WESTERN CUMBERLAND COUNTY COMPREHENSIVE PLAN CONSORTIUM
JOINT MUNICIPAL COMPREHENSIVE PLAN
CUMBERLAND COUNTY, PENNSYLVANIA

PARTICIPATING MEMBER MUNICIPALITIES

Dickinson Township
Lower Frankford Township
Newville Borough
North Newton Township
South Newton Township
Upper Frankford Township
Upper Mifflin Township
West Pennsboro Township

STEERING COMMITTEE

Auggie Ginter, Bert Miller, Dan Wyrick – Dickinson Township
Tim Lush, Craig Houston – Lower Frankford Township
Fred Potzer, Clarence Fry II – Newville Borough
Bob Smith, Brad Spahr – North Newton Township
Ron Bouch, Gary Johnston, David McBeth,
Joe Widra, – South Newton Township
David Baker, George Wickard – Upper Frankford Township
Richard Knoll, Sr., Walter Beaston – Upper Mifflin Township
Barbara Cross, John Eppley, Harvey Hoover, Walter Heine,
Jason Kutulakis, David Twining– West Pennsboro Township
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Kirk Stoner – Cumberland County Planning Commission
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FOREWORD

The Joint Municipal Comprehensive Plan presently being developed for the eight participating municipalities of the Western Cumberland County Council of Governments (COG), Cumberland County, Pennsylvania is to be introduced in two (2) phases. The initial phase, entitled "Comprehensive Plan 2006, Phase 1", is a compilation of the background information submitted to the Plan Steering Committee throughout the first segment of the Comprehensive Planning Program. Over subsequent months, the Committee has been introduced to additional memoranda for review. This data, or Phase 2, represents the municipalities' chosen direction and policy concerning the future physical development of the region, including mapping and recommendations for methods of implementation and achieving select planning goals over the next 10-20 years.

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introduction

A comprehensive plan is more than a document that publishes past and present land use trends while recommending future development concepts for a community. It is also a process of contemplating, organizing and analyzing future growth patterns for a community. The comprehensive plan is a tool to assist governing bodies and planning commissions in determining future community needs, which in turn enables them to then prepare development policies. When conducted in an orderly fashion as part of an administrative process, community planning serves to move a municipality toward unified goals and interests which transcend the desires of any individual interests. Because of the diverse nature of all communities, it is necessary for them to develop their own individual set of goals. The most important underlying factor of these goals should be the health, safety and welfare of the citizens in that community. Planning is both anticipatory and reactive, requiring it to anticipate and develop responses for future problems, while at the same time needing to respond to current problems demanding immediate solutions.

Planning for Western Cumberland County must be concerned not only with both privately and publicly owned land uses, but also with the timing and sequence of development on those properties. The influence of the municipalities over land use, permits the region to manage finances for maximum economies while providing for adequate public facilities and services. To ensure orderly development, planning should not be limited to just the preparation of a plan for current needs. Planning should be a continuing process, in which consideration is given to each new decision as a means towards sustainable development, or developing the region in light of past development with relation to present and future needs.

Since municipal planning is particularly concerned with land uses, any capital expenditure or municipal ordinance, which directly or indirectly affects the use of land, should be dealt with as part of the planning process as well.

Although planning is directly concerned with physical development, it must be remembered that decisions in this sphere will effect the way of life in the entire community. For example, planning exclusively for single-family residences on small lots is more likely to produce a community with a larger number of young families or relatively uniform income. This outcome is opposite to a land use pattern which allows for a variety of housing types ranging from houses on large and small lots, to apartments. Another example that concerns the circulation of the community is the construction of a new major highway. The new highway may increase property values in one area by making vacant land more easily accessible, but the new roadway would decrease property

values in an established residential neighborhood because of adverse effects of increased traffic.

This regional planning program has been undertaken in part because local, state, and federal agencies, along with the planning profession as a whole, are aware that planning problems are not limited by political boundaries. Land use, traffic, and other developmental forces do not stop at borders, but must be studied and dealt with on an area-wide as well as a local basis. For this reason, the participating municipalities must give consideration to Cumberland County's Comprehensive Plan and the planning efforts of adjacent jurisdictions in order to develop a community plan that is compatible with their neighboring municipalities as well as the County.

Granted the authority to adopt the planning tools for each municipality, the respective governing bodies are the most important local policymaking bodies. The Board or Council, in recognition of the above trends and concerns, has authorized the preparation of this updated Plan. The Planning Commissions, on the other hand, serve to advise the elected members of the government. The Commissioners report to the governing body on policies relating to the development of the community. As an advisory body, the Planning Commission can substantially influence the future character of the community. Additionally, the creation of the Council of Governments for Western Cumberland County has infused a regional flavor and enthusiasm to the planning process. A Steering Committee consisting of planners from each Township and the Borough has spent considerable time in refining this document and participating in its year-long evolution. Due to the plethora of small municipalities in the Commonwealth, it has proven historically difficult to promote a regional plan. Recent changes to the State Planning Code and other incentives have made the joint planning process infintiely more appealing. The efforts of this group to coalesce the ideas, desires and goals of eight different municipalities is nothing short of groundbreaking and will prove to be a valuable resource and a positive example in the future for similar undertakings around the Commonwealth.

Professional planners, or consultants in smaller communities, perform the technical work, which the Steering Committee, Planning Commissions and governing bodies cannot prepare due to lack of time, specialized training, and facilities. Professional planners gather data, prepare maps, and draft advisory reports. One of their most important duties is to present the various alternatives open to the community for future development and consequences arising from those alternatives. Planners are primarily advisors, with no political power to do the things that cause change within a community. Their influence on a community's future stems from the capacity to articulate viewpoints and develop consensus among those who hold decision-making power. Because of the professional's knowledge of practical applications of various planning measures in other communities and general planning theory, their advice is most helpful.

A comprehensive planning program has five stages: background studies, a statement of goals and objectives, plan formulation, plan implementation and plan review and revision.

A plan is only as accurate as the information it is based on. All pertinent information must be examined and analyzed before plans can be formulated. This first step in a planning program is the accumulation of background studies from sources such as historical documents, municipal records and census data. Also included in this step is the collection and analysis of mapping data on natural features such as topography, soil and geological surveys, floodplain and wetlands, karst physiography and sinkhole areas. The analysis should reveal the community's needs and problems, and examine community objectives. Much of the information and data collected at the time of earlier Comprehensive Plans remains relevant to this study area today from both a historical and current perspective, particularly the sections detailing physical features and natural resources. For this reason, these portions of these earlier Plans are included herein via reference as an integral element of this updated and expanded planning analysis.

The second step of a planning program is expressing a general statement of community goals and objectives. This statement allows a planning agency to articulate the general values and goals of the citizens in regard to future development. The statement of the goals and objectives needs to be clear and concise since it will serve not only as a guideline for the decision-making process, it will also be a consensus of future development policy formulation. Because the general statement of goals and objectives covers a broad range of data, it allows for intricate detailing during the third step, formulation of the plan.

Once the goals and objectives have been stated and the research accomplished, plan preparation can be undertaken. The finished comprehensive plan attempts to indicate how private and public action can achieve certain community goals and policies over the course of the next 10 to 20 years. It also synthesizes the available information gathered in the previous steps, organizing it into various options to remedy specific problems. A plan is not a rigid design for the future: it serves as a blueprint for a community's growth, suggesting solutions to specific current problems and to those future problems that can be foreseen. It recommends possible solutions and proposes guidelines for actions for rectifying future problems in the community.

Plan implementation, the fourth step in the planning process, is arguably the most critical. Without proper implementation, and the development and enforcement of specific controls, the value and potential benefits of the Plan’s various recommendations and intitatives will be lost. Additional planning studies, the adoption of new ordinances, revisions to existing ordinances, the creation of new advisory groups, and intelligent financial foresight must be undertaken as needed in order to bring the goals and objectives of the Comprehensive Plan to fruition over time. The alternative to continued action and proactive planning is the languishing of a window of opportunity to achieve positive results in municipal and regional growth and development.

The fifth step in the comprehensive plan process is review and revision of the plan. For the plan to be genuinely effective, the community must carry it out incrementally over the expected life of the plan, with review and corrective actions continuously taking place.

Because communities are not stagnant environments, change is inevitable. Community planning is an organized process of addressing that change.

The Comprehensive Planning Program, as currently being developed for this joint effort, will be prepared in three segments.

This, the first report entitled "Phase I Comprehensive Planning Program," contains an inventory of data concerning all aspects of the current municipal situation. It is this data which will enable the community to undertake an accurate appraisal of itself in light of past developments and external forces.

The second segment of the planning program will be prepared in the form of a separate Comprehensive Plan report. The "Phase 2" document will set forth the desired pattern of land development in the community and a program for its achievement. The plan will also contain, where necessary, statements on the order of priority, or the sequence in which the goals are to be achieved. Such a Comprehensive Plan is intended as a guide for both private and public activities. Future policies should be examined in terms of the objectives of the overall plan. It should be clearly understood that, even after its adoption, a Comprehensive Plan is not an unalterable document to be followed regardless of unfolding events. On the contrary, a Plan of this nature should be periodically reviewed to determine its continued applicability. However, to insure the eventually harmonious development of the Township, modification of the Plan should be preceded by a study of all the implications of such modifications and by a readjustment of the whole to enable the Plan to absorb such change without losing its comprehensive character.

The third phase of this program, "The Implementation Report," will describe and make recommendations on the first steps in moving from plan into reality. These steps will involve the adoption, by the governing body, of certain "planning tools" which are provided for in the State enabling legislation entitled "Pennsylvania Municipalities Planning Code" (Act 247) effective January l, 1969, as amended. The Comprehensive Plan, a statement of policies and proposals covering all significant aspects of a community, is of course, the most important of the planning tools since it forms the basis for all others. The other planning tools, however, all have the legal function of influencing or controlling private or public actions in connection with community development. They are:

Zoning Ordinance, through which the community exercises control over the use of all land;

The Official Map, which designates the public streets and their widths, shows the location of future streets and proposed widening of existing streets, and the location of existing and planned parks and drainage rights-of-way;

Subdivision and Land Development Ordinance, which sets forth the standards of lay-out for the new residential neighborhoods and business areas created through the subdivision and development of vacant land;

Housing and Building Codes, which prescribe minimum occupancy and construction standards for buildings;

Other Ordinances, which may describe standards for, or prohibit the carrying on of certain private, manufacturing; or business enterprises and activities;

A Capital Improvement Program, which sets forth the projected capital expenditures of the community.

All, or any, of the measures listed above may be adopted by the governing body of the participating communities as it is deemed necessary to implement the objectives of the Comprehensive Plan.

State and federal financial participation in local development projects continues to be a very competitive venture for municipalities. In many instances, funds are made available only to municipalities which ask for them. The acute competition for funds available causes disbursing agencies to grant funds to communities exercising the strongest and most continuous pressure for them. The responsibility for keeping informed as to new State and Federal legislation, or as to the availability of new appropriations that may be beneficial to the community, rests largely with the Planning Commission. Evidence of a strong, thoughtful and ongoing municipal planning program is also an increasingly, important and determining factor in the disbursement of these funds.

In summary, it is one of the objectives of this planning program to provide the necessary data, analyses, and planning tools needed to structure the healthy economy of the study area along with the efficient provision of public services. In general, this means:

A. The comprehensive plan should meet future residential, commercial and industrial needs of the participating municipalities, while preserving prime agricultural and forest lands.

B. Property owners and businessmen should be enabled to make a fair return on their investment.

C. There should be a stable, diversified tax base.

D. Measures should be taken to avoid blight and slums.

E. Provide locations for multi-family housing units as well as traditional single family residences.

F. Commercial and industrial development should develop so that they are good neighbors to adjoining residential, agricultural or recreational areas, with sufficient land area available for each use.

G. Future development should be located so that it can be served efficiently, and at reasonable cost by public facilities and utilities.

H. Encourage growth primarily in areas where public utilities (sewer and water) are currently available and the roadway network is adequate to handle increased traffic flow.

I. Develop an adequate highway network to meet future needs of the Township.

J. Provisions should be made for the recreational and community facility needs of the Township.

The Council of Governments and the individual municipal Planning Commissions contributions toward the achievement of community objectives in the region can be summarized as follows:

1. Represent the citizen's interest in developments having long range physical and social effects.

2. Contribute the judgment, experience and special knowledge of members to such matters.

3. Secure information and analyses upon which to assemble and periodically revise a Comprehensive Plan, which will include proposals for the accomplishment of its objectives.

4. Safeguard the community's interest in matters of land use and physical development as may be provided in zoning and subdivision ordinances.

The Pennsylvania's Municipalities Planning Code (MPC), Section 301 (a), contains the basic elements for a comprehensive plan. Listed below is a summary of those elements;

- A statement of community development goals and objectives that chart the location, character and timing of future development;

- A plan for land use identifying the amount, intensity, character and timing of land use:

- A plan to meet housing needs of present residents and those families anticipated to live in the municipality as well as the accommodation of new housing in different dwelling types and at appropriate densities for households of all income levels;

- A transportation plan;

- A statement of the relationships among the various plan components which estimates the environmental, energy conservation, fiscal, economic development and social consequences on the municipality;

- A discussion of short and long range plan implementation strategies;

- A statement of the relationship of the existing and proposed development of the municipalities and overall study area to the existing and proposed development and plans in contiguous municipalities, to the objectives and plans for development in the county of which it is a part, and to regional trends.

The comprehensive plan is not limited to the above elements.

Achieving the objective of defining a community vision and then establishing measures for attaining the community vision must be viewed as a corporate venture. Government can not be expected to carry the burden of all the varying roles needed to achieve a successful comprehensive plan. It is imperative for the success of a comprehensive plan that its general goals and objectives are not only agreed upon by the governing bodies, but also be established with input from its constituents as well. The governing bodies are responsible only for providing framework for change, not controlling the development process. An effective planning process needs the support, understanding and cooperation of the citizens of the community. They must be an active part in the planning process and recognized as the backbone as well as an essential ingredient to the planning program. Particularly in this instance of regional cooperation, said cooepration must extend beyond the boundaries of the walls of municpal offices and into the heart of the community and its many diverse interests. It is the input of the citizenry that supplies the comprehensive plan with the expression of community-wide values.

regional setting

The eight municipalities participating in the Consortium (Dickinson Township, Lower Frankford Township, Newville Borough, North Newton Township, South Newton Township, Upper Frankford Township, Upper Mifflin Township, and West Pennsboro Township) encompass an area of about 166 square miles and are situated in West Central Cumberland County. The study area surrounds the Townships of Cooke, Lower Mifflin and Penn. Perry County is located to the north and Adams County is situated along the area's southernmost border. Hopewell and Southampton Townships form the area's western border. North and South Middleton Townships and the Borough of Carlisle form the eastern boundary.

The region is strategically located for travel to any major East Coast city in a day's time (Harrisburg, Philadelphia, Baltimore, Washington, New York City, and Boston). As a result, more and more residents from the Baltimore/Washington area are relocating to Southcentral Pennsylvania and, potentially, these eight municipalities. They find the quiet agricultural community an inviting area to raise their families with a convenient transportation network that allows the flexibility to easily reach urban and metropolitan areas in a matter of hours. Developers also find building restrictions north of the Mason-Dixon Line more palatable and economically feasible. This influx of developments and residents only emphasizes the importance of a comprehensive plan.

Being bounded by such a diverse assortment of municipalities and counties can prove to be a challenge in terms of comprehensive planning. By examining surrounding community plans, one can create a more cohesive comprehensive plan that maintains credibility beyond municipal boundaries. Fortunately, the County Planning Commission prepares regular updates to its regional comprehensive plan and has been a constant force in maintaining a current perspective on planning throughout Cumberland County.

community history

During the 1600's, many Europeans, fleeing religious persecution, arrived in North America. Hoping for freedom in the New World, these settlers, many of which were German and Scotch-Irish Protestants, chose the inland areas of central Pennsylvania as home due to the abundance of game and the fertile soils.

Upon arriving in Pennsylvania in 1682, William Penn befriended the Delaware Indians and began to make land treaties with them. Bartering for land with the Indians was conducted in what was called "the walking purchase", a length of land walked in a day and a half, approximately thirty miles, would constitute the purchase from the Indians. Later, Penn's son, Thomas Penn altered the rules of "the walking purchase" in order to obtain larger land areas. He advertised for swift runners that could cover more ground in a day increasing the amount of land that could be acquired. With the great gains of land acquired by the Penn's the Indians were forced to move westward.

Throughout the early history of Pennsylvania, numerous Indian raids occurred on farmers in South Central Pennsylvania. Many early settlers were either captured by the Indians and held hostage or scalped. Consequently, a chain of forts were set up to protect the new settlers from Indian attacks. In many instances these forts served as the basis for villages and towns that exist today.

Land west of the Susquehanna River, which would become Cumberland and York Counties, had originally been part of Lancaster County. The first settlers in Cumberland County were mostly Presbyterian Scotch-Irish who utilized the woodlands to build their homes, mills, and forts. They were for the most part an aggressive lot who were impatient with the delays of land offices, and who did not hesitate as early as 1740-42 to settle on lands to which the Indian title had not fully been extinguished.

Cumberland County was established as the sixth county in Pensylvania in 1750. Shippensburg was the first county seat followed in 1752 by Carlisle. Cumberland County originally consisted of those lands that now comprise Bedford, Northumberland, Franklin, Mifflin and Perry Counties. A much smaller population of Germans were also among the first settlers in the two counties. The German settlers came to the area after the Scotch-Irish and settled in the abandoned clearings left by the Scotch-Irish. They took advantage of the rich limestone soil and settled as farmers around 1754.

The County was deeply involved in both the Revolutionary War and the Civil War. During the American Revolution, the area built foundries to mine iron ore for production of cannons and served as an armament and ordinance center. The Civil War saw brief

Confederate occupations of Carlisle, Shippensburg and Mechanicsburg in 1863 before troops advanced toward Gettysburg.

West Pennsboro Township (or Pennsborough) was one of the original Cumberland County Townships and was formed in 1745 from Lancaster County's original Pennsborough Township. Dickinson Township broke away as its own Township from West Pennsborough in 1785. Newton Township was created in 1767 from Hopewell Township. North and South Newton Townships were subsequently split to form individual municipalities in 1929. Mifflin Township was also formed from Hopewell Township in 1797. The Township was split in two and Upper Mifflin Township was formed in 1892. Frankford Township was created in 1795 from West Pennsborough and was subsequently split in 1929 to form Lower and Upper Frankford Townships. Newville Borough was laid out in 1790 as part of Newton Township and was formally created in 1817.

The following tables list the properties and structures currently listed on the National Register of Historic Places (2), those properties and structures eligble for listing (15), and historical markers erected throughout the region by the Pennsylvania Historical Commission (4). There is presently one historic district, the Newville Historic District, established within the study area and identified as eligible on the National Register. The National Register of Historic Places lists two sites within the Consortium's study area: Pine Grove Furnace in the Gardeners area of Dickinson Township and the John McCullough House found along State Route 233 in West Pennsboro Township just south of the Borough of Newville. Pine Grove Iron Works dates back to 1764 and ceased operations in 1895. The complex is now part of the Pine Grove Furnace State Park. Today the site includes the furnace stack, the paymaster's house, a store, the Mansion House or Ege Mansion, a grist mill, several houses, and the Pine Grove Chapel. The area was acquired by the Commonwealth in 1913. The remains of various other structures, features and a cemetery are also found throughout the area. The Mansion House and the Pine Grove Chapel are architecturally significant while the oldest structure on-site is likely the 18th century, 3-1/2 story grist mill. The John McCullough House is a 5-bay, Georgian style house with a unique two-story inset portico built between 1804 and 1807 following McCullough's immigration from Ireland. The site comprises roughly 1.75 acres total. The house is in good structural condition but has been neglected for some time and is in serious need of woodwork repair and replastering.

Pine Grove Furnace

The Mansion House

John McCullough House

Western Cumberland County Comprehensive Plan Consortium

	Municipality	National Register Listed Historic Properties
1	West Pennsboro Township	John McCullough House
2	Dickinson Township	Pine Grove Furnace

National Register Eligible Historic Properties

1	Dickinson Township	James Cameron Estate
2	Dickinson Township	High Pastures Farm
3	Dickinson Township	S.W. Sterrett House
4	Dickinson Township	James Weakly Mill
5	Dickinson Township	Daniel Wonderly House
6	Dickinson Township	Samuel Woods Farm
7	Newville Borough	118 S. Big Spring Ave.
8	Newville Borough	Newville Historic District
9	North Newton Township	John Stough Tavern
10	West Pennsboro Township	Samuel Bowman Property
11	West Pennsboro Township	Francis Diller Grist Mill (Heishman's Mill)
12	West Pennsboro Township	Andrew Heikes Farm
13	West Pennsboro Township	James McFarlane House
14	West Pennsboro Township	George McKeehan House
15	West Pennsboro Township	John Myers House

Historical Markers

1	Newville Borough	Laughlin Mill
2	Newville Borough	State Police School
3	Newville Borough	Big Spring Presbyterian Church
4	West Pennsboro Township	Joseph Ritner

Western Cumberland County has a rich, historical and cultural heritage that should be preserved for future generations. The individual municipalities should also play a role in sustaining the memories of its past and educating its citizenry about the important place it has held since the earliest periods of our nation's settlement.

HISTORICAL LANDMARKS MAP

natural features analysis

Background

The environment we live in defines the quality of life enjoyed by those living within the confines of the study area. In order to preserve and allow for the inevitable growth, it is vitally important that the environmental constraints be understood by the planner so that development within the regions can occur in an orderly fashion.

Climate

The climate of the region is typical of the section of the northeastern portion of the United States. Four (4) distinctive seasons are created within the portion of the North American latitude we are located.

The ambient yearly air temperature averages 50° F. The mean freeze free period is 175 days or roughly one half of a calendar year. The mean summer temperature is 76° F, while the mean winter temperature is 32° F. We can expect 2,500 hours of sunshine in a year. The evaporation rate is highest during the summer months when 72% of the annual evaporation occurs.

The weather patterns are readily controlled by the upper atmospheric flow which are characteristic of the humid continental type climate. The prevalent weather systems of our region originate in the Central Plains Region of the United States. As the air masses travel eastward, they are affected by the changing topography encountered at the Appalachian Mountain chain. Moisture in the form of precipitation is lost when the weather systems are lifted and slowed as they move across the mountains. A secondary atmospheric flow pattern, which is the primary source of heavy precipitation, is associated with the cyclonic circulation originating from the Gulf of Mexico and moving northward into our region. Generally when this type of storm system prevails, large amounts of precipitation can be expected.

The moist air flow from the Atlantic Ocean can also bring considerable moisture to the region as storms moving along the southeastern coastline can move across the Chesapeake Bay and then move upward into the Susquehanna River Basin. Heavy precipitation can generally be expected from this type of storm event when the moist air from the ocean meets the rugged terrain in the valley.

Hurricanes or tropical disturbances, as they move northward, follow a northeasterly path in the middle latitudes and produce heavy rainfalls and strong surface winds in the study area. Frequently affecting water supplies and causing floods, these tropical storms are observed during the hurricane season - June through November.

The area normally receives 46 inches of precipitation annually varying from an anticipated mean of monthly precipitation of 2.6 inches in February to 4.3 inches in August.

The prevailing wind direction moves from the northwest in the winter and shifts to the west in the Spring. Normal wind speed is 10 miles per hour (mph) with extreme speeds reaching 70 mph.

The climate is an important element of the planning process as changing seasons and the factors that create climate (precipitation, temperature, wind speed and direction, relative humidity, frost season, and sunshine) all affect our lives. As agriculture is by far the region's leading industry, the growing season is greatly impacted by the region's climate. Additionally, the consumption of energy is controlled by the fluctuation in temperatures. Good planning will dictate the use of sound energy conservation practices when laying out building sites. Finally, water resources are dependant on the climate to provide for the proper recharge and controlled consumption through proper planning initiatives.

Hydrology

Hydrology is made up of the following elements:

1. Surface water resources - streams, creeks, and urban runoff;
2. Groundwater resources - water lying beneath the surface in aquifers;
3. Flood plains - low lands located adjacent to streams and creeks in areas of poor drainage and susceptible to flooding; and
4. Wetlands - areas found with poor drainage and exhibiting features which provide for exceptional ecological value.

The study region is located within the Lower Susquehanna River Basin. Two major watersheds drain to the Susquehanna River - the Conodoguinet Creek on the north side of the valley and the Yellow Breeches Creek on the south side. Each of these watersheds is drained by smaller sub-watersheds (i.e., Conodoguinet, Big Springs, Yellow Breeches, Cold Springs).

Water flows through a watershed basin in two (2) different methods: a) surface water flows and b) groundwater flows. How the water moves through these two vehicles is dependant upon the precipitation type and distribution, topography, ground cover, porosity of the soils, and land use. As precipitation arrives on the ground, gravity provides for the natural tendency to seep into the ground and move as groundwater. However, this groundwater recharge can and will be inhibited when impervious surfaces

or poorly draining soils are encountered. Additionally, the rate of the recharge will be affected by the slope of the land and the saturation levels of the soils.

Quantity and Quality (Q&Q) of the water resource are the two biggest concerns of the water resource planner. Development lends itself to an increase in surface water flow and often has negative impacts on the quality of the water. Planning initiatives should be made which provide for greater groundwater recharge and improved stream quality. Some agricultural practices tend to contribute to the degradation of the groundwater by introducing increased nutrients and nitrates which are applied to the ground and penetrate into the groundwater. Conservation efforts must be made to ensure that the quality of water is preserved.

Planning to protect our water resources has already begun. The Yellow Breeches Watershed was studied through an Act 167 Plan undertaken by the County. The plan was completed to provide measures to control of the quantity and quality of the runoff in the basin. Additionally, the Big Springs Water Association has been formed to preserve the quality of the Big Springs Creek and a Conodoguinet Creek Watershed Association is completing a plan of the creek along the length of the creek in our study area.

Stream flow analysis has shown that groundwater discharges comprise 66% and 80% of the overall stream flow of the Conodoguinet and Yellow Breeches Creek, respectively. The bedrock geology controls the storage and transmission of groundwater. These features include rock type, inter-granular spacing, rock strata inclination, faults, joints, folds, bedding planes, and solutioning. The limestone carbonate rock formation characterized by the bedrock located in the valley portion of the study area provide for some of the largest groundwater supplies in the state which when tapped into, produce very high well yields. These yields have been found to be among the highest in the state and the abundance of available groundwater provides for a good source for municipal water systems.

Several characteristics of the Karst limestone geology contribute to the excellent groundwater aquifer. The susceptibility to solutioning caused by the limestone's ability to dissolve when water is introduced on it creates unique geological features (i.e., sinkholes, fractures, fissures, caves, springs, depressions, etc.). Large aquifers are formed as water infiltrates and dissolves the jointing in the limestone bedrock and creates large channels. While the soil acts as a groundwater filter as water created by precipitation permeates to the bedrock and into the groundwater aquifer, in areas where large cavities in the bedrock have been formed, this natural filtering process does not occur leading to contamination of the groundwater.

Pollutants carried by surface waters are also introduced directly into the geology through sinkholes and springs. Sources of groundwater pollution can occur from nutrient rich agricultural runoff and malfunctioning on-lot septic systems.

The maintenance of a high level of water quality is directly impacted by agricultural activities, wastewater management and increased runoff from urban activities. Dealing

with the unique features of the study areas, hydrogeology is one of the most challenging planning changes that needs to be dealt with.

The area that encompasses the zone of the stream where stream flows exceed the banks in times of flood is delineated as the floodplain of the stream. This corridor has been mapped and studied by the Federal Emergency Management Agency (FEMA). This zone is identified as a hazardous area to allow construction to take place. Development in this area leads to catastrophic property losses in times of high water and tends to further exacerbate flood elevations. Proper planning minimizes the development of these areas and preserves the zone for stream flow.

In addition to surface streams, groundwater resources and floodplains, another prominent water resource are wetlands. These areas have been recognized as a valuable resource to be protected and regulated. Wetlands are important for a number of reasons. They provide habitats for many species, they absorb flood waters and slow down the rate of overland flow. The U.S. Department of Interior, Fish and Wildlife services has developed the Wetland Inventory.

Geology

The geology of a region forms a basis of the hydrologic, soil and topographic properties of the land. How the bedrock formed and the type and properties of the rock provides for an understanding of the environment created above the earth surface.

Geologists state that at one time the eastern part of the United States sank below sea level and formed a great inland body of water known as the Appalachian Gulf. Sediments and dissolved material from surrounding areas settled or precipitate out in uniform layers resulting in the formation of stratified layers of shale siltstone, and sandstone. Continued deposition of sediments exerted extreme pressure on the deeper layers forming flat hard sheets referred to as sedimentary rocks. This was followed by a period of upward movement caused by great horizontal compression. Folding and faulting of the flat sheets of rock formed a series of ridges and valleys, which follow a parallel pattern northeast to southwest.

In a later period, molten material originating within the earth heated these sedimentary rocks. The expansion of these heated rocks and gases forced molten material into cracks and cavities in the surface. These solidified molten materials are igneous rock. Metamorphic rocks result from the intense heat and pressure associated with tectonic activity changing the texture and/or component minerals of sedimentary and igneous rocks.

Generally there are three (3) different rock types: limestones and dolomite found in the valley with mountain quartzite along the south region and shale north of the Conodoguinet Creek. The underlying bedrock is made up of a combination of these rocks and they are grouped and classified in the following formations:

GEOLOGIC FORMATION CHART

The geology of an area must be considered in land use planning, as the ultimate or best use of land is ultimately determined by its characteristics and quality. On-lot sewage disposal, drainage, and construction costs are some of the factors affected by bedrock geology. The rock types found in the study area present some inherent planning challenges. The carbonate rock found extensively throughout the valley is susceptible to solutioning and sinkhole formation. This characteristic accelerates the groundwater contamination potential.

Soils

The quality and capabilities of the soils within a region dictate the types and intensities of uses as well as the location and size of structures on land available for development. The prospect of a successful agricultural operation is directly dependant on the type of soils. Soils, as they relate to this study, are defined as the material above the top of the weathered bedrock and includes the humus zone, the leached zones, and the subsoil zone of the typical soil profile.

The United States Department of Agriculture, along with the Soil Conservation Service have performed detailed soil surveys and mapping. Soils can be grouped into association by identifying and comparing various properties and characteristics. A soil is classified by depth, texture, natural drainage, thickness, arrangement of layers, parent material, slope, and susceptibility to erosion and flooding. Based on the classification soils, engineering can define parameters as to the suitability of a soils behavior for various uses.

The study area includes the following seven (7) of the County's eight total soil associations:

1. Berks-Weikert-Bedington Association: Shallow to deep, gently sloping to very steep, well drained soils that formed in material weathered from gray and brown shale, siltstone, and sandstones; on uplands.

2. Hagerstown-Duffieild Association: Deep, nearly level to moderately steep, well drained soils that formed in material weathered from limestone; on uplands. The main limitations are hazardous of groundwater contamination, sinkholes, rock outcrops and slope.

3. Hazleton-Laidig-Buchanan Association: Deep, nearly level to very steep, well drained to somewhat poorly drained soils that formed in material weathered from gray and brown quartzite, sandstones, siltstone, and shale; on uplands.

4. Monongahela-Atkins-Middlebury Association: Deep, nearly level and gently sloping, moderately well drained to poorly drained soils that formed in alluvium;

on terraces and floodplains. The main limitations are flooding and seasonal highwater table.

5. Murrill-Laidig-Buchanan Association: Deep, nearly level to moderately steep, well drained to somewhat poorly drained soils that formed in colluvium from gray sandstone, conglomerate, quartzite, and limestone, on uplands. The main limitations are steep slopes, stones on the surface, slow permeability and seasonal high water table.

7. Hazleton-Clymer Association: Deep, nearly level to very steep, well drained soils that formed in material weathered from gray sandstone and quartzite; on uplands. The main limitations are slopes, stones on the surface and seasonal high water table.

8. Highfield-Glenville Association: Deep, nearly level to moderately steep, well drained to somewhat poorly drained soils that formed in material weathered from schist and rhyolite; on uplands. The main limitations are a seasonal high water table, coarse fragments, and stones on the surface and slope.

The type of soil can place limitations as to the suitability of an area to allow for on-site wastewater systems and spray irrigation. These properties are ranked as being the following with regards to limitations:

1. Slight - Soil properties and site features are generally favorable for the use and limitations are minor and easily overcome.

2. Moderate - Soil properties and site features are not favorable for the use and special planning, design or maintenance is required to overcome or minimize the limitations.

3. Severe - Soil properties and site features are unfavorable and difficult to overcome such that special design, significant increases in construction and maintenance costs are required.

The soils classified as exhibiting the characteristics of containing severe limitations are located along the upland portions of the study area. The predominate Hagerstown-Duffield association soils in the valley floor are highly permeable and underlain by limestone. These soils present a special problem to subsurface disposal and spray irrigation due to the high risk of groundwater contamination or nitrate contamination.

Certain soils have been classified as prime farmland soils, as being those that have exceptional quality suited to produce food, feed, forage, fiber and/or seed crops. It has the soil quality and growing season needed to economically produce a sustained high yield of crops when it is treated and managed using acceptable farming methods. The benefits of these farmlands are high yields with minimal impacts of energy and economic resources.

The application of adequate soil management measures during agriculture activities serves to protect damage to both the prime farmland soils and the crops being produced. Hazards which may affect those activities are erosion, seasonal high water table (i.e., wetness and flooding) and sinkholes. Preventive measures recommended in the soil survey to reduce runoff and control erosion are the utilization of contour strip cropping, terracing, grassed waterways, and minimum tillage. Measures important to the conservation of organic matter in the soil include the use of cover crops, crop rotation, and crop residue. The protection of key plant species on pasture lands is accomplished by rotational grazing.

As urban sprawl occurs, much of the prime farmland soils are being lost to development. As the amount of these soils is limited, it is incumbent on both the local governments and individuals to preserve these valuable lands.

Topography

The topography of the study region is defined by the Valley and Ridge area that makes up the region. The Blue Mountain Range on the north side and the South Mountain range on the south end form the Cumberland Valley which predominates the topography of the area under study. The topography was derived from the underlying rock formations. The more water resistant rock is responsible for the areas of higher elevation while more erodible rock, such as limestone, forms the valley portions.

Steep slopes defined as those areas where slopes exceed 15% are found in the areas of the Blue and South Mountains. The foothills make up the region with 8 to 15% slopes and a band width of a 2 to 4 mile strip running along the base of the mountains. The central valley is the broad swath of land with slopes that are less than 8%. While the valley is characterized by its flat gentle slopes, it is not uncommon to encounter areas of localized ridges and steep slopes caused by the fracturing limestone bedrock within the Valley region.

Topography is the leading factor in the distribution of the population in the study area. Flatter areas are more conducive to development in the valley floor. Thus the more density populated urbanized areas occur on these level lands. The steeper slopes present problems relative to construction, transportation and agricultural uses. All are physical barriers to the development to the lands characterized by these steep slopes.

Agricultural uses occur predominately in the more level areas of the valley floor. The weathering bedrock coincidently provides for the best agricultural soils in the region and as the level land provides for more efficient farming, agriculture has become the major industry of this area.

While the factors that make agriculture so attractive also make the best use for commerce, industry and residential land types thereby creating conflicts between the

growing need for more space. Proper planning will recognize the need for flat gentle slopes for the various land uses and at the same time make an effort to allow all land types to co-exist.

Erosion is a fundamental issue when examining slope issues. Soil creep is prevalent and may at times be severe. Adequate drainage control from a steep slope and directing it away from passing over the face of steep slopes is necessary in controlling the erosive nature of soil creep.

The practice and use of on-lot septic systems are limited on steep and foothill slopes. Planning for lots and lot sizes must be inhibited by the presence of steep slopes.

Summary

Preserving the natural environment is fundamental to maintaining the quality of life that is currently enjoyed. Land use planning must be undertaken so that the clash between urban sprawl and agricultural uses can be resolved. Many of the soils found within the study area have been classified as prime farmland soils. The loss of these soils to development diminishes agricultural production and when these soils are ultimately lost, they cannot be recovered. By planning to prevent the sprawl and providing urban centers with denser housing and commercial areas, farmland and the prime soils can be preserved.

The soils and geology of the region present yet another challenge to the planner as while the Karst geology that exists in the valley provides for an ample groundwater supply, agricultural practices and rural on-lot septic areas pose as potential polluters as contaminates are introduced directly into the groundwater through the porous soil and bedrock. Farming practices involving spray irrigation and fertilization should be controlled and management of on-lot septic systems instituted.

Finally, urbanization creates an increase in impervious areas and the resultant increase in stormwater flows. Flooding and stream degradation are two negative by-products. Stormwater controls need to be implemented by requiring proper stormwater management practices.

WATERSHED MAP

FLOODPLAINS AND WETLANDS MAP

GEOLOGICAL FORMATIONS MAP

DENSITY OF MAPPED KARST FEATURES MAP

SOIL ASSOCIATION MAP

SOIL LIMITATIONS FOR OLDS MAP

PRIME AND STATE IMPORTANT AGRICULTURAL SOILS MAP

STEEP SLOPES MAP

population analysis

A component of the basic framework for this Comprehensive Plan is the analysis and understanding of the population trends in the region comprised by the participating municipalities. The population of the region and the demographic analysis concerning it make up the driving force of determining future needs and services that the Boards of Supervisors and Borough Council will need to provide and plan for. For example, as a population increases, there is a need for an expanded road system, utilities, and community services. A geographically expanding community creates a greater possibility for incompatible land uses and conflicts arising from urban sprawl. Future population demands will dictate future housing needs, schools, recreation facilities, municipal services, roads and public utilities.

Such analyses should involve not only an examination of total population, but also an inspection of demographic age and sex composition, labor force characteristics, household income data, and educational background of the citizenry. With a complete analysis of population data, the study area will be better equipped to project future trends for land use, to provide public services and to subsequently prepare to meet the needs of its constituency.

The data used in this Comprehensive Plan regarding demographic and population statistics of the participating municipalities has been taken from the 2000 U.S. Census, as well as the most recent available data from various State and County agencies, in order to make the plan as current as possible.

Comparative Population Trends

An analysis of population trends indicates that all three of the political areas (the region, Cumberland County, and the State of Pennsylvania) compared have had significant increases in actual population in recent decades. Both the County and the partiicpating municipalities had substantial percentage increases as compared to the State's minimal percentages. With the close of World War II the population increased very rapidly. During the period from 1930 to 2000, the percent increase in population for the study area (158%) has been nearly fifteen times that of the State (24%) and comparable to that of Cumberland County (211%). Individually, Lower Frankford Township stands out with an increase of 330% over that time period. The percentage of increase in population during the period of 1970-1980 skyrocketed to 30.2% in the study area while the County and State were experiencing declines in rate of growth. The County acually experienced its greatest rate of growth in recent years from 1950-1960. This trend of a twenty year lag between County growth and growth of the Western part of the County may be

happening yet again as growth rates are on the rise for the State and County between 1990 and 2000 while a slight decline in growth rate is exhibited by the study area. Currently, the population density stands at 119 persons per square mile. The study area accounts for 30% of the County area.

Population estimates from the Pennsylvania State Data Center and available data from the County indicate an overall expected growth rate of roughly 16.9% for Cumberland County from 2000 to 2010 and 7.8% from 2010 to 2020. The projected increase for all of Cumberland County and an examination of growth trends were used to compute the future growth of the study area with the assumption that the Township's population will continue to increase as has been the trend for the past four decades. The respective projected increases of 14% and 10% for the study area over the period to 2020 would result in a total population for the participating municipalities of 22,536 in 2010 and 24,790 in 2020. These projected figures indicate that the growth experienced since the 1970's which was of significant countywide importance, will continue although at a steady but perhaps slower pace.

A comparison of the population growth in the Township, County, and State over the same period is illustrated on the accompanying graphs and the table entitled, Historic Population Change.

		Historic Population Change				
Decade	State Population	% Change	County Population	% Change	Study Area Population	% Change
1930	9,631,350		68,667		7,655	
1940	9,900,180	3%	74,806	9%	8,486	11%
1950	10,498,012	6%	94,448	26%	9,318	10%
1960	11,319,366	8%	124,816	32%	10,261	10%
1970	11,766,412	4%	158,177	27%	11,665	14%
1980	11,864,720	1%	179,625	14%	15,182	30%
1990	11,881,961	0%	195,257	9%	17,388	15%
2000	12,281,054	3%	213,674	9%	19,768	14%
2010	**12,649,486**	**1%**	**249,785**	**16.9%**	**22,536**	**14%**
2020	**13,028,971**	**1%**	**269,268**	**7.8%**	**24,790**	**10%**
Average Percentage of Growth		3.6%		16.7%		14.2%

Western Cumberland County Comprehensive Plan Consortium
Population, Rates of Growth & Density

U.S. Census Population
(% Change From
Previous Decade)

Municipality	1930	1940	1950	1960	1970	1980	1990	2000
Dickinson	1667	1816 (8.9)	1936 (6.6)	2025 (4.6)	2416 (19.3)	3037 (25.7)	3865 (27.3)	4702 (21.7)
West Pennsboro	1658	1837 (10.8)	2161 (17.6)	2612 (20.9)	2937 (12.4)	4329 (47.4)	4945 (14.2)	5263 (6.4)
Newville	1482	1758 (18.6)	1788 (1.7)	1656 **(-7.4)**	1631 **(-1.5)**	1370 **(-16)**	1349 **(-1.5)**	1367 (1.3)
North Newton	785	781 **(-0.5)**	930 (19.1)	1088 (17)	1365 (25.5)	1697 (24.3)	1779 (4.8)	2169 (21.9)
South Newton	512	547 (6.8)	715 (30.7)	847 (18.5)	874 (3.2)	972 (11.2)	1153 (18.6)	1290 (11.9)
Upper Frankford	635	748 (17.8)	770 (2.9)	893 (16)	991 (11)	1552 (56.6)	1703 (9.7)	1807 (6.1)
Lower Frankford	424	465 (9.7)	485 (4.3)	620 (27.8)	813 (31.1)	1261 (55.1)	1491 (18.2)	1823 (22.3)
Upper Mifflin	492	534 (8.5)	533 **(-0.2)**	520 **(-2.4)**	638 (22.7)	964 (51.1)	1103 (14.4)	1347 (22.1)

- Top Three Townships Per Decade in Terms of Growth Rate

2000 Population Density

Municipality	Area In Square Miles	2000 U.S. Census Population	2000 Population Density (Persons / Square Mile)
Dickinson	45.6	4702	103
West Pennsboro	30.5	5263	173
Newville	0.4	1367	3417
North Newton	22.5	2169	96
South Newton	11	1290	117
Upper Frankford	19.5	1807	93
Lower Frankford	15	1823	122
Upper Mifflin	21.9	1347	62
Total of All Eight Participating Municipalities	**166.4**	**19768**	**119**

Racial Distribution

While National and Statewide trends have shown a decrease in the white population since the 1950's, Western Cumberland County continues to have an extraordinarily high percentage of white population. 2000 Census data for the Consortium indicates a 98.4% White population, while Statewide the figures have dropped to 85% and nationally to 77%. The study area exhibited a 99.3% White population in 1990. The remaining 1.6% of the study area population includes 0.5% Hispanic or Latino, 0.4% Black or African-American, and 0.3% Asian.

Age Group Composition

The composition of the area's population is similar to that of Cumberland County in its entirety. Both the Consortium and the County have a nearly equal proportion of females to males, although the percent difference is minimal. Census population figures show that of the 19,822 study area residents in 2000, 50.7% were males and 49.3% were females. This is a roughly equal distribution. Percentage sex ratios for Cumberland County are similar: 48.9% are male and 51.1% are female. In 2000 there were more females in the participating municipalities over the age of 65 and in the 18 years and over category.

The Consortium's population increased by 14% between 1990 and 2000. The age groups of 45 years and older experienced significant increases while slight decreases were evident in the younger age groups. The median age within the participating municipalities is 37 years compared to 38.1 years for the County. Individual municipalities range from 33.4 years in Upper Mifflin Township to 40.4 years in Dickinson Township

A slight decrease of 3% was experienced in the 25-44 age group and is contrary to the typical continuing trend of "baby boom" generations, since the 1950's. In contrast, the 45-54 year old age group grew by 49%, and the 55-64 year olds increased by 26%. Younger generations may be migrating out of the area to more urban environments. However, the study area is proving attractive to older citizens. In support of this theory, the age groups that contain the parents of the baby boom children have also registered significant increases over the ten-year period. As stated earler, significant increases occurred in the 45 and over population and follows a national trend that indicates continuing growth in the future.

Persons 55 years and order within the Consortium increased from 3,353 in 1990 to 4,391 in 2000, an increase of 31%. The 65 and over age group grew by 35%. This age group included a range of 200 population percentages from 6.2% in Upper Mifflin Township to 15.9% in Newville Borough. The over 55 years old age group constitutes 22% of the study area's population and is comparable to the County's 24% total and in excess of the State's 15% total. U. S. Census estimates for 2000 indicate that the 15% population for the State is considerably higher than the National averages. The nation-wide trend of the increasing senior population, has been spurred by advances in health services, medical research and treatment, and the general rise in the standard of living. The median age throughout Pennsylvania continues to increase with each decade as does the number of senior citizens. It should be noted that the higher than

average share of senior citizens in Cumberland County will affect the services demand for housing types, rehabilitation facilities and recreation programs of the Consortium study area.

In addition to the aforementioned patterns, the 65 and over age group also exemplifies another nationwide trend: the increased longevity of Americans, especially among women who accounted for 56% of the study area's senior population.

Family Income

According to the 2000 U.S. Census of Population, the majority of the family household incomes in the Consortium's eight participating municipalities range from $35,000 to $74,999. Of the 7,348 family households in the study area in 1999, nearly 78% had incomes of $25,000 or more and approximately 64% earned at least $35,000. The median household income for the Township was $45,302, slightly below the median income level for Cumberland County $46,707 and well above the Commonwealth of Pennsylvania's median figure of $40,106 per family household.

Of the persons whose income could be determined, 5.1% or 298 households fell below the poverty level for 1999. The range of the participating municipalities included a high of 12.2% in Newville Borough and a low of 2.3% in Dickinson Township. The high rate within Newville Borough is typical of more urban areas. If the seven Townships are considered by themselves, the poverty rate falls to 4.6%. These figures are well below the overall rate of 7.8% for Pennsylvania but exceed the 3.8% rate for Cumberland County.

Education

Educational characteristics are directly correlated to the availability of earning a living, therefore it is vital to study the education of a community. The majority of the Consortium's residents who were classified as 25 years and older, 80%, completed at least four years of high school. 26% of the population claims a college education with 11.8% attaining at least an undergraduate degree and 5.9% completing a Professional or Graduate level degree.

The degree of formal education and job training obtained by a community is undoubtedly related to the community's income level. In today's society, all municipalities should launch a concerted effort to provide a wide range of educational and training curricula. Along with this it should follow the insistence that young people utilize minimum requirements in order to secure adequate employment.

Western Cumberland County Comprehensive Plan Consortium
Educational Attainment of Persons Age 25 and Older, 2000

	Percentage of Persons			
Total Persons	Less Than High School Graduation	At Least High School Graduation	At Least Earned BA	Professional or Graduate Degree
13,361	20.4%	61.9%	11.8%	5.9%

Western Cumberland County Comprehensive Plan Consortium
Educational Enrollments, 2000
Public and Private

School Enrollment	# of Persons	% of Enrollment
Nursery School/Pre-School	243	5.5%
Kindergarten/Elementary/High School	3720	84.2%
College	457	10.3%
Total Enrollment	4420	100%

Future Population

The future of any community can only be planned for in relation to the expected population of that community at a point in time in the future. Projections of future population should be based on a wide-range of factors such as past trends of growth, regional location, the local economy, etc. It also must be admitted that the rate at which a community achieves its future population can never really be accurately predicted. This is due to the fact that population growth is subject to many future variables that cannot be estimated. Such factors include the general state of the economy, patterns of regional growth, transportation proposals such as new highways, the willingness of the owners of land to sell for development purposes, and local government land use and growth policies such as zoning.

An examination of past trends for the study area indicates that the rate of growth between 1930 and 2000 has been steadily increasing, at times dramatically. Since 1970, the area has been slowly increasing in the share of the total County population that it contains to a total of 9.3% as of 2000. Using these and other factors, the County Planning Commission and the State Data

Center have made their population projections. It should be noted that population studies, and in particular projections, are based on the best available information at the time of the study.

A new U.S. Census survey will be taken in the year 2010. It is suggested that as new census data becomes available, population characteristics of the region and its individual municipalities be reexamined to determine if any unexpected trends are emerging among its population. Unanticipated shifts in municipal demographics could require the revision of primary municipal and regional policies formulated and based on the available data used in the creation of this Comprehensive Plan.

RACIAL DISTRIBUTION CHART

AGE SEX COMPARISON CHART

AGE DISTRIBUTION CHART

AGE COMPOSITION CHART

housing analysis

Background

Pennsylvania's Municipalities Planning Code (MPC) Section 301 (a) states that a Comprehensive Plan should, among other objectives, "meet housing needs of present residents and those families anticipated to live in the municipality as well as the accommodation of new housing in different dwelling types and at appropriate densities for households of all income levels."

A detailed analysis of the housing supply available within a community is a vital component to the study area's Comprehensive Plan. Housing is generally one of the more significant indicators of growth or decline in an area. Developmental trends are reflected by the local housing supply, and the quality of life experienced by the population of a community is heavily influenced by the condition of the housing. Quantity, quality, and type of housing are all factors providing valuable information upon which to base planning decisions. By using various data about housing, the participating municipalities will be prepared to meet the changing needs of the population in the future.

Total Housing Units

The following discussion deals with "housing units" as defined by the U.S. Census of Housing. A "housing unit" is defined by the U.S. Census Bureau as a house, apartment, rooms, or single room occupied as a separate living residence. The term "separate" in this context refers to housing in that the residents live and eat separately from other persons in the structure and have direct access to the outside from an individual doorway or from a common hallway. Thus, a single-family house and a housing unit are synonymous while a multi-family structure may contain multiple housing units. Units in rooming houses, resident hotels, and those occupied by lodgers with separate entrances to living quarters even when there is no separate cooking equipment are also included in the definition of "housing unit."

Total Housing Supply

The 2000 Census of Population and Housing indicates that 7,523 year-round housing units existed in the eight participating municipalities at that time. For the purposes of this analysis 7,523 is the number that will be used for calculation of housing supply.

The 2000 Census indicates the most prevalent type of housing in the study area was single-family housing, which comprised 79.5% of all housing. Multi-resident housing units

comprised 5.6% of the total. These multi-resident units were most commonly found to contain 2 - 4 apartment-style units. Mobile homes made up the remaining 14.8% of all housing. Pennsylvania averaged approximately 5% of its total housing supply as mobile homes. Cumberland County had a 6% total of mobile homes as part of its total housing inventory.

The following chart entitled "Housing Units and Time of Construction" indicates the growth of residential development in the study area from l939 to 2000. The study area's housing unit estimates show that the growth rate since the 1970's has seen steady growth with a 44% jump in new housing from 1970-1980 and an increase of 29% from 1980-1990. The percentage of increase remained relatively steady from 1990-2000 with a jump of 1,523 housing units or 25%. This trend far mirrors to a great extent the County's experience. Much like our earlier examination of population, housing in the County appears to have had its greatest boom two decades earlier than the study area. Similarly, the participating municipalities have experienced the delayed housing boost followed by a relatively stable period much like the County exhibited. During the 1990's, housing units in the County increased 19% while the population only increased by 9%. From 1990 to March of 2000, there was a net increase of 13,493 housing units in the County.

The Census data indicates that in 1939, there were 1,873 available housing units in the study area. As of 1949, there were an additional 306, which represented a housing increase of 16% of the total number of housing units. In 1959, there were 337 instances of new construction, representing a modest 19% housing increase from 1949. In 1969, there were 631 new houses reported, a 24% increase in the total number of housing units. As of March 2000, the participating municipalities now boast a total of 7,523 housing units.

The trend of increased housing units being constructed was a result of various factors. Development pressures emerging from other nearby communities, continued economic growth in Cumberland County and along the nearby Interstate 81 corridor, the attractive setting of rural Western Cumberland County, as well as a natural increase over time have all played a role in this housing boom. There is also a distinct correlation between the new construction and the population analysis.

The accompanying chart entitled "Housing Units and Time of Construction" illustrates the growth of residential development for the eight municipality region since 1939.

Housing Units and Time of Construction			
Year	**# of Housing Units**	**Cumulative Total**	**% of Increase**
1939 or earlier	1,873	1,873	- -
1940-1949	306	2,179	16
1950-1959	421	2,600	19
1960-1969	631	3,231	24
1970-1979	1,427	4,658	44
1980-1989	1,342	6,000	29
1990-2000	1,523	7,523	25

Source: 2000 U.S. Census of Housing

For the period from 1990-2000, the housing supply increased by 1,523 residential units or 25% of the total housing inventory recorded in 1989. The nationwide total for housing growth was an almost equal 26% over the same time period. These figures point to a continued potential steady increase in housing and the potential for demographic impacts on Township services and facilities in light of a rising population. Careful attention should be paid to continuing building trends that are in all likelihood the most obvious and genuine indicator of growth in the municipality. A rising housing supply will indicate stress on community facilities such as recreation, utilities, schools, and emergency services.

The following tables illustrate the amount of residential development experienced in the past decade and forecast for the next several years. The table entitled "Residential Building Permits / New Construction 1993 – 2002" represents the amount of new residential construction that has taken place in each of the eight municipalities and in the area as a whole. A total of 1,324 residential building permits were issued over that ten-year period. 1998 was the busiest year for new home construction in the study area with 161 permits issued while 2000 was the weakest year with only 101 permits issued. Dickinson and West Pennsboro Township were the busiest municipalities with 424 and 319 permits respectively. Newville was the most quiet in terms of new residential construction with only 21 permits issued over the ten year period.

The second table entitled "Approved Residential Lots / Units 1993 – 2002" demonstrates the amount of approved residential subdivision and land development activity over that same ten-year period. A total of 1,375 new units were approved again with Dickinson (415 units) and West Pennsboro (324 units) Townships showing the greatest degree of development interest. Upper Frankford Township wasn't far behind in this category with 302 units approved. Newville was again at the bottom of the list with only 3 new units approved. 1993 and 1994 were the busiest years for plan approvals of new residnetial construction in the study area with 204 and 205 units respectively.

RESIDENTIAL BUILDING PERMITS
NEW CONSTRUCTION 1993-2002

APPROVED RESIDENTIAL LOTS/UNITS
1993-2002

Housing Condition

The living conditions of a community are reflected in the nature of the housing residents inhabit. In planning for the future, the community should be aware of its residents living conditions as well as the nature and extent of the problems they represent. The Census uses three classifications of structural conditions. "Sound" structures are either ones that have no defects, or only slight ones that can be corrected during the course of normal maintenance. Housing units categorized as "deteriorating" are those that require an unusual amount of repairs, beyond those that would ordinarily be performed during routine maintenance, in order to remain inhabitable. A "deteriorating" house is one which needs more repairs, or repairs of a more critical nature, than would be provided during regular maintenance if it is to continue providing safe and adequate shelter. A "dilapidated" house may either be of inadequate original construction, or have critical defects of such magnitude as to indicate it no longer provides safe and adequate shelter.

The overall condition of the study area's inventory of housing units is sound. Field surveys conducted in January of 2004 found only isolated occurrences of deteriorating housing units. No major areas of deterioration are present, although the urbanized area of Newville Borough with its higher density of development and older construction is a candidate for such an eventuality if programs are not initiated to assist property owners. Dickinson and West Pennsboro Townships also demonstrate a higher than average frequency of older housing. As the housing stock within the region ages, homeowners should maintain the conditions of housing units to insure that deterioration does not occur to the degree at which damage is irreparable. Municipalities should be proactive in publicizing any available financial aid programs for its citizens in this regard.

The U.S. Census indicates the median value of specified owner-occupied housing units in the area in 2000 was $108,200. This represents an increase of 54% over the 1990 median housing value of $70,400. The County median housing value for 2000 was $120,500. Individual municipal values for the study area range from a low of $83,000 in Newville to a high of $127,700 in Dickinson Township. The monthly median mortgage payment of $985 equates to 22% of the median owner occupied incomes. These increases are significant and cannot be overemphasized in terms of their importance in assessing the historical and potential growth of the area.

Selected Housing Characteristics

In general, nearly all occupied housing units in the eight participating municipalities are equipped with plumbing facilities for the exclusive use of the occupants. Only 0.6% of the 7,523 housing units lacked complete plumbing for owner occupied units. 0.3% of all housing units were lacking complete kitchen facilities.

In 1990, the area's 6,000 total housing units included approximately 14% on public or central sewer systems and 86% relying on an on-lot sewage disposal system or other type of in-ground system. Act 537, The Pennsylvania Sewage Facilities Act, which requires an approved sewage system proposal prior to the issuance of a building permit virtually assures that all future housing

units will be equipped with appropriate plumbing and liquid waste disposal facilities. Similar statistics were not available through 2000 Census data for the 7,523 housing units listed therein. However, the figures are expected to be similar as the only public sewer provider remains the Borough of Newville (serving the Borough and portions of North Newton and West Pennsboro Townships). Newville serves a total of 850 customers which would equate to roughly 11% of all units, although a number of these customers are undoubtedly non-residential.

The majority of the 7,523 occupied housing units in 2000 was heated by fuel oil or kerosene (54.2%), with 28.2% heated by electricity, 7.4% heated by wood, 5% heated by liquid propane, 3.6% heated by coal, and 1% heated by natural gas. The water supply characteristics for the area's 7,523 total housing units are reliant on service via the area's groundwater resources and individual wells. 1990 Census statistics indicated that 83% of the area's housing inventory relied on wells or other natural sources while 17% of the units were service by a public or private water supply system. Again, the 2000 Census data does not provide similar statistics, however the same public water providers are available as for sewer, along with the Dickinson Township Municipal Authority which serves Dickinson Township customers and the Huckleberry system for a small number of units in South Newton Township, therefore the percentages are estimated to be similar.

Occupancies and Vacancies

Of the 7,523 housing units available in the eight participating municipalities, 95% were occupied and 5% (366) were vacant at the time of the 2000 U.S. Census. At that time there were 6,416 or 85% of the units occupied by owners and 1,107 or 15% occupied by renters. Rental units are more prevalent in the Borough of Newville and in the Townships of West Pennsboro and Dickinson. Of the 7,523 housing units in the study area, there were 79 houses or 1% up for sale according to 2000 U.S. Census Data. Dickinson Township had far and away the most instances of units for sale with 48.

Mobile Homes

As of 2000 there were 1,117 mobile homes within the participating municipalities. This accounts for nearly 15% of the total housing units. West Pennsboro (314), Lower Frankford (207), Dickinson (204) and Upper Frankford (186) Townships had by far the greatest number of mobile homes. The greatest percentage of mobile homes with regard to overall housing units belongs to Lower Frankford (29%), Upper Frankford (26%) and Upper Mifflin (20%) Townships. This information was obtained from the 2000 U.S Census. Most of the mobile homes are four or five room units.

Field surveys conducted in the Fall of 2003 indicate that the frequency of mobile homes within the study area continues to increase. Mobile home parks have been a common development option in the past within the study area and account for the majority of the 1,117 mobile homes. The balance of the total units recorded are provided in an individual lot setting. While housing growth over the past decade has been concentrated on single family residential homes, a

significant increase in mobile homes has also occurred, and will likely continue to expand at a comparable rate in the near future.

Mobile homes continue to be an important housing type throughout Southcentral Pennsylvania. There are obvious economic reasons for the increased use of the mobile home as an inexpensive housing unit and, inasmuch as this trend is likely to continue, the Township should continue to prepare for the growth of this housing type.

Housing Value

Within the eight municipalities being examined in 2000, most of the housing units (76.1%) were in a value range of $50,000 to $149,999; 1.9% are valued at less than $50,000; and 22% are valued at over $150,000. The value of all homes either new or existing is, of course, subject to the rapidly rising and inflationary cost of building construction and the desires of families to have larger homes with more rooms, attached garages, and the increasing trend of home occupations. The median house value for the area is $108,200 in 2000 compared to a median value of $70,400 a decade earlier.

Information was also obtained from the Cumberland County Tax Assessment Office regarding assessed values of residential properties within the eight individual municipalities as well as the combined study area. The County's data is based on a year 2000 assessment and is current as of March, 2004. A new assessment is planned for 2005. Of the eight participating municipalities, Dickinson and West Pennsboro Townships have by far the greatest number of residential properties with 1,690 and 1,629 respectively. Upper Mifflin has the fewest with 373. The total assesed values follow a similar pattern in comparison to the number of residnetial properties. Dickinson Township has the highest median residential property value at $129,700. Newville has the lowest at $80,700. As a whole, the study area has 6,011 residential properties, a total assessment of $709,324,010, and a median assessed value of $110,360. The following table illustrates this data.

Western Cumberland County Comprehensive Plan Consortium
2004 Residential Assessed Property Values

Municipality	Residential Properties	Total Assessed Value	Median Assessed Value
Dickinson	1,690	$237,305,850	$129,700
Newville	426	$34,985,960	$80,700
Lower Frankford	426	$45,167,070	$108,790
Upper Frankford	436	$42,727,310	$98,400
North Newton	621	$67,417,790	$103,290
South Newton	410	$45,080,790	$100,900
West Pennsboro	1,629	$201,371,180	$115,690
Upper Mifflin	373	$35,268,060	$92,490
Total Study Area	**6,011**	**$709,324,010**	**$110,360**

SOURCE: Cumberland County Tax Assessment Office, 3/2/2004

Summary

Based upon 2000 U.S. Census data, most of the housing in the study area is of the single family type, in sound condition, and is occupied by less than one person per room. The average unit has five to six rooms and is owned by its occupant who is approximately 25 to 44 years of age. The median value of an average housing unit is approximately $108,200 with the owner carrying a mortgage of $985 per month. County tax assessment data places the median residential property value slightly higher at $110,360. The average housing unit has full plumbing facilities, is not connected to a central sewer system and central water system, and is heated by fuel oil or electricity. These characteristics illustrate marked changes since the time of prior planning efforts on behalf of the participating municipalities.

From a State and National perspective, the area's housing supply is average in terms of value and percentage increase in value over the past decade. Similarly, the volume of housing is increasing at an average pace. Planning for the future of housing growth throughout Western Cumberland County is essential in order to create a desirable pattern of housing development corresponding to available and planned infrastructure and services. The potential for incompatible uses existing alongside residential housing units creates a need for planned distribution of housing in order to minimize conflicts.

economic analysis

Background

The economic growth of Western Cumberland County has been slow in comparison to the more concentrated areas of Shippensburg, Carlisle and the West Shore area of Harrisburg. With the proximity of the study area to these regions of economic growth, as well as Maryland, Chambersburg and other burgeoning locations along the Interstate 81 corridor, the area should realize increased economic opportunities as populations and jobs expand outside of the more urban areas. It is also important to remember that these municipalities are in close proximity to the I-81 and Pennsylvania Turnpike corridors, which show all the signs of an emerging economic development region. The employment opportunities in a region determine both the occupation and income of many residents in the region. Businesses that provide stable income to area residents also help to increase the tax base for the region, which sustains the local government services.

Retail Economy

Western Cumberland County has not historically had a significant retail industry. This has been attributed in the past to the low population density in the region. The retail centers of Shippensburg, Carlisle, Chambersburg and the West Shore have drawn most of the shoppers in the participating municipalities to these areas. Existing commercial activity appears to have a slight concentration around Newville and in neighboring West Pennsboro Township. Several Townships, including Upper Mifflin and Lower Frankford, have no identifiable retail sector. With an increase in population that has occurred over the last 30 years, the area may now be able to sustain limited growth in the retail sector of the economy. The Route 11 and Route 641 corridors are the areas most suited to retail development due to transportation access and proximity to the population centers of the Borough of Newville and the outskirts of the Borough of Carlisle.

Manufacturing

The manufacturing sector in the study area is small in comparison to other sectors of the economy, including the agricultural sector. Western Cumberland County has only a nominal amount of the total manufacturing facilities in the County. Most of the existing industrial facilities are small and scattered without any distinct centralization of industry. Dickinson Township has the largest areas of industry with its mining resources in the Gardners area. Other municipalities, such as Lower and Upper Frankford Townships, have no recognizable industrial

activity. The potential exists for a modest expansion of this sector of the economy, especially in proximity to the major transportation arteries and perhaps in the form of specialty manufacture and transportation-related industries.

Labor Force and Employment

The labor force and employment figures for the eight participating municipalities were taken from the U.S. Census of 2000. The term "labor force" includes all people over 16 years of age whether employed or unemployed. In 1990, the working labor force in the Township was 9,091 people. By 2000 this figure had increased to 10,140 people. Interestingly, however, the involvement rate (the percentage of the population in the labor force) has decreased from 71% in 1990 to 65% in 2000. The reasons for this decline are not entirely clear, although as incomes increase families are able to rely on a single income rather than two working parents. Most residents of Cumberland County (70%) work within the County's borders. The majority of the remaining 30% find work within Franklin, Dauphin and York Counties. Only 0.9% of the County's workforce is employed outside the Commonwealth with the majority working in Maryland followed by New Jersey, New York and Virginia.

Labor Force Characteristics

The occupations of the residents of the study area have undergone a change in the past decade. The percentage of people involved in farming has decreased (forestry, fishing and mining are included in this category in the census data) to only 104 persons or 1% of the employed civilian population. In 1990 the figure was a more respectable 476 persons or 5.2%. The Sales, Service and Construction sectors have also seen significant increases. Of particular interest is Sales, which grew from 7.5% to 24.9% over the course of the decade. In contrast, the number of people involved in Management and Production occupations has declined since 1990. While this demonstrates the overall change of the Township economy from agriculture and labor to commerce and services, agriculture remains an important part of the economy. The percentage of workers in Federal, State, and local government employment is 14.3%. A comparison of these figures is illustrated on the accompanying graphs "Worker Classification in Pennsylvania, York County and Participating Municipalities (2000)" and "Occupation Distribution for Participating Municipalities." Both of these graphs were derived from 2000 U.S. Census Data.

The national trend of moving toward a service-oriented economy has occurred on a similar but smaller scale in Western Cumberland County as a result of recent growth trends in population and development.

Agriculture

As stated earlier, the number of people involved in farming has declined over the years. According to the 2000 Census Data, approximately 1% of the employed residents in the eight participating municipalities were engaged in farming (again, this figure includes forestry, fishing and mining). This represents a drop of roughly 78% since the 1990 Census. Cumberland County (-28%) and the Commonwealth of Pennsylvania (-43%) also experienced similar, but not so significant, declines in farm workers during the same time period. A variety of farming products still exist including livestock, crops, and orchards and the rich, fertile soils of the Cumberland Valley are ideal for crop production. The trend of agricultural land loss due to development continues, as does the trend of farm consolidation. This trend is expected to increase as population pressure increases for new housing developments. Through the use of proper planning, the best agricultural land has been and can continue to be preserved for agricultural use for generations to come while other less productive farmland is developed for commercial or residential purposes. A challenge of more significant proportions lies in developing economic strategies on a State level to continue to make agriculture a viable career for the residents of Western Cumberland County and the family farm unit as opposed to corporate ownership and operations of higher concentration and intensity. Although the economics of farming have seen increases in figures such as farm value and sales, the total number of farms and average farm size have remained relatively constant throughout the County.

Income

Annual household income for the study in 1999 had its largest share, 24.4%, in the $50,000 to $74,999 category. 20.8% of the total 7,348 households fell within the $35,000 to $49,999 annual income range. A total of more than 64% of the households earned between $35,000 and $149,999 for the year. Only 2.1% earned in excess of $150,000 while 5.5% earned less than $10,000 in 1999. The median household income was $45,302 with a high of $51,363 for Dickinson Township and a low of $30,313 in the Borough of Newville. 5.1% of families had 1999 incomes below the poverty level. Countywide figures for the same time period are similar in terms of household income percentages. However, the study area's poverty level was noticeably higher than the County's 3.8%. 1989 figures for the participating municipalities reveal a significant rise in income statistics from an annual median household figure of $32,659 (39%).

Summary

The economy in Western Cumberland County has undergone changes but at a relatively slow rate. The retail and manufacturing sectors have a limited potential to develop in certain sectors of the study area. Other areas have certain resources that make them attractive for commercial development in the near future. The most suitable areas for this development are those areas with easy access to transportation and resources, and in proximity to concentrated population centers. These areas include areas around existing villages and the Borough of Newville, as well as highway development in proximity to Routes 11, 233, 641 and Interstate 81. Agriculture remains an important economic and cultural initiative for the Township and land use efforts should be focused to continue supporting the preservation of prime farmland to ensure its survival and sustenance. It can be expected that the economy will continue to change at a slow but steady rate. Annual incomes are expected to show steady increases as the sales and service sectors move to the forefront of the labor force. As development finds its way into the study area in a residential setting, there will be more changes to the character of the work force than to the physical landscape. The service sector portion of the labor force will continue to grow as the agricultural sector maintains at its current level.

WORKER OCCUPATION CHART

OCCUPATION DISTRIBUTION CHART

existing land use analysis

Introduction

A necessary prelude to community preparation for future growth and development is an awareness of the existing use of its land. Through careful analysis of present land use patterns, the Consortium and its individual municipal members will be better able to perceive the past and current trends shaping the future structure of the community. Data has been compiled from County tax assessment and property classification data, consultant's field surveys, and Township data. From this information, land use maps showing existing land use within the overall study area and the eight member municipalities have been prepared and will serve to further augment the County's land use mapping that emerged as part of its County-wide planning effort.

These combined land use maps and resulting information constitute a valuable public record, making it possible to determine at a glance whether a parcel of land is used for residential, commercial, industrial, public, or agricultural use. Such a map is of vital importance to all planning and zoning discussions. It is strongly recommended that, following the adoption of this Plan, each of the municipalities regularly review and update its map in order to insure that it reflects the latest developments within the Township.

County Comprehensive Plan Analysis

The October, 2003 edition of the Cumberland County Comprehensive Plan includes an analysis of land use patterns throughout the County. In certain instances the plan separates the data into three geographic regional categories: Cumberland East, Cumberland Central and Cumberland West. The eight municipalities comprising our study area are primarily located within the Cumberland West category. The exception to this statement is Dickinson Township which is grouped by the County with the Cumberland Central category.

In 1975, and again in 1997, the Tri-County Regional Planning Commission analyzed County land use patterns by acreage. The County as a whole experienced growth in four of the five land use classifications in this 12-year period. Residential (37.4%), Commercial (32.7%), Industrial (234%), and Public/Semi-Public (21.9%) all showed significant growth by area. The category of Vacant/Agricultural suffered the only decline (9.3%) to the benefit of development. The bulk of the County's land use analysis in recent years has focused not on acreage but on number of parcels. Between 1997 and 2002, the entire County saw a 6.15% increase in the total number of parcels. The land use categories remained the same as the analysis by acreage with the exception of a split between the Vacant and Agricultural classes. Residential (5.8%), Commercial (58.8%), Industrial (64.4%), Agricultural (22.2%), and Public/Semi-Public (7.9%) all experienced increases in the total number of parcels categorized as such. Vacant land saw a decrease by 13.6%. Although the general consensus is that agriculture is actually declining both in terms of

the number of farms and the corresponding acreage, a recent change in nomenclature and definitions for the Standard Industrial Classification (SIC) code, which now includes forestry and timber-harvesting under the category of agriculture, may explain the sudden increase in agricultural data as it relates to land use.

The following table illustrates the number of parcels classified as each land use by the County plan for each of the Consortium's member municipalities.

Cumberland County Comprehensive Plan - 2003
Exisiting Land Use Analysis (2002 # of Parcels)

Municipality	R	C	I	A	P	V	Total
Dickinson	1,719	43	1	201	50	598	2,612
Lower Frankford	546	9	0	158	6	161	880
Newville	429	77	4	0	26	24	560
North Newton	631	22	2	148	26	128	957
South Newton	416	14	1	53	9	75	568
Upper Frankford	599	8	1	151	14	159	932
Upper Mifflin	401	4	0	138	11	148	702
West Pennsboro	1,780	52	2	209	47	310	2,400
Total Study Area	**6,521**	**229**	**11**	**1,058**	**189**	**1,603**	**9,611**

Legend: R=Residential, C=Commercial, I=Industrial, A=Agricultural, P=Public/Semi-Public, V=Vacant

Source: Cumberland County Comprehensive Plan, 2003

The County Plan further assesses each of the three regions in terms of their respective percentages of each land use category. Not surprisingly, Cumberland West far exceeds the other two regions combined in terms of the percentage of its total number of parcels used for agricultural purposes. It also leads the other two regions in percentage of both vacant land and industrial use parcels. The western portion of the County lags far behind the rest of the County in terms of commercial land use.

With respect to other observed land use trends and patterns as they relate to the Consortium study area, the Plan notes that higher density residential development decreases as you move west in the County. The study area only exhibits any significant medium density residential use

in proximity to Newville and Mt. Holly Springs. Low density residential development occurs primarily in the form of random strip development and along existing infrastructure networks with single-family detached dwellings representing the dominant housing style.

Residential Use

Approximately 68 percent of the parcels in the eight municipalities comprising the study area are used for residential purposes. According to 2000 Census data, the 19,768 people that comprise the total population of the study area are housed in 7,157 occupied housing units. Farm type residences are scattered throughout although the overall density is not significant in this heavily agricultural sector. The majority of the other residences are not scattered, but are clustered in nodules. Clusters are found in greater density on the outskirts of the Carlisle area in West Pennsboro and Dickinson Townships and also in the Borough of Newville. Other clusters are found around established villages and major traffic corridors in all of the participating municipalities. Western Cumberland County has managed over time to avoid the pitfalls of poor residential planning and strip development experienced by many Pennsylvania municipalities. This is due in part to an extended lull in municipal growth for a number of decades and limited public water and sewer capacity, and also as a result of an increasingly effective County program of agricultural preservation and interest in zoning initiatives that promote cluster development, conservation of natural resources, and a limited number of building lots. While some strip development is evident along certain existing municipal roads, there is also a trend toward the construction of cul-de-sacs with lots clustered around the road and the continued utilization of valuable open space and prime farmland.

Another major residential use of land is the mobile home. Several mobile home parks exist throughout the study area with particular concentrations in Upper Frankford, West Pennsboro, Dickinson, and Lower Frankford Townships. 1,117 mobile homes were reported as part of the 2000 Census data for the combined study area. An abundance of these are situated within mobile home park communities. However, other individual units are located throughout the municipalities outside the confines of a park setting and occasionally mixed in with site-built homes and farmsteads.

Few multi-family housing opportunities exist presently within the study area with the exception of apartment units in Newville Borough and the village of Walnut Bottom in South Newton Township. Some scattered instances are found in the other participating municipalities, but until such time as public utilities become more readily available, this form of housing will likely continue to remain only a small percentage of the total residential land use inventory.

The past few decades have also seen their fair share of large subdivisions utilizing an entire parcel with comprehensive road, drainage and utility networks. These developments, along with some smaller but similar undertakings, account for hundreds of present and potentially future residential lots within the Township. Examples of this form of burgeoning residential development can be found in each of the member municipalities, although to date a higher degree appear in Dickinson and West Pennsboro Townships with their proximity to Carlisle, public utilities, and goods and services.

Public and Quasi-Public Use

A significant expanse of the study area falls within the category of public and quasi-public land use. Particularly, the northern and southern tiers of the study area consist of vast reserves of State Gamelands, State Forest, and State Parks. Other diverse public uses included in this category are Township government and maintenance, schools, churches, cemeteries, sewage treatment plants, well sites and water towers, veterans and fraternal organizations. An allowance for streets and highways in the Township was not included, which would significantly increase the impact of this category. Although these other public uses don't account for a great percentage of land cover, the essential services provided to the greater community are of dramatic importance.

Commercial Use

Only 229 of the parcels (or 2.4%) within the study area are devoted to commercial use while the expanse in terms of acreage is even less eye-catching. It appears that major shopping is performed outside the study area in neighboring communities like Shippensburg and Carlisle but also on a regional basis in York and Harrisburg. Produce markets and roadside stands emphasize the importance of agriculture as a contributor to commerce in this sector of Cumberland County. Scattered specialty retail sales, service enterprises, small businesses, home occupations, repair businesses, golf courses and campgrounds comprise the majority of commercial land use within the study area. Larger scale commercial activity has yet to emerge in the area. As population expands, demands for domestic employment and variety of services will also follow. Certain of the member municipalities in closer proximity to the path of development and significant population centers are already experiencing this pressure for a greater diversity in land use and must plan for proper designation of areas for economic opportunity. The municipalities must be prepared to assist in siting this inevitable development into areas best suited for such growth and in promoting the advantages it maintains in this regard.

Industrial Use

Industrial land use within the subject municipalities constitutes only 0.1 percent, or 11, of the total land parcels. Currently, the Borough of Newville is home to several industries while Dickinson Township includes two significant quarry operations in its southern mountainous region. A few other scattered industrial operations are identified as well including a portion of the Cumberland County Landfill in North Newton Township and various warehousing facilities in association with Dickinson Township and the nearby Interstate 81 Plainfield interchange. As mentioned in the preceding paragraph, the eventual growth of the area is logically succeeded by the need for a variety of employment options and goods and services. This will be a growing sector of land use in the years to come and must be planned for with an open mind and in the best interest of the residents with due consideration of all potential impacts.

Agricultural Use

Open field agriculture is the largest single use of land in Western Cumberland County. A band of fertile soils and successful farming enterprises is cradled between the two forested mountain regions to the north and south. The area is underlain by limestone between the Yellow Breeches Creek and the Conodoguinet Creek. North of the Conodoguinet Creek, the land includes a shale base. A small area of farmland also exists along Dickinson Township's southeastern corner. Open field agriculture, whether cropland, orchard or pasture, pervades the entire region in all directions. As mentioned in the paragraph on residential land uses, the agricultural area is interspersed with a few cases of strip development created as farmers parcel off their land adjacent to roads, lot by lot. This is a potentially harmful practice, due to the resultant haphazard development and the high cost of supplying public services to the outlying strip development areas. The participating municipalities must continue to provide exemplary leadership in land use regulatory programs to ensure that agriculture land and the industry itself is supported and preserved for future generations. The area's rural qualities and character are perhaps its most important resource and make it such an attractive setting in which to live. Indications of the importance of agriculture are also evident in the plethora of properties that have signed on as part of the various Townships' Agricultural Security Areas and those that have participated with the County in its farmland preservation program wherein development rights have been purchased via easements to ensure the future agrarian livelihood of the land.

Summary

Residential land use has been a rising commodity over the past several decades. Most of this development has occurred on the fringes of and between Carlisle and Newville in proximity to public water and sewer systems and to a lesser degree in proximity to Interstate 81 and other major traffic thoroughfares. The remaining residential activity has been spotty throughout with a lower frequency in the north and west quadrants of the study area. Proximity to Interstate 81, the Pennsylvania Turnpike, and other major highways such as State Routes 11, 641 and 233 has served as the only significant catalyst for commercial and industrial activity for the Township along with the need for a basic supply of goods and services to sustain the rising residential population. At this time, however, agriculture clearly remains the dominant use of real estate.

Land use trends will be swayed by future Township and State decisions including changes in land use regulations, economic stimuli, highway improvements, and the availability of water and sewer service. Care must be taken to insure that future development occurs in an orderly fashion at acceptable cost levels for required additional public facilities and in consideration of compatibility with surrounding uses. Knowledge of the land use features incorporated by man over the years, along with consideration for natural features such as soils types, geologic limitations, steep slopes, flood plains, drainage, and wetlands is essential in planning for the future environment.

In spite of ever-increasing residential construction and expanding development pressures in relation to population growth, the Interstate 81 interchanges, and exterior regulatory and market forces, the dominant land use activity in the study area remains agriculture.

EXISTING LAND USE MAP

transportation analysis

Transportation is defined by the movement of people and or freight from one place to another. When viewed within the context of the study area it can involve traffic:

1. Passing through our region.

2. Travel from inside the study area to outside of it and vice versa.

3. Both origins and destinations within our study area.

The overall transportation system is required to support all three types of travel.

The Western Cumberland County Council of Governments (COG) is currently engaged in a separate but simultaneous planning project dedicated to the issue of regional transportation. This Land Use and Transportation Plan will examine details beyond the scope of this Comprehensive Plan. It is not the intent of this document to duplicate the efforts of other COG planning initiatives. This chapter will include basic transportation information and mapping and will touch on basic issues such as traffic volumes and frequency of accidents. However, detailed data collection and analysis will be left to the auspices of the traffic professionals enlisted for this highly specialized study

Highways

In order to accommodate these types of movements a network of roads and highways must be established which define the functionality of each road and the following classification of road hierarchy is used:

	ARTERIAL	COLLECTOR	LOCAL
Sub-Classification	• Limited Access/Interstate • Other Principal Arterials • Minor Arterials	• Major • Minor	
Mobility vs. Access	Mobility of utmost or equal importance	Mobility and land access of importance	Land access of utmost importance
Trip Distance	Typically used for longer trips (inter and intra-state, inter-region and longer intra-region and intra-country trips)	Short to medium distance intra-regional trips and for accessing arterial and local systems	Typically used for short trips and for accessing higher order systems
Traffic Volumes	Highest volume roadways; moderate to high volumes on most arterials	Moderate volumes in general.	Low volume roadways
Design Features	Limited, partial and unlimited access controls; widest right-of-ways, cartways and shoulders; often 3 or 4 lane facilities	No access controls; moderate to minimum right-of-way, cartway and shoulder widths; often 2 lane facilities	No access controls; Minimum right-of-way, cartway and shoulder widths; often 2 lane facilities
Speeds	Typically 45-65 mph	Typically 35-45 mph	Typically 25 mph
Through/Local Traffic	Minimal interference to through travel; local travel discouraged especially on limited access roads	Balanced through and local travel	Through travel discouraged; local travel encouraged
Relation to other most important connections with systems	Other arterials and collectors usually via grade separated interchanges or signalized intersections	Connects with Arterials and Locals: • Collector/Arterial intersections often signalized • Collector/Local intersections often stop controlled	Primarily connects with other locals and collectors • Most intersections of locals with other roadways are stop controlled

Our study area is unique in that it is bisected by two (2) major arterial roads (I-81 and I-76) yet no interchanges are located within it. However I-81 interchanges 37 and 44 both are located close in neighboring municipalities and the location of them impacts both the traffic and land uses surrounding them.

The majority of the roads, seventy percent (70%) within our study area, are classified as local roads used primarily by the residents who live along them to commute to work and travel to the urban centers. They also support agricultural activities for the farms that surround them. These roads serve the rural nature of our study area. Congestion on these roads is not a concern and there are only two (2) signalized intersections in the study area. Often these are old roads following and founded on dirt roads with no engineered design features. Many are constructed of substandard material to support the traffic to which they are subjected. As sprawl within the region occurs, these roads are subjected to higher volumes of traffic and it is left to the municipality to maintain and improve them to allow for the safe travel of the users.

Safety is the primary concern on these rural roadways. PennDOT collects and catalogs the location of vehicle accidents in order to determine sections of the highway network which have hazardous driving conditions. While this data had previously been available for only state owned roads, it is being collected and assembled through the use of Geographic Information Systems (GIS) and made available to local municipalities to pinpoint high accident-prone areas.

Additionally PennDOT provides assistance with safety and maintenance issues through the LTAP program available to local municipalities.

The state does provide some aid in order to provide funding for the maintenance of local roads thru the liquid fuel tax program that is apportioned to the local municipalities based on a formula using population and total length of roads. The breakdown of this fueling within the study area is:

MUNICIPALITY	NO. ROAD MILES - 2003	TOTAL LIQUID FUELS - 2003	AID PER MILE
Dickinson Township	44.70	$130,970.01	$ 2,930
Lower Frankford Township	25.96	$ 66,543.33	$ 2,563
Newville Borough	3.40	$ 20,546.40	$ 6,043
North Newton Township	30.83	$ 79,068.69	$ 2,565
South Newton Township	12.64	$ 36,619.61	$ 2,897
Upper Frankford Township	25.78	$ 66,046.71	$ 2,562
Upper Mifflin Township	25.04	$ 59,871.05	$ 2,391
West Pennsboro Township	50.42	$147,302.80	$ 2,921

PennDOT does undertake improvements to highway network as they are recommended by The Harrisburg Area Transportation Study (HATS), which is the federally designated Metropolitan Planning Organization for the Harrisburg area. The organization develops transportation plans and improvement programs for the region. HATS is comprised of federal, state, and local

agencies, including officials from Cumberland, Dauphin, and Perry counties, Harrisburg, and Capital Area Transit. The HATS area encompasses 105 municipalities in four counties. The area includes all of Cumberland, Dauphin, and Perry counties and includes Palmyra Borough and North Londonderry Township in Lebanon County.

Both HATS and the Pennsylvania Department of Transportation (PennDOT) rely on various transportation planning documents to determine which highways and other transportation projects have the greatest need to be improved. The primary documents HATS uses are the 12-year Transportation Plan, and the 20-year Long-Range Transportation Plan (LRTP).

The 12-year Transportation Plan is a document prepared by PennDOT with HATS input. The first four-year period of the 12-year Plan is identified as the Transportation Improvement Program (TIP). Projects on the TIP are programmed improvements and funding has been allocated. The 4-year TIP is a document prepared by PennDOT with input from a variety of agencies. Municipalities suggest most projects, ensuring people most affected by problematic highway or transit issues have some say in trying to resolve it. Both the county and regional planning commissions then review the submitted projects, and their recommendations are submitted to HATS for final approval. The project improvements completed can take a variety of forms, ranging from small-scale safety improvements to large-scale road reconstruction. Almost all projects on the TIP are programmed for multiple phases, which include preliminary engineering, final design, utilities, right-of-way, and construction. In most cases the pre-construction phases are required to ensure that project construction is as efficient as possible. Some projects placed on the TIP will not have obvious, construction-related improvements completed during the 4-year TIP period, instead construction improvements will be implemented in the next round of the TIP. Though the TIP is a 4-year document, it is updated every two years, ensuring better planning flexibility and allowing new projects to be placed onto the TIP more quickly.

Projects not placed on the first four years of the 12-Year Transportation Plan are those projected to be important projects in the years to come. The 12-year Plan is updated every two years. The current version of both the TIP and 12-year Plan were most recently adopted in October 2002. The next version of both documents will be officially adopted in October 2004.

In 1999, HATS produced and adopted the 1999-2020 Long Range Transportation Plan (LRTP), outlining the kinds of improvements needed in the Harrisburg region in the long term. The plan is the basis on which major highway and transit projects are selected for various improvements. Unlike long range transportation plans a generation ago (1950's to 1970's), the projects and goals identified in the current LRTP focus more on maintaining and upgrading the existing transportation system, rather than expanding the transportation system. HATS completed a minor update of the 20-year plan in early 2001. The next major update of the plan is scheduled to be completed by late 2003 or early 2004.

Projects identified as having deficiencies and needing to be upgraded are submitted for the 12-Year Transportation Plan and those with the highest priority are listed on the TIP. Deficiencies/projects, identified by PennDOT, are discussed in the following categories:

congestion, safety, maintenance, bridges, Intelligent Transportation Systems (ITS), and transportation enhancements.

The highway projects that have been placed and funded on the 12 year plan are indicated in Figure 3. In addition to the projects in the study area upgrades to interchange 44 on I-81 is currently under review and design by PennDOT.

Bridges

The cost of building and maintaining bridges is high and while local municipalities are responsible for ownership and the ongoing maintenance of smaller bridges (less then 12 foot span width). The county owns and maintains many of the longer span bridges located on local roads. The following are the bridges owned and maintained by the county within the study area:

NUMBER	BRIDGE NAME	TYPE	ROAD NUMBER	CROSSED	MUNICIPALITY
C-16	Hertzler	Truss	T427	Conodoguinet	Lower Frankford
C-17	Burgner	P/S Concrete	T457	Conodoguinet	Lower Frankford
C-19	Stanton	P/S Concrete	T448	Conodoguinet	Lower Frankford
C-21	Graham	P/S Concrete	T409	Conodoguinet	Upper Frankford
Y-20	Roush	P/S Concrete	T470	Rail Road	Dickinson
Y-22	Enck	Concrete Slab	T462	Yellow Breeches	Dickinson

The following is a list of load posted bridges within the region:

MUNICIPALITY	ROAD/ BRIDGE NAME	FEATURE CROSSED	OWNER	SINGLE	COMBINED	LENGTH
Dickinson	Encks Mill Rd. (T-462)	Yellow Breeches Creek	Cumberland County	08		40
Dickinson	SR 3021 – Burnt House Rd.	Yellow Breeches Creek	PennDOT	15	25	114
L. Frankford/ W. Pennsboro	Creek Rd. (T-427)	Conodoguinet Creek	Cumberland County	08		218
Upper Mifflin	Bridge Water Rd. (T-387)	Three Square Hollow Run	Upper Mifflin Twp.	07		36
Upper Mifflin	Lesher Rd. (T-365)	Three Square Hollow Run	Upper Mifflin Twp.	10		24
Upper Mifflin	SR 4007 – Mountain Rd.	Three Square Hollow Creek	PennDOT	34	40	47

Public Transportation

While the study area is too sparsely populated to support the location of a public transportation facility, Cumberland County is a part of the Capitol Area Transit (CAT) through the alliance of Cumberland – Dauphin – Harrisburg Authority. Bus service is available between downtown Carlisle and Harrisburg. CAT commuters to Harrisburg can also take advantage of the three (3) park and ride shuttles available.

Cumberland County Transportation Department (CCTD) provides shared-ride paratransit service to the residents of Cumberland County. The service is supplied Monday through Friday, from 8:00 AM to 4:30 PM, provided that notification is given for a ride prior to 12 PM the previous day. CCTD operates thirty-two vehicles (vans), and most are equipped to accommodate wheelchairs. Forty-five percent (45%) of the system's riders are non-disabled elderly, while the other 54% of the riders are either physically or mentally handicapped, or require some sort of medical assistance. Funding for the rides comes from a variety of sources, including PennDOT, via the Pennsylvania State Lottery Fund, the Cumberland County Office of Aging, the Cumberland/Perry Mental Health Retardation program, and the Pennsylvania Department of Public Welfare.

Transportation is provided to and from all points within the County and to medical destinations outside of the County, including Hershey Medical Center and Chambersburg Hospital. The most recent information available indicates CCTD provided approximately 525 one-way trips per weekday, and a total of 135,298 one-way rides between July 2001 and June 2002.

There are also several taxicab and limousine service providers who offer service to Cumberland County residents. The providers supply transportation to many points both within and outside of Cumberland County. Service is available 24 hours a day and can be used by contacting a provider. Cost rates are established through PUC regulations and vary by time and length of trip.

Intercity Bus Services

Two intercity bus companies provide service within Cumberland County, connecting the county to other areas within and outside Pennsylvania. Capitol Area Trailways provides daily service (one bus per day in each direction) between Harrisburg and Hagerstown, stopping at three locations within the county. Two of the stops are in the Carlisle area, one at the Pilot Travel Plaza just east of the I-76/US 11 interchange, the other on US 11 on the Dickinson College campus. In the Shippensburg area, Capitol Area Trailways stops at J&J Computers, located on US 11 in downtown Shippensburg. Only two of the three county stops have on-site ticket service available; the Dickinson College stop is a "flag stop", meaning buses will not stop at the bus stop location unless someone indicates he/she wants to get on or get off the bus. Greyhound also provides intercity bus service to the county, stopping in the Carlisle area at the Pilot Travel Plaza on selected Harrisburg to Pittsburgh routes (two buses per day in each direction).

In addition to the bus stations/stops within Cumberland County, there is a major intercity bus station in downtown Harrisburg. Located at the Harrisburg Transportation Center, the station serves as a hub for Greyhound, Capitol Area Trailways, and Fullington Trailways. Between the three intercity bus providers, Harrisburg receives direct service with no required transfers to and from large markets such as Philadelphia, New York, Baltimore, Washington, and Pittsburgh, and also receives service to and from smaller markets such as York, Lancaster, Lebanon, Reading, Allentown/Bethlehem/Easton, Pottsville, Hazleton, Scranton/Wilkes-Barre, Sunbury, Williamsport, Lewistown, State College, Chambersburg, and Hagerstown.

Passenger Rail Services

Though Cumberland County does not currently receive interregional rail service, the national passenger railroad Amtrak does provide service to the Harrisburg area. Amtrak serves the Harrisburg area with two train stops, one in Middletown, the other at the Harrisburg Transportation Center in downtown Harrisburg. Harrisburg is the western terminus for Amtrak's Keystone Corridor trains, which provide extensive weekday and weekend service between Harrisburg, Lancaster, Philadelphia, and New York. Amtrak runs nine weekday and four weekend Keystone Corridor trains in each direction between Harrisburg and Philadelphia's 30th Street Station; most of these trains also provide service to and from New York's Penn Station. In both Philadelphia and New York, passengers can transfer from the Keystone Corridor trains to other trains that run along Amtrak's Northeast Corridor. Amtrak provides its most extensive national service in this section of the country, running dozens of trains each day between Boston and Washington, DC and various locations in between.

Most Keystone Corridor trains also stop at the Middletown station, currently located near the intersection of Union and Mill Streets in Middletown. By the middle of the 2000's decade, the Middletown station will be moved westward to a location next to PA Route 230 just north of the Harrisburg International Airport. It is expected this station will promote increased intermodal transportation between Amtrak, CAT, and Harrisburg International Airport (HIA) after it opens. CAT's CORRIDOR*one* will also utilize this station when it starts operation, allowing Cumberland County riders to access HIA via passenger rail.

In addition to the Keystone Corridor trains, Harrisburg also receives service from two other trains in the Amtrak system, the Pennsylvanian and the Three Rivers. Each train makes one daily stop in each direction at the Harrisburg Transportation Center. The Pennsylvanian runs between Pittsburgh and New York, while the Three Rivers provides service between New York and Chicago. These two trains augment the service provided by the Keystone Corridor trains between Harrisburg, Philadelphia, and New York, while also providing the only passenger rail service between Harrisburg, Altoona, Johnstown, Pittsburgh, and Chicago. Neither train currently stops at the Middletown station.

Regional Commuter Rail Service

In recent years CAT has also examined the viability of introducing commuter rail service in the Harrisburg area. The first proposed rail line, called CORRIDOR*one*, would run from Carlisle to Lancaster through Harrisburg (Figures 11.3 and 11.4). CORRIDOR*two* was also identified and

would link York, Hershey, and Lebanon. If ridership on CORRIDOR*one* demonstrates a use of the rail service, future requests could be made to expand the regional service with CORRIDOR*two.* CAT unveiled the Modern Transit Partnership (MTP) in July 1997. The MTP is a non-profit organization created to raise local funds and promote public awareness of regional rail and its benefits. Modern Transit Partnership's mission statement is to support and promote public transportation, with the ultimate goal of bringing commuter rail service to the region.

Freight Rail Services

Norfolk Southern (NS) provides extensive service within Cumberland County. It is one of the country's six national-level Class I rail freight operators, with three active rail lines that combined have approximately 70 miles of rail right-of way within the county. The Harrisburg area is a major hub within the NS system. Two of the three active lines are significant rail lines within the NS system, connecting the Harrisburg region to other parts of the country.

The most prominent rail line, the Enola Line, runs north/south in eastern Cumberland County, adjacent to the Susquehanna River. It provides connections both to the west, in Pittsburgh and Chicago, and also to the north, in Buffalo. This line is multi-tracked (i.e. contains multiple rail lines), allowing a high volume of movement along the line. The Enola Yard is a major rail yard and is located along the line in Cumberland County. The yard is a major sorting hub for various materials being shipped by rail along the line.

Another prominent line, known as the Lurgan Branch, runs southwestward through the Cumberland Valley paralleling Interstate 81 to the highway's south. The Lurgan Branch connects the Rutherford Intermodal Yard, just east of Harrisburg, with cities to the south such as Hagerstown, Roanoke, and Atlanta. The Lurgan Branch is a significant rail line within the NS system, but it is a single-tracked line. Trains traveling in opposite directions must use rail sidings (a location where a rail line is briefly double-tracked for capacity and maintenance purposes) in order to pass another train.

The third NS line within Cumberland County is a localized rail line, called the Shippensburg Secondary. It runs between Harrisburg and Carlisle and is connected to the Enola Line. Many local manufacturers along the line ship products to and from the Enola Yard for sorting and shipping purposes. At one time the Shippensburg Secondary ran parallel to the Lurgan Branch from Harrisburg to Hagerstown. However, west of Carlisle the rail line has now been abandoned. Various recreational uses, including bike/pedestrian trails, have been constructed in the rail right-of-way. The Shippensburg Secondary is the corridor proposed for Capital Area Transit's CORRIDOR*one* commuter rail line.

Although not contained within Cumberland County, NS does have two major intermodal yards within the Harrisburg area. These nodes impact freight traveling patterns within the county and the region. The Rutherford Intermodal Yard is located in Swatara Township, Dauphin County and the Lucknow Intermodal Yard is located in the city of Harrisburg. These two yards make

Harrisburg one of Norfolk Southern's three major intermodal hubs. Chicago and Atlanta are the other two.

A considerable amount of rail traffic from the Rutherford Yard travels along the Lurgan Branch between Harrisburg and Hagerstown. Much of the traffic enroute to the Lehigh Valley, New York area, and Philadelphia area also uses this hub as well. The Lucknow Yard is a major hub for east/west traffic. Tracks running north from the yard connect up with the Enola Line north of Harrisburg, allowing traffic from the Lucknow Yard to access places such as Pittsburgh and Chicago. The yard also is connected with Northeast Corridor freight lines via track running between Harrisburg and Perryville, MD.

In addition to the rail freight service provided by Norfolk Southern, the Gettysburg Railroad is another much smaller railroad that provides regional service within the county. This privately owned railroad provides freight and tourist service between Mount Holly Springs and Gettysburg.

Aviation

The study area is served by four (4) airports:

Harrisburg International Airport (HIA) located in Lower Swatara Township, Dauphin County and provides carrier service with American, Continental, Delta, Northwest, United and US Airways. Connections can be made thru direct flights to major hubs in Pittsburg, Philadelphia, Washington and Chicago.

Capitol City Airport (CCA) in Fairview Township, York County and acts as a reliever airport to HIA and provides private corporation and charter services.

Carlisle Airport in Carlisle is privately owned and provides corporate and general aviation operations.

Shippensburg Airport in Southampton Township, Cumberland County, which operates for only small private airplanes on an unpaved runway.

Current Studies

The following are transportation studies that are currently underway within this region:

1. I-81 widening and improvement study – PennDOT and FHWA
2. Interchange 44 upgrade study – Control Cumberland Task Force
3. Western Cumberland County Transportation Plan – Western Cumberland COG

Traffic Volumes

Annual average daily traffic volumes for 2001 were provided by the Pennsylvania Department of Transportation (PennDOT) for the region's road network. The most significant carriers of traffic in the study area are Interstate 76 (the Pennsylvania Turnpike) and Interstate 81, the region's two limited access highways. These two highways carry daily traffic volumes of 21,000 and 41,000 respectively. Other roads carrying high volumes of traffic include U.S. 11 (2,900 to 10,000 vehicles per day), State Route 233 (4,200 to 4,400 vpd), Walnut Bottom Road (2,800 to 4,400 vpd), State Route 34 (3,400 to 4,100 vpd), State Route 641 (1,700 to 6,700 vpd), State Route 533 (1,900 vpd) and York Road (1,400 vpd).

Traffic Accidents

The following tables summarize PennDOT reportable accident data for each of the eight member municipalities from 1997 to 2001. Information is provided with regard to the number of accidents, fatalities, and the affected road.

North Newton Township
Traffic Accidents 1997-2001

Road #	Road Name	# Accidents	Fatalities
S.R. 11	Ritner Highway	9	0
S.R. 233	Doubling Gap Road	6	0
S.R. 533	Shippensburg Road	19	0
S.R. 641	Green Spring Road	24	0
S.R. 3005	Oakville Road	11	0
S.R. 3007	Big Spring Road	4	0
S.R. 4004	Ridge Road	4	0
S.R. 4006	Steelstown Road	8	0
S.R. 4007	Mountain Road	1	0
S.R. 4015	Windyhill Road	4	0
T-333	Springfield Road	2	0
T-334	Horn Road	1	0
T-353	Nealy Road	2	0
T-359	Vaughn Road	1	0
T-361	Fry Road	1	0
T-386	Creek Road	1	0
T-388	Fish Hatchery Road	1	0
T-389	Oakville Road	2	0
T-398	Bullshead Road	3	0
	Totals	**104**	**0**

SOURCE: Pennsylvania Department of Transportation

Dickinson Township
Traffic Accidents 1997-2001

Road #	Road Name	# Accidents	Fatalities
S.R. 11	Ritner Highway	11	0
S.R. 34	Carlisle Road	30	1
S.R. 81	Interstate 81	80	2
S.R. 174	Walnut Bottom Road	23	1
S.R. 465	Allen Road	24	0
S.R. 3006	Pine Road	20	0
S.R. 3008	Pine Grove Road	6	1
S.R. 3010	Goodyear Road	2	0
T-356	Cold Spring Road	5	0
T-466	Mooredale Road	4	0
T-469	Alexander Spring Road	1	0
T-471	Barnitz Road	1	0
T-477	Adams Road	1	0
T-521	Dickinson School Road	2	0
T-523	Half Mile Drive	1	0
T-524	Myerstown Road	2	0
T-525	Ball Park Drive	1	0
T-526	Greenhouse Road	1	0
T-534	Torway Road	4	0
T-540	Peach Glen Road	5	0
T-542	Burnthouse Road	14	0
T-544	Montsera Road	2	0
T-545	Stonehouse Road	5	0
T-591	Minich Drive	1	0
T-602	Church Lane	1	0
T-692	Green Mountain Road	2	0
	Totals	**249**	**5**

SOURCE: Pennsylvania Department of Transportation

Newville Borough
Traffic Accidents 1997-2001

Road #	Road Name	# Accidents	Fatalities
S.R. 233	High Street	11	0
S.R. 533	Fairfield Street	2	0
S.R. 641	Main Street	11	0
S.R. 3007	Big Spring Avenue	4	0
	Corporation Street	1	0
	Glebe Alley	1	0
	Totals	**30**	**0**

SOURCE: Pennsylvania Department of Transportation

Lower Frankford Township
Traffic Accidents 1997-2001

Road #	Road Name	# Accidents	Fatalities
S.R. 74	Waggoners Gap Road	2	0
S.R. 944	Enola Road	10	0
S.R. 4025	Old Mill Road	1	0
S.R. 4027	McClures Gap Road	5	0
T-451	Bobcat Road	2	0
T-454	Run Road	2	0
T-456	Oak Hill Road	1	0
T-457	Burgners Road	20	0
T-458	Ponderosa Road	2	0
T-459	Opossum Lake Road	2	0
T-460	Mt. Zion Road	1	0
T-461	Campground Road	2	0
T-486	Meadowbrook Road	5	0
T-492	Horseshoe Road	1	0
I-76	Pennsylvania Turnpike	1	0
	Totals	**44**	**0**

SOURCE: Pennsylvania Department of Transportation

West Pennsboro Township
Traffic Accidents 1997-2001

Road #	Road Name	# Accidents	Fatalities
S.R. 11	Ritner Highway	62	1
S.R. 233	Centerville Road	29	0
S.R. 641	Carlisle/Newville Road	113	2
S.R. 3007	Big Spring Road	5	0
S.R. 3015	Mount Rock Road	1	0
S.R. 4021	Bloserville Road	5	0
T-325	Mount Rock Road	33	0
T-326	Kerrsville Road	8	0
T-353	Oakflat Road	3	0
T-405	Old Mill Road	3	0
T-408	Schoolhouse Road	4	0
T-427	Creek Road	9	0
T-432	Graham Road	2	0
T-434	Green Hill Road	3	0
T-436	Hilltop Lane	1	0
T-438	Crossroad School Road	8	0
T-440	Goodyear Road	2	0
T-443	Clay Road	2	0
T-445	Limekiln Road	4	0
T-446	Springview Road	3	0
T-447	Barnstable Road	3	0
T-448	Grahams Woods Road	1	0
T-451	Greason Road	5	0
T-456	Bears Road	2	0
T-457	Burgners Mill Road	1	0
T-481	Cedar Court	1	0
T-482	McAllister Church Road	13	0
T-483	Alters Road	6	1
I-76	Pennsylvania Turnpike	76	1
	Totals	**408**	**5**

SOURCE: Pennsylvania Department of Transportation

Upper Mifflin Township
Traffic Accidents 1997-2001

Road #	Road Name	# Accidents	Fatalities
S.R. 997	Roxbury Road	3	0
S.R. 4006	Brandy Run Road	3	0
S.R. 4007	Mountain Road	2	0
S.R. 4013	Whiskey Run Road	9	0
T-369	Lesher Road	1	0
T-383	Mountain Road	4	0
T-387	Bridgewater Lane	1	0
T-389	Gobbler Knob Road	1	0
T-397	Sub-division Road	1	0
T-399	Creek Road	3	0
T-402	Middle Road	4	1
I-76	Pennsylvania Turnpike	54	1
	Totals	**86**	**2**

SOURCE: Pennsylvania Department of Transportation

South Newton Township
Traffic Accidents 1997-2001

Road #	Road Name	# Accidents	Fatalities
S.R. 0011	Ritner Highway	6	1
S.R. 0081	Interstate 81	39	2
S.R. 0174	Walnut Bottom Road	12	0
S.R. 3005	Rehobeth/Furnace Hollow Road	6	0
S.R. 3007	Water St./Stoughstown Road	7	0
T-321	Mountain View Road	1	0
T-322	Furnace Hollow Road	1	0
T-334	High Mountain Road	1	0
	Totals	**73**	**3**

SOURCE: Pennsylvania Department of Transportation

Upper Frankford Township
Traffic Accidents 1997-2001

Road #	Road Name	# Accidents	Fatalities
S.R. 944	Enola Road	12	0
S.R. 4008	Center Road	3	1
S.R. 4019	Brick Church/Center Road	4	0
S.R. 4021	Bloserville Road	9	0
T-405	Mohawk Road	4	0
T-409	Bluerock Road	1	0
T-421	Rock Run Road	1	0
T-423	Mountain Road	1	0
T-426	Lonesome Road	1	0
T-429	Bridge Road	1	0
T-439	Potato Road	2	0
T-448	Grahams Woods Road	2	0
I-76	Pennsylvania Turnpike	22	0
	Totals	**63**	**1**

SOURCE: Pennsylvania Department of Transportation

This tabulation of accidents and accomapnying mapping from a recent five year period illustrate an indication of potential traffic safety hazards within the region. The area's two interstate highways include a considerable number of accidents which is to be expected on a high-speed arterial road. The Pennsylvania Turnpike included a total of 153 reportable accidents while Interstate 81 was subject to 119 reportable accidents.

Other roads showed a more surprising frequency of traffic accidents. State Route 641 was subject to 148 accidents, State Route 174 to 35 accidents, U.S. 11 to 88 accidents and State Route 233 to 46 accidents. Other State Routes with significant traffic safety impacts included 944 (22 accidents), 4021 (14), 465 (24), 34 (30), 533 (19), 3006 (20), 4013 (9), and 3005 (17). Four local roads showed a surprisingly high degree of accident occurrence. They included Burnt House Road (T-542) in Dickinson Township with 14 accidents, Burgners Road (T-457) in Lower Frankford Township with 20 accidents, and McAllister Church Road (T-482) and Mount Rock Road (T-325) in West Pennsboro Township with 13 and 33 accidents respectively.

HIGHWAY FUNCTIONAL CLASSIFICATION MAP

ANNUAL AVERAGE DAILY TRAFFIC MAP

TRAFFIC ACCIDENTS 1997-2001

HATS PROGRAMMED PROJECTS 2030

community facilities analysis

Background

In the Commonwealth of Pennsylvania, residents receive many of their essential local services from the city, borough, or township in which they live. These services vary from protection, such as police, fire and emergency medical; to public education and information resources. Other facilities provided by the local governments include water, sewage disposal, stormwater management, open space and recreation. It is important to keep in mind that many local services, such as education, receive funds from state and federal sources.

Recreation Standards

The National Recreation Association recommends a minimum of 10 acres of local recreation space for each 1,000 persons. The Association also recommends an additional 15 acres of regional recreation area for each 1,000 persons. The planned recreation system for an area should include two different types of facilities: those that serve a limited residential area, and those that serve the entire municipality. Neighborhood parks and playgrounds are included in the first group. The second group includes playfields, large parks, and special recreation areas such as swimming pools.

The Neighborhood Park provides an attractive setting for passive recreation in a small area. The park should be within easy walking distance of the people it is intended to serve. This type of facility is essential in dense residential districts. Neighborhood parks can be developed separately, or as part of a playground or playfield. The parks may be as small as one acre, and the standard is one acre for each 100 residents.

The Neighborhood Playground provides a larger area for more active play of children in the general age range of 5-16 years. The playground should be located in the center of the residential neighborhood. The playground may include facilities such as swings, a multi-purpose playing field, benches and tables, paved areas for basketball and skating, and drinking fountains and restrooms. Playgrounds should be distributed so that access is not made difficult for small children (i.e. not placed in high traffic areas). The size of the playground should be one acre per 1,000 residents in the area to be served.

The Playfield is a recreation area that is designed primarily for young people and adults. Part of the playfield may be developed for organized sports and activities such as softball, football, or soccer. Since the playfield is designed as a multi-purpose facility, it should serve several neighborhoods.

Community parks should be relatively large tracts of land forming a landscape unit including wooded areas and some water resource such as a stream, creek, or small pond. The purpose of the park is to provide a natural environment for the enjoyment of many outdoor recreational activities which may vary depending upon the natural features of the area.

Open Space and Recreation Facilities

As the character of Western Cumberland County continues to evolve from a primarily agrarian environment to a suburban lifestyle, preservation of open space becomes a high priority. Public areas are very important for the well being of the community, as they provide a place for a variety of community functions. The overall recreation facilities available for residents of the eight participating municipalities have, to date, not been actively developed to maintain pace with the burgeoning population. Even with the continuing suburban transition, the rural character of the study area still helps to fulfill the recreational needs of the residents. However, this transition also provides an opportunity to acquire and develop recreational land by requiring land developers to set aside certain portions of their developments for recreational parks. Another means of development-driven recreation can be funded via fees in lieu of dedication.

From a regional perspective, recreation facilities available to Township residents are plentiful. Portions of both Michaux State Forest and Tuscarora State Forest comprise the northern and southern extents of the study area. Pine Grove Furnace State Park and King's Gap Environmental Education & Training Center are located in Dickinson Township. Colonel Denning State Park is also located in close proximity. State Game Lands #169 consists of 2,499 acres in Upper Mifflin Township. Lower Frankford Township is home to Opossum Lake, a 59-acre body of water on 215 acres of land managed by the Pennsylvania Fish & Boat Commission for bass and trout fishing. A portion of the Appalachian National Scenic Trail runs through the region as well as the Cumberland Hiker-Biker Trail, a five-mile trail dedicated to non-motorized vehicle use. Various natural areas have also been defined as part of the County's Natural Areas Inventory, most recently updated in 2003. The inventory efforts identified sites in all of the member municipalities, with the exception of Newville Borough, as home to or likely habitat for various plant and animal species of endangered, threatened, rare, or special concern status. The majority of these sites are related to the areas environmental and physiographic setting with respect to both floodplains and mountain ridges. Of particular note is the Florence Jones Reineman Wildlife Sanctuary, located along State Route 74 partially in Lower Frankford Township and also in neighboring Perry County, which lies along an important migration route for hawks and other raptors. The site is also known as the Waggoner's Gap Hawkwatch. The site is managed by the Natural Lands Trust and is a designated National Audubon Hawkwatch. All of these natural and environmental features and preserves provide a tremendous asset to the study area and beyond in terms of solidifying the area's rural beauty and confirming the need for continued conservation efforts and public awareness.

The open space features of the participating municipalities lend themselves well to the natural evolution of a viable greenway program within the region. Cumberland County's greenway plan prepared in April of 2000 identified seven different regional greenways within the County. Six of these have at least a portion of their respective corridors within the eight-member municipal study area. The Conodoguinet Creek greenway includes sections within Upper Mifflin, North Newton, West Pennsboro, Upper Frankford and Lower Frankford Townships. This corridor encompasses State Game Lands #169 and Opossum Lake. The Yellow Breeches Creek greenway is another regional corridor that runs through South Newton and Dickinson Townships including portions of Michaux State Forest and Kings Gap Environmental Center. The Cumberland Valley Trail greenway extends from Shippensburg to Carlisle along the Rails-to-Trails route. North Newton Township, Newville Borough, and West Pennsboro Township are part of this important emerging trail. The Appalachian Trail greenway runs through South Newton Township. The Big Spring Creek greenway runs through North Newton and West Pennsboro Townships as well as Newville Borough. Finally, the Yellow Breeches to Pine Grove Furnace section of the Letort Spring Run/Mountain Creek/Biker-Hiker Trail greenway includes a significant portion within Dickinson Township that includes the Holly Gap Preserve and Pine Grove Furnace State Park. Western Cumberland County is a major contributor to the environmental character and welfare of the greater region and, as such, provides a tremendous resource to its population. Greenways are multi-purpose as well as multi-beneficial with goals of recreation, ecological stewardship, transportation incentives, social gathering, and economic advantages.

In contrast to its natural open space, active municipal recreation facilities come at a greater premium within the study area. Only Newville and the townships of Dickinson and West Pennsboro currently have active recreation programming. Dickinson Township maintains Barnitz Mill at Stuart Park on 20 acres for hiking, biking, picnicking and fishing. West Pennsboro Township's municipal park is situated on 16 acres for baseball, softball, soccer, basketball, tennis, volleyball and playground purposes. Newville includes a playground and community center with fields for baseball, softball, and soccer. There are also courts for basketball, volleyball and tennis as well as a gymnasium, playground and picnic area. Other resources for public recreation are provided by the school districts and commercial entities such as Cumberland and Eagle's Crossing golf courses, Heishman's softball complex, and other private properties leasing field space for practice and scrimmage purposes. The County's recent review of its recreation facilities advises that additional acreage for active recreation purposes is necessary to service its increasing population. For the study area, the recommended numbers are approximately 250 acres needed in the year 2000 and more than 350 acres by the year 2020.

Education Facilities

Seven of the eight participating municipalities are members of the Big Spring School District. Only Dickinson Township, whose students attend the Carlisle Area School District, is not. North Dickinson Elementary School is located within the Township. Big Spring School District includes five elementary schools, one middle school and one high school with an enrollment of roughly 3,180 students. At this time, there are no major plans for additional facilities. However, the Districts need to be cognizant of the forecast for increased population. Big Spring School

District's location within a primarily rural area creates issues in terms of little opportunity to generate significant tax revenue from sparse commercial or industrial development. Additionally, local municipalities also remain concerned about the potential for elementary school closings and consolidation as well as reuse of the remaining lands and buildings.

Trends toward more private and non-licensed elementary and secondary school options also apply to the study area. Additionally, the region finds itself excellently situated with regard to higher education opportunities with both Shippensburg University and Dickinson College in close proximity.

Police Protection

The participating municipalities are provided police protection by the State Police in the Carlisle Barracks. Additionally, Newville maintains its own police force consisting of six officers and eight community service officers. Increasing population ultimately results in the need for additional protective services and quicker response. Therefore, the municipalities and the Council of Governments are compelled to review such issues annually and discuss possible regional solutions.

Fire Protection

Like so many other municipalities throughout Pennsylvania, the study area has significant questions and concerns with regard to fire protection and emergency medical services. Improvements to the emergency response systems via the County's 9-1-1 network are a necessity as technology continues to change and improve. The need for volunteers, training, and funding for equipment is a seemingly never-ending battle. Currently, the study area is served by a variety of entities both within and outside its boundaries including Newville's Friendship Hose Company and Community Ambulance, West Pennsboro Volunteer Company, Newburg/Hopewell Fire Company, Upper Frankford Township Fire Company, South Newton Township Volunteer Fire Company, as well as Union and North Middleton Township Fire Companies.

Sewage Systems

The eight-member municipal study area is served primarily by individual on-lot sewage disposal systems. From a geologic and soils perspective, the area is split in terms of site suitability for on-lot disposal systems. Malfunctions and failed soils tests are increasingly apparent, particularly in those areas underlain by shale, and also as a result of more stringent testing requirements. However, as development has become more dense and lots have become smaller, public sewer systems have emerged and extended into the area to provide collection, conveyance and treatment of wastewater to a portion of the municipalities. At present, Lower Frankford, Upper Frankford, Upper Mifflin and South Newton are entirely reliant upon on-lot disposal systems or private wastewater disposal systems. Newville Borough's wastewater collection,

conveyance and treatment system was installed in the 1970's and serves not only the Borough, but also portions of North Newton and West Pennsboro Townships. It serves 850 customers with a permitted capacity of 0.350 mgd. With increasing development pressures, the Borough looks toward expanding the system in the next 5 to 7 years. West Pennsboro Township has also recently begun operation of its own system to serve the Village of Plainfield. A small portion of Dickinson Township near Mt. Holly Springs is served by the neighboring South Middleton Township Sewer/Water Authority.

The Townships should encourage future development to take place in areas already served by public water and sewerage systems. This can be accomplished through the enforcement of Subdivision and Land Development Ordinances and through zoning provisions where applicable. At the same time, the powers that be must remain aware of their potential position in relying upon other municipalities for these services and continue to provide for efficient and affordable sewage collection, conveyance and treatment services. The expansion of existing public systems or the development of a new Township or regional system may also prove necessary to accommodate additional development without compromising the region's groundwater resources. The Village of Bloserville in Upper Frankford Township is one area that is specifically recognizing a pressing need for centralized sewer to assist in groundwater cleanup, system replacement options and improved wastewater disposal. The municipalities may also consider implementation of a comprehensive Sewage Management Program to monitor on-lot disposal systems for discharge problems and routine maintenance and pumping procedures. Similarly, many municipalities are implementing a Well Drilling Ordinance in an effort to protect valuable groundwater supplies from potential contamination due to malfunctioning wastewater disposal systems or other potential threats. More municipalities are beginning to see an increased frequency of small flow treatment facilities proposed for individual residences due to the poor performance of native soils under stricter testing and enforcement. The myriad of small streams north of the Conodoguinet Creek lend that portion of the study area to such proposals.

Storm Water Drainage

With the increase in development in an area, provisions for storm water drainage become a priority. The increased area of impervious cover that is associated with suburbanization invariably increases the amount of storm run-off. Progress in this area has been made with the provisions for storm water management included in the various municipal subdivision and land development ordinances. New developments must provide a stormwater management plan for both quality and quantity of additional generated runoff as well as an erosion and sedimentation control plan for the protection of water resources during construction. The introduction of best management practices as a design alternative provides the option for innovative control methods as well as environmental benefits. This holds true for both traditional development as well as agricultural practices. Groundwater replenishment is also gaining momentum as a primary ongoing stormwater management goals via infiltration practices. State and Federal agencies have instituted recent requirements to further protect downstream properties from flooding and surface water degradation. The State is also working to provide watershed management plans (Act 167) for all areas within the Commonwealth. These plans, developed at the County level,

supply specific criteria and regulations for municipal controls within the individual watershed based upon its particular characteristics for both stormwater management and flood control. Currently, this region of Cumberland County has one such plan for the Yellow Breeches Creek with more to come in the future.

Water Supply

Similar to the area's sewage disposal limitations, public water supplies are also a limited commodity. While individual wells are the dominant choice of water supply, four other municipal options exist at this time for properties within the eight municipalities. Newville Borough serves 897 customers at present in both the Borough, and portions of North Newton and West Pennsboro Townships. Huckleberry Land Water Association extends service into a small part of western South Newton Township. South Middleton Township Sewer/Water Authority serves eight customers in Dickinson Township. Dickinson Township also maintains a small water authority of its own in the central section of the Township. Additionally, a variety of private water systems serve some of the area's mobile home park developments.

An ever-diminishing pump rate from local aquifers combined with the recent drought events experienced Statewide, point to the fact that Western Cumberland County must remain vigilant to ensure that its valuable groundwater supplies aren't compromised and a safe and plentiful supply of potable water is always available. The compromise of an area's water supply would not only stall future development, it would severely affect the health and safety of its existing residents and businesses. Water suppliers must be proactive in establishing wellhead protection zones to guarantee the lasting quality and quantity of its supply.

Other Services

Electric services are provided within Cumberland County by Pennsylvania Power & Light (PP&L), Pennsylvania Electric Company, Metropolitan-Edison (Met-Ed), and Adams Electric Cooperative. Telephone service via land line is provided by Sprint while a variety of cellular companies provide consumers with individual mobile service. Cable television and dial-up internet service are also readily available in most of the less remote areas. Satellite television is also an option, while broadband internet services are an ever-expanding market. Natural gas service is not widespread within the study area at this time, however increasing development activity will often trigger the introduction of such service options.

Advanced health care services for the local population are available only in major population centers requiring some travel time. Hospitals and medical clinic facilities are located within a reasonable distance in Carlisle, Shippensburg, Chambersburg, Harrisburg, and Hershey. A growing concern for the aging population is elder care. Residential and nursing care facilities for persons in different stages of life requiring some level of medical attention and supervision are an emerging need as advances in medicine and healthier lifestyles result in a longer lifespan.

Solid waste management service is provided in each of the participating municipalities via private hauling contractors. While curbside recycling is not mandated in any of the study area, a voluntary recycling program has been established in Newville. The sole disposal facility within Cumberland County, Cumberland County Landfill, is located partially within North Newton Township and provides an important regional benefit for the County and areas beyond. Proposed expansions would result in as many as 20 years of additional disposal space.

The John Graham Public Library in Newville is part of the Cumberland County library system. In recent years the library has expanded its programming, resources, and internet access capability to provide a valuable and much-needed upgrade to the area's information services. Additional library facilities are found in local schools as well as the university campuses.

SANITARY SEWER SERVICE MAP

WATER SERVICE MAP

PHASE 2 COVER

planning goals and objectives

Introduction

It can be argued that, until recently, much of the development experienced throughout the study area has been the result of spontaneity and random selection. The ultimate goal and objective of any planning undertaking is to reduce this frequency of chance development and provide a set of guidelines and alternatives that will strengthen a municipality's, or a region's, ability to guide significant development to areas more readily able to absorb the potential impacts that are introduced. Too often municipalities are faced with the hard fact that hindsight, rather than foresight, is the overwhelming contributor to many of the its burdens and woes. If only the responsible officials had planned ahead for the obvious eventuality that was foreshadowed by all too many indicators; later costs, and sometimes irreparable harm, could have been avoided.

The Comprehensive Plan has so far examined much of the background data necessary for the eight participating municipalities to fully understand their collective position in the overall scope of development activity. Now it is time for the Plan to forge ahead, using that wealth of information to determine with some precision the goals and objectives with which the Township should concern itself. It is at this time that the second phase of the planning program begins. Choices must be made and courses charted for the good of the study area. During the course of the next ten years, the region will undoubtedly find itself in the center of, and as the focus of, its fair share of municipal storms requiring decisive and effective action on its part. The goals and objectives of this planning program are captured herein as a snapshot of the region's needs at this time. These issues can be expected to change and evolve as the years pass by, resulting in the eventual need for an updated set of ideas and courses of action.

Phase 2 of the Comprehensive Plan will offer forth a host of ideas, recommendations and potential solutions that can only be realized through the implementation of regulatory tools and policies that the municipalities are willing to openly share with their constituents, regularly discuss and debate, firmly believe in and, when necessary, enforce to the best of their ability. Many of these plan elements will take considerable time to fully implement. Some may occur with all due haste following the adoption of this Plan. Others may never come to fruition. Such is the life and fate of a Comprehensive Plan. Particularly one that is boldly regional in its character. Regardless, the Plan remains a renewable and powerful statement for the responsible and equitable management of growth with the region utilizing all of its resources and assets, experience and viewpoints, successes and failures, desires and displeasure, to formulate the best possible blueprint for the future development of a region with all of the inherent beauty and boundless potential of which Western Cumberland County is able to boast.

Planning Objectives

The Municipalities Planning Code, which sets forth the legal framework whereby local municipalities are empowered to enact such plans, demands a statement of community

development objectives as an essential element of every Comprehensive Plan. These objectives are focused on the future development concerns of a municipality and may include, among other issues, location, character and timing. The statement of community development objectives of this region's planning program carries over significant items of concern from its member municipalities' prior planning undertakings. In some cases, considerable time has passed between a community's comprehensive planning efforts. The list has also been updated to account for new themes observed to be emerging over the last several decades as well as new planning philosophies that have been tried and tested elsewhere in recent years. Most importantly, however, the general goals and objectives stated below represent those qualities of life deemed crucial to the continued prosperity of these seven townships and Newville Borough. More specific implementation strategies will be included in the following chapters relative to land use, transportation and community facilities and services.

1. The quality of life and rural character of the region must be preserved, maintained and enhanced. The region's agricultural economy, cultural heritage and bountiful natural resources are vital elements in the continuing prosperity of the region and the County;

2. The environmental, aesthetic, natural and cultural resources of the study area should be identified, intelligently conserved and properly managed for the enjoyment and benefit of this generation and for generations to come;

3. Development within the region must be guided in an appropriate manner whereby existing community resources are not unduly overtaxed beyond their tolerance or capacity, conflicts between neighboring properties and neighboring municipalities are not promoted, and the people may continue to live and function in an attractive setting and a safe, harmonious and stress-free environment;

4. Western Cumberland County must always strive for a balance between the inevitability of diversity and the ability of these sometimes divergent opinions to coexist and provide for the ongoing care and service that each group needs to survive and flourish. Such balances will be struck between opposing land uses, housing types, environmental interests, demographic sectors, and economic and political forces. Open lines of communication and a reliable supply of volunteers, public servants and professional staff working in the best interests of the region are valuable assets that must be diligently maintained and sought after;

5. Municipal services including transportation, utilities, education, emergency services, recreation, pedestrian safety and information resources should be strongly considered and, when possible, supported or enhanced during all decision making in the development process. Each of the region's many services is as critical as the next to the overall success of the Comprehensive Plan and the future of its growth management strategy.

6. Emphasis must always be placed on the importance of the proper utilization of the region's valuable, but in some cases limited, resources. Whether the issue is one of land development, environmental protection, taxation, capital expenditure, or regional cooperation; the governing bodies and their advisory boards must recognize their

responsibility to their constituents and their neighbors as effective stewards of the myriad of offerings within the boundaries of the region.

7. As a regional planning committee, the Western Cumberland County Council of Governments has the potential to promote smart growth and intelligent design as never before in the area. It is important for the participating members to develop their mutual relationships, to communicate regularly and openly, and to actively seek out ways to more effectively achieve the other objectives stated herein. Similarly, the importance of developing and maintaining levels of consistency in policy and procedures would be an immense benefit to those involved in development and government in the region. Ever changing demographics, technology and economies are constantly encouraging us to rethink our existing policies and future strategies. Following the adoption of this Plan, the group should diligently continue to implement the measures prescribed and work to update the Plan as needed, waiting no longer than ten years.

STUDY AREA MAP

regional planning consistency

Background

As Western Cumberland County continues to move forward with a planning program for its future, it is important to be aware of similar plans, both existing and proposed, in neighboring municipalities and counties. The Comprehensive Plan should make every effort to be consistent and compatible with its neighbors, thereby providing a reasonable and rational connection or relationship between the study and adjoining portions of its neighbors. Also, knowledge of the neighboring plans provides the opportunity for an expanded program of proactive regional planning through better communication and an understanding of each other's needs and requirements. Our study area borders the following fellow Cumberland County municipalities: Hopewell Township and Southampton Township to the west, North Middleton and South Middleton Township to the east, and Carlisle Borough, also to the east. Also, three townships – Penn, Cooke and Lower Mifflin – form gaps in the north central and south central sections of the study area. Finally, Adams County (Menallen, Huntington and Tyrone Townships) forms the southern boundary of the region, while Perry County (Spring, Toboyne and Tyrone Townships) is the region's neighbor to the north. First, we'll examine land use considerations for the study area itself from a greater regional perspective.

Cumberland County Comprehensive Plan

The Cumberland County Comprehensive Plan includes a county-wide plan for future land use dated 2003. A review of this plan indicates that the dominant descriptive land use words are "rural", "agriculture", and "conservation." The Conservation category dominates the southern section of the study area in both Dickinson and South Newton Townships. It also lines the northern boundary of the region in Lower Frankford, Upper Frankford and Upper Mifflin Townships. Finally, the central section of the study area includes narrow bands of designated Conservation lands in proximity to the Big Spring Creek, the Conodoguinet Creek, and the Yellow Breeches Creek. The ridgelines, forests, valuable water resources and publicly-held lands are ideal areas for conservation efforts and are consistently emphasized as valuable resources for the entire County and beyond.

Those areas classified as Agriculture within the County Plan account for the majority of the central section of the study area. Significant portions of Dickinson, West Pennsboro, North Newton and South Newton Townships are included therein based on their strong agricultural economies, the high frequency of prime limestone-based soils, the large contiguous expanses of productive farms, and their participation in the County's agricultural preservation programs. These areas are intended for very limited development utilizing agricultural preservation techniques to ensure the continued viability of the agricultural industry in the County. The Agriculture and Conservation classifications easily add up to between two-thirds and three quarters of the total regional land area.

The land use category identified as Agricultural/Rural covers the majority of Lower Frankford, Upper Frankford and Upper Mifflin Townships as well as the northern stretch of North Newton Township. It is also found in small, scattered instances in both South Newton and Dickinson Townships. These areas also have an agricultural flavor but are primarily located in less productive, shale environments. Farming remains an important element of the community. However, the reality is that non-farm related, lower density residential use also approaches an equal degree of significance. Public infrastructure is not currently available in these areas to support any significant density or intensity of development.

Residential, Commercial, Industrial and Village/Mixed Use account for the remainder of the County's future land use classifications within the study area. Planned industrial use is limited to the quarry areas of Dickinson Township, areas of Dickinson Township in proximity to the Plainfield interchange of Interstate 81, a portion of the Cumberland County Landfill in North Newton Township, and two areas of Newville Borough.

Future commercial use is similarly limited in the region. In West Pennsboro Township, several as yet undeveloped properties on the east side of S.R. 233 are designated Commercial. This township also includes a small section in Plainfield and also on the east side of Newville along S.R. 641. Lower Frankford Township is indicated with two small commercial designations at its south end. A section of Dickinson Township is also designated for commercial use along U.S. 11 near the S.R. 465 intersection. A few areas of Newville are also illustrated as Commercial.

Residential classifications are found in limited supply in Newville and in a radial pattern surrounding it in North Newton and West Pennsboro Townships. West Pennsboro Township also includes some future residential land use in the vicinity of Plainfield extending south to U.S. 11. Dickinson Township also includes residential designations on the south side of S.R. 465 adjacent to South Middleton Township, to the west of Mount Holly Springs, and also in the southeast corner of the Township along State Route 34 leading to Adams County. A small pocket of Residential is also found in Lower Frankford Township. These residential areas are generalized in terms of their degree of density and the types of housing allowed. Individual municipalities are charged with further distinguishing these elements of any necessary hierarchy of residential districts.

Finally, the Village/Mixed Use category is located in scattered instances of the region, particularly in association with historic development settings such as Newville, Walnut Bottom, Bloserville, Plainfield and also in select areas of both Dickinson and Lower Frankford Townships. This land use category would consist of mixed residential and commercial uses in a traditional village type environment. These neighborhood areas would promote a greater emphasis on pedestrian traffic and proximity between residents and goods and services. Greater densities would also allow for additional land to be dedicated to open space and parks.

In addition to future land use, the County Comprehensive Plan also identifies target growth areas for the County. Not surprisingly, the study area includes few such targets. The area's rural and environmental resources are recognized by the County as important assets that require long-term conservation strategies while other areas of the County are better-suited to targeted growth initiatives. The only areas illustrated for growth within the eight municipality region are the greater Newville area, with limited expansion into North Newton and West Pennsboro

Townships, and a small section of Dickinson Township to the west of Mount Holly Springs along the Pine Road corridor.

Consistency With Surrounding Municipalities

The two neighboring counties to the north and south of the region are Perry County and Adams County respectively. Both of these counties and their corresponding municipalities share their borders primarily with the region's vast forests and steep ridgelines. Adams County's Comprehensive Plan from 1990 indicates that all of its common boundaries with the region fall within one of two future land use categories: Parks, Permanent Open Space & Preservation Areas or Agricultural, Resource Conservation & Residential – Very Low Density. The neighboring zoned Adams County municipalities include Huntington and Tyrone Townships. Similar rural designations are found within their zoning programs in proximity to the Cumberland County border. Perry County's 2005 draft Comprehensive Plan identifies its common boundaries with the region as either Public, Conservation or Agricultural. No compatibility issues are foreseen along the adjoinign county boundaries.

Within Cumberland County, another eight municipalities share common boundaries with some portion of the study area. Along the northwestern edge of the region, Hopewell Township's planning and zoning efforts indicate primarily a border of Woodland Conservation and Agricultural Preservation adjacent to North Newton and Upper Mifflin Townships. Minimum lot sizes of two to five acres are required. The only exception is in relation to the lands controlled by the Cumberland County Landfill, which are categorized as Limited Industrial. Southampton Township's common boundaries with North and South Newton Townships are similarly classified as Woodland Conservation and Agricultural Preservation. Minimum lot sizes of one to two acres are prescribed. Potential compatibility issues in this area are limited to the proposed Industrial area along the western edge of South Newton Township.

In the center of the region, three municipalities account for noticeable gaps within the designated study area. Lower Mifflin Township is situated in the northcentral section of the region and is surrounded on three sides by Upper Mifflin, Upper Frankford, and North Newton Townships. Its southern boundary is formed by the Conodoguinet Creek and is designated as floodplain. Its northern reaches correspond with the forests and ridgelines and are appropriately designated Conservation. The remainder of its boundaries to the east and west are zoned Agricultural. These zoning districts also call for limited development with a combination of large lot sizes, maximum residential lot areas, and a sliding scale of development to determine a maximum number of lots which may be subdivided based on the host parcel's overall size. No issues of incompatibility are present in proximity to Lower Mifflin Township.

South of U.S. Route 11 along the State Route 233 corridor are Penn Township and Cooke Township. Penn Township is the northernmost of the two townships and is currently developing its first zoning ordinance. Penn's position with respect to Interchange 37 of Interstate 81 is significant to the study area as it is anticipated to become a location for some degree of commercial/industrial development potential within the region. Although it has chosen not to participate as a member of this Plan, it is simultaneously preparing a plan and zoning ordinance of its own with the intent to closely mirror the recommendations of this document. While not an

official member of the committee, Penn Township's role in the region can't be ignored. In the next decade it is expected to develop as one of the few spots in this section of the County with any significant potential for non-agricultural economic development. Preliminary drafts of a proposed zoning map again indicate Agriculture and Conservation districts dominating the common boundaries with Dickinson, South Newton and West Pennsboro Townships. Any projected development areas around the interchange and the village of Centerville are not contiguous with the study area's boundaries. Cooke Township's Comprehensive Plan classifies future land use for the majority of its land area as Conservation or State Forest/Park. A small amount of Residential land use is identified in the Township's northwest corner which abuts South Newton Township. This category is targeted for a minimum lot size of two acres. In the Penn Township / Cooke Township vicinity, the only area of potential incompatibility centers around the future plans for the emerging interchange area and the Route 233 corridor. Care must be taken to properly plan for continued harmony between business, agriculture, and residences.

To the east of the study area is the rapidly growing Carlisle region, which includes the Borough of Carlisle, North Middleton and South Middleton Townships. These three municipalities share a common interest with the study area due to the evolution of development focused on the Interstate 81, Exit 44 interchange and the Allen Road (S.R. 465 corridor). The Borough adjoins a small section of the eastern boundary of both Dickinson and West Pennsboro Townships. Land use classifications for this section of the Borough include Light Industrial, Light Industrial/Commercial, and Major Community Facilities/Institutional. North Middleton Township's common borders with West Pennsboro and Lower Frankford Townships include primarily Conservation and Agricultural land use designations. The Conservation district includes a steep slope overlay, while the Agricultural district requires minimum lot sizes of one to two acres. To the south of the Pennsylvania Turnpike is an area of Industrial use. Following suit to the south of Carlisle is South Middleton Township which borders Dickinson Township to the east. Much of its common boundary with the study area is planned as Agriculture Reserve and Forest Reserve which call for low density development on large lots with uses dedicated to forest-related and farm-related activity. Two areas, one to the south of Walnut Bottom Road (S.R. 465) and another to the south of the Yellow Breeches Creek are designated as Suburban Community. These areas can range in character from an urban appearance to low-density, large lot development. Finally, the northwest corner of the Township in proximity to Exit 44 of Interstate 81 is identified as Industrial Center to provide for existing industry and additional lands for the expansion of industry. Compatibility issues are of concern where the proposed village / mixed use classification abuts certain sections of South Middleton Township. The evolution of any specific zoning hierarchy and detail within Dickinson Township will dictate whether these abutting areas will co-exist or clash.

Summary

In an effort to achieve consistency with the greater region, the participating municipalities must bear in mind a responsibility to its citizens beyond the steps of simple planning and look toward tangible implementation strategies to accomplish its concluded objectives. This plan has attempted to take into account many of the same issues brought to light in the County Comprehensive Plan, neighboring municipal plans, and past comprehensive plans within the region. These may still be viewed as potential concerns of immediate significance which cannot

be overlooked any longer and which require ample thought and action in the coming years. As a sign of mutual concern and partnership, the County Planning Commission Director and the Big Spring School District Superintendent have been an active participant in the discussions and decisions that have molded this updated plan. The complete membership of the Council of Governments also is an important partner in this effort as the end result will impact the non-participants either directly or indirectly on occasion. Regular monthly meetings of the COG to discuss various concerns and shared interests is a tremendous step toward a more positive vision of the region and a collective force for its betterment. The implementation of additional development and land use regulations, the foresight to actively participate in regional issues that extend beyond municipal boundaries, and the boldness to initiate needed capital improvement projects will serve not only to provide the necessary level of consistency, but will augment this plan with effective tools to further the goals of all affected jurisdictions beyond these pages and into the lives of its residents.

This Comprehensive Plan for Western Cumberland County as proposed has been prepared with an eye towards achieving the highest and most reasonable degree of compatibility with the plans of the surrounding municipalities. A large percentage of the Township's common boundaries with other jurisdictions consists of primarily agricultural, conservation or low-density development designations. Likewise, this relationship should be reciprocated by neighboring communities on the opposite side of the boundary lines. Many legitimate concerns are common among the greater region and multi-county area including farmland and open space preservation, environmental conservation, emergency services, transportation management, utility improvements, affordable housing, and land use compatibility. All of these municipalities share mutual concerns with regard to future development patterns and pressures; the impacts of this development on shared transportation facilities, utility systems and the municipal tax structure; and changes being introduced into our communities that may enhance or threaten our existing resources, lifestyles and economy. As the region continues to grow and change, the eight municipal participants have now laid a foundation that will coordinate their planning efforts with the County and other municipalities and that will bring an intelligent and effective regional planning focus to the area.

future land use plan

Background

Much of the character of Western Cumberland County is easily deduced from even a cursory view of its landscape during a short drive along any of the major traffic arteries running through the region. The same can be said for a quick review of the existing Land Use Plan that was produced as part of the first phase of this Comprehensive Plan. The vast percentage of the landscape in the study area is dominated by wooded ridgelines, winding watercourse, farm fields and scattered single-family residences. These images immediately validate the region's reputation as a rural and increasingly residential collection of communities with vast reserves of open space and environmental resources, and a strong farming economy, incorporating all aspects from livestock to open field cultivation to orchards. Although development has been ongoing throughout the area over the past half-century, the primary patterns of development have only recently become more clear and targeted since the time of the individual participating municipalities' earlier Comprehensive Plans.

Future projected development for the area was examined as part of the COG's concurrent Land Use and Transportation Plan. While this Plan document will not attempt to replicate its findings, the conclusions drawn therein are of infinite usefulness to the Future Land Use Plan. The fifteen municipal partners of the Land Use and Transportation Plan exercise have provided the location of pending and approved development and have also anticipated from a variety of sources the location of likely development to occur in the next twenty years. The lion's share of this forecast activity is not surprisingly found in Dickinson, West Pennsboro, and North Newton Townships. The corridors of U.S. 11 (Ritner Highway), S.R. 641 (Carlisle/Newville Road), S.R. 233 (Centerville Road), and S.R. 465 (Walnut Bottom Road) are the major thoroughfares anticipated for impact by these potential developments.

Much of the residential development in the region has been relegated to the main traffic arteries in the Township and is focused more intensely in those limited areas with accessibility to public water and sewer service. The latter areas are presently situated around the Borough of Newville and in the vicinity of the Interstate 81, Exit 44 interchange. Some of these developments have been sizeable with considerable infrastructure investment. At the same time, commercial and industrial development has been considerably more limited. Warehousing and transportation-dependent businesses are experiencing growth along the eastern edge of the study area near Carlisle. The long dormant Exit 44 interchange of Interstate 81 has seen an injection of activity in the past decade. The development of this area is now proving to be an attraction for a variety of other businesses and a base for future potential regional employment, shopping and dining. The activity, both present and future, surrounding the interchange is fast becoming a dominating

topic of discussion in most political and social circles of the affected municipalities. These basic observations are simple facts easily seen by even the novice planner or the newest resident. The more difficult task at hand is to legitimize specific future growth areas with definable limits throughout the region that will prove suitable to the wide variety of land uses that are pervading our society today.

Many physical land characteristics lend themselves well to all forms of land use. Prime agricultural ground, which is abundant throughout this area of Cumberland County, is usually the most attractive property for developers as well as farmers. Proximity to goods and services, transportation and utilities, natural resources and other amenities are often equally as important to the individual homeowner as they are to the real estate developer. Our goal in this chapter is to use the information previously assembled to find the best and most widely acceptable design for the placement of these divergent land use categories throughout the study area. As this Plan represents a multi-municipal effort, it is important to recognize that its ultimate definition of land use boundaries is not predicated on the existence of municipal borders. It also does not attempt to mirror the multiple and varied land use classifications and zoning districts found within the individual partners' existing comprehensive plans or zoning ordinances. Rather, this Plan lays out a land use strategy that is truly regional and provides a degree of classification consistency in an attempt to promote future multi-municipal planning applications. However, it must be emphasized that the truest manner for any land use plan to be the effective is through the enactment of a well-timed, well-devised, and well-managed municipal or multi-municipal zoning program. This is a program that several of the member municipalities have yet to introduce within their individual jurisdictions. In the following paragraphs, seven different land use categories will be discussed in terms of their composition, importance, compatibility, needs, impacts and locational placement for future growth management purposes.

Designated Growth Areas

While the County Planning Commission has identified two designated growth areas for the entire region, it is incumbent upon the partners to establish their own target growth areas for the study area. The delineation of these boundaries is based upon a variety of factors culled from the background information collected in the first phase of this plan. This exercise also serves as a precursor to the establishment of an eventual future land use plan and potential multi-municipal zoning hierarchy for the region. The majority of the Township continues to reflect its overall continuing agrarian and environmental character with a designation of established rural area. Much of the area surrounding and including the Borough of Newville is identified as a rural core area as part of the County Plan. This area includes a significant expanse of previously developed subdivisions with ample space for additional development. This Plan does not foresee a need to expand the perimeter of this established rural core area at this time. However, circumstances may warrant an upgraded consideration to growth area in the not too distant future.

A rising trend in development was also evident in the County's designation of a small area of Dickinson Township as a growth area. Radial lines of development extending in different directions from Mount Holly Springs impact a small area of interest along the Pine Road corridor. Departing from the overall County perspective, more recent activity with a strictly regional view leads to the conclusion that this same area may now have an extended sphere of

influence reaching further northward along the eastern edge of the study area into West Pennsboro Township and the Plainfield village area. A portion of this area's coverage is directly impacted by the flourishing nature of development in neighboring Carlisle, North Middleton and South Middleton Townships and is associated with State Route 465 (Allen Road) and the Interstate 81, Exit 44 interchange. There are also indicators that some of this area's development potential may extend slightly to the west along the south side of U.S. Route 11 (Ritner Highway).

Housing Considerations

The Cumberland County Comprehensive Plan identified housing needs for all of the County's municipalities through the year 2020. Using a formula that includes factors for current and projected population, persons per occupied dwelling unit, and the number of occupied dwelling units, it is forecast that the study area would require 1,710 additional dwelling units by 2010 and a total of 2,638 additional dwelling units by 2020 to accommodate the expected population increase. This Plan's projected population estimates are slightly more conservative than the County's 2003 figures and would equate to an even lower required number of future housing units (1,008 and 1,825 respectively). These figures are based on the population projections quoted in Phase 1 of this Plan and utilizing an overall average persons per occupied dwelling unit of 2.76 throughout the study area.

In consideration of the higher County estimates, by the year 2020, assuming an average lot size of one acre, 2,638 acres of residential development land would be consumed. This figure doesn't account for additional land consumption factors such as streets, stormwater detention, recreation, and utilities which could add another 10 to 15% to the overall area requirement. The Future Land Use Plan has attempted to provide the necessary acreage to accommodate these expected developments. In reality, pinpointing which municipalities and which properties will be converted to residential land use is a gamble. Residential development can occur at different densities in nearly all of the proposed land use classifications. Therefore, the region has ample opportunity to support the anticipated influx of people in any of the member municipalities.

Conservation

The rural qualities of Western Cumberland County are enhanced many times over by its inventory of high quality environmental resources, its open space, and the abundant reserves of protected lands and potential conservation sites. This is the essence of the region and a vital element in its continued prosperity. There is a growing public awareness that this part of Cumberland County is subject to environmentally sensitive areas such as floodplain and wetlands, groundwater recharge areas, distinctive geologic and topographic features, and natural habitat for endangered or threatened species of flora and fauna. Therefore, it should come as no surprise that the conservation of open spaces, environmental areas and woodlands is a primary thrust of this Comprehensive Plan.

The specific sections of the study area that are targeted for long-term conservation land use correlate directly with the location of its defining natural resources and its publicly managed

properties. These areas include large blocks of land in the region's southern sector consisting of the Michaux State Forest, King's Gap Environmental Education Center, the Mount Holly Preserve, and Pine Grove Furnace State Park. To the north are State Game Lands #169 and the Tuscarora State Forest. Scattered throughout the rest of the participating municipalities are the areas of identified 100-year floodplain, steeply sloping contiguous mountain ridgelines, Opossum Lake, and the Fish Commission lands at the headwaters of Big Spring Creek. There are also abundant water resources in this region that merit special attention and protective measures. The Yellow Breeches Creek has been awarded scenic river status at the State level. Mountain Creek, Doubling Gap Creek and Opossum Creek are all classified as high quality waters, while the headwaters of the Big Spring Creek is elevated to exceptional value status. In each of these instances, adequate landscaped and natural buffers should be required to ensure the continued pristine condition of these waters.

These areas are to be revered as irreplaceable community assets. As such they should be subject to the strictest of land use regulations. Development in these areas is not only intended to be infrequent, but also of the lowest intensity and subject to defined criteria for the protection and maintenance of the natural environment. The primary use of these lands should remain those related to conservation activities, forest management, passive recreation, and the public enjoyment and appreciation of nature. Residential development must be viewed as an encroachment, and any resulting densities of one dwelling unit per five to ten acres are appropriate. Without continual oversight of the region's very foundation, the remainder of the region's land use potential is irreparably undermined. This land use category is deserving of the region's highest priority. The effectiveness of all other classes of land use is dependent on the integrity of these primary community assets.

Agricultural

A significant percentage of the land cover in the partner municipalities is devoted to agriculture and open fields; therefore it is impossible to ignore the heavy influence which these land uses impart upon the residents of the community. While economic factors related to agriculture, such as labor force percentages and incomes, may have declined nationwide over the years; farming continues to play a vital role in the region's ever-evolving character. Lay people are beginning to recognize with greater frequency the advantages and benefits that the farming industry and agriculture provide. There is also an awareness that, similar to the conservation category, these areas are also subject to environmentally sensitive areas.

There is a growing movement afoot to permanently preserve the best agricultural soils and to salvage the institution of the locally owned family farm. No better example is available of this progressive philosophy than the County's burgeoning program for the purchase of permanent agricultural easements. A multitude of farms totaling over 3,000 acres have already become active program participants and, in tandem with the Townships' strong Agricultural Security Areas, there is an obvious desire by the farming community to maintain its vital role in the area's economy and culture. Consequently, an obvious land use expectation for the region is that the implementation of agricultural preservation practices, as well as the conservation of open spaces, will be a primary thrust of this Comprehensive Plan.

While farming and open land have been and remain a consistently strong asset in municipal history, increasing development pressures threaten to erode away and undermine these resources. Productive agricultural lands are particularly vulnerable as the extension of utility services invade these sectors of the region along with improved highways, increased population and a booming housing market. Municipalities experiencing these development patterns must plan for and carefully manage a balanced growth strategy. This strategy should be one that will do everything in its power to maintain the integrity of the agricultural community while allowing the area's other emerging elements to prosper and endure in their own right.

The targeted areas for the participating municipalities' agricultural preservation program are widespread. The thriving agricultural community is best identified through a review of those properties participating in the Township's Agricultural Security Area (ASA) program. The central portion of the study area is particularly populated by properties either participating in the respective municipal ASA programs or already settled in terms of permanent County preservation easements. The accompanying map entitled "Significant Farmlands" identifies the location of these designated farm properties. All of the preservation activity to date has taken place in the areas with an abundance of prime farmland and soils of statewide importance such as North Newton, West Pennsboro and Dickinson Townships. ASA participation, however, is significantly strong in each of the municipal partners with a particular frequency in Upper Frankford Township. The extreme southern section of the region has few ASA farms and no preserved farms. While the quality of the soils is not on par with those of the limestone valleys, The Townships north of the Conodoguinet Creek would like the County to give serious preservation consideration to areas that not currently subject to the degree of development pressure found elsewhere in the region. As most of the preservation efforts have historically been located in West Pennsboro, Dickinson, Penn and North Newton Townships, the unfortunate long-term effect may be an unintentional push of residential development northward into areas not as well-equipped to deal with the secondary impacts.

Development pressures are most obvious at this time along major traffic arteries such as U.S. Route 11 and State Routes 233, 465, and 641. This includes a host of farms and hundreds of prime agricultural acres that are either preserved or ASA participants. There is no better example of the conflicts between dissimilar uses currently at work within the western portion of the County than this. The pressure of improved and easily accessible Interstate transportation has already been a harbinger to the disappearance of valuable quantities of farmland in lieu of residential subdivisions and support services. Another form of growing concern and discussion in the region is the recent emergence of concentrated animal operations (CAO's) or "factory farms" as they've come to be known. While agricultural in nature, these high-tech, large-scale operations are on the rise to such a degree that the traditional family farm or small operation pales in comparison. These facilities are also of such a diverse character that they oftentimes result in a higher degree of conflict with adjacent existing neighborhoods than the traditional farming operation. Care must be taken in future land use planning to account for these types of agricultural practices while maintaining a balance with the existing farm community, the natural environment and surrounding residential neighborhoods wherein all of the parties can not only coexist but also prosper.

The most universal and proven method for effective preservation of the Township's remaining agricultural resources lies within a rural-oriented, very low density, zoning ordinance. Various zoning methods have been developed over the years to cope with different municipalities' needs. Due to an historically limited trend of development in this portion of the County, the sought after land use balance for the eight participating municipalities has been adequately serviced over the years by the existing municipal land use and development ordinances. However, newly observed development trends indicate the time is ripe for a retooling of these ordinances to ensure better protection of farmland and the agricultural industry. As with the Conservation areas, permitted uses within the Agricultural designated areas must be compatible and suited to the continued viability of the region's rich farming heritage and economy. Recent years have seen the family farm struggle financially to make ends meet. As a result, municipalities must be flexible in allowing secondary industries to locate in these areas as a supplemental source of income. These industries should not result in a dramatic industrial or commercial presence, but should be limited in scope and to activities compatible with and beneficial to the rural farming community.

A variety of effective land use strategies have been developed and implemented in agricultural regions with similar strength and significance to Western Cumberland County. Ground-breaking sliding scale zoning efforts whereby a limited amount of development can occur in predominately agricultural areas based on the size of the host parcel have been enacted with success in the fertile counties of Lancaster and York. Additionally, all development must be placed on the land deemed to be of the lowest quality for farming and uses are strictly limited to farm-related activities and single-family residences. A very limited list of special exception uses are also designated therein. While other municipalities around Southcentral Pennsylvania have either enacted large-lot zoning for their agricultural areas, incorporated modest density incentives for clustered communities with some minimal preservation of open space, or failed to enact any zoning requirements whatsoever; this region has an opportunity and a legitimate claim to move to the forefront of farmland preservation through creative zoning options. An ultimate development density of one dwelling unit per 2 to 3 acres is only the beginning for promoting strong, identified agricultural sectors. Truly effective conservation and preservation efforts can boost the ultimate density in the most valuable areas to one dwelling unit per 15 or even 25 acres. This area, with its plethora of valuable and productive prime farmland, and other areas better-suited for development, is primed to maintain a strong pro-agricultural position.

As new areas within the Township begin to experience the pressures of development, land use strategies may need to shift to examine balanced alternatives to allow limited development while still conserving adequate open space amenities. Open space conservation design zoning techniques have been gaining momentum in recent years as part of Pennsylvania's "Growing Greener" emphasis. Municipalities can employ techniques whereby properties are required to preserve a minimum percentage of the total acreage (anywhere from 35% to 70%) for use as common open space, farmland and/or greenway development. In return, the developer is permitted to design the subdivision with the same number of lots that were permitted under traditional design efforts by utilizing a base density formula. Municipalities must utilize an overall open space plan to achieve their community-wide conservation goals. Depending on the character of the particular region, the end result can also include significant agricultural preservation efforts as well as recreational and environmental objectives. In light of the region's inevitable position in the path of development pressures, it is recommended that consideration be

given to such conservation design oriented practices within a portion of the area's agricultural lands. By incorporating a low rural residential density with mandatory open space preservation, undesirable development will be curtailed in these widespread areas of environmental significance and the continued viability of limited residential subdivision in a rural setting will remain.

Developers will find themselves encouraged, as well as required, to participate in such projects by maintaining equal densities for housing lots, reduced infrastructure costs, attractive settings to market to consumers, and higher potential investment returns. The net return for the municipal partners can be what so many people are seeking today in terms of long-range planning and development for their communities: the preservation and creation of additional public amenities such as permanent farmland easements, open space, recreation facilities, environmental areas, woodlands, and protected watersheds; and the preservation of the area's rural lifestyle and landscape. Additional discussion of this land use option is found in the Transportation and Community Facilities Plan chapter.

Rural Residential

The rural residential land use classification represents areas that remain predominantly agricultural or open in character. The difference in this category lies in the fact that these areas are not as productive in terms of farming or that these areas have already lost a significant portion of their potential for effective agricultural preservation due to historical and ongoing development. These areas have also been found to be lacking in focused conservation efforts and interest, and may have a closer proximity to expanding growth areas. The intent of this Plan is to maintain the agricultural and rural qualities of the subject sections by encouraging its continued green and open virtues as a primary objective. Low densities of development (one dwelling unit per 1.5 to 2 acres) would not promote the rapid expansion of public utilities into these areas. These areas would also be ideal candidates for consideration of an open space conservation zoning program in order to permanently preserve environmental resources, to interconnect important greenways, and to manufacture large reserves of contiguous farmland. As is the case with most of the region, new residents must be made aware of the area's expected agricultural impacts such as odors, dust, pesticide and fertilizer application, and slow-moving equipment on roads. Any municipal land use ordinance should include requirements for development plans to display an appropriate agricultural nuisance disclaimer. Such a notation, regardless of the specific zoning district, would serve to inform the general public and potential lot purchasers that the farming industry is a primary contributor to the region's character, a daily presence in the community, and is strongly supported by both local and regional government.

Residential

With a growing population comes the inevitable boom in real estate and housing. Over the past decade, finding the appropriate locations for this increasing inventory of single family homes and mobile homes has proven to be a most challenging and daunting task. Space is ample throughout the green expanses of Western Cumberland County, however not all of these spots are desirable to builders, developers and prospective residents while others are not equipped or eager to handle

the additional burdens of traffic, stormwater runoff, and sewage disposal. The same balance that was sought for preservation of the study area's rural qualities must be equalized with the manifest need for living space.

The region's housing demands and supply have to date not expanded much beyond the need for traditional single-family dwellings and manufactured housing. Outside of concentrated borough and village environments, few townhouse or multi-family developments have appeared although the fickle real estate market can alter its demands with little advance notice. The municipal partners should also be aware of available public or private incentives, subsidies and sponsorship that can be utilized to encourage varied forms of housing to provide for the wide array of incomes and social strata dispersed through this sector of the County. The partners must be sure to account for each possibility as it crafts its future plan for residential land use. A review of existing trends in residential development indicates a radial pattern of housing subdivisions dominating the multi-municipal arena. Primary traffic corridors emanating from the heart of Newville have seen a strip pattern of development in nearly every direction over the past 30 years. Similar trends are observed along the eastern edge of the study area as part of the greater Carlisle and Mount Holly Springs influence. Other radial patterns of roadside strip development can be seen along the Walnut Bottom Road (S.R. 174, S.R. 465), Pine Road, Molly Pitcher/Ritner Highway (U.S. 11) and Carlisle/Newville Road (S.R. 641). In comparison, subdivision in the remaining areas of the region has been sporadic and minor in nature. These subdivisions have, for the most part, been predictable in terms of the attraction of public utilities, typical small lot sizes, and planning a development to its utmost capacity with little regard or cause for any conservation offerings or resulting benefits to the community as a whole.

Without the aid of progressive growth management techniques, the municipal partners are open to rampant development with the resulting pressures placed upon all of the region's precious public services. The continued addition of more utility lines at significant length through the area in lieu of upgrades to existing stressed facilities will only place more financial burden on the responsible authorities and foils the efficiency of those systems. The same theory holds true for the region's road system. As more and more miles of roads must be maintained, the existing street inventory will suffer from untimely neglect and the need for constant increases in maintenance equipment and manpower will erode municipal resources to undesirable levels. Development not properly located may also be routinely situated in geologic or topographic settings conducive to frequent drainage problems. The resulting effects may not only prove to be ongoing maintenance problems for municipal officials but inconvenient and costly for homeowners and taxpayers as well.

For these reasons and others, it is prudent for the municipalities to propose growth controls through a zoning program geared towards the proper siting of these developments that are often severely taxing on a municipality's resources. Currently, the study area includes a number of varied residential zoning districts within the municipal partner's zoning hierarchies. Some are geared towards multi-family housing and higher densities while some are hybrids that allow mixed uses in a neighborhood setting. The consideration of a concept such as open space conservation design may cause the partners, either with an existing zoning ordinance or those considering the possibility of one, to consider a revised hierarchy of residential districts. Regardless of the number of residential districts, each one would be distinct in terms of location, base density of allowable lots, and permitted uses. Municipalities with multiple residential

districts would likely base their densities on the availability of public utilities. Resulting densities could therefore range from one dwelling unit per acre with on-lot sewage disposal systems to one dwelling unit per quarter acre with both public water and sewer. The region's Agricultural and Rural Residential districts could also be incorporated at the low end of the Township's density schedule for housing.

In addition to the proper siting of these residential neighborhoods, this plan must account for possible and appropriate secondary uses therein. With the exception of certain suitable home occupations, the residential districts are not recommended to permit commercial or industrial development in an effort to protect the desired family flavor of the area. Compatible uses such as churches, schools, and municipal facilities would continue to be permitted under specific review criteria. Density must also be discussed and would likely be based upon two factors: type of housing proposed and availability of public water and sewer. The current municipal lot size regulations allow a range of minimum residential lot sizes from 40,000 square feet to 88,000 square when either public sewer or public water service is not provided. These numbers are reduced significantly in some of the municipalities when public utilities are available. These prevailing dimensional requirements may prove to remain the desirable levels once an updated or initial zoning program is effectuated, however the corresponding figures must be adjusted accordingly across the board for all designated residential zones so that the assumed benefits are not lost. The region's designated growth area boundaries are a valuable tool to assist the municipal partners in determining any future density adjustments.

The concept of an open space and conservation design zoning program does not place the same level of importance as traditional zoning methods on the presence or absence of public utilities. Equal density formulae are employed regardless of the type of available utilities and, if necessary, traditional on-lot systems can be situated offsite within common open areas. Such a program can be adapted in environments of the very lowest density up to and including the higher density residential and mixed use zones. Situated within this natural and pristine section of the County, a new open space conservation zoning program would take advantage of the many environmental resources found here including waterways, prime farmland, woodlands, and steep slopes as well as the greenway and trail potential associated with the former railroads and creeks.

The prescribed residential zoning designations are situated in the Borough of Newville and emanating from it in nearly every direction inside West Pennsboro and North Newton Townships. The village of Plainfield also includes a sizeable area of designated future Residential land use. Dickinson Township also includes four separate pockets of Residential area on the south sides of U.S. 11 and Walnut Bottom Road near the study area's eastern edge, and also west of Mount Holly Springs in the Barnitz area between York and Pine Roads.

Village Center

This land use category is a hybrid intended to foster revitalization of existing village environments within the region and to provide opportunities for other neo-traditional communities to evolve in appropriate areas of the participating municipalities. Historic village settings have survived for centuries in some instances with an atmosphere of togetherness and community. Pedestrian traffic, visually pleasing streetscapes, interaction between residents,

facilities for civic and social gatherings, and a mix of businesses and residences are typical elements of a Village Center. In many instances in the region, these villages are in need of revitalization and economic enhancement. Locations such as Bloserville, Stoughstown, Walnut Bottom and Oakville are some of the historic village settings that have seen no signs of growth or investment in many years. Newville is a larger example of a densely populated municipality with certain areas of a complementary mixed-use potential. By focusing a reasonable amount of cluster development and mixed use activity in these areas, it is hoped that they might discover a resurgence and continued vitality for another century. Population centers eventually reach a level wherein their separation or isolation from common goods and services can be detrimental to the greater good of the region. Transportation costs rise, property values decline, and the desire to encourage new residences dwindles. The preferred land use strategy for the region is to guide development to these areas and to others with similar potential, thereby furthering the conservation goals of the more rural sections of the study area.

New village or hamlet style development scenarios may also play out in the region as part of any success experienced with the recommended open space conservation zoning program. Densely clustered communities may emerge in association with higher percentages of open space conservation. The overall density of such areas would be reliant on the provision of centralized water and sewer systems which are scarce inside the region and would likely average at the threshold of one dwelling unit per quarter acre. Outside the historic villages of the region, other areas illustrating a propensity for some mixed use development include a developing section of Lower Frankford Township north of the Conodoguinet Creek and Burgners Road (T-457). An area of Dickinson Township in the vicinity of Toland and Hunter's Run along Pine Grove Road and State Route 34 also exhibits similar mixed use potential. In these instances, the area could easily include recreational development such as campgrounds and community parks as compatible uses. Some potential for more mixed use opportunities is also present in Dickinson Township on the south side of U.S. Route 11 and in West Pennsboro Township along both sides of S.R. 641 near Plainfield and also along both sides of S.R. 233 north of U.S. Route 11.

Commercial and Industrial

The study area's future plan for the management of business development is separated into two levels of character and intensity: Commercial and Industrial. Existing commercial and industrial land use classifications are extremely limited throughout the region. The Borough of Newville is a longstanding hub of economic activity and includes five blocks of zoned lands for business use. Dickinson Township's zoning program includes four distinct classifications that permit business activity. Industrial activity is focused on the existing quarry operations and also in proximity to the Interstate 81 – Allen Road sector of the Township. Other commercially-oriented districts are situated on the south side of U.S. 11 and Walnut Bottom Road near its Allen Road intersection, and also along both sides of the northern extent of S.R. 34 as it approaches neighboring Mount Holly Springs and South Middleton Township. Finally, West Pennsboro Township maintains a few zoning districts oriented toward business development. Commercial districts are found to the east of Plainfield on the south side of S.R. 641 and also to the east and south of Newville along S.R. 641 and the east side of S.R. 233 respectively. The Township's sole industrial area is

located on the southeast corner of the southernmost end of Centerville Road at its intersection with U.S. 11.

As noted in the Phase 1 discussion of existing land use patterns, many of these referenced Township commercial and industrial areas have seen little in the way of development to date. However, those in the northern sector of Dickinson Township are garnering significant attention in recent months, particularly in relation to proposed warehouse construction. Industrial development is also anticipated in West Pennsboro Township as an extension of Carlisle Borough activities and also on the northwest corner of the U.S. Route 11 and S.R. 233 intersection. Again, in light of the region's extremely rural composition, it must be stressed again that neighboring Penn Township is perceived as an important role player in the short-term future economic development of Western Cumberland County. Although not an official participant in this planning process, Penn Township's forthcoming zoning program indicates a substantial expected increase in the areal extent of potential regional commercial and industrial development. This fact must be considered by the municipal partners when assessing whether adequate opportunities exist for this type of land use in the coming years. Also of importance are the assessment of population growth and its associated employment and service needs. Residential growth is forecast for an increase in the region and in surrounding areas. Therefore, an adequate amount of job opportunities have been accounted for as part of this future land use plan. The concurrent COG Land Use and Transportation Plan identifies projected residential development within fifteen municipalities reaching from Shippensburg to the western edge of Carlisle, including those partnered in this plan, to reach 5,500 new approved dwelling units over the course of the next twenty years. Upon full build-out, this would equate to nearly 13,000 additional people. Based upon this premise, an appropriately sized commercial/industrial land use designation has been developed for the study area to address the need for jobs as well as goods and services.

In order to avoid the associated headaches brought by sudden large scale development and its proximity to other zoning districts, care must be taken to avoid negative impacts to the surrounding and prosperous residential, agricultural and conservation communities. As a separation of the business districts from the residential and rural districts is of significant concern, these non-residential zones would ideally be limited to strictly nonresidential development and include allowances for other non-business uses like schools, hospitals, government facilities, and churches. Serious consideration must also be given to the need for proper transition between uses as conflicts may arise in some circumstances between neighboring properties. Effective buffer zones, ample setbacks, suitable landscaping and lighting, parking requirements, stormwater runoff impacts, mutual access considerations, pedestrian safety, and waste disposal arrangements are a few of the issues that will require diligent municipal review and approval through the course of future ordinance preparation and later plan assessment.

This rural and open region has few areas suited for the type of development referenced in the preceding paragraphs. The premier site is, not surprisingly, in proximity to Interstate 81 and the associated Exit 44 interchange. While the interchange itself is located outside the region, infrastructure is planned or constructed to provide easy access via U.S. 11, Allen Road, Alexander Spring Road, and Walnut Bottom Road to the Interstate. This area has been the

subject of successful development in neighboring municipalities for many years and is consequently attracting additional ancillary development. Pending development proposals and increased land speculation indicate the time is ripe for business and industry to emerge as more of a presence in a limited section of Dickinson Township. Necessary support services are anticipated as inevitable to supply the needs of current and future residents associated with the moderate anticipated residential growth around Newville and Plainfield. Therefore, additional commercial areas are designated for portions of West Pennsboro Township to the east of Plainfield, on the outskirts of Newville, on the north side of Route 11 at the extents of the township, and along the east side of S.R. 233 midway between Newville and Route 11.

There is also the need for lots of a larger area, perhaps 25 to 30 acres minimum, to attract users of a certain size and caliber that would be seen as a boon to the region rather than a headache. Forthcoming improvements to the interstate and related traffic arteries and the demand for more services and employment opportunities and an expanded tax base forces the municipal partners to seriously contemplate the need for an expanded business district. The region would also be well-served to consider a greater variety to its commercial and industrial zoning guidelines. The complete separation of commercial and industrial districts may be an idea that has outlived its usefulness in this day and age of office campuses and industry support services. An alternative mixed zoning district allowing the intermingling and symbiotic relationship between sales, service and manufacturing could prove to be attractive to potential clean and prolific industries. Such an employment center district could also potentially result in far-reaching positive economic impacts in terms of employment and a more stabilized tax base. Dickinson Township has already diversified its zoning program to include four separate such business land use classifications.

The area also has the potential to attract higher intensity uses involving significant truck traffic, large areas of impervious surface, meaningful employment opportunities, and regional transportation and utility improvements. Taking these business arrivals into account it appears that their impact is best managed in a few areas already subject to these pressures, with long-term expectations for intense development, and concentrated at the location presently best-suited for large scale commercial and light industrial activity. Compatibility with these types of uses is often the most challenging and divisive issue with which a municipality is faced. By utilizing proper growth management techniques, the study area will find itself prepared to encourage this type of development while avoiding the conflicts traditionally associated with its proposal.

Since development opportunities for business as a whole are somewhat limited in Western Cumberland County, based upon the earlier devised strategies of widespread agricultural preservation and residential harmony, these segregated areas will provide the opportunity for a mix of uses with those higher intensity uses already existing or planned and will offer alternatives to serve not only the established and emergent residential communities but also the growing business community and travelers utilizing the interchanges.

Recent developments surrounding Exit 44 have illustrated a need and a desire to function together as moderate-sized business campus settings with shared access and drainage networks. This is an encouraging trend that the COG should promote and participate in for the sake of all parties involved. Development proposals should be asked to analyze regional planning concepts

to address not only transportation, but also issues like stormwater management, protection of environmentally sensitive areas, buffering and landscaping, and utility extensions and improvements. Tools aside from the obvious zoning regulations should be updated or adopted to assist the municipalities to these ends. An Official Map, the Subdivision and Land Development Ordinance, special municipal and regional task forces, and similar undertakings can provide a strong foundation to further ensure that all of the region's varied and bona fide concerns are adequately addressed rather than conveniently overlooked. Also examined should be the advantages of zoning as a growth management tool to assist in the discouragement of any deleterious facilities and proper oversight of any such existing establishments.

SIGNIFICANT FARMLANDS MAP

EXISTING LAND USE MAP

FUTURE LAND USE PLAN

transportation and community facilities plan

Transportation

As population increases and development horizons expand into this sector of Cumberland County, one of the most easily recognized, visible sign of such progress is an increase in traffic volumes, roadway construction and maintenance, and the resulting congestion. State and municipal road crews spend innumerable manhours resurfacing, plowing snow from, maintaining drainage structures, painting lines, erecting signs, inspecting, and grading and mowing alongside the inventory of streets and highways within the boundaries of the region. With a continuation in growth, the mileage of roads will grow while increasing traffic erodes away at road improvements all the more quickly. These are facts of life in the realm of road maintenance and the municipal planning partners must be sufficiently prepared to address these issues as they emerge and, more importantly, to plan ahead to avoid many of life's hard lessons already learned.

Concurrent with this comprehensive planning program, the COG has also undertaken the preparation of a Land Use and Transportation Plan. A greater degree of municipal participation is evident with this assignment as a total of fifteen municipalities have signed on as partners. These partners include the eight members of the Comprehensive Plan consortium along with Shippensburg Borough, Shippensburg Township, Newburg Borough, Penn Township, Cooke Township, Lower Mifflin Township, and Mount Holly Springs Borough. The study is designed to focus on the region's primary traffic corridors with the omission of the area's two limited access highways, Interstate 81 and the Pennsylvania Turnpike (Interstate 76). The following State highways were identified by the COG as the focus corridors for the study: S.R. 11, S.R. 174, S.R. 233, S.R. 533, S.R. 641, S.R. 696, S.R. 944, and S.R. 997. Other roads of significance were also identified in the midst of the process by the municipal partners including S.R. 465 (Walnut Bottom Road) and Pine Road (S.R. 3006).

At present, the plan has completed an analysis of potential and projected land development. Much of this information has been simultaneously considered as part of the Future Land Use chapter of this document. Subsequently, the transportation planning element is now set to get underway for an assessment of existing roadway and bridge deficiencies, future projected capacity issues, prioritization of needed improvements, likely cost estimates, and funding possibilities. As these planning projects are tied closely together both in terms of geographic area and timing, the intent of this Comprehensive Plan is not to duplicate the efforts of this specialty plan by enumerating specific road improvement problems and projects for consideration. This Plan strongly encourages and promotes the findings of the COG with the

assistance and guidance of the selected transportation experts. Instead, this section of the plan will focus on additional transportation considerations not covered within the scope of the separate Land Use & Transportation Plan.

The Pennsylvania Turnpike is a major traffic carrier within the region, however there are no points of access within the study area. While the idea of creating a new interchange may seem farfetched, the opinion of many of the affected municipalities is that an interchange between the Carlisle and Blue Mountain interchanges would serve to alleviate potential truck traffic problems in other areas of the region. Of particular benefit would be the location of a more direct route between Interstate 81 and the turnpike. Such a project would require considerable cost and time, and regulatory agency cooperation, and may involve the improvement of existing roads or the construction of new roads. The presence of the nearby Newville interchange (Exit 37) of Interstate 81 and its blossoming development potential, the truck traffic associated with the Cumberland County Landfill, and the many warehousing facilities in the greater Carlisle area, are some of the factors contributing to ever-increasing volumes of truck traffic throughout the region. A visionary approach to short-circuiting the problem should not be eliminated from the region's mindset.

Similarly, discussions have periodically indicated interest by certain investors in an intermodal facility in this region to take segments of the freight-related traffic off the highways and move it onto rail lines. This represents yet another potential transportation enhancement that, if realized, could result in remarkable safety advantages for the region's populace as well as thousands of travelers passing through the area on a daily basis. The COG should commit to being an active participant in any forthcoming planning initiatives involving PennDOT, the Turnpike Commission, the Federal Highway Administration, and private rail companies. This is an important consideration to keep the quality of life for the area's residents at a high level. Proactive transportation planning to improve the flow and safety of traffic is a valuable commodity for the region.

Much of the area's perceived traffic difficulties are due, in part, to burgeoning development in nearby municipalities as well. In particular, the Shippensburg and Carlisle areas are experiencing a rapid rise in development. Major traffic arteries such as Interstate 81, U.S. 11 (Molly Pitcher Highway, Ritner Highway), S.R. 174 (Walnut Bottom Road), S.R. 641 (Carlisle/Newville Road) are experiencing rises in traffic volumes as a result. Increased commuter traffic from Perry County is also a concern for certain traffic corridors such as S.R. 233 (Centerville Road) and S.R. 74 (Waggoner's Gap Road). Smart growth and intelligent transportation planning must function on a level greater than simply one municipality, and even one multi-municipal region, to be truly effective. Intermunicipal relationships must be established and cultivated to work regionally and cooperatively so that effective coordination can truly be achieved. Developments of regional significance, outside the study area as well as within the COG, should also be considered and debated from a joint perspective, perhaps even at the COG level, to adequately review the full magnitude of their potential impact. Additionally, the jurisdiction over the roadway network is not confined to local municipalities ands this fact should not be overlooked. Meaningful communication and participation with the Commonwealth Department of Transportation (PennDOT) must be ongoing. Oftentimes, a

regional and collaborative approach to traffic concerns is received more favorably than random individual complaints or requests from single entities.

Municipalities often find themselves in heated competition for limited transportation project funding. The current scenario wherein the County, PennDOT and the Harrisburg Area Transportation Study (HATS), the area's metropolitan planning organization, cooperate to prioritize projects within a multi-county area, requires individual municipalities to have a strong voice in the process. The member municipalities and the entire COG must remain vigilant as to the region's status to help ensure that projects are scheduled and completed in a timely fashion and that new regional projects are given serious consideration for inclusion in the 12-Year Plan during each two-year update cycle. Specific projects for consideration will be listed as part of the COG's upcoming Land Use and Transportation Study.

This Comprehensive Plan and the concurrent Land Use and Transportation Plan will serve their purpose as an official declaration of certain recommendations. However, supplementary procedures including the adoption of Official Township Maps, additional subdivision and land development requirements, and focused traffic engineering studies dedicated to specific concerns will serve to solidify the region's commitment to solving these potential predicaments. The municipal partners must continue to review their existing Subdivision and Land Development Ordinances (SALDO) to ensure that the municipalities are not unduly burdened with the cost of improvements that should be the responsibility of developers. The requirement for professional and meaningful traffic impact studies, the adoption of specific and updated street construction and design standards, and the continued awareness of the importance of proactive transportation planning should also continue to be a significant element of routine Township management and development discussion.

Traffic studies must be accurate and be accompanied by a thorough review by transportation professionals. They must also be prepared and performed in cooperation with municipal staff from the outset with the establishment of mutually agreed upon study areas and the identification of specific municipal concerns for evaluation and resolution. These studies should also be utilized to justify speed limits, weight restrictions, and signage. Similarly, the SALDO should be reviewed in terms of street design criteria. As development increases so do the resulting secondary impacts such as increased speeds and safety violations. Residential streets can be constructed differently to promote a safer environment via narrower widths and sharper curves and other traffic calming design measures. Similarly, access management considerations are becoming a topic of discussion for many municipalities. Ordinances can be crafted to limit direct access to major roadways, promote the more efficient flow of vehicles, reduce the number of conflict points, preserve the function of intersections and interchanges, and implement certain physical features (turning lanes, deceleration lanes, signals, median barriers, and service roads) to further improve the overall safety and success of the Township's transportation system. Such an undertaking is a perfect example of another process expressly suited for regional cooperation. All of these items of interest should also be considered for consistency throughout the region. Equal street construction and design standards and traffic impact study criteria are only the beginning to bringing the region closer to a level of compatibility and homogeneity for those participants in the development industry.

Public Water and Sewer

The provision and extension of public sewer and water service to an area is usually a harbinger of development. The COG partnership must therefore effectively communicate its growth management proposals to the appropriate water and sewer authorities to avoid conflicts in goals and objectives. Certain areas of the region may ultimately require service due to public health concerns or other State mandated orders, even though a resulting conflict in planning philosophy is consummated. The overriding factor for all decisions must remain the public health, safety and welfare. In the event of such conditions, appropriate secondary planning strategies must be crafted to alleviate these unexpected conflicts. Of equal importance, utility companies are required to communicate to the municipalities when extensions of service are proposed within its boundaries and potential resulting development concerns must be taken under advisement prior to a final decision.

A reliable long-term water supply is a critical goal in guaranteeing a successful planning program for all of the member municipalities and the greater region. The quickest way to a regional decline in development and quality of life is to experience a decline in water availability and quality. The current situation in this section of Cumberland County with regard to public or centralized water supply is extremely limited. The Borough of Newville remains the only significant source and its service area encompasses the Borough and a modest number of customers in West Pennsboro and North Newton Townships. The study area's other public water suppliers are either limited in scope and potential or otherwise originate from outside the study area leaving the Plan's municipal partners with little authority or control. Care must be taken to protect the region's sources of public water also. Whether the sources are surface water or groundwater, protective measures such as wellhead protection zones and streamside buffers should be defined specific to each of the water sources and appropriate development limitations employed by the local municipality.

The Future Land Use Plan identifies a number of areas poised on the cusp of booming development. These areas around the expanding boundaries of greater Newville, the village of Plainfield, the western edge of Interstate 81's Exit 44 influence will ultimately require the identification of adequate water sources that will not serve to overtax the underground aquifers or threaten the reliable supply for existing uses. Also, planned development and infrastructure investments along the Centerville Road (S.R. 233) corridor leading to the Interstate 81, Exit 37 area in neighboring Penn Township will require similar oversight with regard to water supply. As development marches on in this section of the County, the municipal partners will be slowly introduced to the need for additional municipal services such as an adequate and safe supply of centralized water. Newville, West Pennsboro and Dickinson Townships in particular appear to be facing that challenge sooner rather than later. Developers must be willing to pay their fair share of the inevitable improvement costs to upgrade existing municipal facilities or to finance new construction. Municipalities must demonstrate the foresight to negotiate and assert such regional benefits as an opportunistic part of the land development process.

As was alluded to in the Phase 1 document, private individual wells are becoming an increasingly greater concern. Both groundwater levels and production rates show consistent signs of decline in some areas. Expanding development and resulting demands on groundwater,

an increase in impervious surfaces and the resulting decrease in infiltration opportunities, and periodic drought conditions are all possible contributors to this trend. The COG should remain a vocal proponent of intelligent and fiscally responsible, regional solutions to the area's water resource dilemma. Provincial thinking with respect to a diminishing quality and quantity of potable water will only further delay progress. The municipal partners should proactively support regional efforts with any prospective partners for joint water supply solutions that will result in a safer sanitary environment for its citizens. Infrastructure costs are initially expensive, but should the occasional trends observed in recent years reach epic proportions, the costs could reach beyond finances and the area could face a long-term economic and environmental recovery. Similar regional efforts should be undertaken to promote groundwater recharge initiatives, aquifer identification and delineation, and groundwater availability analyses for new development.

Individual water supplies also face a growing crisis not only in terms of quantity and availability, but also with respect to contamination. Nitrate/nitrogen levels within much of the region's groundwater supply are approaching problematic proportions. Many municipalities have already sought to reduce this occurrence through the introduction of a well driller's ordinance to assure proper construction techniques to reduce the frequency of contaminated water supplies. In addition to municipal attempts to reduce the problem at its source, such ordinances have proven to be effective in lessening the individual property owner's susceptibility to suspect groundwater quality. Also, the karst geologic terrain in the central section of the study area lends itself to the rapid introduction and transport of groundwater contaminants. Many limestone-indicative areas have found themselves forced to require developers to undergo hydrogeological studies of properties to determine adequate recharge zones and resulting increased minimum lot sizes to negate any adverse impacts to already elevated subsurface nitrate/nitrogen levels. Also of importance, municipalities should consider amending their ordinances to require Developers at a certain threshold to prepare a groundwater availability study. Such a study will ensure that the necessary water supply is present and of sufficient quality to serve the proposed development. It will also analyze whether the estimated drawdown on the aquifer will adversely impact surrounding water supplies for existing users. At the same time, the performance of these analyses will create a valuable source of information with respect to regional groundwater resources.

On-lot sewage disposal systems remain the dominant form of wastewater disposal throughout the region. As mentioned in Phase 1 of this plan, the shale areas of the region, particularly on the north side of the Conodoguinet Creek, are limiting the intensity of development activity. At the same time the situation is forcing developers to either consider other, more expensive options for disposal, or to seek other areas better-suited for on-lot disposal. It is recommended that the member municipalities work closely with their Sewage Enforcement Officers to gather additional information regarding updates to this data prior to making any significant decisions on capital expenditures with regard to municipal wastewater disposal needs. The Commonwealth's Act 537 Sewage Facilities Planning program, administered through the Department of Environmental Protection, allows each municipality to undergo a comprehensive assessment of itself with respect to wastewater disposal and issues of environmental quality and public health. Each municipality should ensure that its plan for sewage facilities remains current and relevant in the coming years. It should also be noted that coordination of municipal sewage enforcement

services on the basis of a regional contract may also be an ultimate area-wide benefit similar to the current sharing of construction code inspection services and any future examination of a regional zoning program.

While the region's choice of public water supplies is finite, the study area's options with regard to public wastewater collection, conveyance and treatment facilities is likewise limited. Half of the study area's eight municipal partners are presently without the benefit of any such public facilities. Holding tanks are not a preferred alternative and too often result in illegal pumping and discharge, difficulty in property sales, and ultimate municipal maintenance responsibility. Expanding development around the Borough of Newville has already pressed the Borough into examining a system expansion sometime in the next five years to account for potential development extending radially outside the Borough into North Newton and West Pennsboro Townships. Similar to West Pennsboro Township's recent operations of its Plainfield system, other areas of concentrated development within the region (Bloserville, Walnut Bottom, Oakville, Stoughstown, and Barnitz) may soon realize an immediate need for additional wastewater services.

The regulatory climate in Pennsylvania in 2006 has become increasingly complex recently. Mandates at the State level regarding the discharge of effluent within the Chesapeake Bay watershed are still in flux at this time. Concerns about the continual introduction of additional nitrate/nitrogen and phosphorus from point source discharges such as wastewater treatment plants are driving the Middle Atlantic region toward a reduction strategy that places additional treatment burdens on plant operators and designers. Existing municipal plants are being directed to undertake costly upgrades within a prescribed time period, while new point source discharges are forced to seek creative methods of technology and credits trading with improved agricultural operations before any new permitting can proceed. The municipal partners of this Plan must remain informed and up-to-date on any new developments in this regulatory process. They must also remain supportive and committed to each other, ensuring that unfair or unnecessary costs will not burden the tax coffers of the region and that the citizenry will not suffer undue harm as a result. Similarly, the partners must be prepared to assist and educate the farming community with regard to its own compliance issues. Agencies such as the County Conservation District, Farm Service Agency, Natural Resources Conservation Service, and the Penn State Extension Office are available to help farmers. These agencies can assist individuals with stream bank restoration, barnyard improvements, intensive grazing, no till initiatives, cover crops and the CRP program. All of these measures can serve to achieve the objectives of the Chesapeake Bay initiative.

The continued expansion of sanitary sewer facilities inside the study area is a double-edged sword. It will both better serve the public health and attract additional development, thereby unearthing new issues requiring municipal attention. With this strong interrelationship in mind, it is strongly urged that any municipal services extending beyond municipal boundaries be accompanied by an apt regional voice within the controlling authority membership. Such an extension of the COG's exemplary communication and cooperation would benefit the region immensely, with each impacted municipality having a voice in utility-related decisions as a member of and a partner in any vital regional decisions. Only in this position can each of the

municipal partners be expected to actively and effectively participate in decisions affecting the livelihood of its residents.

As is the case with public water, sanitary sewer will for the foreseeable future continue to be extended as the various systems' capacity allows and as the developers' real estate market dictates. The region should be aware of any current municipal subdivision requirements for the extension of utilities to the furthest point of their holdings as a result of any development. In a rural area like Western Cumberland County, such extensions may be appropriate in some areas and unwise in others if the intent for future development is very low densities and land preservation. Future developments in wastewater treatment technology may also lead to new opportunities for water resource protection along with a newfound compatibility for increased development. Only time will tell. But until then, a balance must be achieved between protecting the environment and providing adequate services for the local populace while also attempting to promote the desired conservation objectives of this plan.

Open Space and Recreation

Western Cumberland County is richly blessed with respect to the natural environment, large tracts of open space, and endless recreation opportunities. The rural, green character of the region consequently places it at the forefront of local conservation efforts. Organized active recreation offerings within the study area are more difficult to identify outside the auspices of the school districts and several smaller municipal or private recreation agencies. Options exist wherein developers can be required to set aside their own lands for playgrounds and other facilities. With an increasing demand for leisure and recreation opportunities, the region recognizes that, in addition to passive recreation and environmental possibilities, it must play a stronger role in providing active, purpose-oriented amenities and planning for their development. As was stated in the Phase 1 recreation analysis, the need for various recreation amenities is based on a level of service requirement specific to the particular study area.

A myriad of recreation alternatives is available to the participating municipalities at this time. A Regional Park and Recreation Commission would benefit from a mutual relationship and a multi-municipal agency dedicated solely to the management of the area's recreational resources. There is also the option to form separate Recreation Boards charged with planning and providing for individual municipal facilities. The ongoing efforts of the Cumberland County Planning Commission in assessing the County's recreation needs, resources and capabilities will also prove invaluable to the Township in any future attempt to address its recreation demand and potential. No matter which scenario is selected, the organizing body should prepare a formal Recreation Plan identifying the needs of the service area and implementing a funding mechanism to achieve its goals. But, as with so many of the issues discussed as part of this Plan, the region shares so many of these resources, the representative potential of the COG or some other effective regional authority to coordinate recreation efforts is too great to ignore.

The municipalities should participate at a minimum through efforts to permanently preserve open space in outlying rural areas and through the requirement of a fee in lieu of recreation. This fee is assessed to developers as applications for subdivision or development are presented. The

funds must be earmarked for recreation purposes only and transmitted to a separate account where they must be utilized within a prescribed period of time or otherwise returned to the Developer. Such a step requires strong positive efforts on behalf of the managing body of the recreation department to realize its desired goals and objectives. The track record for such programs is highly successful but requires significant motivation, support and diligence. One underlying problem is that the funds derive from developers' fees in lieu of recreation are utilized for capital expenses rather than operational expenses. This sometimes results in a budget shortfall for operations and maintenance as the area's available residential development property is diminished over time.

The region has seen a number of properties present themselves as potential long-term recreational resources and conservation opportunities. Facilities such as the Mount Holly Preserve and Kings Gap Environmental Education Center are splendid examples of conservation success stories. The Rails-to-Trails project connecting Shippensburg to Newville, and potentially Newville to Carlisle is also a regional recreation amenity of considerable value. The years ahead will undoubtedly find additional prospects with similar potential that the region should give serious consideration for investment and cooperative participation with potential partners such as the County, philanthropic organizations, land trusts, and State and Federal agencies. Proper planning of tourism opportunities is also an accessory consideration in relation to these recreation resources.

Recreation and open space often share a symbiotic relationship. Preserving a valuable resource like open space and examining possible common and public use of these lands poses a challenge to municipal and regional leadership. The County's efforts in the purchase of farmland preservation easements have provided strong leadership in the protection of farmland. The County has recently completed a county-wide draft open space plan entitled "Land Partnerships". As reported previously with respect to the forthcoming Land Use and Transportation Plan, it is not the intent of this document to duplicate the efforts of the Land Partnerships initiative. The information found within the Open Space Plan is of significant value and applies particularly to the eight members of this joint comprehensive planning effort.

One section of the Land Partnerships report that bears further discussion as part of this planning effort is the mention of a land conservation movement known as Conservation By Design. The Future Land Use Plan portion of this document suggests that the municipal partners that have an established zoning program institute an open space and conservation design zoning program for a portion of its residential, agriculture and conservation zoned lands. In order to implement such a program, the Comprehensive Plan must include a summary of the policies which the municipalities are interested in promoting. A map must also be prepared that illustrates potential conservation lands in a manner that will assist the Township and other users in identifying how these lands can function together as part of a larger, municipal network. Such regional maps can be found throughout the Land Partnerships document as well as this Plan. The innovative elements of this zoning program would include third party ownership of open space, focused protection through easements as opposed to deed restrictions, encouraging density bonuses as a means to achieve certain public purposes, and permitting individual sewage disposal systems in common open space when necessary.

The actual goals of this program for Western Cumberland County in terms of open space preservation include protecting the open character of farmland by minimizing road frontage development and encouraging clustering of residential uses in select locations. A related goal is to preserve the region's natural areas by restricting development in areas of environmental significance. Finally, protecting specific corridors that, for a variety of reasons, may demonstrate excellent potential to serve as future regional greenways, is a long-term initiative to further enhance these conservation efforts.

Natural features will serve as a beginning guide to potential conservation lands within the area. Pertinent maps have been created to illustrate the environmental features that are deemed essential to a comprehensive review of worthy open space and natural resources. These features include the 100-year floodplain, wetlands, woodland, steep slopes, National Register listed historic sites, prime farmland, County identified natural areas, settled agricultural preservation easements, and the Township agricultural security areas.

Many of these features are self-explanatory in terms of how they were determined. Others require some discussion for the sake of clarity. Phase 1 of this document and the Land Partnerships assessment serve to accurately define the sources used to establish these maps. Yet another map has been included as an exhibit to this chapter of the Plan. Exhibit 4 entitled "Environmental Features" illustrates the interrelationships between such features as floodplain, wetlands, steep slopes, and natural areas. The County prepared an inventory of natural areas in 2000 which identified likely habitats for rare, threatened and endangered species. As such a program of creative open space design evolves, this mapping, along with actual site-specific inspections of individual properties, will guide the municipal partners on the path of creating and refining an area-wide network of open space and greenways with the greatest degree of significant and valuable resources.

ENVIRONMENTAL FEATURES

Specific means are available to contribute to a successful conservation planning effort. These include refinements to both municipal Zoning Ordinances and Subdivision and Land Development Ordinances. The aforementioned refinements are necessary in order to protect the open space network within the community and to allow creative development techniques. The following seven techniques are related to municipal zoning programs and are suggested for consideration. Additional assistance is available through the cooperative efforts of the Commonwealth's "Growing Greener" program and the Natural Lands Trust.

- Menu of options offering a variety of densities and conservation requirements – This technique provides a series of subdivision and development options that encourage design oriented to land conservation and discourages land-consumptive design. Five choices are included within this potential menu including two low-density options, one density-neutral option, and two higher density options. The density neutral option yields the same number of lots as permitted under the pre-existing traditional zoning framework. However, lot sizes are reduced in order to permanently conserve a certain percentage of unconstrained land. A density bonus could be granted to a developer who is willing to provide an even greater percentage of undivided open space than the minimum prescribed. The two low density options encourage landowners to consider the creation of rural estate lots, mini-farms, or country properties. Such lots would vary between 4 acres and 10 acres in size and would appeal to a specific market seeking privacy, private environmental amenities, and significant real estate. Finally, the fifth menu option involves a significant density bonus, possibly as much as doubling the yield of lots. This option creates a village or hamlet setting with neo-traditional layouts, village greens and parks, tree-lined streets, broad perimeter greenbelts, and perhaps architectural construction standards.

- Natural features conservation standards – Through this technique, land classified as environmentally sensitive is excluded from proposed development activity. Various resources can be protected through restrictions on construction, grading and clearing. Environmental constraints may also be factored into the overall density calculations for a project. Land subject to these constraints (floodplain, wetlands, steep slopes, etc.) can be either entirely or fractionally subtracted out of the density equation, depending on the fragility of the specific resource, thereby reducing the overall intensity of the development.

- Density zoning – Also referred to as "performance zoning", this technique correlates a site's ability to safely accommodate development with its ultimate intensity. This approach is well-suited in unserviced areas with low densities. By responding to specific constraints on individual parcels, the concept not only performs well, but also is legally more sustainable in outlying areas where a community desires to place more strict limits on new development. Density factors are applied to different types of land for an objective calculation of the true area of unconstrained and buildable area. For instance, tracts of good, dry, flat land would be eligible for full density buildout, while

other properties of equal size but additional constraints would qualify for a proportionately reduced scope of development.

- Land owner compacts – This term is defined as a voluntary agreement among two or more adjoining landowners to essentially dissolve their common, internal lot lines, and to plan their separate but contiguous landholdings in an integrated and comprehensive manner. Areas for development and conservation are thereby located to produce the greatest benefit for each. Development is distributed in such a way that the best portions of both properties are effectively preserved. Both landowners would share the net proceeds proportionately based upon the number of lots that each could have otherwise developed independently.

- Traditional neighborhood model – In order to accommodate a diversity of housing sizes, types and price ranges at a higher density; said development can be better handled through the creation of new neighborhoods designed along traditional lines, rather than as a suburban-style planned residential development (PRD) with garden apartments, condominiums, and seas of asphalt parking. Such development proposals should be guided by detailed design and layout standards regarding lot size, setbacks, street alignment, streetscape design, on-street parking, and the provision of interior open space and surrounding greenbelt areas. Municipalities may also consider including illustrations within their zoning standards to accurately demonstrate their expectations to the prospective developer. Such illustrations might include aerial perspectives, street cross-sections, building elevations, photographs, and streetscape concepts.

- Transfer of development rights (TDRs) – This tool authorizes developers to purchase the rights to develop one parcel of land and exercise those rights on another parcel within the Township. Specific areas need to be identified as areas permitted to both send and receive these rights. Experience dictates that sending areas should be modest in scale so as not to overwhelm the receiving districts which are typically already designed to accommodate a higher density of development. Therefore, in areas zoned for 0.5 to 2.0 dwelling units per acre, TDRs should be limited to play only a partial role in conserving a community's open space. TDRs are not considered an overall panacea to the conservation of municipal environmental resources, but rather as an occasional contributor. Areas designated as receiving zones must be appropriate in terms of location, accessibility, and public water/sewer service or soils suitable for community water and wastewater treatment facilities. Detailed neo-traditional design standards may also be combined with the TDR option to again recreate the semblance of historic hamlets and villages. Local officials must also remain active in promoting TDR potential by leading developers in the proper direction and balancing the need for preservation in one section of the Township versus the development potential present in others. Future state-level considerations may make the concept of inter-municipal TDRs politically acceptable, particularly for rural townships where it may be difficult to envision appropriate receiving areas of sufficient density. However, such an inter-municipal venture would also require an advanced degree of cooperation and coordination between jurisdictions than is typically the norm among local governments.

- Purchase of development rights (PDRs) – This is an inherently limited conservation option, particularly in areas that are experiencing suburban densities and the resulting skyrocketing land values. Although on an occasional basis, the opportunity is presented for a municipality to conserve an entire parcel of great local significance. Such endeavors can pose a hefty capital investment on the part of the Township, however they are advantageous in that they preserve whole properties while conservation design subdivisions may only conserve from 30% to 50% of a parcel. The disadvantage is that use of this tool solely will only preserve isolated parcels while a conservation design program will serve to protect interconnected networks of open space throughout the Township or region.

With regard to Subdivision and Land Development Ordinances, the following six additional refinements are suggested for consideration.

- Existing Resources / Site Analysis Map (ERSAM) – The ERSAM provides fundamental environmental site information as an initial base map of the property under consideration. The noteworthy features are then identified, described and located so they may be designed around via a sensitive subdivision layout. Such features may expand beyond floodplains, wetlands and topographic features to include other important site elements such as vegetative features, natural areas supportive of threatened or endangered species, prime farmland soils, historic or cultural features, scenic views and unusual geologic formations. Many of these identifiable site features can be preserved through sensitive street alignment and lot positioning.

- Pre-Sketch Conference and Site Visit – Although the State Municipalities Planning Code (MPC) doesn't specifically authorize sketch plans, the steps of a sketch plan and a site visit should be strongly recommended and adopted as routine procedure for municipalities considering conservation design programs. Developers and municipal officials work together at this early stage to identify and prioritize conservation elements thereby providing insight and hopefully expediting the approval process.

- Voluntary Sketch Plan – Again, while the MPC doesn't authorize the sketch plan step of the approval process, use of the conservation design program necessitates early dialogue between developer and municipality to establish acceptable parameters for both development and conservation. Significant financial savings can be realized if rudimentary sketches are prepared and reviewed prior to a more formal, engineered Preliminary Plan. The initial submission of a detailed Preliminary Plan often leads to limitations on modifications, the exchange of information, and meaningful communications between the approving body and the interested investor. The project's infancy is a time when significant examination should be made and is the opportune time for adjustments.

- Two-Stage Preliminary Plans (Conceptual & Detailed) – In instances where a developer might resist the voluntary sketch plan, municipalities are still able to ensure that development concepts are thoroughly thought out and discussed by splitting the Preliminary Plan 90-day review process into two stages. Applicants who choose not to provide a voluntary sketch plan would be subject to the preparation of a conceptual preliminary plan during the first 30 days and a detailed preliminary plan during the following 60 days. The former conceptual plan would closely resemble the voluntary sketch plan and allows the Planning Commission one month to review and specify what adjustments would be necessary to bring the proposal into compliance with applicable zoning and subdivision requirements. This form of review process would likely necessitate a greater frequency of mutually agreed upon extensions of review time between the municipality and the developer.

- Conservation Subdivision Design – This design concept is a new breed of residential development wherein conservation is achieved without fear of a takings issue as the landowner is still permitted to achieve the full density allowed by the Zoning Ordinance and the resulting open space remains privately owned, typically by homeowners associations or land trusts. Many people fail to initially see the difference between clustering and conservation design. However, three important differences are evident upon closer examination and practice. First, conservation design sets much higher standards for the quality, quantity and configuration of open space. Cluster ordinances typically require 25% to 30% open space while the conservation design program usually requires 50% permanent and undivided open space or more to be set aside. Second, municipalities are able to exercise greater influence on the design of developments through the conservation design program. Rather than leaving the design to chance or to the single-minded objectives of one party, meaningful conservation efforts can be realized through an open public discourse in the early stages of design. Finally, any resulting protected lands may be configured to promote an interconnected network of greenways and open space throughout the region and the greater community, linking resource areas and also providing buffers between new development and existing conservation lands.

- Four-Step Approach to Design – This recommended refinement reflects a dramatic shift in traditional subdivision design. Engineers and surveyors have historically not included a strong emphasis on the conservation of natural and cultural features when laying out a subdivision. In order to maximize the benefits of a conservation design program, the first and most significant step must be to identify potential conservation areas. Both primary conservation areas, or unbuildable/constrained land, and secondary conservation areas, or other noteworthy natural or cultural features, would be defined and delineated. Such an approach seeks to conserve those special features that make each community distinctive and attractive. The second step is then the siting of houses. The dwellings are located outside these conservation areas but with views of and direct access to them, enhancing their desirability and value. The third step is the alignment of streets and trails and utilities which can often be accomplished simply by connecting the dots for access and service. Finally, the fourth step is the drawing in of lot lines.

Schools

The Big Spring and Carlisle School Districts face many challenges in the coming years, just as their constituent municipalities do. Development trends that identify increases in housing also translate into increased student populations and the need for additional facilities, programs and staff. At present, the School Districts are seeing increased residential growth in Dickinson Township and West Pennsboro Township. Nonetheless, the other municipalities are also experiencing an influx of development leaving the school administration concerned with maintaining high quality education, facilities and opportunities for the local student population. The Big Spring School District is faced with the difficult position of a rural location where historically there has been little commercial and industrial development to generate real estate taxes for much-needed improvements – taxes that, when realized, don't translate into a burden on the local population

Looking beyond short-term needs, consolidation efforts have been instituted. Schools cost money and local municipalities must always seek to limit any unnecessary increase in taxes. County real estate assessments must be kept up-to-date so that school taxes are equally distributed with respect to rising property values. Existing school facilities are also lacking in recreational amenities. Therefore, the burden for providing them falls on the community. As new schools are built and new properties acquired, the municipalities should encourage the School District to include adequate recreational facilities and seek their availability for public use to ease this burden. It is a refreshing and welcome change to see the Big Spring School District as an active member and regular participant within the COG. Oftentimes, school districts and municipalities are viewed as adversaries vying for individual attention over each other. However, in this case, an open dialogue has been established and should be maintained, strengthened and viewed as a mutually beneficial relationship. Whenever possible. municipal partners should also seek out, negotiate and promote by any means, financial contributions from developers toward public improvements including the region's educational system.

Municipal and Emergency Services

A variety of providers currently are available within the region for fire protection and emergency medical technician (EMT) services. While volunteers have served the study area adequately for the past century, it is becoming clear that, within a few short years, paid EMTs and firefighters will be a foregone reality as well as a necessity. In many instances, volunteer shortages are already being experienced and there is a growing need for the housing of equipment. Fire companies and ambulance services are routinely seeking the various municipalities' assistance in this regard. This relationship is one of mutual expectations, however, and the municipal partners must also routinely seek input from its emergency service providers with regard to the suitability of new development proposals. Design suggestions from these skilled personnel can often lead to a safer environment. It should also be noted that, with an abundance of emergency service providers, a legitimate concern exists with regard to the unnecessary duplication of equipment among different companies. From a regional vantage point, improved coordination and communication between the companies could result in not only a cost savings, but also in the more efficient placement of personnel and more efficient emergency response times. There is a

strong possibility that leadership from a regional organization such as the COG could be a catalyst for the success of a program of such importance.

The region's police protection service is limited to the Pennsylvania State Police and the Newville Borough police department. Response times for police calls are less than ideal today in light of a small borough force and a State Police barracks with an expansive rural coverage area, particularly with the increased regional growth being experienced and the accompanying rise in such concerns as juvenile delinquency, speeding, and automobile accidents. As a result, the COG must be alert to the need for creating a Police Services Committee to consider alternatives including the purchasing of police time or possibly the examination of an eventual Regional Police Force. This is a costly undertaking for a single municipality, but with a regional approach and as circumstances evolve, the members may ultimately reach the conclusion that such a move is in the best interest of its citizens.

In addition to the study area's growing need for expanded emergency services, the individual municipalities must give ample consideration to their own needs for growth and expansion. Growing conversation concerning expanded road maintenance crews, or the introduction of tax collection staff, code enforcement officials, recreation employees, senior citizen activities, and space for emergency services equipment and personnel logically leads to a decision about expanded municipal campuses and facilities. The degree of citizen interest, input and participation continues to rise also. Additional municipal advisory bodies become desirable for specific issues and meeting space and storage space suddenly becomes an invaluable commodity. Each of the municipal partners should annually review its position with respect to space and staff and the changing landscape of local government. Budgetary considerations should include an honest assessment of municipal facilities to ensure that the region is receiving its highest return in efficient municipal services.

Drainage

Stormwater management and floodplain management are also issues of regional significance in Western Cumberland County. Periodically, watershed management plans involving specific engineering considerations are undertaken by the County for each of the area's major drainage sheds. Specific stormwater management criteria can then be employed at the design stage of development to ensure the proper continued flow and maintenance of each of the region's stream networks. Water quality issues as well as quantity concerns are addressed resulting in a better and safer overall environment. Each of the municipal partners should enthusiastically participate in these watershed management programs as they are adopted and the COG should play its role as a regional clearinghouse for information and a forum for dialogue and questions.

With regard to floodplain management, a number of areas in the region are intermittently impacted with unforeseen flood damage during frequent and intense summer storm events. Currently, the area's floodplain regulations as they pertain to development are based on data provided from the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Mapping (FIRM). In many cases, this data is of considerable age and conditions may have changed that ultimately impact the precise delineation of flood-prone areas. It is recommended

that the municipalities work with developers and FEMA at every opportunity to coordinate updated hydraulic studies of these areas to better define a current representation of areas that should be considered as conservation areas rather than areas for construction. Flood damage is a significant hazard and cost to low-lying areas that will result in individual hardships as well as municipal economic loss.

implementation & action plan

Introduction

As with any formal planning document, the end result is only as meaningful as the manner with which the municipal partners follow up on its various recommendations and ideas. The subsequent implementation and actions are equally as important, if not more so, as the concepts presented to this point. The participating COG members have worked diligently to formulate a viable plan for the future and are therefore obligated to continue their work beyond these pages to bring as many of these plans to fruition as is possible. The first multi-municipal commitment to evolve from this plan is the Intergovernmental Cooperative Implementation Agreement. This document, an example of which is included as an appendix hereto, permits each partner municipality to proceed individually with amending respective ordinances to achieve a greater level of consistency with the Plan as adopted.

Similarly, there is a further obligation to continue those planning efforts with periodic updates. The Municipalities Planning Code requires updates to comprehensive plans, whether municipal or multi-municipal, at least every ten years. The character of a community or a region and the trends that serve to define it are constantly evolving. One of the local Planning Commission's roles within each jurisdiction is to remain vigilant to various types of change. Consequently, a regional planning agency, such as the COG, represents another important body that should meet regularly to assist in the identification of such shifting trends. Change may be physical, cultural, political, economic, or otherwise. Once identified, these changes must be interpreted, discussed and planned for appropriately to maintain a positive balance and ensure the continued prosperity of all elements that constitute the collective community.

Individual Implementation and Action Items

A review of the Phase 2 portion of this Comprehensive Plan for Western Cumberland County reveals a host of issues that have warranted hours of discussion and debate. Some of these items can be pinpointed as specific to a single element of the planning process and perhaps specific to only one or two of the municipal partners. Others may be more broad and ultimately impact two or more planning elements at once as well as three or more of the affected municipalities. Regardless of their particular focal points, the combination of these implementation and action items represents the culmination of the COG's diligent and lengthy comprehensive planning efforts. Overall, there are few conflicts between the listed action items given the frequency and similarity of integrated objectives. The Plan should be viewed as a formal blueprint intended to lead toward a more successful and responsible future in the best interests of the entire region and the individual municipalities.

As a result of this plan's multi-municipal qualities, the following sections have been identified with respect to their regional or municipal emphasis. Some of these implementation and action

items are pertinent to all of the members of this planning consortium. Others may be specific to an individual township or borough or to several. Issues are also identified from a perspective of priority (short-term - immediate to 5 years, long-term - 5 to 10 years, and ongoing). Through this identification of emphasis and timing, each of the municipal partners can more readily distinguish the critical plan facets that are expected within their dominion. Where possible, potential funding sources or partnerships with other entities have been identified. These individual implementation and action items are as follows:

Regional Relationships & Consistency

- **1 -** ***Regularly monitor the future planning activities of surrounding municipalities and counties.*** Aim for continued compatibility and increased consistency whenever possible. (Ongoing)

- **2 -** ***Maintain ties with the Western Cumberland County Council of Governments.*** Cultivate relationships with other members. Utilize regional solutions for more projects. (Ongoing)

- **3 -** ***Encourage, support and cooperate with fellow municipalities to continue planning efforts.*** Adopt the proposed Intergovernmental Cooperative Implementation Agreement. Seek to update comprehensive plans at least every ten years. (Short-term, Ongoing)

Future Land Use

- ***1 - Recognize agriculture as a vital element in the region.*** Seek out new means to support it as an industry and initiate zoning techniques to preserve prime farmland and avoid over-consumption of resources. (Long-term)

- ***2 - Institute procedures among the COG members for open discussion and sharing of information with regard to developments of regional significance.*** (Ongoing)

- ***3 - Periodically reassess growth area boundaries as well as zoning strategies.*** (Ongoing)

- ***4 - Townships without a zoning program must consider the support, timing and merits for such land use regulations within their municipalities.*** (Short-term)

- ***5 - Municipalities should guide their zoning programs toward the concept of conservation districts in appropriate rural and environmental areas with limited, compatible uses and accordingly low densities.*** (Short-term)

- ***6 - Actively promote landowner participation in the Agricultural Security Area program and the County agricultural preservation program.*** (Ongoing)

- ***7 - Work with the County to introduce new areas outside perceived growth corridors to the agricultural preservation program, particularly in those townships north of the Conodoguinet Creek.*** (Short-term)

- ***8 - Implement design standards*** to reduce instances of strip development, excessive points of traffic conflict, and extended infrastructure costs. (Short-term)

- ***9 - Incorporate agricultural nuisance disclaimers with all development plans.*** (Short-term)

- ***10 - Develop zoning strategies to responsibly site intensive, concentrated animal operations and to address public concerns and regional impacts.*** (Short-term)

- ***11 - Be flexible with respect to secondary farm industries*** and permit them in the agricultural community as a supplemental source of family income and a valuable community service. (Short-term)

- ***12 - Utilize agricultural preservation zoning techniques*** such as open space conservation, transfer of development rights, or a sliding scale of permitted intensity to effectively and permanently conserve farmland. (Short-term)

- ***13 - Recognize the important future role that neighboring municipalities, such as Penn Township, South Middleton Township and Carlisle Borough, play from a regional perspective.*** Understand the implications, positive and negative, of Interstate 81 and its associated interchanges in the future land use trends of the region. (Ongoing)

- ***14 - Remain cognizant of the need for a diversity of uses and the need for local support services and goods throughout the study area.*** (Ongoing)

- ***15 - Identify and implement appropriate residential densities*** in any zoned municipalities based on specific hierarchical needs. (Short-term)

- ***16 - Provide ample space in the region for affordable housing, multi-family housing, special-needs housing, and age-restricted/retirement opportunities*** so that the indigenous population is not involuntarily displaced. (Short-term)

- ***17 - Outside of village and hamlet settings, separate business and housing developments*** to ensure a minimization of land use conflict and ample area for future economic development. (Short-term)

- ***18 - Use discretion at the individual municipal level with respect to zoning district hierarchy and the need for any hybrid zones.*** (Short-term)

- ***19 - Look to environmental opportunities and greenway potential as a catalyst for tourism*** and as an attraction for specialized recreational development. (Ongoing)

- ***20 - Support the protection of identified significant historic resources.*** Cooperate with historic interests in pursuing National Historic Register status for important historical resources. (Ongoing) (PA Historic & Museum Commission)

- ***21 - Support historic village revitalization and encourage neo-traditional development in other appropriate areas.*** Encourage preservation, re-use and rehabilitation of historic structures where appropriate. (Ongoing) (PA Historic & Museum Commission)

- ***22 - Identify limited areas of commercial and industrial potential in proximity to existing hubs of similar activity.*** Understand the need for diversity in land use and a strong employment and tax base. (Short-term)

- ***23 - Ensure that effective design standards are in place to buffer agricultural and residential communities from potential commercial and industrial impacts.*** (Short-term)

- ***24 - Determine the suitability and benefits of hybrid commercial districts*** that may serve to locate clean industry, recreational development and office campuses in areas that may not be well-suited for uses with heavy transportation impacts. (Short-term)

- ***25 - Promote job creation*** in cooperation with the COG, County and economic development agencies. (Ongoing)

- ***26 - Promote the use of existing housing stock*** through renovation and rehabilitation. (Ongoing) (Housing/Redevelopment Authority)

- ***27 - Promote education programs for homeowners with regard to proper upkeep and maintenance,*** & associated property value benefits. (Ongoing) (Housing/Redevelopment Authority)

- ***28 - Encourage small business development and high-tech, research and development, and professional office opportunities*** to balance existing retail commercial uses and warehouse distribution potential. (Ongoing) (PA DCED, County)

- ***29 - Encourage partnerships between developers for shared regional services and facilities*** including drainage, utilities, open space, and street connections. (Ongoing)

<u>Transportation</u>

- **1 -** ***Complete and implement the recommendations of the COG's forthcoming Land Use and Transportation Plan*** including the development of a Capital Improvements Plan. (Short-term)

- **2 -** ***Maintain and improve the region's existing roadway network.*** (Ongoing) (PennDOT)

- **3 -** ***Adopt and regularly update regionally consistent street design and construction standards.*** (Short-term)

- **4 -** ***Require professionally prepared traffic impact studies for developments.*** (Short-term)

- **5 -** ***Develop and support innovative methods to reduce truck traffic impacts*** in the region such as intermodal facilities, interstate improvements, and more direct connections between the area's two interstate highways. (Long-term) (PennDOT, Turnpike Administration, County, HATS, FHWA)

- **6 -** ***Establish regular dialogue between the COG and PennDOT*** to express transportation concerns and advance mutual resolutions. (Ongoing)

- **7 -** ***Establish strong ties with the County staff for effective representation with PennDOT and HATS relative to the prioritization of future projects.*** (Ongoing)

- **8 -** ***Work with the County, PennDOT and HATS*** to ensure TIP projects are scheduled for prompt completion and are prioritized accordingly. (Ongoing)

- **9 -** ***Consider the establishment of a regional access management program*** to improve safety and efficiency for the area's roadway network. (Long-term) (PennDOT)

- **10 -** ***Develop strategies to address the study area's over-reliance on personal vehicles.*** (Long-term)

Water and Sewer

- **1 -** ***Work with the region's water and sewer authorities to ensure continued cooperation in services and plan for future community needs.*** (Ongoing) (PADEP)

- **2 -** ***Establish methods for the enhancement of potable groundwater quantity and quality*** including wellhead protection programs, underground tank removal incentives, improved well construction standards, and groundwater recharge requirements. (Long-term) (PADEP)

- **3 -** ***Implement water availability study requirements*** to ensure ample supply and the elimination of impacts to the surrounding community. (Short-term)

- **4 -** ***Continue reviewing municipal sewage facilities (Act 537) plans.*** (Ongoing) (PADEP)

- **5 -** ***Discourage the unnecessary extension of public utilities inside targeted conservation areas.*** (Ongoing) (Municipal Authorities)

- **6 -** ***Promote negotiations with developers for the improvement of existing facilities.*** (Ongoing)

- **7 - *Examine all potential options with regard to regional water and sewer solutions.*** (Ongoing) (Municipal Authorities)

- **8 - *Coordinate regional sewage enforcement and management services.*** (Long-term) (PADEP)

- **9 - *Remain informed as to the evolution of Pennsylvania's Chesapeake Bay initiative*** and its impact on existing wastewater treatment providers, agricultural operations, and potential development. (Ongoing) (PADEP, PA DCNR)

- **10 - *Promote utility rate structures that aren't discriminatory to existing customers.*** (Ongoing) (Municipal Authorities)

- **11 - *Promote a regional voice among municipal and multi-municipal authorities.*** (Ongoing)

Recreation and Open Space

- **1 - *Promote the initiatives and implement the recommendations of the County's Land Partnerships open space plan.*** (Short-term, Long-term)

- **2 - *Examine possible regional recreation relationships and alternatives.*** Plan accordingly for developer contributions or fees in accordance with a defined plan and the Municipalities Planning Code to support the program. (Long-term) (PA DCNR, County)

- **3 - *Support the enhancement of existing public recreation amenities*** as a valuable component of the region's rural environment and quality of life. Maintain existing parks and recreation facilities at a high level of efficiency, security and variety. (Ongoing) (PA DCNR)

- **4 - *Develop new recreation opportunities*** in areas currently without service and address the unfulfilled needs of the populace. (Long-term) (PA DCNR)

- **5 - *Protect and maintain the County's identified potential greenway corridors.*** (Ongoing) (PA DCNR, County, PA Game Commission, Land Conservancies)

- **6 - *Protect areas and species identified in the County's Natural Areas Inventory.*** (Ongoing) (PA DCNR, PA Game Commission)

- **7 - *Encourage developers to prepare existing resource site analyses*** as an integral early element in the development process. (Short-term)

- **8 - *Require natural landscaped buffers contiguous to high quality and exceptional value waters and important wetlands.*** (Short-term)

- **9 -** ***Promote the efforts of the Rails-to-Trails Council and other similar groups*** and seek to develop support facilities and businesses catering to users of the amenities. (Ongoing)

- **10 -** ***Support efforts to protect and enhance watersheds and associated stream corridors.*** (Ongoing) (PA DCNR, PA Game Commission, Land Conservancies, Watershed Associations)

- **11 -** ***Promote the regional transfer of development rights*** for the preservation of agriculture and open space. Direct the transfers to appropriate receiving areas within the region. (Long-term)

Schools, Emergency and Municipal/Regional Services

- **1 -** ***Cultivate relationships and maintain an open dialogue with local school districts.*** Consider their needs and seek their input with regard to development proposals. Encourage the inclusion of recreational facilities for public use. (Ongoing) (School Districts)

- **2 -** ***Solicit input from emergency service providers to develop improved safety design with regard to new development proposals.*** (Short-term, Ongoing)

- **3 -** ***Consider establishing a regional Police Services Committee*** to examine alternatives for improved, cost-efficient coverage. (Long-term)

- **4 -** ***Annually review municipal needs for facility expansion and staff increases.*** (Ongoing)

- **5 -** ***Work towards an update of floodplain and hydrologic data in the interest of public safety.*** (Long-term) (PA DEP, FEMA)

- **6 -** ***Assess the ongoing need for EMS staff and equipment upgrades.*** Promote regional coordination. Avoid unnecessary duplication of investments. (Ongoing)

- **7 -** ***Actively participate with the County in the development and administration of individual watershed management plans.*** (Ongoing) (County, PA DEP)

- **8 -** ***Support recycling and waste reduction efforts*** at the municipal and County levels. (Ongoing) (County)

- **9 -** ***Support public library and literacy programs*** and other community-sponsored education and outreach initiatives. (Ongoing)

- **10 -** ***Develop energy conservation plans.*** (Long-term)

- **11 -** ***Maintain regular communication with the State Police force*****.** (Ongoing)

PLAN INTER-RELATIONSHIPS

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MUNICIPAL RESOLUTION OF ADOPTION

APPENDIX A

INTERGOVERNMENTAL COOPERATIVE IMPLEMENTATION AGREEMENT