

Chapter 8

Transportation and Circulation Plan

INTRODUCTION

There is a direct connection between land use planning and transportation: one cannot plan for one and ignore the other. The transportation system will function properly only when each community has adequate access to the system. The identification of problem areas throughout a region's transportation network, as well as a logical land use plan that enables residents to make fewer vehicle trips are key components to a joint comprehensive plan. Figure 8.1, the Future Traffic Circulation Map displays future transportation issues and concepts for the Region, including proposed intersection alignments, interchange improvements, proposed roads and bridges, scenic roads, sidewalk gaps, and greenway corridors.

The results of the citizen survey indicated that transportation concerns were not particularly pressing for either Borough or Township residents. However, Borough residents noted the need for street improvements to reduce congestion and facilitate easier movement through town, and Township residents noted the need to improve traffic circulation in the region.

Goal:

Provide a safe and efficient transportation circulation system that will enhance pedestrian and bicycle movement, ease vehicular travel, minimize impacts on residential development, and enhance the safety of the region's road corridors.

Objectives:

- Cooperate with the appropriate State agencies and the surrounding municipalities and Counties to build the proposed inner loop to alleviate traffic congestion in the region.
- Implement the recommendations of the Preliminary Traffic Plan¹ for the Shippensburg Area in the most efficient and cost effective manner.
- Coordinate access management programs along the principal road corridors outside of the Downtown area to minimize the number of access points to the road system.
- Establish coordinated design, performance, and signage standards for the region's road corridors.
- Preserve scenic road corridors as shown on Figure 8.1, the Future Traffic Circulation Map.
- Improve the visual image of the Region at 'gateways' and along road corridors, including both ends of King Street, Walnut Bottom Road, and Baltimore Road.
- Maintain and improve the existing road system as necessary.
- Implement traffic calming techniques to prevent adverse impact of traffic on residential neighborhoods.

¹ - Refers to the Preliminary Traffic Study prepared for the Shippensburg Area Chamber of Commerce by Carl Bert and Associates, 2002.

- Work with State, County, and other municipal officials to address areas of traffic concern within the region.
- Develop, expand, and link pedestrian, buggy, and bicycle systems, including sidewalks, shared bikeways, paved shoulders, trails, and greenways. Seek a variety of State, County, and private funding assistance.
- Encourage collaboration between the University and the Cumberland Valley Rails-To-Trails Council to continue the trail through the University Campus.
- Facilitate pedestrian and bicycle access to community facilities, including schools and recreation facilities.
- Improve intersections and turning movements along Walnut Bottom Road, Earl, and Queen Streets.
- Develop policies to discourage the use of streets in residential areas as shortcuts for externally generated through-traffic.
- Eliminate excess signage and traffic distractions, paying special attention to the areas that serve as a gateway to the historic Downtown area of the Borough.
- Support the development of multi-modal transportation facilities within the Borough, such as park-and-ride facilities, bike-and-ride facilities, and walk-and-ride facilities along with auto/bus/bike/pedestrian hubs.
- Prepare and implement a transportation capital improvement plan.
- Reduce the number and intensity of traffic flow constrictions on Borough streets; evaluate the feasibility of synchronizing traffic signals along King and Orange Streets, the realignment of Fayette Street, and the addition of left turn lights on King and Earl Streets.
- Provide connections between road corridors within the Borough and a system of alternative routes to destinations and work to accomplish the recommendations of the Preliminary Traffic Plan for the Shippensburg Area and coordinate efforts for road connections outside the Borough's limits.
- Maintain developer responsibilities for transportation improvements.
- Establish standards for street and road and driveway design.
- The Borough and Township should work with the County, HATS, and PennDOT to ensure the TIP Projects remain on the Program and are scheduled for completion.
- Implement projects listed on the PennDOT Transportation Improvement Program, as recommended by the Cumberland County Comprehensive Plan.
- Address parking needs within the Borough: improve signage indicating the location of public parking areas; acquire more parking lots in the central business district to relieve crowded on-street parking.
- Identify trip reduction strategies, such as mixed-use development and employee programs, and determine their suitability. Include the University with these discussions regarding ways to reduce the reliance of students and employees upon personal vehicles.

- Implement the recommendations of the Cumberland County I-81 Corridor Study.
- Implement the recommendations of the *Bicycle/Pedestrian Transport Plan* as adopted by HATS.

Actions:

1. Amend municipal ordinances to be consistent with the goals and objectives of this Plan, include provisions for:
 - a. Traffic calming techniques
 - b. Bicycle, pedestrian, and buggy accessibility
 - c. Shoulder improvement standards
2. Develop an access management plan for commercial corridors including Walnut Bottom Road (Route 174), Baltimore Road, and US 11.
 - a. Avoid zoning that allows commercial strip along the entire roadway.
 - b. Zone for compact centers of development and encourage shared access and parking.
 - c. Define subdivision standards for lot layout, driveways, and building location.
3. Identify appropriate truck routes through the Region to alleviate congestion.
4. Initiate a study to improve traffic flow within the downtown areas of the Borough.
5. Prepare multi-year programs for local street and road maintenance. The Township and the Borough should identify additional methods to share resources and equipment.
6. Develop a greenway along Burd Run from the University to Walnut Bottom Road and along the Middle Spring Creek from Spring House Road to Dykeman Road.
7. Cooperate with HATS, PENNDOT, local municipalities, and developers to address the ongoing need to make improvements to Interchange 29 (King Street exit) of Interstate 81. Proposed improvements include:
 - a. Increased lanes;
 - b. Improvement to ramp system;
 - c. Addition of a cloverleaf design;

The recommendations of the ongoing Interstate 81 Corridor Study for Exit 29, King Street, should be referenced and implemented. The interchange location is shown on Figure 8.1.

Functional Classification of Roadways

Roads are classified by the volume of traffic they are designed to handle and the degree of access that they provide to abutting properties. Chapter 15, "Traffic Network and Circulation," provides further information regarding this classification system.

Expressway: Interstate 81.

Principal Arterials: US 11(King Street) and Route 174 (Walnut Bottom Road).

Minor Arterials: North Earl Street, South Fayette Street, Olde Scotland Road, North Morris Street, the portion of US 11/Route 533 from Township line to Walnut Bottom Road.

Major Collectors: Orange Street, Prince Street, Richard Avenue, Roxbury Road, Queen Street, Britton Road, portion of South Fayette Street.

Minor Collectors: None.

Local Access Roads: All other roads and streets.

Proposed Road Improvements / TIP Projects

Proposed PennDOT Transportation Improvement Program projects, as listed in the Cumberland County Comprehensive Plan and depicted on Figure 8.1 include:

- Widening of Route 174 (Walnut Bottom Road) from Township line to intersection with King Street.
- Improvements to Baltimore Road
- Improvements to South Fayette Street and Olde Scotland Road

The Borough and Township should work with the County, HATS, and PennDOT to ensure the TIP Projects remain on the Program and are scheduled for completion.

Notable intersections or roads in need of improvement and alignment include:

- Walnut Bottom Road (alignment for proposed inner loop intersection)
- Walnut Bottom Road and East Orange Street (intersection improvement)
- Walnut Bottom Road and King Street (intersection improvement)
- King Street and Conestoga Drive (intersection improvement)
- Baltimore Road (alignment for proposed inner loop intersection).

These improvements are shown on Figure 8.1.

Proposed Roads

INNER LOOP

The Steering Committee took a position during the development of this Plan to support the development of a new collector road, referred to as the "Inner Loop". Such a loop would connect several arteries and major collectors between US 11 and Olde Scotland Road. The proposed road would extend Conestoga Drive and Airport Road to connect King Street (US 11) with Walnut Bottom Road and Baltimore Avenue, then continue along the south side of the Borough behind the Borough Industrial Park, and ending at either Olde Scotland Road in Shippensburg Township, or continuing to South Earl Street in the Borough. The latter option presents some significant logistical and grading difficulties.

In taking this position, the Committee did not identify an exact location for the corridor but identified the need to address congestion and safety using the concept described above.

OUTER LOOP

Although completely outside of the planning area, the Outer Loop proposal would connect East King Street (US 11) to Newberg Road (Route 696) through a new collector road that would pass to the north of the Township and University through Southampton Township, Cumberland County. This road could significantly reduce traffic congestion throughout the Shippensburg area. Shippensburg University is participating in and financially supporting a transportation study to determine the feasibility of the "Outer Loop".

The proposed location for these new roads can be found on Figure 8.1, the Future Traffic Circulation Map.

Mass Transit

Raider Regional Transit (RRT) is the only local bus system serving Shippensburg University and the Shippensburg community. Due to budgetary concerns and low ridership, additional mass transit programs are not feasible at this time; however, the municipalities should revisit the issue periodically.

Future road and access road design should consider accommodating potential bus traffic. As infill, redevelopment, and development occur in the area where bus service is likely, provision should be made for pull-offs, stops, and shelters as well as pedestrian access to the stops and shelters.

Access Management

Access management will be a concern along all roads within the area, but particularly along King Street (US 11) and Walnut Bottom Road (Route 174). Walnut Bottom Road is scheduled to be widened to three lanes in 2005. The municipalities should consider working with PennDOT to develop a joint access management plan for the area.

The major elements in access management include the following:

- Driveway design standards
- Reduce number of road entrances
- Traffic Impact Analysis where development is proposed
- Left turn lanes and right turn lanes constructed at road and driveway intersections
- Install medians
- Adequate parking lot/internal circulation design in developments
- Shared access to properties
- Interconnect properties developed along roads

- Improve intersection design/spacing
- Signalized high volume driveways
- Control of access
- Direct development access roads to signalized driveways

- Prohibit inappropriate turning movements

Transportation Development Districts

The Transportation Partnership Act (Act 47 of 1985 as amended) allows municipalities to create Transportation Development Districts to assist in the financing of transportation facilities and services. Roads, railroads, and public transit are eligible. If municipalities propose a district, property owners who represent more than fifty percent of the assessed valuation within a proposed district must be in favor of the district. The creation of the Transportation Development District allows municipalities to impose assessments upon benefited properties within the District to construct transportation improvements.

Congestion Management System Strategies

Congestion management system strategies have been used by some communities in the past to reduce traffic. The major elements are:

- Employee trip reduction plans to increase average vehicle occupancy
- Creation of transportation management associations in which municipalities work with local businesses to identify measures to reduce travel demand. These may include:
 - reducing vehicle concentrations at peak periods by staggering work hours;
 - encouraging commuting by carpool and public transit rather than by single occupancy vehicles;
 - eliminating unnecessary commutes;
 - funding informal paratransit/vanpool operations; and
 - hiring a transportation coordinator to organize transportation alternatives.

With more commercial and industrial development in the Region, the appropriateness of these strategies should be reviewed.

Impact Fees and Negotiated Financial Contributions

The Municipalities Planning Code allows municipalities to assess a traffic impact fee provided municipalities have adopted a traffic impact fee ordinance. With a traffic impact fee system in place, a municipality can collect fees to finance improvements to the road system.

The Municipalities Planning Code indicates that when municipalities have prepared a multi-municipal plan, in order to allow for the provision of transportation capital improvements in a cooperative manner, the municipalities may collectively cooperate to enact joint transportation impact fee ordinances.

Where traffic impact fee systems are not in place, financial contributions from developers for road improvements should be negotiated. Developer-financed road improvements at existing intersections and along road segments could correct current deficiencies and mitigate traffic increases associated with new development.

Though the Steering Committee has expressed interest in exploring Impact Fees, it recognizes that enacting an Impact Fee Ordinance in either municipality is not financially feasible at the present time. However, if conditions change, the Township and Borough may consider cooperating with Southampton Township with regard to Impact Fees, so this information has been provided in case the issue is revisited.

**SUMMARY OF THE STEPS ASSOCIATED WITH IMPLEMENTING A
TRAFFIC IMPACT FEE ORDINANCE**

<u>Task</u>	Responsible Entity
1. Establish Transportation Service Area and appoint an advisory committee. <i>Note: Committee must be at least 7 members, can be the <u>entire</u> Planning Commission, with ad hoc members if necessary to meet the 40% builder/realtor requirement. Other than this, the committee <u>cannot</u> contain municipal officials or employees.</i>	Governing Body
2. Public Notice of Intent to implement a Traffic Impact Fee Ordinance. <i>Note: This allows for fees to start being collected <u>and</u> starts an 18 month clock, by which time the Ordinance must be adopted.</i>	Governing Body
3. Committee oversees preparation of Land Use Assumptions plan, holds public hearing, forwards to Governing Body for adoption.	Impact Fee Advisory Committee
4. Committee oversees preparation of Roadway Sufficiency Analysis and forwards to Governing Body for approval.	Impact Fee Advisory Committee
5. Committee oversees preparation of Capital Improvements Plan, holds public hearing, forwards to Governing Body for approval.	Impact Fee Advisory Committee
6. Impact Fee Ordinance text developed and Ordinance adopted.	Governing Body

Shoulder Improvements

Developers should be required to improve shoulders along the frontages of their tracts when they develop. In addition, the municipalities should improve the shoulders along existing roads. Shoulders should be wide enough to accommodate trails and buggy traffic in accordance with the guidelines in the Statewide Bicycle and Pedestrian Master Plan.

Gateways

Formal gateways should be provided at the entrances to the Shippensburg region. A gateway is an entrance corridor that defines the arrival point as a destination. Gateway planning addresses the arrangement of the landscape to create a visual experience that establishes a sense of arrival at the destination and provides a positive image of the destination. The municipalities can work with property owners to enhance these gateways. Consistent road corridor overlay zoning could be adopted along the major roadways.

The three primary gateways to the Borough include both ends of King Street, Walnut Bottom Road, and Route 696. At these gateways, the municipalities can work with property owners to enhance commercial areas through coordinated landscaping, signage, lighting, street furniture, paving materials, site improvement design, building facades, and window displays. When infill, redevelopment, or new development occurs, developers should be required to comply with performance and design standards that would address these elements. When new parking facilities are constructed, they should be landscaped, buffered, and located to the side or rear of buildings.

Signage should be minimal, and appropriate to the character of the municipalities.

Property owners should be encouraged to maintain and improve properties, particularly those that may have negative impacts on surrounding properties. Where the rear of commercial properties face or abut residential properties, attention should be paid to the appearance of the commercial property and its impact on the residences.

Design guidelines addressing the following elements could also be applied within the Region:

- discouraging the use of drive-thru facilities
- encourage new development to be compatible with and integrated into existing streetscapes

Scenic Roads

Scenic roads are an important element within the circulation system within the Region and maintenance of a system of scenic roads is encouraged. The municipalities should discuss whether it would be appropriate to adopt scenic road overlay zoning along scenic roads. Within such overlay areas, greater setbacks along the roads could be required, additional landscaping and screening requirements could be established, and design standards for siting of buildings could be established in order to minimize visual impacts of any development.

Discouraging intensive development along the scenic roads also has another benefit. This can lessen traffic volumes and driveway intersections along roads, which are typically not suited for intensive traffic volumes.

The scenic road corridors identified on Figure 8.1, the Future Traffic Circulation Map include Britton Road from Brookside Avenue north to the Township line; Fogelsonger Road; a portion of Dykeman Road near Dykeman Springs; and Route 696 from the University campus north to the Township line.

Bicycle/Pedestrian Circulation

The Borough and Township should incorporate bicycle and pedestrian improvements into the transportation planning process. The municipalities should revise and strengthen their zoning and subdivision ordinances to ensure bicyclists, pedestrians, and horse-drawn buggies are accommodated within the transportation system. As streets are maintained and improved, design

requirements for pedestrian and bicycle access should be addressed, such as the provision of appropriate curb radii at intersections. Limiting radii at intersections to the minimum necessary to allow safe traffic flow can make intersections more pedestrian and bicycle friendly. Pedestrian crossings at street intersections, particularly along the major trail routes within the area, should be facilitated through crosswalks, stop signs, and pedestrian islands. Gaps in the sidewalk system such as those along Walnut Bottom Road should be eliminated. Access to community facilities and commercial areas in the Borough and Township should be enhanced through expanded and repaired sidewalks and greenways and by establishing crosswalks. Streetscape amenities such as benches, trash receptacles, information signs, and landscaping should be provided in downtown Shippensburg. The Rails-To-Trails project in the region should be completed to provide a link joining the Township, the University, and the Borough.

Parking Programs in Shippensburg Borough

Parking did not rate as a critical concern with citizen survey respondents, although this may become an issue if economic development and downtown revitalization efforts are successful. The Borough should continue to monitor adequacy of parking. If the Borough determines to increase the number of parking spaces, a number of issues could be addressed with regard to parking in the Borough:

- Public/private cooperation
- Identification/direction to existing facilities (such as the Borough Building)
- Designated parking spaces for residential tenants living above commercial uses so that they are not forced to park on the street in front of the commercial uses.
- Maintain existing on-street parking
- Permit and encourage sharing of spaces by private parties
- Investigate use of fee-in-lieu of parking option

Traffic Calming

As development in the Region occurs, and traffic volumes increase, there will be more traffic on residential streets. Means of dealing with this additional volume include road improvements, providing increased opportunities for pedestrian and bicycle traffic, supporting efforts to increase automobile occupancy rates, and access management. If these steps are not sufficient, the municipalities may consider traffic calming techniques.

The purpose of traffic calming is to manage movement through an area in a way that is compatible with the nearby land uses. Two fundamental principles of traffic calming are that streets are not just for cars and that residents have rights. Streets should be safe for pedestrians and local drivers, and traffic should not adversely affect the quality of life along the streets.

The general methods of traffic calming include:

- Active speed reduction (construct barriers to traffic movements)
- Passive speed reduction (installation of signage)
- Streetside design (landscaping changes the appearance of the area and driver attitudes)
- Regional planning efforts - direct external traffic to other routes (such as proposed "loop" roads)

- Opportunities for use of alternative modes (mass transportation, pedestrian, bicycle)

1. *Active Speed Reduction (Construct barriers)*

- a. Speed bumps and speed tables are raised areas in the street surface, which extend across the width of the street. Speed bumps present liability and are also annoying to local residents. Speed tables, which are really raised pedestrian crosswalks, could be more successful. They would be most appropriate in areas with substantial pedestrian traffic.
- b. Changes in roadway surface - This could include rumble strips, milling, and special roadway surfaces. These techniques can increase noise in areas and raise objections by area residents.
- c. Intersection Diverters - This could involve a barrier placed across an intersection, typically to alter travel plans, such as permitting right turns only, to make travel through a neighborhood more indirect.
- d. Channelization - This could involve provision of pedestrian refuge areas, providing protected parking bays through landscaped islands, altering motor vehicle traffic movements, and restricting movements at intersections by narrowing the space available for vehicular movement.

The active controls require changes in driver behavior. While the active methods send the message that the street is not just for through traffic, the methods are costly, and likely to be viewed negatively by some of the local users of the streets.

2. *Passive Methods of Control*

- a. Traffic signs such as Do Not Enter, Stop, Not a Through Street, Local Access Only, No Trucks, or signs establishing speed limits, indicating one-way nature of street, or prohibiting turns.
- b. Traffic Signals
- c. Pavement markings, including crosswalks, edgelines, and use of different materials for pedestrian crosswalks
- d. Permitting on-street parking
- e. Speed watch

These methods have lower costs and can be applied to certain times of the day, if appropriate. However, signs are often ignored in usage, and enforcement is necessary.

Primary emphasis should be given to the passive traffic calming techniques. Active traffic calming techniques should be employed only if passive techniques are not successful due to their cost and the inconvenience to residents caused by their construction.

Prior to implementation of any traffic calming program, it is necessary to identify the specific problems to be addressed; to identify and evaluate the alternative techniques and their drawbacks, benefits, and cost; to identify alternative traffic patterns that could result from implementation of the techniques and the effects of those patterns on other streets and neighborhoods; and to involve citizens of the community in the evaluation and selection of techniques. Techniques should not detract from the character or visual quality of a neighborhood.

Capital Improvements Planning

Capital improvements planning includes financial analysis of past trends in the community, present conditions, and a projection of the community's revenues and expenditures, debt limit, and tax rates, to determine what the financial capabilities of the municipality are. It also includes a capital improvements program which establishes a system of priorities. The final element is the capital budget which lists the schedule of improvements over a 5-year period based on the community's financial capacity and availability of grant money.

In the capital improvements program, capital expenditures are separated from operational expenditures. Operational expenditures are those for administration, salaries, maintenance and similar functions, and are short term. Capital expenditures are for assets which have a substantial value compared to the total municipal budget and are expected to provide service for a number of years. The purchase of land or the construction of a building is an example of a capital expenditure.

The capital improvements program schedules the purchase of capital items in a systematic manner rather than allocating a large amount of money for all expenditures in one year. Based on the assessment of future needs, future expenditures are planned so that the municipality can anticipate these major expenditures prior to the budget year. The program is based on identified capital needs, goals for capital acquisitions, and a priority list of all proposed capital expenditures.

A time frame is established for the capital improvements program. Five-year programs are typical. Every year the schedule for capital improvements must be revised and updated as necessary, based on the current municipal priorities. For each project included in the program, estimated costs must be established and a budget prepared.

Benefits of capital improvements programs include:

- It helps assure that projects will be based upon the ability to pay and upon a schedule of priorities determined in advance.
- It helps assure that capital improvements are viewed comprehensively and in the best public interest of the municipality as a whole.
- It promotes financial stability by scheduling projects at the proper intervals.
- It avoids sharp changes in the tax structure by the proper scheduling of projects.
- It facilitates the best allocation of community resources.

Transportation Strategies

In addition to the actions, a set of priorities have been established to address specific issues within the region. Priorities have been identified as immediate (within 2 years), short-term (3-5 years) and long term (6-10 years). The specific agency (i.e., Governing Bodies or Planning Commission) responsible for the individual strategies have also been identified as well as the most appropriate planning tool to implement the strategy.

**Immediate
(within 2 years)**

Implementation

Tool

Access Management Provisions	PC/GB	ZO/SALDO
Capital Improvement Plans and Programs	GB	CIP
Conservation Easements and Local Land Trusts	GB/LLT	EP
Corridor Access Management	PC/GB	ZO
Transit Design Standards	PC/GB	ZO/SALDO
Traffic Calming Standards and Design	PC/GB	ZO/SALDO
Traffic Circulation Plan	PC/GB	PENNDOT

**Short-term Strategies
(3-5 years)**

Pedestrian/Bikeway Facilities Design	PC/GB	ZO/SALDO
Inner Loop Design	GB/PENNDOT	CIP/OM
Right-of-Way Preservation	PC/GB	ZO/SALDO
Traffic Signal Systems	GB/PENNDOT	
Parallel Access Road Standards And Design	PC/GB	ZO/SALDO/OM

Long-term (6-10 years)

Official Maps	PC/GB	OM
Parking Management Programs	PC/GB	ZO
Traffic Impact Fee Ordinances	PC/GB/IFAC	CIP
Trip Reduction Ordinances	PC/GB	ZO
Inner Loop Construction	GB/PENNDOT	CIP/OM

IMPLEMENTATION RESPONSIBILITY	TOOL
GB - governing body/bodies	ZO - Zoning Ordinance
PC - local Planning Commission(s)	SALDO - Subdivision and Land Development Ordinance
LLT - local land trust	CIP - Capital Improvements Plan
PENNDOT - Pennsylvania Dept. of Transportation	EP - Easement Purchase
IFAC - Impact Fee Advisory Committee	OM - Official Map