of a US Route 30 relief route north of Gettysburg between Cashtown and Abbottstown.

5. US 30, Knoxlyn Road to Franklin County

Congestion Summary

This section is also a principle arterial that is a part of the NHS. Typical sections are comprised of two travel lanes just west of the National Military Park to a three-lane section in the vicinity of PA 234. This is the most direct route between Chambersburg and Gettysburg and connects US 30 with I-81. Congestion tends to be non-recurring.

The facility's terrain ranges from fairly level just west of Knoxlyn Road to rolling as it traverses over South Mountain. The center lane becomes a passing lane on the westbound climb over South Mountain. Congestion can occur when slow moving vehicles experience difficulty climbing the grade up South Mountain. Congestion occurs at the area near Cashtown Road and Old Rt 30.

Current Traffic Conditions

This section of US 30 is primarily rural with commercial development interspersed. From the RMS data, the AADT volume just west of PA 234 was found to be 5,975. The approximate peak hour v/c ratio was calculated to be .24.

Strategies for Future Consideration

- Land Use Controls
- Access Management
- Special Events Coordination
- Signalization
- Destination Signing

Planned and Programmed Improvements

Speed Limit Reduction

The speed limits have been reduced to increase safety on this section of US 30.

Recommendations from Recent Studies

The *Adams County Comprehensive Plan* recommends signalizing US 30 and Cashtown Road.

6. Gettysburg Borough

Congestion Summary

The Gettysburg Square has a rotary intersection that provides one lane on each approach controlled by a yield sign. On street parking is provided in each quadrant of the square. The island within the rotary intersection is large and landscaped. In addition, the Gettysburg National Military Park draws many tourists. Many roads within the Park are accessed within Gettysburg Borough. Other tourist attractions, many relating to the Park are within the Borough. The combination of non-local traffic and the convergence of these corridors leads to confusion and congestion in the square.

The majority of primary arterials in Adams County are arranged in a radial pattern with Gettysburg at the hub. US 30, PA 34, PA 97(Baltimore Pike), Bus. 15, PA 116 and US 134 converge at this intersection or within the Borough in a radial pattern. The majority of the primary corridors in Adams County intersect within Gettysburg Borough.

Pedestrian traffic in the borough also has the potential to conflict with automobile traffic. A walking tour of historic sites and many other tourist attractions within the Borough encourages pedestrian traffic.

Trucks can have difficulty maneuvering the geometry of the rotary intersection and can be a cause of congestion.

Current Traffic Conditions

Gettysburg Borough has high densities of residential and commercial development. There are numerous intersections and driveways. The *Adams County Comprehensive Plan* shows 2,605 vehicles accessing the rotary during the PM peak hour. A count of truck activity in the square was performed as part of the US 30 study. This study determined that the peak period for truck activity was between 12:30-1:30 PM when 111 trucks accessed the rotary. The truck percentage was determined to be 4.1%.

Adams County Office of Planning and Development staff have indicated that pedestrian traffic in the square and Borough are have increased significantly.

Strategies for Future Consideration

- Parking Management
- Transit
- Bicycle and Pedestrian Programs
- Special Events Coordination
- Signalization
- Destination Signing

Planned and Programmed Improvements

Gettysburg Borough - SAMI project

As part of a Safety and Mobility Initiative (SAMI, formerly ECONS) program to increase safety and improve traffic flow, a signal improvement program is under design for Gettysburg Borough. This includes upgrading signals at 11 intersections and installing a computerized signal system. This project is currently in the preliminary engineering process.

Twelve Year Program Status:

- Engineering - first four years
- R.O.W. - first four years
- Construction - first four years

Recommendations from Recent Studies

The *US Route 30, Section S01* study recommends signalizing the intersection of US 30 and SR 3001 Gettysburg Square; however, this is unacceptable to local officials.

7. PA 94, US 15 to US 30 Corridor

Congestion Summary

This is a 10.15 mile section of PA 94. This is a two-lane non-divided highway with no access control. This facility connects US 30 with US 15, and Hanover with Harrisburg. It also connects Hanover with Carlisle. Although there are relatively few congestion problems along this corridor, there is non-recurring congestion at the intersection of US 15 and PA 94.

Current Traffic Conditions

The corridor traverses a rural area with some commercial and residential development. Annual average daily traffic volumes were found to be in the 6,000 to 8,000 range. Truck percentages were found to be about 8%. Approximate peak hour v/c ratios were calculated to range between .32 (north of PA 234) to .47 (south of SR 1007).

Strategies for Future Consideration

- Land Use Controls
- Access Management
- Signalization
- Turning Lanes/Shoulder Upgrade
- Lighting

Planned and Programmed Improvements

PA 94

Safety improvement to the intersection of Berlin Road and PA 94 in Hamilton Township. Regrade for sight distance. This project is in the preliminary engineering process and construction will begin in the 1996 construction season.

Twelve Year Program Status:

- Engineering - first four years
- R.O.W. - first four years
- Construction - first four years

Recommendations from Recent Studies

The *Adams County Comprehensive Plan* recommends providing full width shoulders to improve the LOS in the future. It also recommends turning lanes and traffic signals at PA 234 and PA 394 as well as other intersections.

8. PA 94, US 30 to York County (South)

Congestion Summary

This section is 3.33 miles long. It is a non-divided highway that is part of the NHS. This section of PA 94 connects US 30 to Hanover. It also connects to Maryland and I-795. Congestion on this road increases steadily as it reaches the Hanover area and becomes heavily commercial.

Current Traffic Conditions

The intersection of US 30 and PA 94 has been identified as having congestion. There is also some peak hour congestion in the Hanover area. From the RMS data AADT volumes were found to be 12,889 south of US 30 and 25,452 south of SR 2033. The approximate v/c ratio for the peak hour for these segments was calculated to be .71 (south of US 30) and 1.15 (south of SR 2033). The segment south of SR 2033 (Green Springs Road) is considered to be congested. The truck percentage south of US 30 was reported at 5%.

Strategies for Future Consideration

- Land Use Controls
- Access Management
- Signalization
- Right-of-Way Preservation Program to ensure Local Road Continuity

Planned and Programmed Improvements

Hanover Study

A transportation study concentrating on PA 116 and PA 94 was initiated in December of 1995. The study will include the approximate area of Penn Township, West Manheim Township, Hanover Borough and will extend into adjacent areas in Adams County.

Twelve Year Program Status:

Engineering - first four years

Intersection of PA 94 and US 30

The intersection of PA 94 and US 30 has recently been upgraded.

Recommendations from Recent Studies

Adams County Comprehensive Plan recommends providing full width shoulders to improve the LOS in the future. It also recommends that traffic conditions be reevaluated if a Hanover bypass is implemented.

9. Hanover downtown area/McSherrystown Borough

Congestion Summary

The Borough of Hanover is in York County. Hanover is a major employment and commercial center with a high density of industrial, commercial and residential development. Employers attract employees from the southeast region of Adams County. There is congestion on the PA 94, PA 116, and PA 194 corridors that converge in Hanover. These corridors become extremely congested. There is a conflict with through traffic and local traffic. Traffic accesses PA 94 in Hanover. PA 94 is part of the NHS and connects to Route 30 in Maryland, which connects to I-795. All state routes leading into Hanover from Adams County are two-lane undivided highways.

Current Traffic Conditions

According to the *Southeast Adams County Transportation Study*, two unsignalized intersections in McSherrystown currently operate at poor levels of service in the PM peak hour. The intersection of PA 116 and Third/Mt. Pleasant is operating at LOS D on the northbound approach and the intersection of PA 116 and Fifth Street is operating at LOS F on the northbound approach. The study indicates that these intersections carried a total PM peak hour volume of 1,569 and 1,492 respectively.

Strategies for Future Consideration

- Transit
- Bicycle and Pedestrian Programs
- Signalization
- Turning Lanes/Shoulder Upgrade
- Right-Of-Way Preservation Program to ensure Local Road Continuity

Planned and Programmed Improvements

Hanover Study

A transportation study concentrating on PA 116 and PA 94 was initiated in December of 1995. The study will include the approximate area of Penn Township, West Manheim Township, Hanover Borough and will extend into the areas that are adjacent to these municipalities in

Adams County.

Twelve Year Program Status:
Engineering - first four years

Recommendations from Recent Studies

The *Adams County Comprehensive Plan* recommends providing a McSherrystown Relief Corridor. It also recommends coordinating and modernizing traffic signals in McSherrystown. The Plan also recommends signaling PA 116 and South Third Street.

10. PA 116, PA 16 to Gettysburg Borough

Congestion Summary

This is a 12.0 mile section that traverses through Carroll Valley Borough, Fairfield Borough and Highland Township. It is a two-lane non-divided roadway. It intersects with PA 16 in Carroll Valley. PA 16 connects to Franklin County and Maryland. Towards the eastern end, it connects with Gettysburg Borough and the Gettysburg National Military Park. The congestion on this corridor is generally moderate. It is influenced by the Park towards the end and peak hour commuter traffic towards the western/southern end.

Current Traffic Conditions

Average annual daily traffic volumes obtained from RMS range from 3,609 (north of PA 16) to 9,636 (north/east of SR 3021- Jacks Mountain Road). Truck percentages were found to be in the 2-5% range. The approximate v/c ratios calculated range from .27 (north of PA 16) to .57 (east of SR 3020 - Knoxlyn/Ortanna Road).

Strategies for Future Consideration

- Land Use Controls
- Access Management
- Park and Ride Lots
- Special Events Coordination
- Turning Lanes/Shoulder Upgrade
- Lighting
- Destination Signing

Planned and Programmed Improvements

There are no planned or programmed improvements for this facility at this time.

Recommendations from Recent Studies

The *Adams County Comprehensive Plan* recommends widened shoulders for the entire section and traffic signals and turning lanes at the following locations: PA 116, Carrolls Tract Road, and Bullfrog Road.

11. PA 116, Park Avenue and Willoughby Run to Hanover Street (SR 2018)

Congestion Summary

This section is a 2 mile, two-lane non-divided roadway with no access control. The congestion on this corridor is generally moderate to severe. The congestion is the most severe on the segment within the borough. The intersection of Baltimore Street, and the intersection of SR 2018 with York Road (US 30) experience very severe congestion. This is a principle arterial. Access to the Gettysburg National Military Park is provided on Reynolds Avenue and West Confederate Avenue. The section between Reynolds Avenue and West Confederate Avenue is part of the Auto Tour advertised on the Park brochure. This increases the occurrence of commuter traffic conflicting with tourist traffic.

Current Traffic Conditions

Average annual daily traffic volumes obtained from RMS range from 8,391 (Willoughby Run Road) to 9348 (Baltimore Street). The truck percentage are approximately 5%. The approximate v/c ratios were calculated at .77 (Willoughby Run Road) and .78 (Baltimore Street).

Strategies for Future Consideration

- Parking Management
- Transit
- Bicycle and Pedestrian Programs
- Special Events Coordination
- Signalization
- Destination Signing

Planned and Programmed Improvements

Gettysburg Borough - SAMI project

As part of a Safety and Mobility Initiative (SAMI, formerly ECONS) program to increase safety and improve traffic flow, a signal improvement program is under design for Gettysburg

Borough. This includes upgrading signals at 11 intersections and installing a computerized signal system. This project is currently in the preliminary engineering process.

Twelve Year Program Status:

Engineering - first four years

R.O.W. - first four years

Construction - first four years

Recommendations from Recent Studies

The *US Route 30, Section S01* study recommends signalization: US 30 and PA 116 (SR 2018)

12. PA 116, SR 2018 and York Road (US 30) in Gettysburg Borough to Littlestown Road

Congestion Summary

This is a minor arterial two-lane non-divided roadway. This section is 8.9 miles long. It traverses through Gettysburg Borough one block south of US 30 on Middle Street. Although it does not intersect with US 30, it does run parallel for several blocks contributing to the overall congestion in Gettysburg Square. It also traverses Mount Pleasant Township. Congestion is generally moderate although it has been noted to be severe at times at the intersections of PA 116, and SR 2018 that then intersects with US 30.

Current Traffic Conditions

From the RMS data, AADT volumes were found to range between 4,876 (just east of US 30) to 6,106 (just east of US 15). Approximate v/c ratios calculated for various segments ranged from .32 (east of SR 2001 - Maple Street) to .41 (east of US 30). The *Southeast Adams County Transportation Study* indicates that PA 116 west of SR 2001 (Maple Street) and PA 116 west of Bonneauville are experiencing LOS D. The Study also indicates existing LOSs at the following intersections:

Location	Level of Service (LOS)
PA 116 and Littlestown Road	C
PA 116 and Cedar Street/Bon-Ox Road	B
PA 116 and Maple Street/White Hall Road	C
PA 116 and Pine Street/Granite Station Road	B
PA 116 and Low Dutch Road	B

Strategies for Future Consideration

- Land Use Controls
- Access Management
- Bicycle and Pedestrian Programs
- Park and Ride Lots
- Special Events Coordination
- Signalization
- Turning Lanes/Shoulder Upgrade
- Right-of-Way Preservation Program to ensure Local Road Continuity
- Lighting
- Destination Signing

Planned and Programmed Improvements

Southeast Adams County Transportation Study

Adams County is conducting a *Southeast Adams County Transportation Study* to identify measures needed to accommodate future growth and to prepare a transportation/land use plan for the area. Two working papers have been prepared, *Working Paper 1; Existing Conditions*, and *Working Paper 2; Future Conditions and Deficiencies* that contain information on existing and future conditions. *Working Paper 3; Evaluation of Alternatives and Draft Plan Recommendations* has been prepared in draft form. The findings of these studies will be used to select a preferred development scenario for Southeast Adams County.

Recommendations from Recent Studies

Adams County Comprehensive Plan recommends full width shoulders be provided. One section east of Bonneauville already has them. In Bonneauville, the following improvements are recommended: realignment of the "S" curve and construction of a 40-foot wide section to provide sufficient width for turning lanes and some mid-block on-street parking.

Also, as part of the Cross Keys-Littlestown Connector, it is recommended the intersection of PA 116 and Littlestown Road be signalized and widened for left turns.

13. PA 116, Littlestown Road to Hanover

Congestion Summary

This is a minor arterial non-divided roadway that is 3.7 miles long. Congestion is considered to be recurring and is rated as moderate to severe. Congestion occurs at two unsignalized intersections in McSherrystown: the intersection of PA 116 and Third Street/Mt. Pleasant

Road; and the intersection of PA 116 and Fifth/Blettner Avenue.

Current Traffic Conditions

From the RMS data, the AADT west of SR 2001 (2nd Street) was 10,462. The approximate v/c ratio was calculated to be .87 that indicates this facility is approaching congestion. The *Southeast Adams County Transportation Study* indicates the existing LOS at the following locations:

Location	Level of Service (LOS)
PA 116 and Centennial Road	C
PA 116 and Third/Mt Pleasant Road	D
PA 116 and Oxford Road/Third Street	C
PA 116 and Fifth/Blettner	F

Strategies for Future Consideration

- Land Use Controls
- Access Management
- Transit
- Bicycle and Pedestrian Programs
- Park and Ride Lots
- Special Events Coordination
- Signalization
- Turning Lanes/Shoulder Upgrade
- Right-Of-Way Preservation Program to ensure Local Road Continuity
- Lighting

Planned and Programmed Improvements

Southeast Adams County Transportation Study

Adams County is conducting a *Southeast Adams County Transportation Study* to identify measures needed to accommodate future growth and to prepare a transportation/land use plan for the area. Two working papers have been prepared, *Working Paper 1; Existing Conditions*, and *Working Paper 2; Future Conditions and Deficiencies* that contain information on existing and future conditions. *Working Paper 3; Evaluation of Alternatives and Draft Plan Recommendations* has been prepared in draft form. The findings of these studies will be used to select a preferred development scenario for Southeast Adams County.

Recommendations from Recent Studies

The *Adams County Comprehensive Plan* recommends adding turning lanes at the PA 116 and Racehorse Road/Sunday Drive intersection as part of the Race Horse Road improvement.

The *Adams County Comprehensive Plan* recommends providing a McSherrystown Relief Corridor. It also recommends coordinating and modernizing traffic signals in McSherrystown. The Plan also recommends signalizing PA 116 and South Third Street.

14. PA 194, US 30 to York County (Hanover)

Congestion Summary

This is a two-lane facility connecting US 30 to York County. It is a 2.7 miles long collector. Congestion is considered to be recurring and generally moderate. This is a commuter route to Hanover, York County from Abbottstown, US 30 Hamilton Township, and Reading Township. It traversed through Berwick Township, into York County and intersects with PA 94. The land use in York County is commercial. PA 194 becomes increasingly commercial as it approaches York County.

Current Traffic Conditions

No traffic data was available in RMS for this segment of roadway.

Strategies for Future Consideration

- Land Use Controls
- Access Management
- Transit
- Signalization
- Turning Lanes/Shoulder Upgrade
- Right-Of-Way Preservation Program to ensure Local Road Continuity

Planned and Programmed Improvements

There are no planned or programmed improvements for this facility at this time.

Recommendations from Recent Studies

The *Adams County Comprehensive Plan* recommends shoulder improvements, traffic signals (when warranted) and tuning lanes.

The *US Route 30, Section S01* study recommends signalizing the Abbottstown square.

The *US Route 30, Section S01* study recommends signaling the Abbottstown square.

15. PA 194, Hanover to Littlestown

Congestion Summary

This is a 5.5 mile long, two-lane facility that connects Hanover and Littlestown Borough. Congestion is recurring during the peak hour and is generally moderate to severe. The congestion becomes more apparent in Littlestown Borough. This is a two-lane facility with no access control.

Current Traffic Conditions

Average annual daily traffic volumes on PA 194 north of SR 2025 (Pine Grove Road) and south of SR 2006 (Mount Pleasant Road) were found to be 10,832 and 9,781 respectively. Both segments indicated a 3% truck volume. Approximate peak hour v/c ratios were calculated for these two segments and were found to be .81 (north of Pine Grove Road) and .86 (south of Mount Pleasant Road). This is considered to be approaching an unacceptable level of congestion.

Strategies for Future Consideration

- Land Use Controls
- Access Management
- Parking Management
- Transit
- Bicycle and Pedestrian Programs
- Park and Ride Lots
- Special Events Coordination
- Signalization
- Turning Lanes/Shoulder Upgrade
- Right-Of-Way Preservation Program to ensure Local Road Continuity

Planned and Programmed Improvements

There are no planned or programmed improvements for this facility at this time.

Recommendations from Recent Studies

The *Adams County Comprehensive Plan* recommends shoulder improvements, traffic signals (when warranted) and tuning lanes on: Racehore Road, Pine Grove Road and Mt. Pleasant Road.

16. SR 1015 (Hanover Street/Oxford Road), New Oxford Borough to PA 94

Congestion Summary

This is a two-lane facility that connects the New Oxford Rotary to PA 94. It is 3.4 miles in length with no access control. Land use is primarily commercial and residential near the New Oxford Borough. Congestion is recurring and is considered to be moderate to severe.

Current Traffic Conditions

There is no data available from RMS on this section of roadway. The *Southeast Adams County Transportation Study* conducted an Automatic Traffic Recorder count on Oxford Road north of PA 94. The PM peak hour volume was determined to be 672 vehicles and the LOS was found to be C.

Strategies for Future Consideration

- Land Use Controls
- Access Management
- Signalization
- Turning Lanes/Shoulder Upgrade
- Transit

Planned and Programmed Improvements

There are no planned or programmed improvements for this facility at this time.

Recommendations from Recent Studies

None were discovered at this time.

17. Baltimore Pike, Business 15 to US 15

Congestion Summary

This is a two-lane undivided roadway that connects US 15 and PA 97 with Gettysburg Borough. It is 2.4 miles in length. The National Military Park abuts this facility towards the northern section. The National Cemetery and other sites are accessed from the Baltimore Pike. Land use in the area has been influenced by the park. Congestion is considered to be generally moderate but does increase in proximity to the Military Park and Borough.

Current Traffic Conditions

From the RMS data AADT volumes were found to be 5,718 just north of US 15 interchange and 11,632 just south of Steinwehr Avenue. The approximate peak hour v/c ratios calculated from these two segments were found to be .36 and .97 respectively. The segment south of Steinwehr Avenue is considered to be approaching an unacceptable level of congestion.

Strategies for Future Consideration

- Land Use Controls
- Access Management
- Parking Management
- Transit
- Bicycle and Pedestrian Programs
- Special Events Coordination
- Signalization
- Turning Lanes/Shoulder Upgrade
- Right-Of-Way Preservation Program to ensure Local Road Continuity
- Destination Signing

Planned and Programmed Improvements

There are no planned or programmed improvements for this facility at this time.

Recommendations from Recent Studies

None have been discovered.

18. PA 97, US 15 to Maryland State line

Congestion Summary

This is a two-lane facility that is 9.4 miles in length. It traverses Mount Joy Township and Littlestown Borough and connects with US 15 and PA 194. Congestion is considered to generally be moderate. Lake Heritage Village, a large residential development, accesses PA 97 just east of US 15. A large parcel of undeveloped land is located in the southeast quadrant of the US 15 and PA 97 interchange. A developer is considering a large outlet mall for this site.

Current Traffic Conditions

Average annual daily traffic volumes obtained from RMS for this segment of road ranged from 5,193 (north of Kensington Drive) to 9,547 (north of PA 194). Truck percentage near

US 15 was reported at 8%. The approximate v/c ratios calculated ranged .40 (south of US 15) to .80 (north of 194). The segment just north of 194 is considered to be approaching congestion. The *Southeast Adams County Transportation Study* reports that the intersection of PA 97 and PA 194 is operating at LOS E in the PM peak hour, that indicates that congestion is present.

Strategies for Future Consideration

- Land Use Controls
- Access Management
- Parking Management
- Transit
- Special Events Coordination
- Signalization
- Turning Lanes/Shoulder Upgrade
- Right-Of-Way Preservation Program to ensure Local Road Continuity
- Lighting
- Destinalional Signing

Planned and Programmed Improvements

There are no planned or programmed improvements for this facility at this time.

Recommendations from Recent Studies

The *Adams County Comprehensive Plan* indicates that the interchange at US 15 and PA 97 be improved to accommodate increased traffic.

The *Southeast Adams County Transportation Study* identified that the intersection of PA 97 and PA 194 in Littlestown is operating at an unacceptable level. The study indicates on street parking as significantly contributing to congestion. *Working Paper 3; Evaluation of Alternatives and Draft Plan Recommendations* has been prepared in draft form. The findings of these studies will be used to select a preferred development scenario for Southeast Adams County.

19. Littlestown - Borough

Congestion Summary

PA 97 and PA 194 that are principle arterials that intersect in the Borough of Littlestown. This four-legged signalized intersection provides a single lane on each approach with adjacent parking. Land use is commercial and residential.

Current Traffic Conditions

Average Annual Daily Traffic (AADT) volumes were found to be 10,063 on PA 194 north of PA 97 and 9,547 on PA 97 north of PA 194. The *Southeast Adams County Transportation Study* reports that this signalized intersection accommodates 1,469 vehicles during the PM peak hour. The report determined the LOS to be E, that indicates that congestion is present. An analysis showed that if parking is removed, the intersection's LOS would improve to C.

Strategies for Future Consideration

- Land Use Controls
- Access Management
- Bicycle and Pedestrian Programs
- Parking Management
- Express Bus or Vanpool Service
- Park and Ride Lots
- Special Events Coordination
- Signalization
- Turning Lanes/Shoulder Upgrade
- Right-Of-Way Preservation Program to ensure Local Road Continuity

Planned and Programmed Improvements

There are no planned or programmed improvements for this facility at this time.

Recommendations from Recent Studies

A recently prepared *Comprehensive Traffic Study; Borough of Littlestown* indicates that in 2002 without development the intersection of Queen Street (PA 97) and King Street (PA 194) will experience LOS F. With the five major residential developments completed, it is anticipated that many of the intersections studies will operate at LOS E or F. The Traffic Study recommends improvements to intersections including improved signalization and turning lanes.

The Southeast Adams County Transportation Study, Working Paper 3; Evaluation of Alternatives and Draft Plan Recommendations has been prepared in draft form. The findings of these studies will be used to select a preferred development scenario for Southeast Adams County.

20. PA 16, Carroll Valley to Maryland State line

Congestion Summary

This is a two-lane facility that connects Maryland and PA 116 in the southwest part of the county. It is 1.3 miles in length. Congestion is considered to be moderate. Both recurring and non-recurring congestion occur. The non-recurring congestion is associated with recreational travel associated with the Ski Liberty resort.

Current Traffic Conditions

From the RMS data, the AADT volume for this section of road is 6,133. The truck volume was reported to be 7%. The approximate v/c ratio calculated for this segment was .38.

Strategies for Future Consideration

- Land Use Controls
- Express Bus or Vanpool Service
- Access Management
- Park and Ride Lots
- Destination Signing
- Special Events Coordination
- Lighting

Planned and Programmed Improvements

There are no planned or programmed improvements for this facility at this time.

Recommendations from Recent Studies

No recommendations were discovered.

21. PA 234, Biglerville to US 15

Congestion Summary

This is a minor arterial two-lane non-divided roadway. This section is 6.3 mile long. It traverses through Biglerville Borough, Butler Township and Tyrone Township. It connects PA 34 and Biglerville to US 15. The land surrounding Biglerville is rural. The majority of the land use is agriculture.

Current Traffic Conditions and Mixes

This section of PA 234 consists of a 2-lane highway and no access control. Traffic congestion is non-recurring relating to special events and the seasonal fruit processing industry. Truck traffic to the orchards and fruit processing plants can be significant. This traffic is seasonal relating to the peak harvest of the various types of fruit. In addition, the Apple Harvest Festival in Arendtsville creates congestion .

From the RMS data and AADT volume was found to be 3,818 in the Borough of Biglerville. The approximate peak hour v/c ratio calculated for this segment was found to be .19. The information on truck traffic is not available.

Strategies for Future Consideration

- Land Use Controls
- Access Management
- Special Events Coordination
- Signalization
- Turning Lanes/Shoulder Upgrade
- Lighting

Planned and Programmed Improvements

Comprehensive Road Improvement Study (CRIS)

A transportation study will be done to assess what improvements are needed within the PA 234, US 30 and PA 394 corridors. There has been no activity on this project.

Twelve Year Program Status:

Engineering - first four years

Recommendations from Recent Studies

No recommendations were discovered.

22. PA 34, Biglerville to Gettysburg

Congestion Summary

PA 34 is an minor arterial that is 6.5 miles in length. It is a two-lane non-divided highway with no access control. This facility connects Biglerville with Gettysburg. Although there are relatively few congestion problems along this corridor, there is non-recurring congestion relating to special events and the fruit processing industry.

Current Traffic Conditions

This corridor traversed a gradually developing rural area with some residential development. The annual average daily traffic volumes ranged from approximately 6,388 to 8,377. The truck percentage was 5%. The approximate v/c ratios were calculated to range between .53 south of Biglerville to .63 north of Gettysburg.

Strategies for Future Consideration

- Land Use Controls
- Access Management
- Parking Management
- Special Events Coordination
- Signalization
- Turning Lanes/Shoulder Upgrade
- Lighting

Planned and Programmed Improvements

There are no planned or programmed improvements for this facility at this time.

Recommendations from Recent Studies

None were discovered at this time.

23. PA 34, Cumberland County to Biglerville

Congestion Summary

This is a minor arterial two-lane non-divided roadway. This section is 7.78 miles long. It traverses through Huntington Township, Menallen Township, Bendersville Borough, Butler Township and Biglerville Borough.

Current Traffic Conditions and Mixes

This section of PA 34 consists of a 2-lane highway with no access control. The land use surrounding Biglerville is rural, with the majority of the land in agriculture. The agriculture is unique because it is primarily orchard land. As a result, there are numerous fruit processing plants on PA 34. This type of industry is seasonal, with traffic increasing during the harvest season. Truck traffic also increases significantly during the processing season. From the RMS data and AADT volume was found to be 13,940 near Biglerville and only 2,042 near the Cumberland County line. The approximate peak hour v/c ratio calculated for this segment was found to be .70 near Biglerville and .11 near Cumberland County. The

information on truck traffic is 10% and 13% respectively.

Strategies for Future Consideration

- Signalization
- Turning Lanes/Shoulder Upgrade

Planned and Programmed Improvements

There are no planned or programmed improvements for this facility at this time.

Recommendations from Recent Studies

None were discovered at this time.

24. Gettysburg National Military Park

Congestion Summary

The roads through the Gettysburg National Military Park are posted at 25 mph. The Scenic Auto Tour circulates traffic through the Park using both Park roads and State roads, such as US 30 and PA 134.

Congestion is caused by a mix of slow moving Park visitor and non-visitor traffic. Traffic moves slowly through the park. Cars often stop to view the monuments that line the road. Drivers stop on the road or pull off onto grass or gravel areas. Pedestrian traffic along this road is high and no sidewalks are provided.

Current Traffic Conditions

One-way and two-way traffic patterns occur within the Park. 25 mph speed limits are posted. Pedestrian traffic is high.

Strategies for Future Consideration

- Special Events Coordination
- Bicycle and Pedestrian Program

Planned and Programmed Improvements

Rehabilitation of Park Roads, Gettysburg National Military Park

The Military Park plans to rehabilitate some of the park roads. In order to preserve

monuments at the park and address congestion concerns the park has proposed to make some of the Military Park roads one-way in the fall of 1996:

West Confederate Avenue - one-way southbound
Stone Avenue/Meredith Avenue - one-way southbound
Sickles Avenue - one-way northbound
United States Avenue - one-way eastbound

Other roads considered for one-way were Reynolds Avenue and Howard Avenue. Reynolds Avenue will become one way, but this will be delayed until the *Gettysburg Area Transportation Study* is completed. Howard Avenue requires further study.

Gettysburg Area Transportation Study

Adams County is planning to do a transportation study of the Gettysburg area. It will also address some traffic issues associated with National Military Park.

Recommendations from Recent Studies

Recommendations should be identified in the upcoming *Gettysburg Area Transportation Study*.

APPENDIX A

APPENDIX A

Methodology for Quantifying Recurring (Peak Hour) Congestion

The following has been retyped from the HATS Regional CMS.

A. General

This methodology has been developed as an efficient way to quantify recurring congestion on the HATS CMS network at a regional/sketch planning level. Its results along with previous results from detailed SOV project CMS evaluations and environmental studies of major highway projects are being used to quantify system-wide recurring congestion. This method produces a rough estimate of congestion and actual capacity of a segment may need to be adjusted based on abnormal local conditions. During detailed corridor studies, volume to capacity ratios may need to be more precisely defined and certainly, a more detailed and accurate methodology, perhaps using a different measure of congestion, will be instituted at that time. The weakness of the methodology lies in the fact that it analyzes link and not node (intersection/interchange) capacity (where the most severe capacity problems often occur). However, some of the more severe node and special case (Lane drops, for instance) capacity are listed at the end of each corridor's link analysis table. Again, detailed capacity analysis of these locations will occur during the detailed corridor studies.

B. Sub divide corridors into a series of segments based on:

- Roadway characteristics
 - Number of lanes
 - Access control (LA, NLA, PCA)
 - signalization
 - Speed constraints/ranges
- Urban/Rural location

C. Use following congested/capacity volumes (per lane, hourly volumes) based on LLTS work and HCM (94')

Type Facility	Hourly per lane Volume	Speed
Limited Access		
urban	1600	55mph
urban	1400	45mph
rural	1400	55mph
Arterial (unsignalized)	1000	45mph
Suburban arterial (signalized)	800	35mph
City arterial (signalized)	600	25mph

D. Calculation method

- Select highest AADT record by segment
 - Use only 1985 or later count data - use most recent data when applicable (highest or close to highest AADT)
- Sum AADT's if highway is divided
- Multiply by K factor (to derive peak or design hour volume)
 - Use 10% if K factor not provided
- Divide by number of through lanes in one direction
 - Don't count center left turn lanes
- Will consider T factor later at detailed corridor study
- Divide result by congested hourly volume from "C" above

E. Results

- if > 1 = unacceptable level of congestion
- if .80 to .99 = approaching unacceptable level of congestion
- if < .80 = acceptable conditions

APPENDIX B

Adams County Congestion Management RMS data and Computations

Roadway Segment	Seg. No.	AADT	K factor	D factor	Truck Percentage	Peak Hour Volume	Number of Lanes	Estimated Capacity	V/C Ratio	Congested Y or N
US 15										
north of Bus. 15	60 & 61	9388	0.07	0.60	12%	394	4	3000	0.13	N
between PA 134 & PA 97	140 & 141	14296	0.08	0.60	8%	686	4	3000	0.23	N
between PA 97 & PA 116	170 & 171	12295	0.08	0.55	15%	541	4	3000	0.18	N
between US 30 & PA 394	230 & 231	10041	0.08	0.55	13%	442	4	3000	0.15	N
between PA 394 & PA 294	350 & 351	14387	0.08	0.55	7%	633	4	3000	0.21	N
between PA 294 & PA 94	390 & 391	10418	0.09	0.55	13%	516	4	3000	0.17	N
north of PA 94	480 & 481	17056	0.1	0.55	12%	938	4	3000	0.31	N
PA 16										
between Maryland and PA 116	100	6133	0.07	0.70	7%	301	2	800	0.38	N
US 30										
west of PA 234	30 & 31	5975	0.08	0.50	N/A	239	2	1000	0.24	N
between PA 234 & SR 3011 (High Rd)	80	5976	0.08	0.50	N/A	239	2	1000	0.24	N
east of PA 3015 (Fairview Fruit Rd)	190	7130	0.08	0.50	10%	285	2	1000	0.29	N
west of Fourth St	290	13756	0.09	0.60	8%	743	2	600	1.24	Y
east of US 15	330	10959	0.09	0.55	10%	542	3	1000	0.54	N
bet. SR 2005(Gr. Station) & SR 2006(Cent.)	370	11989	0.09	0.50	13%	540	3	1000	0.54	N
between RI 2001(Bon Ox Rd) and Rotary	460	15262	0.09	0.50	16%	687	2	800	0.86	Y
west of PA 94	490	18189	0.1	0.60	6%	1091	2	1000	1.09	Y
east of PA 94	510	14501	0.1	0.55	7%	798	2	1000	0.80	Y
PA 34										
Gettysburg to Biglerville	10	8387	0.11	0.55	2%	507	2	800	0.63	N
PA 94	130	6388	0.11	0.60	5%	422	2	800	0.53	N
south of SR 2033(Green Springs Rd)	20	25452	0.09	0.50	N/A	1145	2	1000	1.15	Y
south of US 30	70	12889	0.1	0.55	5%	709	2	1000	0.71	N
north of US 30	100	7670	0.11	0.55	8%	464	2	1000	0.46	N
south of SR 1007 (Stoney Point Rd)	140	7805	0.11	0.55	7%	472	2	1000	0.47	N
north of PA 234	170	6448	0.1	0.50	N/A	322	2	1000	0.32	N

Note: Italic numbers mean that the parameter was estimated.

Adams County Congestion Management RMS data and Computations

Roadway Segment	Seg. No.	AADT	K factor	D factor	Truck Percentage	Peak Hour Volume	Number of Lanes	Estimated Capacity	V/C Ratio	Congested Y or N
PA 97										
north of SR 2027(Bollinger Rd)	30	5820	0.1	0.50	6%	291	2	600	0.49	N
north of 194	50	9547	0.1	0.50	N/A	477	2	600	0.80	Y
north of Kensington Dr	80	5193	0.1	0.50	N/A	260	2	600	0.43	N
south of SR 2001 (Two Taverns Rd)	150	6548	0.1	0.50	8%	327	2	800	0.41	N
south of US 15	180	6339	0.1	0.50	8%	317	2	800	0.40	N
PA 116										
north of PA 16	20	3609	0.11	0.55	2%	218	2	800	0.27	N
north of SR 3021 (Jacks Mln Rd)	70	9636	0.07	0.50	5%	337	2	800	0.42	N
west of SR 3013 (Camp G-burg Rd)	130	5845	0.08	0.50	4%	234	2	800	0.29	N
west of SR 3020 (Knoxlyn/Ortanna)	170	8358	0.1	0.55	4%	460	2	800	0.57	N
west of Confederate Ave	230	9348	0.1	0.50	5%	467	2	600	0.78	N
east of US 30	250	4876	0.1	0.50	N/A	244	2	600	0.41	N
east of US 15	290	6106	0.1	0.50	N/A	305	2	800	0.38	N
east of SR 2001 (Maple St.)	370	5166	0.1	0.50	N/A	258	2	800	0.32	N
east of SR 2017 (Honda Rd.)	420	6245	0.09	0.60	9%	337	2	1000	0.34	N
west of SR 2011 (2nd St.)	470	10462	0.1	0.50	N/A	523	2	600	0.87	Y
PA 194										
south of PA 97	60	5610	0.1	0.50	N/A	281	2	600	0.47	N
north of PA 97	100	10063	0.09	0.50	3%	453	2	600	0.75	N
north of SR 2025 (Pine Grove Road)	130	10832	0.1	0.60	3%	650	2	800	0.81	Y
south of SR 2006 (Mount Pleasant Road)	160	9781	0.1	0.70	3%	685	2	800	0.86	Y
PA 234										
Biglerville to US 15	260	3818	0.1	0.50	N/A	191	2	800	0.24	N
SR 2035 (Ballimore Rd)										
north of US 15	20	5718	0.1	0.50	N/A	286	2	800	0.36	N
south of Steinwehr Ave	50	11632	0.1	0.50	N/A	582	2	600	0.97	Y

Note: Italic numbers mean that the parameter was estimated.

APPENDIX C

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Summaries of Recently Completed Studies

Comprehensive Plan, Adams County Pennsylvania, Norman Day Associates, 1990

More detailed recommendations are contained in the report. The following outlines the circulation policies set forth in the document:

1. Plan for and construct a US Route 30 Relief Route north of Gettysburg between Cashtown and Abbottstown.
2. Plan for and construct roadways as follows:
 - PA Route 194 by pass of Littlestown
 - Littlestown - Hanover Road Extension
 - McSherrystown Relief Corridor
3. Encourage municipalities to adopt local collector road systems to reduce congestion in villages and boroughs.
4. Improve key roadways to operate as County Collector roadways, including:
 - Fruitbelt Connector - PA Route 116 to Cashtown
 - Connector from US Route 30 Relief Route to Old US Route 30 - Coleman Rd
 - Cross Keys-Littlestown Connector
 - Racehorse Road
5. Improve US Route 15 interchanges to accommodate increased traffic at:
 - PA Route 97
 - PA Route 116
 - US Route 30
 - Goldenville Road
 - PA Route 94
6. Improve the arterial roadway system to increase its capacity.
7. Adopt Access Management Standards to increase the efficiency of the arterial system.
8. Encourage SAMI studies by the Pennsylvania Department of Transportation of key crossroads and in key communities.
9. Implement the SAMI recommendations for Gettysburg.
10. Implement a safety Improvement Program in Adams County to address problems at locations where accidents have occurred and where potential safety problems may emerge.

ROUTE 30, Section SO1, Franklin, Adams and York Counties, Gannett Fleming, 1993

Study was conducted to determine improvements to support traffic growth through 2014 along US Route 30 between Mercersburg Road (PA Route 416) and Hanover Road (PA Route 116) - approximately 57 miles.

The results of the study indicate that a two-lane bypass around Gettysburg and Chambersburg is not warranted.

The following additional recommendations are included in this study.

- Abbottstown Square (Rt 30 & Rt 194) - signalize
- New Oxford Square (Rt 30 & Rt 1015) -signalize
- Route 30 & Route 15 Ramps - signalize
- Route 30 & Route 116 - signalize
- Gettysburg Square (Rt 30 & Rt 3001) - signalize
- Route 30 & Herrs Ridge Road - signalize
- Route 30 east of Route 94 - eastbound and westbound passing lanes (< 1 mile)
- Route 30 east of Swift Run Road - eastbound passing lane (< 1 mile)
- Route 30 west of PA Route 2031 - westbound passing lane (< 1 mile)
- Route 30 between Gettysburg Borough & RT 15 - provide a 5 lane cross section that includes a center left turn lane
- Detailed Environmental Study for alternate truck route

Southeast Adams County Transportation Study, Skelly and Loy, Inc. 1995

Study is currently underway, to date two working papers have been submitted. Working Paper 1 - Existing Conditions, and Working Paper 2 - Future Conditions and Deficiencies. No recommendations are included.

Under existing conditions, the only intersection operating at an unacceptable level in the PM peak hour is the intersection of PA Route 97 and PA 194 in Littlestown (LOS E) . The study indicates on street parking as significantly contributing to the congestion.

The intersection of PA Route 116 and Fifth/Blettner is experiencing poor LOS on at least one approach during the PM peak hour.

The following roadway sections are experiencing LOS D:

PA Route 97 south of Littlestown

PA Route 194 east of SR 2005

PA Route 116 west of SR 2001

PA Route 116 west of Bonneauville

SR Route 2009 north of Oxford Road

