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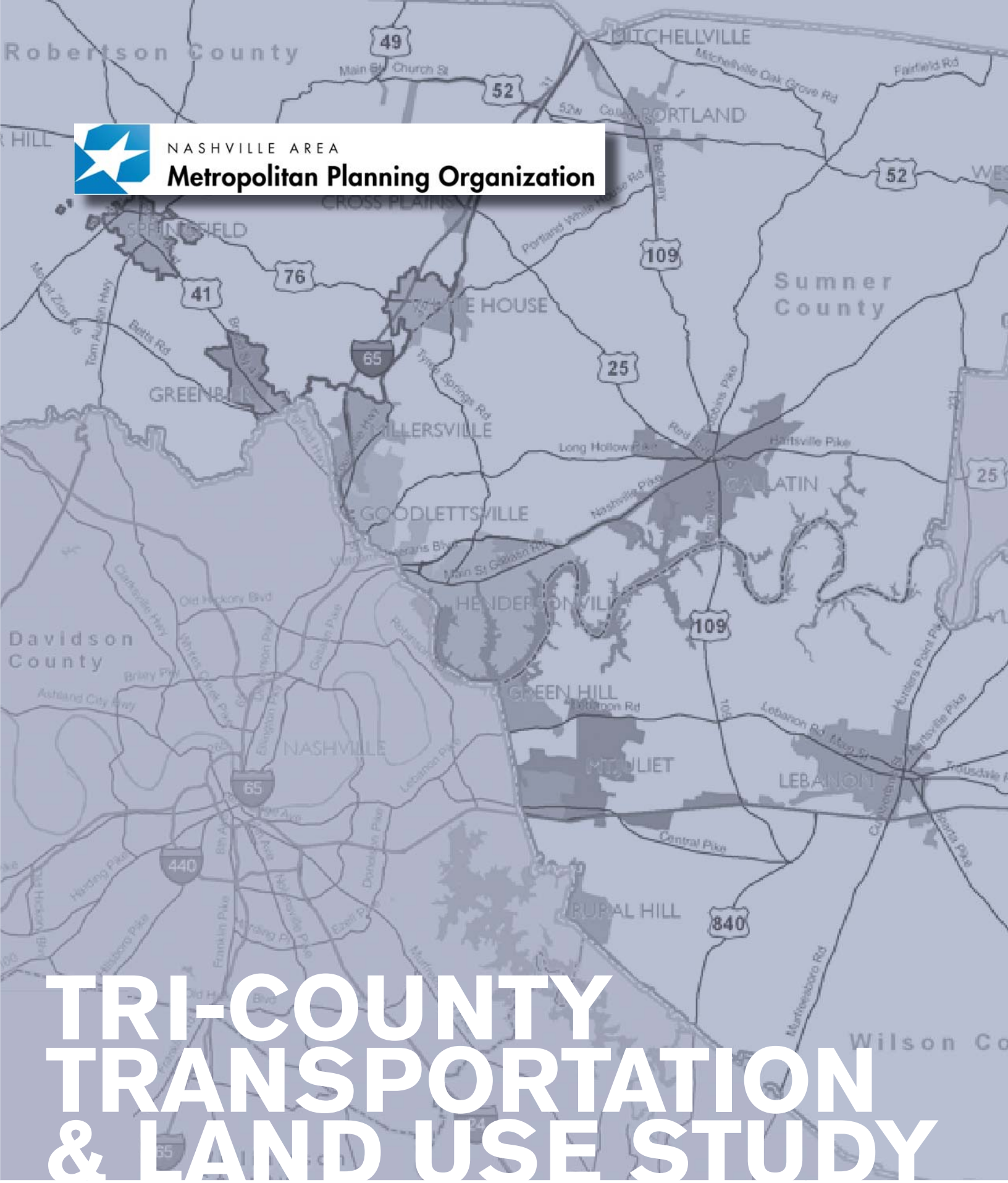

TRI-COUNTY TRANSPORTATION & LAND USE STUDY

LandDesign

December 2010

TRI-COUNTY TRANSPORTATION AND LAND USE STUDY

DECEMBER 3, 2010

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Acknowledgements

SPECIAL THANKS:

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PART 1

STUDY PURPOSE, METHODOLOGY & PUBLIC INVOLVEMENT

Tri-county Land Use & Transportation Study

Part 1: Study Purpose, Methodology & Public Involvement

Section 1.1: Overview of Planning Process and Purpose

In 2007, the Nashville Area Metropolitan Planning Organization (MPO) began a study of land use and transportation for three counties within the area served by the MPO: Robertson, Sumner, and Wilson. The Tri-County Transportation & Land Use Study is a first of its kind in the Nashville region to bring local governments, citizens, and businesses together across jurisdictional boundaries to discuss issues pertaining to future population growth and development. Through this process, local leaders in the three counties were brought together to talk about the impacts of future growth, particularly on regional mobility, economic prosperity and the environment.

The primary purpose of the effort was to generate ideas for the regional transportation plan to be prepared by the MPO in a subsequent process. The ideas were predominantly focused on future land use, as an efficient transportation network is one that effectively supports the established and desired development patterns. By looking beyond their jurisdictional boundaries and considering the growth plans and regulatory frameworks of neighboring jurisdictions, those leaders—as well as interested citizens and other stakeholders—were able to evaluate the regional development patterns that might result from future growth and consider how local decisions play a role shaping the future development pattern of the three-county area.

The process involved a variety of meetings to gather input at key points in the process. A Steering Committee comprised of staff from the MPO, municipal and county planners, the RTA, and other regional partners provided valuable input throughout the study period, including technical information that enhanced the analyses conducted. Through this series of meetings, workshops and interviews, issues and opportunities were identified and later used to inform decisions about the preferred type and direction of growth for the region. In addition, implementation strategies, including growth management tools that can be employed at regional and local levels to achieve the desired development pattern also were identified. The results of the study may be used by local governments to develop or improve upon their own comprehensive plans.

Section 1.2: Public and Stakeholder Involvement

During the process, workshops, open house meetings, and presentations were held in various locations throughout the region to solicit input on issues and opportunities, regional goals, growth alternatives and implementation strategies. Information gathered through stakeholder interviews supplemented the input gathered through the other outreach activities. From these interviews, the project team was able to glean specific information about community preferences and growth management challenges from individuals working directly with the communities on a daily basis. A Public Participation & Stakeholder Involvement Plan (see Appendix A), which describes the various audiences and outreach activities, was developed in the early stages of the process to optimize public and stakeholder input and to guide the process of identifying, engaging, informing and learning from key stakeholders.

The project team employed a multi-faceted engagement strategy to reach a wide, informed audience for the Tri-County Transportation & Land Use Study. This strategy included the following elements:

- MPO Board: a body of elected and appointed officials representing governmental entities throughout the Tri-County area who have been asked to serve on the region's transportation planning agency were updated on project progress.
- Steering Committee: a group of professional planners representing local governments throughout the Tri-County area, plus the executive director of the region's metropolitan planning organization and a planning expert from the non-profit group advancing city and regional planning in the Nashville metropolitan area. The Steering Committee assisted with selection of stakeholders for interviews.
- Stakeholders: prominent community members with important perspectives and intricate knowledge of local and regional transportation and land-use planning issues were interviewed.
- Local Authorities: groups of local government officials, who are responsible for local land use policy throughout the region we contacted for input and technical information.
- Community Forums: three series of public meetings to which citizens were invited, whereby meetings occurred one per county in each series. Attendees received education about local and regional growth and planning issues, information about this Tri-County Transportation & Land Use Study, and opportunities to directly influence the outcome of the project. These community meetings directly influenced goal formulation for the project. The goals appear in Section 2.0. The public was also responsible for choosing one of the regional growth scenarios, which are described throughout Part 3 of this document, based on potential achievement of regional goals.

Citizens involved in the planning process during Community Forum #1

Section 1.3: Study Area

Robertson, Sumner, and Wilson counties constitute the Tri-County area. These three counties in north central Tennessee are components of the Nashville-Davidson-Murfreesboro Metropolitan Statistical Area (Nashville MSA). The study area is bound on the north by the Tennessee-Kentucky border; on the east by the boundaries Macon, Trousdale, Smith and DeKalb counties; on the south by Cannon, Rutherford, Davidson and Cheatham counties; and on the west by Montgomery County. Insterstate-65, Interstate-40 and Nashville Pike are three major corridors running through the study area.

The Context Map (Figure 1.1) on the following page depicts these three counties (red boundaries) and their location relative to Nashville and Davidson County, the center of the MSA. The study area includes 18 municipalities:

- Adams
- Cedar Hill
- Cross Plains
- Gallatin (Sumner County Seat)
- Goodlettsville
- Green Hill
- Greenbrier
- Lebanon (Wilson County Seat)
- Millersville
- Mitchellville
- Mount Juliet
- Portland
- Rural Hill
- Springfield (Robertson County Seat)
- Watertown
- Westmoreland

The Tri-County area is home to approximately 323,000 persons, roughly a quarter of the population of the metropolitan statistical area. The three county seats, Gallatin, Lebanon, and Springfield are among the largest and most established towns. Goodlettsville, Hendersonville, and Mount Juliet also have relatively large populations due in large part to suburban growth within the Nashville MSA. The Economic & Market Analysis provided in Appendix B provides a summary of recent growth trends, existing demographic information and the potential for future residential and non-residential growth in this area.

The study area covers 1,589 square miles and includes several important natural and man-made features. The Old Hickory Reservoir lies along the Sumner/Wilson County line. The Cedars of Lebanon State Park and Nashville Superspeedway stand in southwestern Wilson County. Interstate highways 24, 40, and 65 provide direct access from the three counties into the heart of Nashville and its central business district.

More information about the study area in economic contexts appears in Appendix B, Economic and Market Analysis. Details about the land use and transportation characteristics of the Tri-County area appear in Appendix E, Business-as-Usual Scenario Report.

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PART 2
REGIONAL GOALS

Tri-County Land Use & Transportation Study

Part 2: Regional Goals

Tri-County Regional Goals

Community sessions conducted in Fall 2008 and Spring 2009 provided an opportunity for citizens and stakeholders to discuss issues related to recent development and express concerns about the potential impacts of future development. Following a presentation of existing conditions, attendees were invited to participate in an exercise designed to evaluate several aspects of the region. This initial list was derived from prior conversations with the Steering Committee and the input gathered through the stakeholder interviews.

- Historic Conservation and Enhancement
- Viable Agriculture
- Rural Preservation
- Economic Enrichment
- Preservation of Urban Centers
- Protection of Natural Resources
- Efficient Transportation System
- Availability of Services
- Housing Options
- Sense of Community and Sense of Place

A report card, utilized in meetings in each of the three counties in the study area, appears below. Each of the ten preliminary goals is paraphrased within the report card. Citizens who attended community meetings received these report cards and were asked to assign a grade to each goal, based on how well the goals were being met currently in the Tri-County area. The grades that appear in the report card regenerated below are average scores.

Goals	Grade
Historic Conservation and Enhancement	B-
Viable Agriculture	B
Rural Preservation	C+
Economic Enrichment while Safeguarding Existing Public and Private Development	B-
Preserve Urban Centers	B
Protection of Natural Resources	B-
Efficient Transportation System	C
Ensure Availability of Services	B
Provide Housing Options	C+
Maintain Sense of Community and Sense of Place	B-

From the results of this exercise and the discussions that ensued during the exercise, the project team and the Steering Committee were able to distill goals common to all three counties and identify the higher priority goals. The following are the refined goals that guided the work of the project team throughout the remainder of the study.

- GOAL 1: Promote conservation of historic and cultural resources and support efforts in the study area related to these areas through plans, programs and policies.
- GOAL 2: Recognize and support the important role of agriculture in both the existing and future economy.
- GOAL 3: Preserve areas intended to retain a rural character or way of life and reinforce preservation through plans, programs, and policies.
- GOAL 4: Enhance economic growth and opportunities in the study area to ensure that a high quality of life remains for population in the study area.
- GOAL 5: Strengthen and enhance existing urban centers through plans, programs and policies.
- GOAL 6: Identify and protect the most critical natural resources that exist.
- GOAL 7: Provide for the efficient movement of persons, goods and services while providing a wide range of transportation choices for the study area.
- GOAL 8: Ensure that future growth in the study area occurs in a coordinated manner with community infrastructure and services needed to adequately support growth and development.
- GOAL 9: Provide a wide range of housing types and communities for a variety of household sizes and income ranges.
- GOAL 10: Allow new types of development while recognizing the importance of retaining the established character and existing development types unique to the study area.

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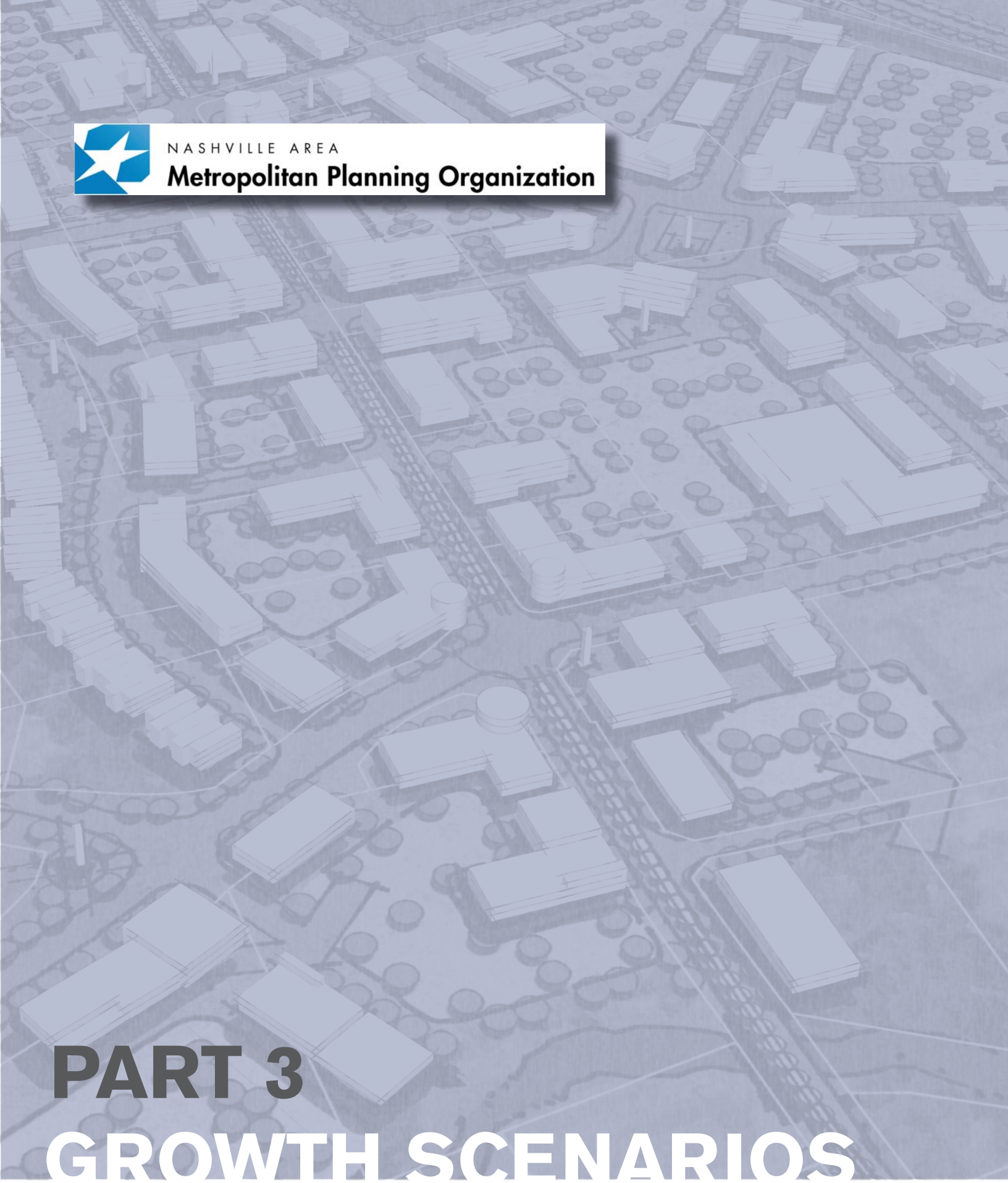


PART 3
GROWTH SCENARIOS

Tri-County Land Use & Transportation Study

Part 3: Growth Scenarios

3.1: Introduction

Development patterns have a significant effect of the region's ability to achieve the ten goals listed in Part 2. For example, large areas of residential development that utilize prime farmland soils and are in close proximity to and encroaching upon existing agricultural operations may create a challenge for a community to achieve Goal 2 (Recognize and support the important role of agriculture in both the existing and future economy). Similarly, a dispersed pattern of low density development can result in an inefficient transportation network (e.g., too little access provided and/or too much roadway capacity available relative to the number of users served), which is in direct conflict with Goal 7 (Provide for the efficient movement of persons, goods and services while providing a wide range of transportation choices for the study area). The existing land use, described in Section 3.2, was taken into consideration as citizens and stakeholders evaluated existing conditions and formulated the stated goals.

These patterns will change over time. Planning provides an opportunity to evaluate potential future development patterns to determine which, if realized, would be optimal. An understanding of the region's assets and shortcomings, as revealed in the goal-setting exercise described in Part 2, helps citizens and other stakeholders frame the issues and consider future development patterns that might address the shortcomings. One way to determine the most appropriate future, one that will achieve the goals while respecting the context and recognizing the opportunities and constraints, is to generate and compare different growth scenarios.

A growth scenario is an expected distribution of projected population and employment growth (such as those summarized in Section 3.3) within a specified time period given a hypothetical land use pattern and related policies. Each growth scenario is reflection of a possible direction for future development, which is typically based on a set of goals defined by the community. By altering the hypothetical land use patterns and policies, citizens and stakeholders can better understand the potential impacts of land use decisions. Aided by a growth allocation model described in Section 3.4, the impacts of each scenario can be measured so that the evaluation includes an objective comparison of the scenarios based on quantitative data.

This Part 3 of the report summarizes the steps to generate and compare three growth scenarios, and based on the evaluation; develop a preferred alternative for the Tri-County region. It concludes with the description of each scenario and the preferred alternative in Sections 3.5 and 3.6.

3.2: Existing Land Use

The Existing Land Use Map (Figure 3.1) illustrates how land was being utilized throughout the Tri-County area at the outset of this Tri-County Transportation & Land Use Study. "Land use" is the regularly occurring or permanent function for which a piece of property is utilized. This use may occur in a structure on the land, such as a residence, or may employ the land itself, as is the case in farming. For simplicity, the various land uses across the three counties were folded into six broad categories, which are depicted on the map. For instance, farming, ranching, and forestry all occur within "Agricultural." The other five categories are "Residential," "Commercial/Office," "Industrial," "Park/Recreation," and "Institutional/Public."

The majority of land in Robertson, Sumner, and Wilson counties is used for agricultural purposes. Land that falls within one of the other five categories is primarily clustered in and around the municipalities of the Tri-County area, with a strong bias toward Nashville, the center city anchoring the MSA. Notable exceptions exist in southern Wilson County: the Cedars of Lebanon State Park, which is Park/Recreation land, and Nashville Superspeedway, which attracts Commercial/Office and Industrial land uses. Residential and Institutional/Public uses also congregate around the Old Hickory Reservoir, situated along the boundary between Sumner and Wilson counties. Three counties seats – Springfield, Gallatin, and Lebanon – have the broadest mix of land uses.

Interstate Highway 40 bisects Wilson County. Significant Industrial, Institutional/Public, and Commercial/Office acreage occurs in this corridor, clustered around interchanges between the two largest municipalities, Lebanon and Mount Juliet. The US Highway 70 corridor, running parallel to I-40 attracts these same land uses as well as a significant residential component and park/recreation land.

The existing land use pattern in Sumner County is similar to that of Wilson County. Extensive residential use occurs at the western edge, closer to Nashville, and two corridors attract much of the non-agricultural use. State Highway 174 is primarily residential in nature, while the US-31E corridor between Gallatin and Hendersonville uses land extensively in all non-agricultural categories. In the northern extent of Sumner County are Portland and Westmoreland, two municipalities that continue to exhibit a mix of land uses clustered round major crossroads.

The municipalities of White House and Millersville straddle the Robertson/Sumner County line. Both are primarily residential in nature with commercial/office and industrial components at interchanges of Interstate Highway 65, which leads northeast out of Nashville just inside Robertson County. US Highway 41 in Roberson County also has a large component of residential land use, accompanied by institutional/public and commercial/office uses through Greenbrier and into southern Springfield.

This “snapshot” of the existing development pattern is key to understanding and evaluating the potential future land use patterns evaluated through this study.

Section 3.3: Growth Projections

To assess economic and market demand and supply, this Tri-County Transportation & Land Use Study includes an Economic & Market Analysis (Appendix B), which includes the following:

- Regional Context and Asset Overview – an assessment of the competitive market and economic position of the Nashville region;
- Market Analysis – an analysis of trends, issues, and opportunities in the Tri-County area; and
- Future Demand Analysis – an understanding of emerging real estate trends, demographics, and economic conditions to identify where and when growth is occurring in the Tri-County area.

The final section includes detailed projections for households as well as employment in three broad sectors: retail, office, and industrial. These projections also appear in the Business-as-Usual Scenario Report (Appendix E). The total increases from 2008 to 2035, the horizon year for this study, are provided below. These growth figures are employed in the CommunityViz growth allocation model, explained in Section 3.4.

- Households: 83,320

- Office employees: 17,219
- Retail employees: 17,071
- Industrial employees: 32,290

Section 3.4: Evaluating Growth

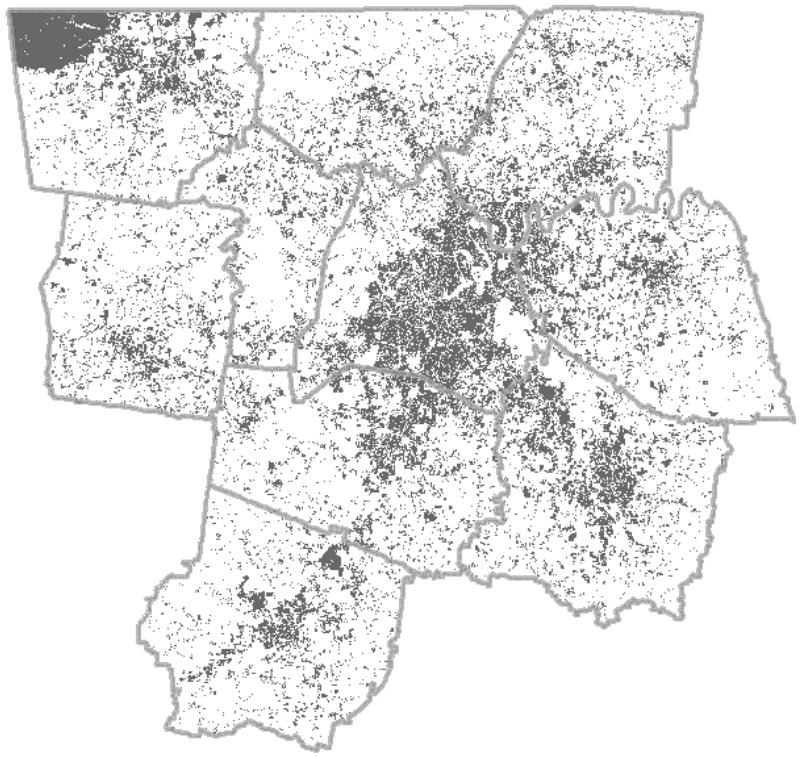
Prior to generating future growth scenarios for consideration, several steps must be taken so that the evaluation of growth scenarios can be based on consistent and objective information. Such steps include the construction of a growth allocation model to determine the possible distribution of future growth, the development of metrics to measure the impacts of growth reflected in each scenario and compare the results, and the creation of a common land use language for use throughout the multi-jurisdictional area. Each is described below.

Growth Allocation Model

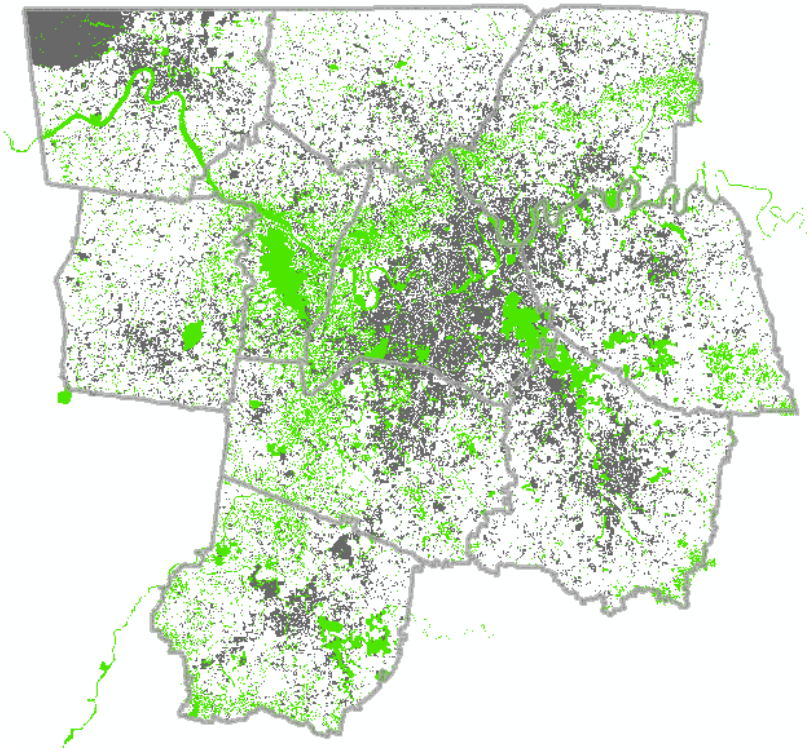
A vital component of this Tri-County Transportation & Land Use Study is a model that allocates growth. The purpose of modeling growth is to illustrate different patterns of growth within the study area to 2035 and measure impacts. These impacts must be considered in the evaluation of growth alternatives with respect to effectively achieving stated goals provide decision-makers with objective information by which to select a preferred alternative for the region and prepare local and regional plans to manage growth.

The growth allocation model is CommunityViz, an extension of ESRI's ArcGIS software. ArcGIS is a brand of geographic information systems software that city and regional planners employ to inventory, illustrate, and analyze land use and transportation conditions, among other things. CommunityViz enables MPO staff to allocate projections of households and employment across the landscape of the multi-county area. The allocation utilizes parcels as units that can host households and jobs based on several factors. Growth projections were developed for the Tri-County area within the Economic & Market Analysis, documentation of which appears in Appendix B.

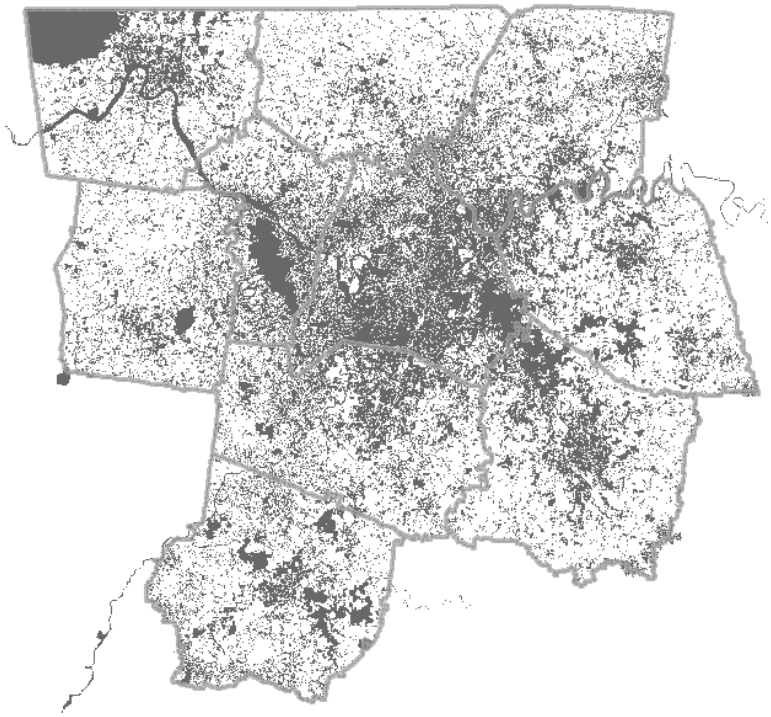
First, the availability of land is considered. Parcels with existing residential, commercial/office, industrial, park/recreation, and institutional/public land uses do not receive future households or jobs in the model run. Furthermore, certain environmental constraints such as wetlands prevent allocation of growth to underlying parcels. The fine-grained nature of the analysis allows only the upland portion of a parcel to receive growth.



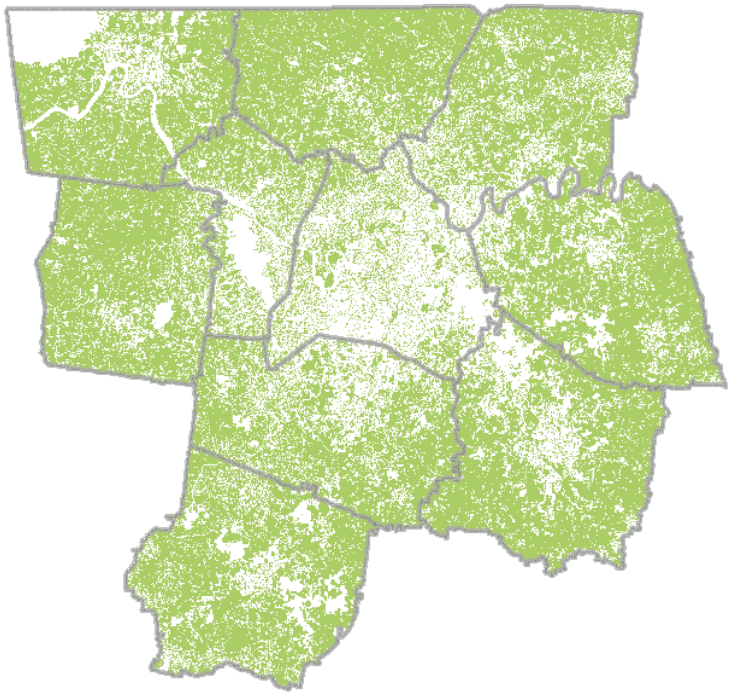
Development pattern (2008)



Environmental constraints



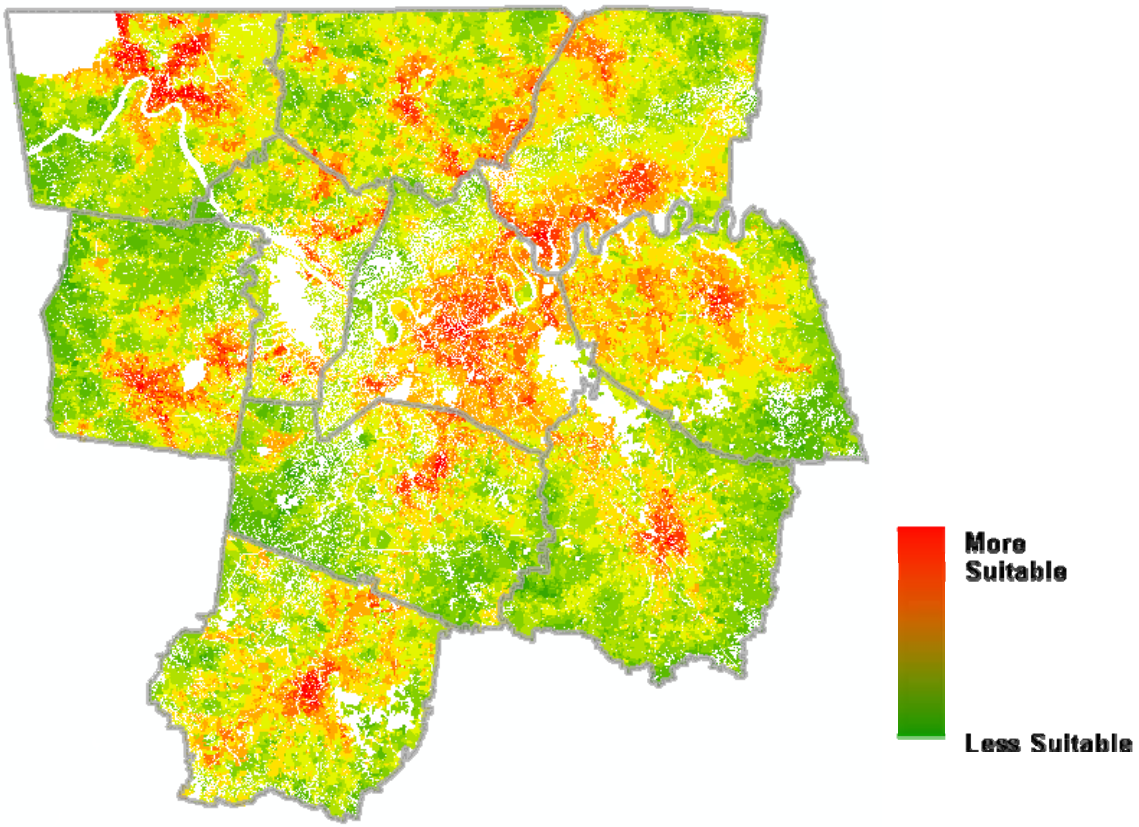
Developed or constrained



Vacant greenfield development opportunities

Two important factors affect the rate of allocation: local land use policy and land suitability. In simple terms, local land use policy is the maximum development potential of parcels set by adopted land use plans or, in the absence of an adopted plan, zoning. Local governments throughout the Tri-County area adopt land use plans and administrate zoning to limit the intensity of site development measured in residential dwelling units per acre and non-residential square footage as a ratio to the total acreage of the parcel (floor area ratio).

Land suitability represents the likelihood that a parcel will experience growth by 2035, the horizon year. Factors that influence the suitability of land include access to public infrastructure and proximity to jobs and services.



Land Suitability

The Draft Project Protocol Report (Appendix C) contains a thorough review of the modeling process.

Measures of Effectiveness

The patterns of growth occurring across the Tri-County area's landscape have differing impacts. Measures of Effectiveness (MOEs) have been developed for this Tri-County Transportation & Land Use Study to assign values to these impacts. The purpose of these values is to compare impacts of various regional growth scenarios.

The notion of "effectiveness" relates to the region's goals. Vision and goals were developed for the Tri-County area with guidance from stakeholders and citizens. Part 2 of this Tri-County Transportation & Land Use Study presents the regional goals. One of these goals is "Recognize and support the important role of agriculture in both the existing and future economy." An MOE related to achievement of this goal is the impact of growth patterns to agricultural land. A pattern that consumes this land at a lower rate more successfully achieves this goal and thus receives a higher MOE value.

In addition to "Acres of prime agricultural land consumed," Measures of Effectiveness include the following:

- Vehicle miles traveled;
- Vehicle hours traveled;
- Congested corridors;
- Acres within a buffer of environmentally constrained land consumed;
- Additional parkland acres to maintain level of service;
- Percentage of people within walking distance of transit (1/4 mile);
- Sewer – additional 1000 gallons per day generated;
- Water – additional 1000 gallons per day generated;
- Demand for new schools;
- New firefighters required to maintain level of service;
- New police officers required to maintain level of service; and
- Percentage of multi-family households in "Preferred Growth Areas."

Tri-County Transportation & Land Use Study: Measures of Effectiveness Summary (Appendix D) lists the MOEs evaluated in the growth allocation model. In model terminology, these MOEs are "indicators." The calculations behind the values yielded by these indicators appear in the appendix as well.

Character Areas

A general, recognizable development pattern that exists or is expected to occur across a particular landscape constitutes a "Character Area." Due to the size and diversity of the Tri-County area, local land use policies are aggregated into Character Areas. In each regional growth scenario, Character Areas facilitate the comparison of similar land development patterns across multiple jurisdictions. Only then could the values yielded for Measures of Effectiveness be meaningful for one local government relative to another.

In basic terms, each Character Area is applied to a geographic area subject to similar regulations for land development intensity, pattern, and form. Character Areas emphasize form and design rather than focusing solely on land use. For instance, the Suburban Character Area covers all portions of the Tri-County area for which freestanding buildings, segregated land uses, and irregular, disconnected, automobile-oriented road networks are planned.

In general, Character Areas fit into a sliding scale from rural to urban, with residential densities and non-residential intensities ranging from lowest to highest. This approach is similar to the "transect" of New Urbanist lexicon, but adapted to conditions specific to the Tri-County area. Separate Character Areas incorporate development patterns and places found in or planned for the study area that do not fit neatly into the sliding scale. This common language of Character Areas, supported with visual aids,

appears in Appendix E along with the regional map depicting the potential distribution of Character Areas across the Tri-County area assuming adherence to current policies (see section 3.5).

3.5 Business as Usual (BAU)

Overview

The "Business-as-Usual" Scenario visually represents the location and pattern of growth in the Tri-County area within the timeframe of the study, to 2035. "Business as usual" is the continuation of development with existing plans, programs, and policies in place. (Adopted regulations substitute in the absence of local plans and policies to guide growth.) The BAU regional growth scenario reflects projected population, employment, and demand for goods and services in the timeframe, as well as existing features and characteristics of the study area. This BAU Scenario is further explained in the report in Appendix E.

Detailed Description

In order to successfully model this growth, the results had to be understandable in the context of the region. Therefore, the common land use language of Character Areas was applied to adequately represent adopted growth management policies that will influence the distribution of future growth.

To generate the Business-as-Usual Scenario, the project team gathered available information and plans for the study area, including (1) comprehensive plans/land use plans, (2) zoning ordinances and maps, and (3) existing land use data. Land was assigned to Character Areas based on categories found in local land use plans, zoning maps and tax parcel data. Given the range of jurisdictions and the variety of plan approaches across jurisdictions, the study employs a generalized methodology to define the extent of Character Areas using Urban Growth Areas, Urban Services Districts, city limits, and input from jurisdictions.

The mapping of the Character Areas areas depicted a future—or BAU—pattern of development that includes additional urbanization of the county seats and extensive areas of suburban development surrounding the same. Such suburban development lies within the portion of the Tri-County area that is in close proximity to Nashville and the highway corridors that connect to Nashville. Mount Juliet, Portland and Coopertown are among the towns that stand out as supportive of sizable suburban areas. A high percentage of the land is in the Rural Character Area due to development density limitations; however, these areas are subject to transition into the Suburban Character Area, as growth management and utility policies could actually facilitate the development of these areas.

While Character Areas shown in the BAU Scenario map (Figure 3.2) serve to organize and represent existing plans, programs and policies, their number is expanded to address possible new development patterns desirable for the future of the Tri-County area. Parameters for all Character Areas, depicted in the BAU or not, are described in the Business-as-Usual Scenario Report in Appendix D. These were presented to the Steering Committee for feedback.

BAU Growth Allocation and Model Results

As indicated in section 3.4, the first purpose of modeling growth for the Tri-County Transportation & Land Use Study is to evaluate its impacts to the region. With an understanding of land supply, the likely

effects of the policies reflected in the Character Areas and the growth projections, the model was employed to allocate future growth given the BAU framework and measure the impacts. The resulting 2035 BAU Residential Density Map (Figure ___) illustrates the dispersal of residential development at varying densities.

"Measures of Effectiveness" have been developed to quantify and objectively evaluate impacts of the BAU as well as all alternatives to the BAU. If this BAU Scenario is realized in the future, approximately 41,000 acres of land will be developed to accommodate new residential growth. The resulting development pattern throughout most of this region may be characterized as dispersed and low density with few recognizable centers. Some of the other model results indicate the following:

- Almost 18,000 acres of new residential development will utilize land that is classified as prime agricultural land.
- Approximately 22,000 acres of residentially developed land will lie within areas that are environmentally constrained.
- Just 1.2% of the future population will be located within ¼ mile (or a reasonable walking distance) of an existing or proposed transit stop.
- More than 14 million vehicles miles could be expected in travel on ____ basis throughout the Tri-County area, and time spent traveling in vehicles could approach 350,000 hours per ____.

As explained in Part 2, related goals in the report card (viable agriculture, rural preservation, and efficient transportation system) received average grades, indicating the region's desire for better performance in these areas. A complete summary of BAU model results are provided in Appendix ___.

Section 3.6: Alternative Regional Growth Scenarios and the Preferred Alternative

3.6.1: Alternative Scenarios

Overview

At the heart of this Tri-County Transportation & Land Use Study is an evaluation of three regional growth scenarios. The first of these three scenarios is the Business-as-Usual Scenario, which is documented in Appendix E. While the BAU Scenario represents current growth management policy in the Tri-County area, the others are hypothetical scenarios developed for purposes of comparison.

The significant difference between the BAU Scenario and an alternative regional growth scenario is designation of "Preferred Growth Areas" (PGAs), which are explained in more detail below. In short, PGAs in an alternative scenario host 80 percent of regional growth to the horizon year.

The two alternative regional growth scenarios, "Centers" and "Centers and Corridors," were selected from four growth concepts and later presented throughout the region in community meetings alongside the BAU Scenario. Equipped with modeling results, the public supported Centers and Corridors – with refinements – as the regional growth scenario that best adhered to the region's goals. The refined Centers and Corridors Scenario is the "Preferred Alternative" regional growth scenario. Both alternative scenarios, as well as the Preferred Alternative, are described and contrasted in this section.

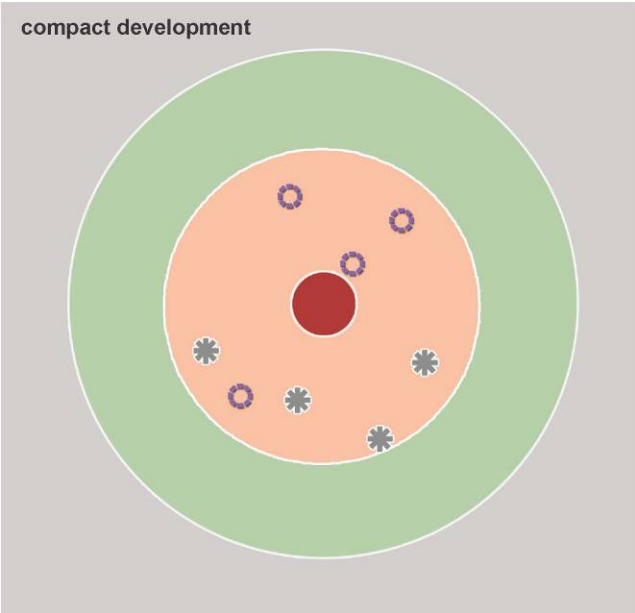
The regional growth allocation model has been run for all three scenarios. Measures of Effectiveness have been tallied for each, the results of which appear in Alternatives Modeling (Appendix G).

Preferred Growth Areas

Hypothetical regional growth scenarios have been developed as alternatives to the Business-as-Usual (BAU) Scenario. Two alternatives were selected from a set of four growth concepts presented to the Steering Committee. Each of the four concepts suggest that growth be deliberately directed in a manner that accomplishes key growth management objectives, such as utilization of existing infrastructure and preservation of important open space. They are based on precedents studied as part of this planning effort and summarized in Appendix F. The four concepts are as follows:

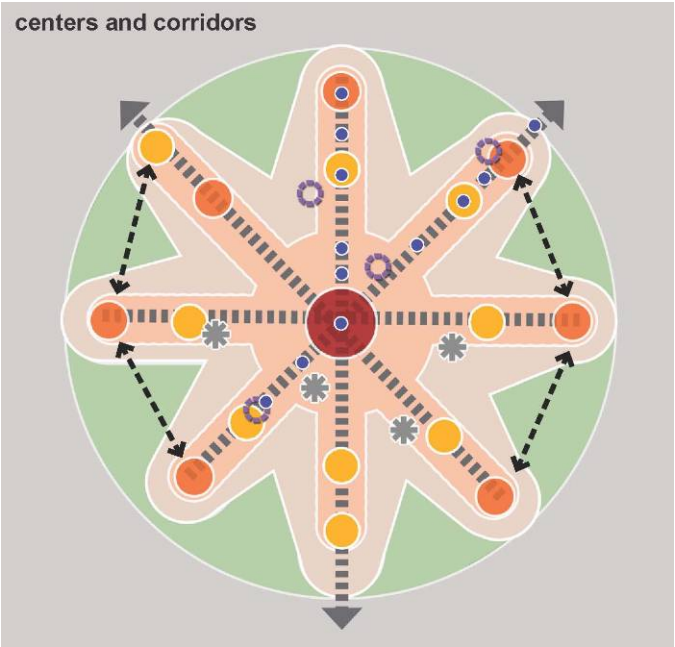
Conservation Concept

Emphasis on set asides including open space and environmental assets forming contiguous greenbelts that may extend within and surround a regional center, growth lies within remaining areas.



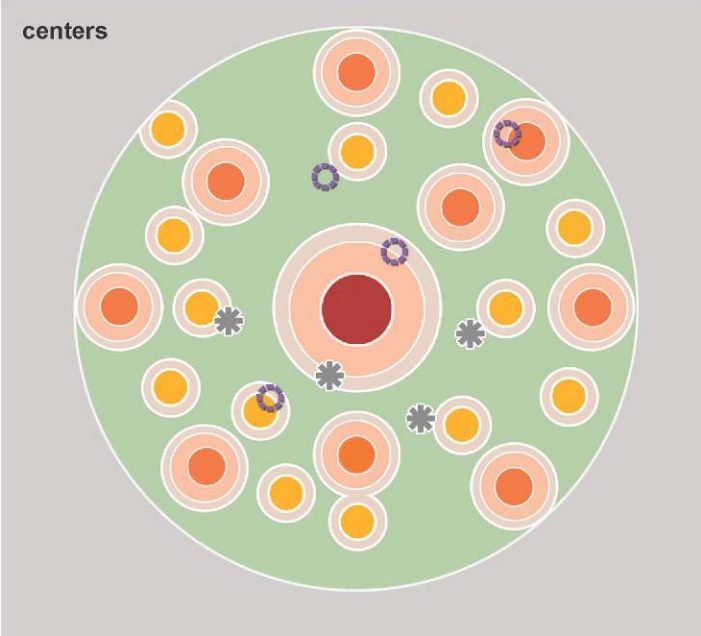
Compact Development Concept

Urban growth boundary or service boundary, directing growth toward regional center (Nashville), reinforces established regional center, leapfrog development in neighboring counties.



Centers and Corridors Concept

Growth concentrated into regional, urban and outlying village centers and corridors with remnant countryside areas outside centers and corridors. Supports multiple transportation modes, utilizes infrastructure.



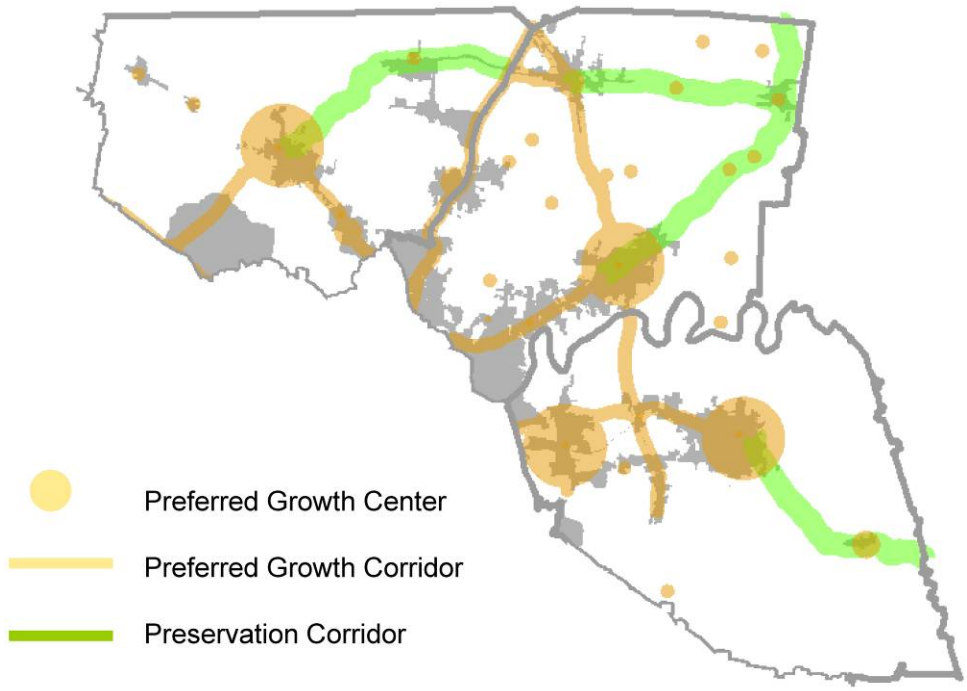
Centers Concept

Growth concentrated into regional, urban and outlying village centers with remnant countryside areas forming greenbelts surrounding centers, distinct places (identity), duplication of services.

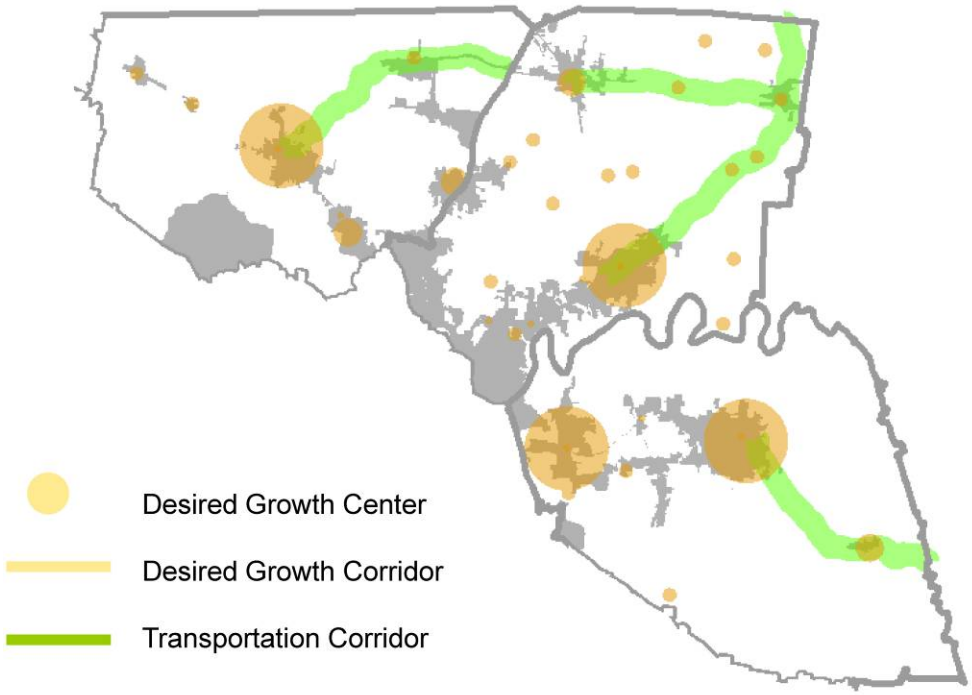
The two alternative regional growth scenarios, “Centers” and “Centers and Corridors,” were selected from the four growth concepts. In each of the alternative regional growth scenarios, 80 percent of residential and employment growth projected for the Tri-County area occurs in close proximity to civic hubs, retail destinations, and major infrastructure. Geographies in proximity of these features are thus “Preferred Growth Areas.” These alternative scenarios differ from one another in their deployment of Preferred Growth Areas (PGAs).

Preferred Growth Areas (PGAs) may be radial or linear. Radial PGAs are based on civic hubs, retail destinations, or transit stations, existing or planned. Linear PGAs generally occur along the Tri-County area’s major regional highways. Land that lies outside Preferred Growth Areas is generally less accessible, or less convenient to retail, public services or infrastructure. On the whole, costs to the region to support growth outside PGAs are higher.

Figure 3.3 illustrates the first regional growth scenario, “Centers and Corridors,” which incorporates both, radial and linear Preferred Growth Areas. Depicted in Figure 3.4, “Centers” is the second alternative, a scenario in which 80 percent of the region’s growth occurs in radial Preferred Growth Areas. The Preferred Alternative regional growth scenario, a refinement of “Centers and Corridors,” appears in Figure 3.5.



Centers & Corridors: Preferred Growth Areas



Centers: Preferred Growth Areas

Centers

In all three alternative regional growth scenarios, radial Preferred Growth Areas, or Centers, are based on locations of four Character Areas: Traditional Town Centers, Village Centers, Activity Centers, and Transit-Oriented Development Centers. The radius of each Preferred Growth Area (PGA) is based on the type and location of center as well as the magnitude of infrastructure and services (community and commercial) available at the center. The locations and sizes of these PGAs underwent public review and refinement, as explained in Section 3.6.4.

- A Preferred Growth Area (PGA) is six miles in diameter around a Traditional Town Center, centered on the town square.
- A PGA is 1 mile in diameter around an Activity Center.
- A PGA is ½ mile in diameter around a Transit-Oriented Development Center. (A quarter-mile is a reasonable walking distance the typical adult is willing to endure to reach a destination. This radius from a planned transit station is the basis for the size of this Preferred Growth Area.
- PGAs affixed to Village Centers range between 1 and 3 miles. Generally, 1-mile PGAs based on this Character Area exist in outlying, rural portions of the Tri-County area, while larger PGAs based on Village Centers occur in more urbanized portions of the metropolitan area.

Corridors

Two of the three alternative regional growth scenarios utilizes linear PGAs, or Corridors, in tandem with radial PGAs. Linear Preferred Growth Areas occur on major commuting routes into Nashville, the central city of the metropolitan area of which Robertson, Sumner, and Wilson counties are parts. PGAs also follow routes between Employment Center Character Areas and larger towns in the Tri-County area.

A linear Preferred Growth Area is 1 mile wide, or ½ mile from each side of the highway it follows. This proximity to the major transportation route offers convenient access to centers, where jobs and services are available and from where public services can be administered to growth that occurs within the corridor.

Preservation Corridors

In addition to Preferred Growth Areas, the regional growth scenarios include “Preservation Corridors.” This second type of corridor is applied to rural highways. Concentrating growth along these highways would impinge upon their level of transportation mobility, and no plans or monies are proposed for improvements that could accommodate significant growth. The mobility function of highways designated as Preservation Corridors for regional transportation is therefore prioritized over accommodation of new growth within them.

Alternatives Analysis

Residential and employment growth projected between 2008 and 2035 was modeled using Community Viz software, an extension of ArcGIS mapping software. Jobs and households expected to accrue to the region were allocated across the Tri-County area to yield four distinct scenarios:

- BAU;
- Centers and Corridors;
- Centers; and

- Preferred Alternative.

The intensity of allocation occurred according to the parameters of the Character Areas (i.e., more households were allocated to one square mile of General Urban area than one square mile of Suburban area). In the hypothetical, alternative scenarios only, 80 percent of the projected totals were redirected into Preferred Growth Areas. In practice, an alternative regional growth scenario would differ from "business-as-usual" in that a concerted effort would be necessary to guide new growth into Preferred Growth Areas. Such an effort might include a suite of strategies, ranging from amended zoning to incentives to attract development near infrastructure. The BAU Scenario, meanwhile, represents existing policy, in which the availabilities of infrastructure and services are less significant factors for management of development locations and intensities.

The results of the Community Viz modeling appear in Appendix G: Alternatives Modeling.

The public had the opportunity to review and comment on three of these scenarios: BAU, Centers and Corridors, and Centers. At community meetings occurring in each of the three counties in December 2009, attendees responded to maps illustrating these three scenarios. Also available were model results indicating the relative success of each scenario with regard to numerous indicators (refer to Measures of Effectiveness in Section 3.4), including the following:

- Number of people allocated per acre;
- Average residential lot size;
- Percentage of multi-family households;
- Percentage of population and employment within ¼ mile of transit stations;
- Prime agricultural land consumed;
- Environmentally constrained acres consumed; and
- Percentage of income spent on transportation (with fuel at $2.50/gal.).

The scenarios were also input into Nashville Area MPO's travel demand model. This separate tool reported disparities in vehicle miles traveled and vehicle hours traveled by all drivers in the Tri-County area between scenarios.

Alternative Scenario 1: Centers and Corridors emerged over Alternative Scenario 2: Centers and the BAU Scenario through the public planning process as more appropriate for the Tri-County area. Public input, consistency with Regional Goals, and achievement of Measures of Effectiveness developed to evaluate the alternatives led to this conclusion.

The Preferred Alternative regional growth scenario for the Tri-County area builds upon Alternative Scenario 1: Centers and Corridors. The composition of Preferred Growth Areas underwent refinement through public input meetings of December 2009. The revised Centers and Corridors Scenario thus became the basis for the Preferred Alternative regional growth scenario. Section 3.6.4 details the composition of the Preferred Alternative, while Sections 3.6.2 and 3.6.3 explain Alternatives 1 and 2, respectively.

3.6.2: Alternative Scenario 1: Centers and Corridors

Overview of Centers and Corridors

Alternative Scenario 1: "Centers and Corridors" was developed to depict an alternative to the trendline, or "Business-as-Usual" Scenario. The intent of Centers and Corridors is to depict a regional growth scenario in which a higher-than-expected percentage of new growth occurs within close proximity to existing development along key transportation routes (Corridors) and established destinations (Centers). The physical pattern of development and distribution of projected growth in this scenario is described below. The related map, "Alternative Scenario 1: Centers and Corridors," illustrates this scenario (Figure 3.3).

Detailed Description

Centers

Centers anchor Preferred Growth Areas within Robertson, Sumner, and Wilson counties that will accrue growth in Alternative Scenario 1. Included among these Centers are the existing urbanized areas delineated in the "Business-as-Usual" scenario: Traditional Town Center, Village Center, and Activity Center. In this scenario, most existing centers are expected to attract some future growth through redevelopment. In addition, a new type of Center, TOD, is introduced. It, too, will accommodate growth but depending upon location, will combine new development with redevelopment.

Corridors

Corridors line key transportation routes in the region. Future growth will also be concentrated along some of these transportation routes, but typically at a lower intensity than in the Centers. For the purposes of this alternative, the Corridors are categorized as primary and secondary linkages. Primary linkages are major roads, including those that could eventually support bus rapid transit between Centers and downtown Nashville, the metropolitan area's central business district.

Secondary linkages, or Preservation Corridors, connect smaller Centers within the study area or connect the study area to surrounding rural counties. Regional mobility, rather than accommodation of the region's growth, is the priority on these rural highways.

Areas Outside of the Centers and Corridors

All of the areas outside of the Centers and Corridors, except those within Conservation Character Areas, will accommodate 20 percent of total growth projected for the study area. This would reduce pressure to develop outlying areas. Future redevelopment of existing underutilized land in Centers will further reduce this development pressure. In contrast to the BAU, significantly less land area would require a full complement of urban services. Conservation of agricultural lands and open space would be more feasible in this scenario than in the Business-as-Usual Scenario.

Centers and Corridors Growth Allocation Model Results

In comparison to the BAU alternative, the Centers and Corridors alternative, fewer acres will be utilized for new residential growth. Approximately 25,000 acres of land will be developed, which is 16,000 fewer acres than the BAU alternative. Some of the other model results indicate the following:

- Approximately 12,600 acres of new residential development will utilize land that is classified as prime agricultural land, which is more than 5,000 acres protected in comparison to the BAU alternative.
- More than 12,000 acres of residentially developed land will lie within areas that are environmentally constrained, but that number is almost 10,000 fewer acres than the BAU alternative.
- Approximately 5.6% of the future population will be located within ¼ mile (or a reasonable walking distance) of an existing or proposed transit stop.
- A reduction in vehicles miles to be traveled on ____ basis throughout the Tri-County area could be reduced by 6%. Likewise, time spent traveling in vehicles could be 8.2% less than the hours expected with the BAU alternative.

A complete summary of the model results are provided in Appendix ___.

3.6.3: Alternative Scenario 2: Centers

Overview of Centers

Alternative Scenario 2: Centers was developed to depict an alternative to the trend, or Business-as-Usual Scenario, and to contrast with the first alternative, Centers and Corridors. The intent of the Centers Scenario is to depict a scenario in 80 percent of new growth occurs within or in close proximity to existing development of established Centers.

This scenario reflects the prevailing method of anticipating and managing growth in the Tri-County area, led by individual municipalities. While this aspect of the scenario is common to "business-as-usual;" the difference is that new growth is allocated closer to the infrastructure and urban services of existing communities in Alternative Scenario 2.

In contrast with Alternative Scenario 1: Centers and Corridors, this scenario does not support new growth along key transportation corridors except where located within or adjacent to new or established centers. This scenario stresses mass transit between Centers and downtown Nashville, clustering development around existing and potential station locations as new centers. The physical pattern of development and distribution of projected growth in this scenario is described below. The related map, "Alternative Scenario 2: Centers," illustrates this scenario (Figure 3.4).

Detailed Description

Centers

Centers anchor Preferred Growth Areas within Robertson, Sumner, and Wilson counties that will accrue growth in Alternative Scenario 1. Included among these Centers are the existing urbanized areas delineated in the Business-as-Usual Scenario: Traditional Town Center, Village Center, and Activity Center. In this scenario, most existing centers are expected to attract some future growth through redevelopment. In addition, a new type of Center, TOD, is introduced. It, too, will accommodate growth but depending upon location, will combine new development with intensified redevelopment.

Areas Outside of the Centers

Area outside of the Centers will accommodate some growth; however, with 80 percent of future growth directed toward the Centers, the pressure to develop outlying areas will ease. In contrast to the BAU, development in most of the outlying areas is likely to be more rural in character and require limited or no urban services. Conservation of agricultural lands and open space is more feasible in this scenario than in the Business-as-Usual Scenario.

Key transportation routes throughout the Tri-County area are identified as Preservation Corridors. These Corridors would not attract growth in this scenario; rather, access to these routes should be managed or mitigated to conserve capacity for traffic between the destinations found in Centers and Nashville.

Centers Growth Allocation Model Results

Like the Centers and Corridors alternative, the Centers alternative would consume fewer acres for new residential growth in comparison to the BAU alternative. Approximately 23,500 acres of land will be

developed, which is 16,000 fewer acres than the BAU alternative and 1,500 fewer acres than the Centers and Corridors alternative. Some of the other model results indicate the following:

- Approximately 11,600 acres of new residential development will utilize land that is classified as prime agricultural land, which is more than 6,000 acres protected in comparison to the BAU alternative.
- Nearly 13,000 acres of residentially developed land will lie within areas that are environmentally constrained, but that number is almost 10,000 fewer acres than the BAU alternative.
- Approximately 9.1% of the future population will be located within ¼ mile (or a reasonable walking distance) of an existing or proposed transit stop.
- A reduction in vehicles miles to be traveled on ____ basis throughout the Tri-County area could be reduced by 6.7%. Likewise, time spent traveling in vehicles could be 9.7% less than the hours expected with the BAU alternative.

A complete summary of the model results are provided in Appendix ___.

3.6.4: Preferred Alternative Regional Growth Scenario

Overview

Based on the assessment of the BAU and the two alternative scenarios presented a the community meetings in December 2009, a preferred alternative was developed to recognize the attributes of the alternatives that were deemed more appropriate for the future of the Tri-County area relative to the BAU. In response to input at the community meetings, this alternative incorporates the centers and corridors concept and, with respect to the BAU Scenario, it adjusts the Character Areas in terms of geography (size and location). It also includes an additional Character Area not previously defined, but identified by the meeting attendees and the Steering Committee as important for guiding future land use policy in the region.

Detailed Description

The underlying premise of each alternative regional growth scenario is that 80 percent of all growth will be redirected to Preferred Growth Areas. In the Preferred Alternative Scenario, the centers and corridors, shown on the "Preferred Alternative Scenario" map (Figure 3.5), are the Preferred Growth Areas. In order to achieve this objective, local growth management policies would have to change accordingly. Character Areas, which represent these local policies, are thus altered in the Preferred Alternative Scenario so as to guide growth toward Preferred Growth Areas. The reduction of Suburban Character Area explained below is an example of an adjustment to direct growth away from land located outside Preferred Growth Areas. The "Preferred Alternative Scenario" map depicts all similar adjustments in the Tri-County area.

Character Areas

The Preferred Alternative Scenario includes ten Character Areas, seven of which are mapped in the Business-as-Usual Scenario. These seven are described in the report documenting creation of the BAU Scenario. That document furthermore describes two additional character areas, "Transit-Oriented Development Center" and "Conservation," which were not mapped in the BAU Scenario. The tenth Character Area, "Secondary Conservation," appears in the Preferred Alternative Scenario only. It was added to the palette in response to public input, as meeting attendees desired recognition of important agricultural or environmentally sensitive lands that are not protected from development. The following table lists all ten Character Areas and their utilization in the four regional growth scenarios.

Character Area	BAU Scenario	"Centers" and "Centers & Corridors"	Preferred Alternative Scenario
Conservation	Unmapped	Unmapped	Mapped
Rural	Mapped	Mapped	Mapped
Suburban	Mapped	Mapped	Mapped
General Urban	Mapped	Mapped	Mapped
Traditional Town Center	Mapped	Mapped	Mapped
Village Center	Mapped	Mapped	Mapped
Employment/Industrial Center	Mapped	Mapped	Mapped
Activity Center	Mapped	Mapped	Mapped
Transit-Oriented Development Center	Unmapped	Mapped	Mapped
Secondary Conservation	Unmapped	Unmapped	Mapped

The geographies of the seven Character Areas that appear in both the BAU Scenario and the Preferred Alternative Scenario differ in some, but not all, locations. In some places, the policy that a Character Area represents in the BAU Scenario is also appropriate in the Preferred Alternative Scenario. For instance, a "Suburban" designation of an existing neighborhood may reflect a condition that can be expected to remain in 2035. Not all existing neighborhoods retain their BAU Scenario Character Areas, however. Some are well positioned to urbanize – ascend to "General Urban" character – by 2035, due to their proximity to civic hubs and major infrastructure.

The supply of land contained within Suburban and General Urban Character Areas in the BAU Scenario far exceeds that necessary to accommodate projected population growth to 2035. This was determined through aforementioned CommunityViz modeling of residential and employment growth. The extent of Suburban Character Areas, therefore, is reduced for the Preferred Alternative Scenario.

In the Preferred Alternative Scenario, General Urban Character Areas aggregate around the Traditional Town Centers and TOD Centers. Representing higher intensities of development, General Urban areas benefit from higher levels of transportation interconnectivity and the civic institutions of the Traditional Town Centers.

Suburban Character Areas, which are lower in development intensity and therefore require more land per residence, lie outside of General Urban Areas as well as some Village Centers and Activity Centers. Additionally, most of the developed land in the Tri-County area is consistent with the parameters of Suburban Character Areas and are rendered accordingly on the map of the Preferred Alternative Scenario.

The Preferred Alternative Scenario is the first scenario to depict Conservation Character Areas. The planning process revealed a need for primary and secondary levels. Features lying within the primary areas, or Conservation Character Areas include surface water and wetlands, floodways, steep slopes, and protected lands, such as public parks, state forests, and tracts under conservation easements.

Secondary Conservation Character Areas, in contrast, are important landscapes that do not pose the same inhibitions to development. These lands include important agricultural or environmentally sensitive lands, such as prime farmland soils in active agricultural use and floodplains, that are not protected from development. Land appropriately classified Secondary Conservation is very sparsely developed with residences, such as those situated for waterfront views or housing farmers. Infrastructure is limited to roads and bridges necessary to access farms or cross water bodies. An exception is a network of greenways, including trails parallel to water courses. These include floodplains and prime agricultural soils. A spatial data set is available for the former, as appears on Figure 3.5, illustrating the Preferred Alternative Scenario. Creation of a spatial data set for mapping prime agricultural soils will require research and preparation of additional data sets to supplement and update this study in the future.

The balance of the Tri-County area is classified as one of the center-type Character Areas or as "Rural" in character in the Preferred Alternative Scenario. These Rural Character Areas include very low-density residential areas and agricultural areas, including those that should be designated Secondary Conservation Areas in a future step.

Centers

One of the two components of the Preferred Growth Areas in the 2035 Preferred Alternative Scenario is the Centers. The five Character Areas classified as a type of center anchor the Centers of the Preferred Growth Areas. The Business-as-Usual Scenario includes some of these same Character Areas, most notably the Traditional Town Centers of Gallatin, Lebanon, and Springfield. A vital aspect of the Preferred Alternative Scenario is that Traditional Town Centers will receive growth through redevelopment and infill.

Established, smaller communities like Mount Juliet, Portland, and White House are Village Centers in both the BAU and Preferred Alternative Scenarios. The latter, however, involves the growth of Village Centers through infill and redevelopment, as well as expansion into adjoining areas through 2035.

The Transit-Oriented Development (TOD) Center Character Area does not appear in the BAU; rather, it is introduced in the description of Character Areas and deployed in the alternative regional growth scenarios. TOD Centers are associated with existing fixed-route transit stations served by the Music City Star and with proposed fixed-route transit stations identified through a separate and concurrent study. TODs occur in the Preferred Alternative Scenario as extensions of urban fabric adjacent to Traditional Town Centers, as redevelopment and intensification of suburban commercial areas, and as new neighborhoods in the Tri-County area.

Activity Centers accommodate residential development at an urban density and attract regional retail. Activity Centers may also include regional destinations, such as Nashville Superspeedway.

Employment/Industrial Centers are identified in all scenarios and are identical in geographic area. They differ from other center-type Character Areas in that they are not intended to accommodate significant retail and residential components.

The alternative regional growth scenarios underwent public review in a series of workshops held toward the end of 2009. Participants in this public process reviewed Center locations designated for growth – Preferred Growth Areas . These workshops yielded revisions, itemized below.

- Expand the Village Center around Adams to reflect 1-mile radius;
- Expand the Center around White House to incorporate State Highway 76's interchange with I-65;
- Expand the Center around Pleasant View to reflect a Village Center with a one-mile radius of influence;
- Add an employment/Industrial Center near Millersville along I-65; and
- Add Village Centers (1/2-mile radius) at Norene, Statesville, and Tucker's Crossroads.

Corridors

The other component of the Preferred Growth Areas in the 2035 Preferred Alternative Scenario is the Corridors. Character Areas are generally assigned to a Corridor due to its location and function within the Tri-County area. This scenario includes two types of Corridors: "Growth Corridors" and "Preservation Corridors."

A Growth Corridor is aligned with a regional arterial highway which will accrue growth due to its importance as a commuting route within the Tri-County area, typically between the area's larger

communities and Nashville, for Nashville is the central city of the metropolitan area of which the Tri-County area is a part.

As previously noted, the Preferred Alternative Scenario builds upon Alternative Scenario 1: "Centers and Corridors." These two regional growth scenarios include, in common, the following highway segments:

- State Highway 112 along the southwestern boundary of Robertson County, parallel to I-24;
- State Highway 11 between Springfield and Nashville;
- US-31W between Nashville and the Kentucky state line;
- State Highway 52 from Portland to US-31W;
- State Highway 109 beginning at its intersection with US-31W, near the Kentucky state line, south to Portland;
- US-31E between Gallatin and Nashville; and
- US-70 between Lebanon and Nashville.

The planning process refined the Preferred Alternative Scenario in 2009 to include Growth Corridors in addition to those identified for Alternative Scenario 1:

- State Highway 49 from Springfield to I-24; and
- State Highway 109 from Portland, south to its intersection with State Highway 840, at an Employment/Industrial Center in Wilson County.

Some center-type Character Areas fall within Corridors in the Preferred Alternative Scenario. Elsewhere, land within one-half mile of the highway is classified Suburban Character Area, as growth in these linear Preferred Growth Areas will generally occur at a lower intensity than Centers' growth by 2035.

As stated earlier in this report, Preservation Corridors are important highways within the Tri-County area on which mobility will be prioritized in the Preferred Alternative Scenario. These Corridors are vital links between important Centers of various types in the Tri-County area; therefore, growth alongside them is discouraged to limit demand for access to these highways. Preservation Corridors thus meet the same objectives as Mobility Corridors found in the other alternative regional growth scenarios. The following highways are Preservation Corridors in this scenario:

- State Highway 49 between Springfield and Orlinda;
- State Highway 52 from Orlinda to US-31W;
- A second segment of 52 from Portland to Westmoreland;
- US-31E from Gallatin to the Kentucky state line; and
- State Highway 26 from its intersection with West Main Street (State Highway 24) in Lebanon to the eastern boundary of Wilson County.
- State Highway 257 between highways 49 and US-41;
- State Highway 76 from Springfield through White House to Johnson's Crossroads, where it intersects State Highway 25;
- State Highway 25 from Johnson's Crossroads (intersection with 76) to Gallatin;
- US Highway 431 from Springfield to Nashville;
- State Highway 11 from Springfield to the Robertson County boundary at the western edge of the study area; and

- US Highway 231 from Bransford to the southern boundary of the study area, the Wilson County line, except the segment that traverses Trousdale County, which is outside the study area.

Policy Guidelines

Eighty percent of growth projected for Robertson, Sumner, and Wilson counties to 2035 will occur in radial and linear Preferred Growth Areas in the hypothetical Preferred Alternative Scenario. The remainder will occur outside these designated areas. Compared with the "Business-as-Usual" Scenario, this alternative will reduce demand for urban public services in areas currently unserved and facilitate conservation of agricultural lands and open spaces.

Adjustments to Character Areas are needed to achieve the pattern of growth represented in this scenario in contrast with "business as usual." These adjustments carry with them policy implications for lands underlying the Character Areas, as noted below.

- Allow redevelopment and infill development to occur in areas delineated as Traditional Town Centers and Village Centers in the BAU Scenario.
- Reinforce established centers by concentrating growth around them. General Urban Character Areas should be encouraged within one mile of Traditional Town Centers and one-half mile of TOD Centers. In these areas, urban services presently exist or can be provided readily.
- Create Transit Oriented Development Centers and allow TOD intensities along primary corridors where transit stops are likely to occur. A TOD Center includes area delineated within ¼ mile from transit stops, existing or proposed. (One-quarter mile is typically a 5-minute walk.)
    - Note: Transit stops shown on the map are potential locations assumed only for the purpose of this alternative, and do not reflect actual stops. Other studies will determine actual locations of stops.
- Maintain development in Suburban Character Areas that is compatible with existing communities. These areas contain a variety of land uses at lower intensities compared to areas designated within Traditional Town Centers, TOD Centers, or General Urban areas. Some designated areas have existing Suburban characteristics that they are likely to retain to 2035. Suburban areas include those within:
    - ½ mile of Growth Corridors, except where Character Areas of higher density prevail;
    - 1 mile of TOD Centers and Village Centers poised for growth; and
    - 3 miles of Traditional Town Centers and one large community with a Village Center, Mount Juliet.
- Maintain areas designated Activity Centers and Employment/Industrial Centers in the BAU Scenario and allow for expansion as needed to support these Centers. The significant retail activity and employment generated by each of these Centers will serve other Centers in a complementary fashion.
- Delineate Conservation Areas shown in the Preferred Alternative Scenario and defined in the BAU Scenario. As lands on which development is severely inhibited or prohibited, Conservation Areas should supersede other Character Areas. For instance, a General Urban Area may be interspersed with Conservation Areas reflecting steep slopes and floodways.
- Delineate floodplains as Secondary Conservation areas. Some Centers exist in floodplains and should be expected to remain; however, Secondary Conservation areas should supersede other Character Areas, except Conservation areas. All but the lowest intensities of land use and development should be directed away from these areas.

- Designate lands outside of Preferred Growth Areas and Conservation and Secondary Conservation areas as Rural areas and minimize establishment and extension of urban public services and infrastructure in these lands.

NASHVILLE AREA
Metropolitan Planning Organization

PART 4

LINKING LAND USE & TRANSPORTATION PLANNING

Tri-County Land Use & Transportation Study

Part 4: Linking Land Use and Transportation Planning

Section 4.1: Introduction

Part 4 of the Tri-County Transportation & Land Use Study illustrates means to improve transportation and manage land-use impacts through urban form and facility design. The illustrations in Section 4.2 depict existing and recommended road cross-sections for Strategic Corridors in the Tri-County area. The section that follows, 4.3, builds upon four selected Strategic Corridors to illustrate hypothetical scenarios of land development adjacent to the corridor. Each represent one or two of the character areas. These Development Form Focus Areas depict how land use can materialize in the built environment in accordance with the parameters of a given character area and with successfully integrated transportation facilities. The hypothetical results are four multi-modal, mixed-use communities with transportation and land use functioning symbiotically through urban design.

The locations of the ten one-mile Strategic Corridors are a subset of arterial roadways in the Tri-County area in which changes in land-use intensity and traffic appear imminent in the Preferred Alternative regional growth scenario. The project team studied researched 14 such corridors and presented them to the Steering Committee. Committee members narrowed the list to ten that best represented a broad set of issues, the full range of Character Areas depicted in regional growth scenarios, various road facility cross-sections, and the three counties in the study area.

Each of the four Development Form Focus areas coincides with a Strategic Corridor. These, too, were reviewed and agreed upon by the Steering Committee. A Development Form Focus Area appears in these four Character Areas: Traditional Town Center (Springfield), TOD Center (Lebanon), Village Center (Westmoreland), and Suburban (Sumner County). This set furthermore represents a variety of conditions ranging from fast-growing to revitalizing to rural. The Development Form Focus Areas represent and depict opportunities to implement strategies that support the Preferred Alternative Scenario.

Due to the hypothetical nature of the illustrations, lessons may be applicable to other, similar conditions throughout the Tri-County area. Strategies and tools to implement aspects of the Strategic Corridors and Development Form Focus Areas appear in Chapter 5.

Section 4.2: Strategic Corridors

Detailed Descriptions

As a part of the Tri-County Transportation & Land Use Study, ten corridors where identified for demonstration planning. Referred to as Strategic Corridors, the intent was to evaluate one-mile segments for a diverse roadway types and provide a format for considering safety, character, land-use context, vehicular capacity, and mode integration so that future year visions could be expressed. Ultimately, a similar format could be used by local jurisdictions and the MPO so that detailed expectations for roadways are communicated during future planning processes. The creation of Strategic Corridor exhibits helps planners ensure that mode integration is occurring along important corridors and provides the community a single source of summary information rather than looking at numerous documents for information.

The ten corridors were selected with assistance from the Project Steering Committee and were intentionally diverse with respect to geography (locations in all three counties), functional classification, and character (rural, suburban, and urban). In addition, a preference was given to corridors that correspond with Development Form Focus Areas studied as a part of this plan.

The Strategic Corridors do not substitute for more detailed planning and engineering studies but represent a means to graphically communicate issues and concerns, as well as local and regional expectations, beyond the details traditionally found in system-level transportation plans. It also allows for an integrated approach to consider the needs of freight, motorists, pedestrians, bicyclists, and public transportation.

The Strategic Corridors that follow include two exhibits for each corridor ('A' and 'B'). The first expresses the existing conditions including, traffic volumes, cross-section, speed limit, and crash history. Field visits were conducted for each location to document conditions, observe traffic operations, and attempt to identify the causational factors associated with any identified crash patterns. The second exhibit represents likely future year conditions and recommendations including corridor vision, projected 2035 traffic volumes, and recommended cross-section(s) as well as other measures that should be considered.

One result of this exercise is the recognition that a "one size fits all" approach to transportation planning is not appropriate given the diversity of roadway types and character of the surrounding landscape. The Strategic Corridor planning process also works in concert with the Complete Streets principles and Context-Sensitive Solutions practices by considering land use context, modal accommodations and defining the intended purpose of a street prior to making recommendations. (Complete Streets and Context-Sensitive Solutions are described in Section G.3 of Appendix G: Transportation Planning Best Practices.

The Strategic Corridors are as follows. (As previously noted, a Strategic Corridor is illustrated across two exhibits, enumerated as 'A' and 'B'. For example, Figure 4.3A and Figure 4.3B illustrate Mt. Juliet Road.)

Figure 4.1: SR 109 (Morningside Drive to W. Knight Street), Wilson County
Figure 4.2: SR 109 (Cherokee Dock Road to Bates Road), Wilson County
Figure 4.3: Mt. Juliet Road (Central Pike to Pleasant Grove Road), Wilson County
Figure 4.4: Hartmann Drive (W. Baddour Parkway to Leeville Pike), Wilson County

Figure 4.5: Coles Ferry Pike (Academy Road to Horn Springs Road), Wilson County
Figure 4.6: Gallatin Pike/West Main Street (New Shackle Island Road to Sanders Ferry Road), Sumner County
Figure 4.7: Long Hollow Pike (Center Point Road to Buchanan Circle), Sumner County
Figure 4.8: US 31 East (Epperson Springs Road to Clyde Wix Road), Sumner County
Figure 4.9: Memorial Boulevard (East 4th Avenue to Batts Boulevard), Robertson County
Figure 4.10: US 41 (Lights Chapel Road to East College Street), Robertson County

Section 4.3: Development Form Focus Areas

Introduction

"Development Form Focus Areas" are conceptual developments of the Character Areas that apply throughout the Tri-County area. Each of the four Focus Areas is located in a disparate setting, ranging from rural community to urban center. These settings, in turn, exemplify four different Character Areas, which are detailed in the previous part of this study ("Business-as-Usual Scenario") and are depicted in Map B.

Each of the four Focus Areas is served by one of the ten Strategic Corridors. As a transportation facility of regional importance, the conceptual integration of a Strategic Corridor with land use and development form will demonstrate how the regional transportation network would support future patterns of land development. The conceptual illustrations will furthermore reflect policies that underlie the Character Area and inform local decision-making.

The Development Form Focus Area illustrations are not intended to replace or comprehensively satisfy local land-use planning needs. They may serve to enhance local land-use planning efforts, provide the basis for new local land use plans, or justify modifications or updates to adopted plans.

As a hypothetical model rather than actual development scenario, a Development Form Focus Area illustration depicts concepts applicable to other locations of the same Character Area. By depicting regionally applicable solutions, Development Form Focus Areas will potentially increase regional awareness in local planning efforts and enable more efficient use of resources for solutions to transportation issues. Efficiencies will result provided neighboring local governments consistently use this resource as a guide for transportation solutions on Strategic Corridors.

Lebanon: West Main Street (US-70) at Hartmann Drive

Along Highway 70 and south of the Music City Star regional commuter rail line, this potential transit station area would conform to the attributes described for the TOD Center Character Area. The station location is conceptually envisioned to occupy a site west of downtown Lebanon. As a development target area, this presents an opportunity to bolster economic development efforts for Lebanon.

Critical to the success of the transit station area is the mixture of uses at transit-supportive densities. Also important are the linkages to adjacent developed areas, particularly Lebanon's downtown. In close proximity to Lebanon's traditional downtown, this area could develop in a complementary manner with uses – particularly office and retail with upper story residential – that are transit-supportive. The benefit is that the primary access to transit is available within walking and biking distance of downtown Lebanon but not in the heart of downtown, preventing the disruption of the historic center with

redevelopment. In this neighboring location, the desired uses can be accommodated through redevelopment at transit-supportive densities.

The conceptual illustrations of this Focus Area depict a transit station and supporting development. This site lends itself to redevelopment to incorporate a mixture of uses. Stemming from the transit stop toward West Main Street and Hartmann Drive, pedestrian-scaled streets are flanked by 4- and 5-story buildings with retail and office uses. (See Appendix G: Transportation Planning Best Practices for more about pedestrian-scaled streets.) Upper story residential units might also be accommodated in the same buildings. The "street wall" created by such buildings would be continued along West Main Street, particularly in the direction of downtown Lebanon, where such an enclosure would enhance the environment for pedestrians and shorten the perceived distance between the transit station and downtown. Infill development on some sites, such as the existing Big Lots shopping center, allows for a consistent scale and achievement of appropriate densities while maintaining existing businesses. Two-story office buildings oriented toward the southern segment of Hartmann Drive are located to take advantage of both transit and interstate highway access. Multi-family units and townhouses facing a park-like street provide a seamless transition to the single-family neighborhoods that lie to the south.

Figure 4.11A through Figure 4.11C, at the end of this Section, conceptually illustrate this Development Form Focus Area. Figure 11A illustrates a conceptual master plan for the land in the vicinity of Hartmann Drive, including arrangement and size of building footprints as well as land use. A three-dimensional perspective of the conceptual master plan appears in Figure 11B, depicting building sizes in relation to one another and transportation rights-of-way.

Figure 4.11C highlights predominant freight routes and pedestrian routes in the study area. The intent of this third figure in the series of three is to identify where these forms of traffic are most likely to be found, based on proposed form and use in the Focus Area as well as the function of the facility in regional context. In concert with the Strategic Corridor, this Development Form Focus Area recommends the following features for arterial roads in the Focus Area:

- US-70: 4-lane, median-divided section with curb-and-gutter, planting strip, and sidewalks.
- South Hartmann Drive and Hartmann Drive (south of West Baddour Parkway): 4-lane median-divided section with wide shoulders and shared-use path.
- Hartmann Drive (north of West Baddour Parkway): 3-lane, curb-and-gutter section with planting strip and sidewalks.

Springfield: Main Street and Memorial Boulevard (US-41/431) near 5th Avenue

The center of Springfield is experiencing some renewed interest, evidenced by the recent investments in commercial development (i.e., The Farmer's Bank), new businesses along Main Street with associated up-fits to existing tenant space, and revitalization of older buildings for new uses (e.g., The Depot Bar & Grill in the 1922 grocery store building and the Robertson County History Museum in the old post office). In addition, the renovation to the 1879 county courthouse was recently completed.

A Traditional Town Center Character Area, this historic downtown exhibits qualities that could be enhanced by improvements that expand on recent successes and maintain growing momentum. As growth continues in Robertson County, particularly in connection with the growth the Clarksville area is experiencing due to Hemlock Semiconductor LLC (location of a new production facility) and support businesses, new residents may seek the quality of life that a small town can provide. Springfield, within

a reasonable commuting distance of Nashville and Clarksville, offers an authentic environment—and experience—that many find more appealing than the sometimes contrived appearance of new town centers created in the traditional style to emulate the desirable traits of the historic centers.

Much of the investment has occurred along Main Street and will likely act as a catalyst for additional development (infill) and redevelopment. In anticipation of demand for downtown space for both residential and non-residential uses, changes could occur between Main Street and Memorial Boulevard. How such development occurs is critical to the long-term success of downtown and important for establishing a positive image for downtown, in general and a new "face" along Memorial Boulevard, specifically.

As shown in the Focus Area illustrations, the historic urban fabric is relatively in-tact and should remain so through adaptive reuse of many existing buildings. By maintaining the fabric, the downtown will continue to complement the residential neighborhoods surrounding downtown, which include a rich collection of historic homes. The combination of commercial and residential uses will increase the vibrancy of an area that should function as the heart of the community, not simply a focal point of development in Springfield. Another way to create more activity in the downtown area is to encourage additional residential development that would help support the non-residential uses.

Main Street should be the focus of this area in terms of a central core. Continuing to build on Main Street as a pedestrian-oriented space and a central public gathering place with some streetscape improvements could have a significant impact on the downtown, particularly for connecting the "courthouse square district" with the new "warehouse/arts district" to the south. Section G.3: Complete Streets in Appendix G provides additional information about these concepts for Main Street.

In this scenario, Memorial Boulevard serves as an arterial, moving traffic, including trucks, through the center of town while providing access to downtown. Due to the anticipated traffic volumes, downtown development is expected to orient to the connecting perpendicular streets rather than Memorial Boulevard itself. Clearly a later addition to the street network, Memorial Boulevard began with a utilitarian purpose. By allowing it to continue to function in that manner, local traffic as well as pedestrian and bike traffic can be better accommodated on adjacent streets. The specific streetscape treatment, however, should improve the appearance of this edge of downtown and highlight key access points into downtown to entice visitors to local business. Other improvements should limit turning movements to reduce traffic issues, as detailed in Section G.4: Access Management of Appendix G.

Figure 4.12A through Figure 4.12C, at the end of this Section, conceptually illustrate this Development Form Focus Area. Figure 4.12A illustrates a conceptual master plan for the land in the vicinity of Springfield's town cetner, including arrangement and size of building footprints as well as land use. A three-dimensional perspective of the conceptual master plan appears in Figure 4.12B, depicting building sizes in relation to one another and transportation rights-of-way.

Figure 4.12C highlights predominant freight routes and pedestrian routes in the study area. The intent of this third figure in the series of three is to identify where these types of traffic are most likely to occur, based on proposed form and land use in the Focus Area, as well as the function of the facility in regional context. In concert with the Strategic Corridor, this Development Form Focus Area recommends the following features for Memorial Boulevard through the Focus Area to serve regional freight traffic in balance with local vehicular traffic: 4-lane, median-divided section with curb-and-gutter.

Pedestrian traffic, in contrast, is better served on Main Street and on routes perpendicular to Main and Memorial.

Sumner County: Long Hollow Pike at New Shackle Island Road

Near the northern edge of Hendersonville's jurisdiction in Sumner County is the intersection of Long Hollow Pike (Highway 174) and New Shackle Island Road (Highway 258). With growth occurring in and around Hendersonville, this location is experiencing, and will continue to experience, development pressure.

Environmental constraints and transportation issues will affect development in this area, which is presently an emerging Suburban Character Area. Floodplain and steep slopes present challenges in accommodating development programs, particularly programs that possess characteristics consistent with the definition of the Suburban Character Area. Furthermore, the collocation of high, middle, and elementary schools near the northwest quadrant of the intersection has generated traffic volumes that hinder circulation in the area at peak hours, which affects access to adjacent development.

As depicted in the conceptual illustrations of this Focus Area, residential and non-residential development is incorporated into the existing pattern to reinforce this location as a center or node along this route. With a cluster-development or conservation-subdivision approach, environmentally sensitive areas are preserved while suburban densities are achieved. In addition, the local street network is expanded to improve circulation and increase connectivity for a more walkable environment, particularly around the schools. Section G.2: Collector Street Planning in Appendix G offers guidance for expansion of the street network.

Greenway trails and bikeways would supplement the circulation system. The local streets are also intended to unite development rather than separate it with buffers; housing is oriented toward streets and adjacent development, as well as open spaces that include greenways, to create a more cohesive, linked environment. The floodplain and hilltops are illustrated as preserved open spaces and the focal points or natural amenities of development.

Figure 4.13A through Figure 4.13C, at the end of this Section, conceptually illustrate this Development Form Focus Area. Figure 4.13A illustrates a conceptual master plan for the land in the vicinity of Hartmann Drive, including arrangement and size of building footprints as well as land use. A three-dimensional perspective of the conceptual master plan appears in Figure 13B, depicting building sizes in relation to one another and transportation rights-of-way.

Figure 4.13C highlights predominant freight routes and pedestrian routes in the study area. The intent of this third figure in the series of three is to identify where these forms of traffic are most likely to be found, based on proposed form and use in the Focus Area as well as the function of the facility in regional context. In concert with the Strategic Corridor, this Development Form Focus Area recommends the following features for Long Hollow Pike through the Focus Area: 4-lane, median-divided section with swales and shoulders wide enough to accommodate experienced bicycle riders. (This is consistent with the Hendersonville Land-Use/Transportation Plan.)

Westmoreland: US Highway 31E

Considered a hamlet in the northeastern portion of Sumner County, Westmoreland has a Village Center character. Main Street is surrounded by a residential neighborhood that quickly transitions to a rural

environment. As development gravitates to this area over time, it should complement existing development and retain the village character through scale and by minimizing physical and visual encroachment into the rural areas. New development should occur in close proximity to the center to best minimize rural encroachment.

The conceptual illustrations of this Focus Area demonstrate how development can be integrated into the center near the intersection of Highway 52 and Highway 231/31E. The mixture of uses shown is depicted at a scale that is consistent with the Village Center Character Area. This demonstrates a viable approach to development for uses that would occupy outparcels in conventional development that also achieves the character of a Village Center. Buildings, in combination with gateway treatments (i.e., monuments), flanking Highway 231/31E will announce the presence of the town along a highly traveled segment, which should discourage unsafe speeds of passing trucks in this areas. Those buildings and the streetscape, as depicted, will also reinforce the scale and character of the town.

Main Street development is enhanced by infill development and a new street connection to Highway 52, which is one of four intersections to be enhanced for visibility and orientation. South of Highway 52, large-lot residential subdivisions can be integrated into the rural landscape utilizing a conservation-subdivision approach to preserve farm ponds, large stands of trees, and other features of the rural landscape.

Figure 4.14A through Figure 4.14C, at the end of this Section, conceptually illustrate this Development Form Focus Area. Figure4. 14A illustrates a conceptual master plan for the land in the vicinity of Hartmann Drive, including arrangement and size of building footprints as well as land use. A three-dimensional perspective of the conceptual master plan appears in Figure 14B, depicting building sizes in relation to one another and transportation rights-of-way.

Figure 4.14C highlights predominant freight routes and pedestrian routes in the study area. The intent of this third figure in the series of three is to identify where these forms of traffic are most likely to be found, based on proposed form and use in the Focus Area as well as the function of the facility in regional context. In concert with the Strategic Corridor, this Development Form Focus Area recommends the following features for US-31E through the Focus Area: 3-lane swale section with sidewalks, one of which may be a curvilinear multi-use path.

NASHVILLE AREA
Metropolitan Planning Organization

PART 5
IMPLEMENTATION STRATEGIES, BEST PRACTICES, AND TOOLS

Tri-County Land Use & Transportation Study

Part 5: Implementation Strategies, Best Practices, and Tools

Section 5.1: Introduction

This Part 5 of the Tri-County Transportation & Land Use Study recommends implementation strategies, best practices, and tools available to local and regional governments to better link transportation planning and land use planning. Section 5.2 begins with policies and initiatives appropriate for the Tri-County area. While these are sorted regionally and locally, as well as by land use and transportation, some overlap is evidence of the necessary interrelationship of each to yield successful transportation systems and supporting land-use patterns. The tools listed in Section 5.3 appear underlined throughout Section 5.2, which explains how local and regional governments can best deploy them to implement strategies.

Section 5.2: Implementation Strategies

5.2.1: Regional Transportation Planning

Achievement of the Tri-County Regional Goals, presented in Part 2 of this report, will require regional coordination and leadership in transportation planning. The MPO must continue to work with local governments, the state, public service agencies, and stakeholders of the region to increase travel choices for the Tri-County area. This requires a multi-faceted approach:

- Diversify investment in and educate travelers about transportation modes.
- Manage access to as well as demand for transportation, especially at peak hours, to reduce need for additional capacity.
- Direct investment in transportation infrastructure to Preferred Growth Areas identified in this study and away from Rural, Primary Conservation, and Secondary Conservation Areas.
- Invest equitably in transportation infrastructure to benefit all populations and communities.

Each of the following implementation strategies are opportunities for the MPO to take steps toward achievement of the goals of this study in the Tri-County area. The status of each strategy appears in parentheses, in line with the strategy heading. Tools to achieve the strategies are imbedded in each.

Sustainable Communities Initiative (current)

The federal offices of HUD, DOT, and EPA engaged in partnership in 2010 to better coordinate planning for employment, housing, and transportation. The partnership made available $150 million for regional plans and programs that accomplish this objective. The partnership has furthermore identified the MPO of every region as a critical member of any application for funding.

The MPO took the step of assembling a regional consortium to apply for these monies, but was unsuccessful in its application in 2010. The MPO, then, should initiate its own program to link local and regional planning efforts to attract jobs, create housing, and improve transportation in the Tri-County region and to better position itself for a subsequent round of funding in this vein.

This Tri-County Transportation & Land Use Study is an important first step toward linking these vital aspects of planning. The Study will thus position the Tri-County region competitively for federal Sustainable Communities grants for detailed plans and implementation projects by demonstrating commitment and progress in regional planning.

Atlantic Station, a large recent land development project near downtown Atlanta received financial support from the Atlanta Regional Commission's "Livable Centers Initiative. The development integrates four modes of transportation, depicted. The Sustainable Communities and Complete Streets programs proposed here are modeled after the Livable Centers Initiative.

The MPO should set aside a small portion of its federal transportation planning dollars as seed money for interlocal initiatives, such as corridor plans and transit station small-area plans, that would serve as demonstration projects for the Tri-County region to link planning for transportation, housing, jobs, and land use. The seed money should fund a fraction of an eligible project, to be matched by local funds, all of which might combine to match an application for federal monies available through the aforementioned partnership.

Steps to be taken to implement this strategy include refinements of the following tools:

- Update the region's Long-Range Transportation Plan (LRTP) to craft a vision aligned with the Preferred Alternative Scenario and identify needs to be positioned as projects under the regional Sustainable Communities Initiative (SCI).
- Revise the Urban Planning Work Program to identify federal PL (planning) dollars for SCI projects, as necessary, upon adoption of an updated LRTP. Coordinate with Tennessee Department of Transportation as needed to secure support.
- Require local governments to amend comprehensive plans and comprehensive transportation plans to specify projects proposed for funding under this regional initiative.

Refine MPO Project Scoring System (ongoing)

The MPO should continue to refine the system it employs to rank projects in its Long-Range Transportation Plan. Categories should include need for safety improvements, potential to catalyze economic development, ability to support existing as well as future commercial and residential development, impacts to natural and cultural features, quality of life, and consistency with other plans for transportation and land use. The scores should be contrasted with cost and availability of alternatives. Metrics like volume:capacity ratio, travel delay, and percentage of truck traffic should be considered as components of broader categories rather than justifications for improvements in and of themselves.

Standard traffic engineering measures may be inconsistent with transportation needs and result in improvements inconsistent with local goals. This facility in downtown Gallatin serves purposes in addition to vehicular mobility.

- The region should update its Long-Range Transportation Plan to rank projects according to its scoring system. While the LRTP can continue to incorporate all projects received from local governments, sources to fund them are limited. According to federal standards, LRTP must be fiscally constrained; therefore, only those projects achieving high scores should be identified as potential candidates for those federal dollars administrated by the MPO within the next 25 years (the LRTP's horizon year).

Establish "Fix It First" Policy (current)

The MPO should work with TDOT to establish a regional policy to "fix it first." Repairs and improvements to infrastructure in established communities should be prioritized over new or wider roads serving new growth in outlying areas. Future projects should support infill development in developed Character Areas – particularly in Preferred Growth Areas – rather than new subdivisions in Rural and Conservation Areas. "Fix it first" can be implemented procedurally through asset management, which will help assign value to existing infrastructure and its condition.

Limited dollars to address maintenance issues like ponding in the roadway, such as that seen above, in Gallatin, should be bundled with monies from other sources to address maintenance backlogs.

- Asset management is an objective fiscal measure by which to prioritize maintenance needs. These priorities could be incorporated in the MPO's scoring system for evaluating road improvements for inclusion in its LRTP.

Implement Context-Sensitive Solutions (current)

Context-sensitive design is federal policy that guides transportation planners and engineers to account for and mitigate impacts to historic and environmental features, existing communities, and vulnerable populations. The MPO should adopt the Federal Highways Administration's Context Sensitive Solutions principles as a manual to guide planning and construction of major thoroughfares in the Tri-County area. Critically, the resulting manual should be influenced by local land use patterns, both existing in the region and recommended as a component of this study. This policy should set the stage for thoroughfare design guidelines and Complete Streets, recommendations for which follow.

Context-sensitive solutions reduce and/or mitigate impacts on historical and natural resources. A thorough transportation alternatives analysis should carefully consider context.

Develop Thoroughfare Design Guidelines (proposed)

While facility footprint and location are commonly evaluated during analysis of alternatives, the typical user and, subsequently, the design speed of the facility, should also be considered. Roads with wide lanes, expansive intersections, and high speed limits serve freight traffic as well. Slower, narrower roads are better suited to and safer for local motorists as well as bicyclists and pedestrians. The MPO should therefore develop thoroughfare design guidelines to build thoroughfares that reflect the context and support the development pattern of the Character Area in which they are to be constructed.

Thoroughfare road design should be scaled to context and Character Area. Generally, Rural Areas will have high-speed facilities (45+ mph), Suburban Areas medium-speed facilities (30-40 mph), General Urban Areas moderate-speed facilities (25-35 mph), and Traditional Town Centers low-speed facilities (20-30 mph). (This would not apply to limited access facilities or bypasses.)

Intersection design speed should vary by context as well. Rural and Suburban Areas might utilize moderate to higher speeds: 12-15 mph, while Village and Traditional Town Centers require lower speeds – 10-13 mph – to safeguard pedestrians. These parameters are not universally applicable, as a dirt road in the countryside would have a lower design speed than a truck route near a city center. Local and regional plans must then recognize that the truck route is a barrier to pedestrian mobility just as a dirt road inhibits vehicle mobility and adjust accordingly.

- Guidance for Strategic Corridors in Chapter 4 provides examples of thoroughfare design.
- *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, An ITE Recommended Practice* is a resource for transportation planners, designers, and engineers who seek to construct facilities that respond to their surroundings.

Initiate Complete Streets

The MPO should adopt a policy of "Complete Streets." The concept of Complete Streets is presented in detail in Appendix G, Transportation Planning Best Practices.

To implement this policy, the MPO should dedicate a fraction of its transportation improvements funding to Complete Streets projects. Such projects should provide or increase access and mobility for bicycle and pedestrian travel while incorporating needed upgrades to intersections. New sidewalks, crosswalks, and pedestrian crossing signals (ped heads) might be bundled with installation of on-street parking, raised planted medians, and curb-and-gutter edge treatment for an intersection in need of signalization and turn lanes.

Complete Streets balance transit, vehicular, bicycle, and pedestrian transportation modes. (MARTA station is depicted in the left side of the picture.) MPOs in Atlanta, GA, and Charleston, SC, dedicate funds for improvement projects that bring these modes into balance.

Complete Streets projects should appear in the MPO's Long-Range Transportation Plan and be prioritized based on an objective scoring system. Scoring criteria might include the following:

- Safety – potential to reduce bicyclist and pedestrian injuries and fatalities.
- Demographics – household income and car ownership are correlated.
- Planned as well as existing density of housing and jobs.
- Proximity to destinations, especially those frequented by children and the elderly – schools, parks and recreation, libraries, and senior centers.

- Proximity to retail and services that could attract pedestrian traffic, thus reducing their parking needs.
- Coordination with transit – future commuter rail and bus rapid transit stations should be implemented in areas with Complete Streets to get bicyclists and pedestrians safely and conveniently to transit vehicles.

The MPO should annually set aside a fraction its funding for highways to implement Complete Streets. This reserve should then be allocated to well qualified Complete Street projects appearing in the metropolitan transportation improvements program (MTIP). The MPO should require a local match for the federal money allocated. Local revenue sources for this match might include a tax-increment financing district, business improvement district, metered parking, fees in lieu of parking, tree bank monies (for street trees), and utility assessments (to bury power lines). Other state and federal sources could also be employed, such as a community development block grant in a low- to moderate-income area.

- The Long-Range Transportation Plan will identify and prioritize Complete Streets projects just as it does other types of transportation improvements.
- A corridor plan typically offers the level of analysis needed to identify and recommend needs for Complete Streets projects.
- The MTIP will program a portion of federal highways funds for Complete Streets. The amount may be only a remnant remaining once major thoroughfares are programmed, but this amount is significant in the context of intersections and short segments for which this initiative is intended versus major thoroughfare segments several miles in length.

Maintain and Build Regional Bike/Ped Framework (ongoing)

The MPO should build on its award-winning *Regional Bicycle and Pedestrian Study* by assisting local governments with facility-specific planning and implementation. The regional study identifies existing and proposed facilities, educates the region regarding their value, serves as a framework for future project selection, and aims to improve safety for their users.

Local or countywide plans are needed to identify future projects using this framework, especially the type of facility. The Preferred Alternative regional growth scenario may also be a reference for facility selection, as wide sidewalks are well suited to Centers while multi-use trails may better serve Rural and Suburban areas. Like it did with Wilson County, the MPO should partner with local governments to prepare and regularly update local bicycle/pedestrian plans that identify potential users, their skill level, and the facility appropriate to their use. This partnership might involve technical assistance or financial support from the MPO.

- The *Wilson County Bicycle and Pedestrian Master Plan* demonstrates many good practices as well as specific projects with cost assessments. Other local governments in the Tri-County area might utilize it as a reference.
- Bicycle and pedestrian improvements could be funded within Complete Streets projects, as discussed previously, or separately by transportation enhancement grants.

Prepare Tri-County Collector Street Plan (proposed)

The MPO should partner with local governments of the Tri-County area to prepare a plan for collector streets. While local governments might typically perform this task alone, the number and arrangement of jurisdictions occurring in developed Character Areas (Suburban, General Urban, and centers) could justify partnership. The boundary between Robertson and Sumner counties and the arrangement of municipalities along it would seem to necessitate a level of coordination best accomplished within one concerted planning effort.

The Wake County (NC) Collector Street Plan, also adopted by all the municipalities, including the City of Raleigh, identifies road connections throughout the county. A collector street, like this one in Spence Creek, ideally provides for bicycles and pedestrians as well as motorists.

A substantial network of arterial, collector, and local streets should improve ease of access through connectivity, reduce congestion, increase mobility for alternative modes of transportation, and be cost-effective through private-sector cost-sharing. The plan would identify connections rather than specific routes, locations, and timeframes, since the private sector will lead construction of collector streets within land developments.

Evaluate Transit Alternatives to Connect TOD Centers

The Music City Star commuter railroad links Transit-Oriented Development Centers depicted in the Preferred Alternative regional growth scenario. Each train station in Wilson County anchors a TOD Center. TOD Centers appear in each of the other two counties as well.

The MPO should lead a feasibility and alternatives study for mass transit in Robertson and Sumner counties.

5.2.2: Local Transportation Planning

Make Corridor Planning Standard Operating Procedure

Every project appearing in the LRTP should be the subject of a corridor plan to link land-use planning and transportation planning prior to the project's inclusion in the MTIP. Each project should be part of a plan to improve the community in which it is located, improve return on investment of public funds through enhanced revenue (property and sales taxes) in the corridor, and improve the regional transportation network.

The corridor plan should first include a detailed land use study, building upon existing locally adopted plans, to better understand future land use in the corridor. The plan should then consider transportation alternatives suitable to support the corridor's future land use mix. Recommendations regarding urban design and road cross-section to effectively link land uses planned for the area to the function of transportation facility should also appear. The corridor plan should finally make recommendations to reserve transportation right-of-way and manage access, activities that should begin as early as possible, well before a project appears in the MTIP.

The Street Design Priorities Matrix in Appendix G of this document should be considered a resource for corridor planning. Later in the same section, Access Management is discussed at length as a best practice for transportation planning.

In the Tri-County area, the City of Gallatin taken steps to manage access and set standards with design guidelines along US Highway 31 toward Hendersonville. Other local governments might review these practices while studying their options.

Manage Parking Supply

Local governments typically require a minimum number of private off-street parking stalls for motor vehicles based on land use and intensity. Parking availability and pricing should be factored in as well, so as to promote local and regional land use and transportation goals. These standards should be adjusted to fit context, as follows:

- Local governments should evaluate parking maximums for General Urban Areas and Traditional Town Centers and encourage shared parking spaces via agreement between property owners. These centers should also include requirements for short- and long-term bicycle parking.
- Activity Centers and TOD centers should have ample parking to support intense retail activity and transit, respectively; however, this parking should be arranged carefully and structured, where practicable, to reduce loss of development intensity and pedestrian accessibility to surface parking. For these same reasons, these centers should include requirements for short- and long-term bicycle parking as well.
- In Traditional Town Centers, parking minimums might count employees only and "unbundle" parking otherwise required for patrons or residents, who might utilize nearby paid parking, such as metered on-street or structured parking. Furthermore, local governments should invest in on- and off-street public parking in Traditional Town Centers and TOD Centers.
- On-street parking should count toward required parking in site approval as well as development approval and at a much greater ratio than 1:1.

- Local governments should partner with the private sector to implement structured parking in Activity Centers in light of their high densities. The local government should consider accepting structures as public infrastructure and collecting fares one the market will bear it (long-term, once the Activity Center is substantially built).

Employ Access Management Techniques

(ref Appendix G)

5.2.3: Regional Land-Use Planning

Increase Housing and Lifestyle Options in the Region

The MPO should work with local governments, the state, public service agencies, and stakeholders of the region to increase travel choices for the Tri-County area. This requires a multi-faceted approach, which includes a variety of transportation modes, in addition to the following:

- Encourage population and employment growth in Preferred Growth Areas identified in this study.
- Direct growth away from Rural, Primary Conservation, and Secondary Conservation Areas identified in this study.
- Promote development patterns that enable people to live, work, learn, and play in the same community.
- Allow a mixture of land uses throughout the community, especially in Traditional Town Centers, Village Centers, Activity Centers, TOD Centers, and along the spines of Growth Corridors identified in this study.

Regional Land Use Coordination Committees

Land use and development patterns occur regionally and often develop without regard to local political boundaries. The Character Areas, which represent broad categories of similar development patterns, depict this phenomenon in the Tri-County region.

Impacts generated by land uses, such as traffic and stormwater run-off, span these boundaries. A single large land development project may occupy more land, house more people and jobs, and generate more traffic than many of the Tri-County region's smaller towns. This size of development has regional impacts that are best understood when local, regional, and state managers of land use, transportation, and the natural environment communicate opportunities and challenges.

Preparation of local land use plans must consider forces occurring outside local boundaries to understand their impacts on local land use. Because local goals and values differ, however, land use policies across one highway or water body may yield conflicting results without coordination. This study establishes a framework for more consistent application of land use intensity across the region by Character Area.

The MPO should convene two forums to coordinate regional land use: (1) a coordination committee of elected and appointed representatives of local government and (2) a technical committee of local land use planners, traffic engineers, environmental enforcement officers, and others engaged in land development review and permitting processes. Both committees should be voluntary, with no official responsibilities to or oversight of the MPO. The technical committee may serve as a resource to advise the coordination committee.

The MPO works with the Nashville Civic Design Center under agreement for assistance regarding master planning and urban design. These considerations are critical to linking land use planning with transportation planning. The MPO should furthermore partner with Cumberland Region Tomorrow, which represents a broad coalition of stakeholders and staff with expertise to tackle local and regional

planning issues. The expertise available at these three entities would be invaluable in collaboration to the recommended committees.

The technical committee for regional land use coordination would serve as an opportunity for a local official to introduce a large land development proposal at a conceptual stage of development to a peer with a neighboring town and a TDOT traffic engineer responsible for encroachments permits. These three officials might generate solutions or foresee problems in advance of project approval and potentially forestall unintended negative consequences. MPO and Nashville Civic Design Center staff might receive the proposal in advance of the committee meeting and be prepared to facilitate discussion. MPO staff could then follow up with a meeting summary for delivery to the local planner responsible for the proposal.

While the technical committee focuses on developments of regional impact, the regional land use coordination committee of elected and appointed officials should serve as a platform for interjurisdictional land use plans. The coordination committee would have no authority to review or approve plans; rather, its members and MPO staff would have the opportunity to showcase examples of interjurisdictional coordination and best planning practices. To enhance stakeholder engagement in planning processes, this forum might furthermore include representatives of the real estate development industry, advocates for natural and cultural resources, and supporters of good planning, such as Cumberland Region Tomorrow.

Tri-County Rural Resource Guide

The MPO should partner with local governments in the Tri-County area and state agencies with jurisdiction over rural areas to prepare a "Rural Resource Guide." This inventory of important natural and agricultural resources will help the region precisely define and delineate landscapes that deserve protection as Primary and Secondary Conservation Areas. The guide should build upon those inventories currently maintained by the Tennessee Department of Agriculture. This Rural Resource Guide will benefit the MPO as resource document for transportation planners preparing environmental assessments in advance of transportation improvement projects.

Commonalities of rural landscapes in Robertson, Sumner, and Wilson counties, as well as the regional nature of watersheds, make working together cost-effective. Data sets, findings, conclusions, and implementation strategies would not only be similar, but would also frequently require interjurisdictional cooperation to achieve results. The Rural Resource Guide should help local governments prioritize landscapes for conservation, identify critical points of collaboration, and update countywide comprehensive plans and open-space plans accordingly.

While implementation of protection strategies for Primary and Secondary Conservation Areas would occur primarily at the local level, a planning process for the Rural Resource Guide should explore the feasibility of a regional "transfer of development rights" program. Such a program could direct development, which might otherwise occur in Secondary Conservation Areas, to Preferred Growth Areas.

The Rural Resource Guide would also serve as an important education piece for citizens as well as local governments. It should detail strategies to protect Primary and Secondary Conservation Areas and identify non-profit and state partners available to help.

In addition to transfer of development rights, applicable tools might include conservation easements, purchase of development rights, and lease of development rights. Partners with information and technical and financial assistance include Tennessee Landowner Incentive Program, Wetlands Acquisition Fund, Farm Wildlife Habitat Program, Tennessee Stream Mitigation Program, Tennessee Heritage Conservation Trust Fund, State's Local Parks Recreation Fund, Land and Water Conservation Fund, Natural Resource Trust Fund, Greenways and Trails Program, Tennessee Parks and Greenways Foundation.

5.2.4: Local Land-Use Planning

Utilize the Preferred Alternative Scenario as a Resource for Countywide and Municipal Plans

Local governments should refer to Preferred Growth Areas and Character Areas as mapped in the Preferred Alternative regional growth scenario as a resource when developing urban growth boundaries and land-use plans. Zoning ordinance preparation should consider the housing types and densities specified in Character Area parameters. Development of subdivision ordinances should entertain standards for block size and transportation facilities as described in the description of Character Areas.

Codes that apply to centers should enable alleys and other streets that enhance access and promote a fine grid that facilitates walking and supports transit. Zoning should encourage mixed land uses and transit-supportive densities. (Refer to "mixed use" under Section 5.3.) Stormwater management should seek to reduce footprints of management structures and focus on mitigating peak volume.

In Rural and Conservation Areas, meanwhile, stormwater management should focus on protecting water quality. (Refer to "low-impact development" under Section 5.3.) Zoning ordinances should limit extensive land development and cluster communities to conserve natural features and landscapes. Performance zoning, which changes the focus from land use and lot size to meaningful open space and protection of steep slopes, should be investigated for implementation.

This small set of example objectives can be accomplished through a number of tools, including a traditional neighborhood development ordinance, a conservation development ordinance, density and intensity bonuses, and a form-based code district, all of which are detailed in Section 5.3. Small area plans, comprehensive transportation plans, corridor plans, revitalization plans, and affordable housing programs are recommended to guide which tools are appropriate.

Establish Redevelopment Districts in Centers and Declining General Urban Neighborhoods

Local governments of the Tri-County area should portions of existing Centers and General Urban neighborhoods as redevelopment districts. Traditional Town Centers, in particular, should become Courthouse Square Revitalization Zones, as allowed by the State of Tennessee.

This process should begin with preparation of a revitalization plan and should consider, as applicable, creation and recognition of a historic district. Tax-increment financing districts should be established to set aside revenue for infrastructure improvements planned to revitalize the district. Likewise, neighborhood groups and business associations should organize to support the district by arranging patrols, for instance, to raise vigilance against crime.

Among the tools local governments can use to redevelop stagnant or declining areas are community development block grants in low- to moderate-income areas, assistance to developers with property assembly, stricter code enforcement against deteriorating buildings, form-based codes that enable reuse of existing buildings and encourage construction of compatible structures within communities, adaptive building codes that remove barriers to refurbishment, and innovative stormwater management standards that encourage infill development by forgoing large land areas for detention. To preserve the historic fabric the community may wish to preserve, the local government should consider adopting guidelines for the historic district to ensure that renovation and perhaps new development, as well, is compatible with the existing built fabric. Partnership with Tennessee Main Street Program should assist

with outreach and education, helping property owners become aware of historical tax credits, revolving loan funds for historic preservation projects, and other non-local resources.

Maintain Rural Character

The Tri-County area should work together to protect the economic viability of working lands and strengthen protections for lands in Primary and Secondary Conservation Character Areas to maintain rural character that prevails in much of Robertson, Sumner, and Wilson counties. Multiple partners working together are needed to achieve these ends.

Landowners should be educated to establish Agricultural Districts and to take advantage of Tennessee's Greenbelt Law to incentivize continued rural land uses. Local governments should strengthen protections for landscapes and features in Rural and Primary and Secondary Conservation Areas. Local governments should avoid incorporating lands in Agricultural Districts and Greenbelts inside urban growth boundaries. Local governments should furthermore work with utility providers and school districts to limit further encroachment of facilities into Rural and Primary and Secondary Conservation Areas.

County governments should work with their agricultural communities to implement programs with competitive grant funding available from the State of Tennessee to support local agriculture. Agricultural Producer Association Grants support education, training, marketing, sales, equipment, and infrastructure to increase sales of local farmers' products. This partnership could materialize in the form of a farmers market, funding for which is also available on a competitive basis through the state's Department of Agriculture. These monies can be used to promote the market as well as to create a facility for it.

Local government action items, working in partnership with applicable state regulators, should include the following:

- Prevent encroachment by suburban residents, who might oppose agricultural uses due to externalities such as odor, dust, and heavy truck traffic.
- Upgrade floodplain protection requirements to achieve higher standing with FEMA and lower flood insurance premiums for landowners.
- Upgrade wetlands protection standards with buffers and clustering provisions to avoid isolated, "non-jurisdictional" wetlands.
- Set development limitations and prohibitions and for slopes in excess of 15% and 30%, respectively. Employ conservation development clustering options to respect property rights.
- Avoid conventional BMPs for stormwater management, which typically require more grading and a larger footprint than low-impact development techniques.

In conjunction with public service providers, local governments should pursue the following:

- Limit extensions of water and sewer infrastructure in Rural Areas. Development that occurs with these amenities should be clustered and served in a way that does not encourage attendant strip commercial development. Investment in existing infrastructure and communities should be the priority over extensions to support new development. Utility providers should institute asset management to aid in this prioritization.

- Locate new schools in Village Centers or nearby Suburban Character Areas rather than on large sites along country roads. Schools on country roads not only precipitate residential development where other public services and infrastructure are inadequate, but also present a safety hazard to students, parents, and teachers who must then navigate narrow roads not designed for heavy traffic generated by schools. School traffic would furthermore compete with farm vehicles and logging trucks for limited space.

Streamline Development Review

A land development proposal consistent with the parameters of the Character Area in which it is located should be eligible for approval without a local legislative process. A proposal that demonstrates the intensity of land use, transportation connectivity, affordable housing, and urban design characteristics planned for its location, as well as more conventional requirements like sufficient water and sewer infrastructure, should face a smooth path to approval and permitting without unpredictable reviews by boards of elected officials based on unquantified metrics.

Establish Concurrency Requirements

Local governments should ensure that adequate public facilities and infrastructure are in place concurrent with private land development. This is a two fold strategy. First, the local government should plan and implement transportation, water, and sewer infrastructure adequate to meet the needs of its population and employment base. Second, the local government should plan for and approve land developments that come on line in step with this infrastructure. The local government should work with school districts to achieve the same for education buildings.

Planning tools to achieve concurrency include local Priority Funding Areas, Capital Improvements Programs, and Adequate Public Facilities ordinances. Priority Funding Areas identify where infrastructure improvements can be expected. In the Tri-County area, these areas should fall within or align with Preferred Growth Areas.

A Capital Improvements Program identifies what projects will be constructed and when. Developers must be able to rely on this program so they can bring projects on line concurrently.

The Adequate Public Facilities Ordinance, then, sets level-of-service standards that must withstand the impacts of real estate development. The local government should also identify means by which the developer can mitigate impacts to uphold standards.

Typically, facilities should be adequate in existing centers. Also, concurrency requirements might be waived in Employment Industrial Centers and TOD Centers to encourage growth in those locations. Public/private partnerships might alleviate concurrency requirements in Activity Centers.

Scale Development Assessment Fees by Location

Local governments should implement development assessment fees. These revenues will improve potential for success to achieve infrastructure concurrency. Moreover, varying fees by location will be a compelling tool to direct growth to Preferred Growth Areas and away from Rural and Primary and Secondary Conservation Areas. Like concurrency requirements, fees might be waived entirely in some centers. An ordinance implementing development assessment fees should allow the developer the

option to make off-site improvements in lieu of paying the fees. The local government implementing development assessment fees should perform a fiscal impact study to properly evaluate costs to provide infrastructure to support projected growth.

Employ Asset Management for Water and Sewer Systems

The Tri-County area's water and sewer service providers should employ asset management. In this practice, the agency evaluates and depreciates its lines, stations, and plants as assets. This provides an objective measure by which the agency should use to determine priorities to maintenance and upgrades. The agency should prioritize these activities over the expansion of its system.

System expansion that neglects asset management results in new links connecting to deteriorating links and overextends the fiscal capacity of the agency to maintain the system at a high level of quality. For the benefit of customers, then, the region should work with utility providers to manage expansion of the water and sewer systems. This management should result in the prioritization of investment in existing communities ahead of new development. Investment should furthermore be focused in Preferred Growth Areas, which are intended to accommodate the greatest number and concentration of water and sewer customers.

Guide Development of Corridors to Reflect Community and Regional Goals

Local governments should prepare and adopt access management strategies, where appropriate, for Growth Corridors and Preservation Corridors, as indicated in the Preferred Alternative regional growth scenario, and coordinate with neighboring localities and TDOT, as necessary. Access management should be coupled with overlay districts prescribing design guidelines for Growth Corridors with the following objectives:

- Reflect these areas' positions as gateways to the Tri-County region's larger municipalities.
- Orient sites to bicycle-pedestrian facilities and bus stops.
- Preserve mobility in the corridor through access management strategies that consolidate driveways, especially for high-volume generators near intersections.
- Identify parallels for cross-access easements that accommodate bicyclists and pedestrians as well, since many Growth Corridors are major arterials that may not serve these users safely or comfortably in the road right-of-way.
- Require or refine requirements for traffic impact analysis so as to gain operational improvements to the corridor for land uses and developments that generate a significant amount of trips into the corridor. ("Significant" may be commensurate with the corridor, as determined by the local government of jurisdiction.)

White House has design guidelines in place for commercial corridors that the Tri-County area might consider a resource. Similarly, Preservation Corridors should be the subject of adopted overlay districts with design guidelines. Guidelines should:

- Reflect these corridors' rural/agricultural context.
- Orient development away from corridors and set aside deep buffers vegetated and/or with limited uses, such as roadside stands for agricultural sales and other typical rural uses.
- Preserve mobility in the corridor by limiting uses that generate high volumes of traffic, especially peak-hour (e.g., schools, fast food restaurants, but not churches)

- Implement access management standards that promote safety of roadway. Regulating frequency of access to Preservation Corridors is less important than limiting odd driveway locations or high-volume driveways.

Local governments should implement eligible activities under the TDOT Roadscapes Grant Program as applicable to the corridor. For Preservation Corridors indentified on the Preferred Alternative regional growth scenario, the following activities should be deployed:

- Establish gateways and entry corridors.
- Preserve significant landscapes, viewsheds, and scenic vistas in the corridor.
- Rehabilitate cultural and historic sites related to transportation.
- Establish park entrances.
- Restore native plants and remove invasive species.
- Restore stream banks and wetlands.

These practices are well suited to Growth Corridors:

- Establish gateways and entry corridors.
- Enhance highway interchanges.
- Rehabilitate cultural and historic sites related to transportation.
- Establish park entrances.
- Restore native plants and remove invasive species.
- Restore stream banks and wetlands.

Revitalization Plans

A revitalization plan is a small area plan focusing on a largely built out, but stagnant community. The plan should lead to the establishment of tools to redevelop the area, such as tax-increment financing.

Capital Improvements Program

A capital improvements program (CIP) is a four- to six-year schedule of infrastructure and facilities to be built or upgraded. The CIP should identify funding sources and timelines for completion of projects upon which all citizens, including those in the real estate development industry can rely.

Affordable Housing Program

An affordable housing program is a multi-pronged strategy involving many partners to make shelter available to low- to moderate-income households, especially those working in service jobs in the community. An important component of the successful affordable housing program is to remove regulatory barriers. Local governments should allow in their codes and encourage a variety of housing types, including accessory dwelling units, live-work units, and adaptive reuse of existing non-residential structures. Local governments should also streamline the development review process for affordable housing projects to reduce costs and manage public opposition. Local governments should furthermore reduce fees, especially development assessments fees, where applicable, to retain the affordability of the housing units.

Local governments should also foster partnerships with state agencies and non-profit partners. Examples include housing authorities, Habitat for Humanity, and the Tennessee Housing Development Agency.

5.3.2: Local Practices

Mixed Use

In recent decades, local governments have administered zoning ordinances that require strict separation and buffering between homes, schools, offices, shop, and other uses. Local governments should alleviate these requirements and encourage these four uses to locate in closer proximity to reduce citizens' reliance on long car trips on congested arterial roads for everyday activities.

Infill Development

Infill development occurs on existing lots or small existing tracts of land that have pre-existing access to high levels of public services and infrastructure. Infill development allows a community to accommodate needed housing or jobs without extending infrastructure and public services. In many cases, restrictive zoning may inhibit infill development, since it will typically need to occur at a higher intensity than its surroundings to be economically feasible.

Traditional Neighborhood Development Ordinance

A traditional neighborhood development ordinance is a tool by which to encourage walkable neighborhoods with a mixture of housing types that build communities. A successful TND ordinance will commonly integrate land uses, subdivision standards, and design considerations. This tool might be made available as a regional resource by model ordinance. For example, a model TND ordinance is available from the Congress for the New Urbanism. The following considerations are a small sample of those that should guide the text of a model ordinance.

- Allow front porches to encroach front yards and require deeper front setbacks for garages.
- Require connectivity between phases and between neighboring tracts. Establish connectivity scores based on stubs and intersections, and provide density bonuses for higher scores. Weight local street connections higher than trail connections, but allow both to meet requirement.
- Allow bike/ped facilities to collocate with utility easements and rights-of-way.
- Provide land development standards for public streets that are suited to modern townhouse developments. These will include angled and parallel on-street parking, alleys that can accommodate utilities, and street hierarchies that enable access by public service vehicles into the development, but not necessarily down every street.
- Accessory dwelling units that count less heavily or not at all against density maximums.
- Live-work units, which allow housing above light retail.
- Garden court housing developments that require less street frontage per unit and allow automobile access by alley only. Facades face walkway in community green.
- Duplexes and triplexes in structures of similar scale to adjacent single-family residences in General Urban and Center-type Character Areas.

Conservation Development

Development patterns informed by the Character Areas of the Preferred Alternative regional growth scenario reflect existing rural communities and harmonize with the landscape. The alternative, large-lot subdivisions use up large expanses of land, eliminate valuable natural resources, require long, inefficient runs of infrastructure and service vehicles, and appear out of character with the landscape.

A rural conservation development like that employed by Coopertown enables compact development on smaller lots surrounded by extensive open space. This open space will typically remain in a natural state and encompass steep slopes, floodplains, wetlands, and wildlife habitat, covered by a conservation easement. Upon occasion, commercial development may also be clustered to comprise a more village-like environment.

Low-Impact Development (LID)

Low-impact development is a set of techniques to manage stormwater for water quality as well as volume and rate of flow. While conventional stormwater BMPs (best management practices) typically involves piping and detention ponds, LID emphasizes utilization of topography, vegetation, and natural features to encourage absorption and filtering. LID stormwater management features are more easily integrated into site and land development plans than detention ponds, use less land, and require less site alteration.

In many instances, LID techniques run afoul of local stormwater management ordinances geared toward BMPs. Local governments should audit their ordinances for these inconsistencies and introduce alternate language that achieves the same goals of reducing flash flooding and protecting property.

Conservation Easements

A conservation easement is a private restriction of private property recorded on the deed. A landowner is subject to conservation only voluntarily. Typically, a conservation organization agrees to monitor the easement and maintain the land in its natural state. Alternatively, the landowner may seek an easement that allows agricultural use, in which he continues to operate as usual. A conservation easement will typically result in economic benefit to the landowner, either through reduced property taxes or via direct payment from the conservation organization.

Density and Intensity Bonuses

Density and intensity bonuses are optional increases of residential dwelling units per acre or non-residential floor: area ratio. A local zoning ordinance may make available these bonuses to land development proposals that choose to exceed minimum requirements for natural resource conservation, affordable housing provision, or transportation interconnectivity.

Form-Based Coding

A form-based code district is an alternative to a conventional zoning district. It prioritizes the form of new development over the use of land. Size and shape of buildings, streets, open spaces, and other components of land development are guided to fit more seamlessly together and with surrounding neighborhoods.

Design Standards

Design standards, like form-based codes, may address the size and shape of buildings as well as the site layout. Design standards may also regulate aesthetics, in which case a design review board may be responsible to review and approve site developments. More commonly, design standards are implemented for particular small areas or corridors with specific objectives, such as continuity of buildings along a sidewalk.

Section 5.3: Implementation Tools

5.3.1: Local Plans and Programs

Comprehensive Plan

The comprehensive plan is the foremost tool for a local government to coordinate land use, housing, jobs, and transportation. The plan should include a process in which the long-term future of the community is envisioned and implemented with short- to intermediate-term capital improvements, implementation strategies, and tools. This format necessitates five-year updates to a 20-year vision. The following elements should be addressed in the plan:

- Future land use
- Transportation
- Environmental
- Cultural/Historical
- Economic development
- Housing
- Open space, parks, and recreation
- Water
- Wastewater
- Solid waste
- Stormwater
- Emergency services
- Education

Comprehensive Transportation Plan

A comprehensive transportation plan is a local government's opportunity to study transportation at a greater level of detail than in the Regional Transportation Plan. This plan should dissect the current transportation system, address the hierarchy of the street system, integrate alternative modes of transportation, and link land-use planning to transportation planning through urban design.

Open Space, Parks, Recreation, and Greenway Plans

Similar to a comprehensive transportation plan, plans for open space, parks, recreation, and greenways allow for greater specificity in terms of need, location of facilities, and facility programming.

Small Area Plan

A small area plan is another opportunity a local government to build its comprehensive planning program. Prepared for a smaller geography, this plan can explore master planning and urban design possibilities to better link land use, housing, jobs, and transportation. Both, Hendersonville and Mount Juliet have illustrated how portions of their localities could develop as town centers to accommodate residential and retail development, among other needed building types.

Local Historic District and Guidelines

A local government may choose to establish a local historic district and guidelines for a commercial district or neighborhood by which to harmonize new development with the old. Guidelines might be adopted by ordinance as design standards, while the district itself should be the subject of a more comprehensive strategy involving education, marketing, and public investment in infrastructure. The district might align with a national historic district, thus making historic buildings eligible for tax credits.

Woodson Terrace is a historic district that the City of Gallatin has taken steps to protect and celebrate.

Urban Growth Boundaries

An urban growth boundary (UGB) represents an area in which a municipality's growth is expected to occur over 20 years. The boundary is set as part of a countywide plan to manage growth. The municipality may administer zoning and subdivision regulations with extraterritorial jurisdiction within the UGB and annex land only as it can demonstrate an ability to provide public services. The municipality need not identify all land within its UGB for urban and suburban development patterns; rather, it should zone according to its ability to provide public services. Lands beyond this range should expect to develop closer to the horizon year.

In the absence of municipal exercise of its extraterritorial jurisdiction, the county should administer its zoning authority similarly within UGBs. Counties should focus their public services on state-enabled "planned growth areas" that coincide with Preferred Growth Areas identified in this Tri-County Transportation & Land Use Study.

Traffic Impact Analysis

A traffic impact analysis is prepared for submittal of an application to construct a significant traffic generator when required by local government. A well prepared analysis will forecast the amount of traffic the land development can be expected to generate and identify solutions, which may include off-site operational or road capacity improvements.

Tax-Increment Financing (TIF)

Tax-increment financing allows a local government to dedicate property tax revenue infrastructure within a target district. The purpose is to catalyze investment in that district with the expectation of public improvements. When the local government establishes a tax-increment financing district, it records the level of property taxes assessed as a baseline. Any increase in revenue is set aside to fund planned improvements. These improvements are typically identified before TIF is initiated in a revitalization plan.

Development Assessment Fees

A development assessment fee is a source of revenue that a local government can assess land development to fund infrastructure to be used by occupants of that land development. These fees must not be collected to mitigate pre-existing deficient levels of service; rather, the amount collected must be in proportion to the impact generated by the proposed use or development. For instance, a fee may be assessed per housing unit for school construction; however, the fee must fund a school to serve that housing unit and not go to alleviate overcrowding at an existing school. The amount of the fee must be

equivalent to the impact of that house and not offset pre-existing needs for which fees were not collected.