



Bluegrass Corridor

MANAGEMENT PLANNING HANDBOOK



November 2000

Letter from the Secretary

Dear Fellow Citizens of Kentucky:

We are proud to present to you our Bluegrass Corridor Management Handbook. It is through our state's roadway corridors that we experience the best that Kentucky has to offer. We have prepared this handbook to be used as a guide for local community leaders, planners, and transportation officials for the development of corridor plans that are comprehensive and responsive to community values and the Kentucky heritage.

The Kentucky Transportation Cabinet realizes that our roadway investment decisions often influence not only traffic movement but also land development patterns and community character. This handbook is intended to provide communities with a process for the development of plans that yield transportation investments that not only reduce congestion, but also encourage appropriate land use planning through the integration of community and environmental goals.

We hope you find this work helpful, not only as a guide, but as a tool for the improvement of planning coordination at the state, county, and private sector levels. We understand that these decisions are difficult, however many of you have told us that a more community-based planning framework may be helpful. Therefore we are pleased to make available this handbook and look forward to working with towards improving the quality of life in Kentucky.

Sincerely,

James C. Codell, III
Secretary of Transportation

Acknowledgements

The process of developing a corridor management planning handbook is a major undertaking, and one that draws on the abilities and cooperative efforts of many people. A Technical Advisory Committee was appointed early in the process to add their expertise to the handbook. Composed of planners, local business owners, transportation specialists, concerned citizens, and local, state, and federal officials, this interdisciplinary group set the tone for the handbook before any words were put on paper by deciding what the handbook should accomplish. Members of the committee attended meetings, reviewed drafts, and provided valuable assistance through the process to answer questions and provide guidance. Our thanks go to those who participated in determining the direction and content of the handbook, and to all those who gave their time and support in the interest of building a better community.

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CORRIDOR MANAGEMENT PLANNING HANDBOOK

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Step 1



GET ORGANIZED

Step One - Get Organized

The process of drafting a corridor management plan rarely flows in a fixed, predictable series of steps. However, there is a basic logic behind the process of a corridor management plan.

Form a Corridor Advisory Group

The purpose of a corridor advisory group is to engage concerned citizens in gathering information, in order to explore the broadest range of options possible, and to involve the public in the decision-making process. Corridor advisory group representatives speak with citizens and business owners in order to determine what problems exist in the corridor, and determine what issues can be examined for further study. Due to the facilitatory role of the group, care should be taken to ensure that members are representative of the community.

Members of the corridor advisory group should not be limited to developers and planners, but should include representatives from local and appropriate state government, environmental interest groups, civic groups, and major stakeholders. Prior to the workshops and public hearings, project information will be shared with the corridor advisory group for review and comment.

Establish Initial Goals and Objectives

Defining the goals and objectives of the roadway corridor management plan is one of the earliest phases of project development. Although transportation planners and engineers traditionally have controlled this process, corridor advisory group representatives should fully participate along with designers and other concerned parties.

Based on their understanding of community values and issues, the corridor advisory group should take an active role in the development of goals and objectives. For example, established values such

as the "Balanced Vision" endorsed by Bluegrass Tomorrow should help direct the initial goals and objectives.

The goals and objectives initially drafted by the corridor advisory group will serve as the guiding point for the study, providing guidance in determining what data to collect and the framework for its analysis. For this reason, goals and objectives must be developed prior to the collection of any data. Some goals and objectives may be stated tentatively and revised as analysis progresses. Other goals and objectives should be value statements that are intractable. Nonetheless, a statement of goals and list of objectives must be stated so that they can be measured, and the measures for each objective must be specified.

*To protect the
distinct community
character of both Lexington -
Fayette County and Scott
County - Georgetown.*

*To preserve the rural character
which exists along U.S. 27.*

-- Preliminary Goals,
US 27 Corridor Planning Workshop

Step One - Get Organized

For example, a successful approach, taken by the Virginia Route 50 Corridor Coalition, specified goals and objectives for traffic calming which include the following² :

Goals:

- Increase the quality of life,
- Incorporate the preference and requirements of the people using the streets and intersections,
- Create safe and attractive streets,
- Reduce the negative effects of motor vehicles on the environment, and
- Reinforce the historical, agricultural, and natural setting.

Objectives:

- Slow traffic to within the posted speed limits,
- Reduce collision frequency and severity,
- Improve the perception and reality of safety for non-motorized users of the streets,
- Reduce the need for police enforcement,
- Provide more greenery (trees, shrubs, grass, etc),
- Enhance the historical, agricultural, and natural setting,
- Accommodate, but not invite through traffic.

Define the Study Area

Once goals and objectives are defined, maps of the study area provide a foundation for future activities. Each technical analysis may have its own individual study area. However, the corridor management plan study area should include the com-

munities within, and immediately surrounding, the corridor's sphere of influence. In addition, analysts should recognize that the projects within the corridor may have social consequences to communities well beyond the immediate geographic area. As a result, the study area may change as more information is collected and alternative strategies are developed. The defined study area must be a consensus point of the corridor advisory group.

The boundaries of a study are often delineated by physical barriers, land-use patterns, political or area-of-responsibility divisions (e.g., school districts / police districts), demographic characteristics, and citizen perceptions. A good starting point for defining the corridor is the already-defined neighborhoods recognized by name or tradition.

The elements that make up the corridor can include nearly anything that can be seen from, or impacted by the roadway. Boundaries can be determined by mapping the corridor's "viewshed" - the surface area that can be seen from a specific viewpoint along the road³. Viewshed mapping is an important step of corridor planing because it involves early identification of important corridor features, and provides an appraisal of the visual impact that development may have on roadway area views.



Figure 1.1 Viewshed Study Area for Paris Pike

²Route 50 Corridor Coalition. A Traffic Calming Plan for Virginia's Rural Route 50 Corridor. 1996. Pp 32-33.

³Bishop, K. Designing urban Corridors. APA. Planning Advisory Service Report Number 418. 1989. P 23.

Step One - Get Organized

In all cases, a minimum of three maps are necessary:

- map of the region,
- map of the corridor area (1" = 500'), and
- aerial photograph(s) of the corridor area (1" = 500').

Specific data sources and resources are explained in further detail in **Step Two, Know the Corridor.**

Identify Stakeholders and Concerned Public

In order to ensure that the corridor management plan's recommendations are feasible and acceptable, the stakeholders involved in the implementation of the plan should be identified. Citizen planners will provide important input to help refine the management plan, substantiate its goals and objectives, and supply information for developing corridor alternatives, which address identified objectives. Involve stakeholders and the public early in the process; this will help create ownership, support for new recommendations, and ensure that the management plan reflects community values. In addition, it enhances the credibility of the process and its outcomes.



Figure 1.2 High school students serve as citizen planners.

Government agencies with jurisdictional review or an expressed interest in roadway corridor development must be contacted and identified. The agencies are a valuable resource not just in terms of

data, but professional expertise and support. The list below includes stakeholders from previous initiatives in the Bluegrass Region. It is meant to be a starting point and is not exclusive. As other concerned public agencies are identified throughout the study, they should also be listed and contacted.

Local

- County (Planning Development, Public Works Department, Parks & Recreation Department).
- City (Development Services and Zoning Division, Planning Department, Engineering Division).
- County School Board.

Regional

- Metropolitan Planning Organization (MPO).
- Bluegrass Area Development District (BGADD).
- Bluegrass Tomorrow.
- Bluegrass Airport Authority.
- Utility Agencies and Companies.
- Economic Development Agency.

State

- Kentucky Transportation Cabinet (KYTC).
- Kentucky Department of Economic Development.
- Kentucky Department of State, State Historic Preservation Office.
- Kentucky Department for Natural Resources and Environmental Protection.

Federal

- Federal Highway Administration (FHWA).

In addition to the government agencies, the following groups should be mailed information in order to share project information (including notification of upcoming meetings) as well as to solicit input and ideas. Again, the following list includes stakeholders from previous initiatives and is meant to serve as a guide.

Step One - Get Organized

Owners

- Property Owners, whose property lies, in part or whole, within 300 feet of the study area.
- Business Owners, whose property lies, in part or whole, within 300 feet of the study area.
- Elected and Appointed Public Officials.

Users

- Drivers who use roadways in the corridor.
- People who work within the corridor.
- People who live within the corridor.
- People who use recreational facilities within the corridor.
- People who attend school within the corridor.

Major Employers

- Advance Drainage Systems, Inc.
- Aeroquip Automotive, Inc.
- GTE Products Corporation.
- Kuhlman Corporation Distribution - Transformer Division.
- Rand McNally and Company.
- United L-N Glass, Inc.
- Keeneland.
- Woodburn Farm.

Interest Groups

- CSX Railroad.
- Norfolk Southern Railroad.
- 4-H Clubs.
- League of Women Voters.
- Jaycees.
- Kiwanis Clubs.
- Rotary Clubs.
- Lions Clubs.
- Audubon Society.
- Civic and Neighborhood Groups.
- Chambers of Commerce.
- Trucking Associations or Unions.
- Any individual or groups requesting to be placed on the mailing list.

The identified stakeholders and concerned public previously described should be included in the initial mailing list. A comprehensive mailing list created early and maintained throughout the corridor management planning process is a simple and relatively inexpensive way to reach and inform a large number of people.

Establish Initial Schedule

Once the corridor advisory group establishes the initial goals and objectives, defines the initial study area, and identifies the stakeholders and concerned public, an initial schedule with target dates should be established. In the next phase of the process, citizens will actually put forth their ideas on maps and paper at community planning workshops. Before this can occur, there are certain tasks that must first be completed. The identification of near-term tasks may include funding and organizing.

The first task of any funding program will include mass mailings and one-on-one meetings with potential contributors. This initial influx of capital is to assure that resources will be available to help distribute information, hire consultants, reproduce large-scale maps for the planning workshops, and cover the expenses of activities on a daily basis.

As funding sources are secured, organizational tasks may be identified, assigned, and completed. When organizing a community planning workshop, consider this list of activities and the room requirements for each:

- Registration,
- Information tables,
- Presentations, and
- General workshop area(s).

Have a firm commitment with the selected site. Send out at least one bulk mailing to inform the public and media about upcoming events and to

Step One - Get Organized

recruit volunteers. Information packets may also be prepared for ongoing fundraising.

Finally, prepare an overall schedule that reflects the initial community planning workshop(s), data collection, definition of corridor type, generation of development options, analysis of options, evaluation of options and recommended solution(s), implementation strategies and course of action for achieving the vision. With a clear vision in mind and a coordinated volunteer effort, groups will be ready to develop their corridor management plan. This overall schedule will appear in project newsletters, web site, and workshop displays. A sample schedule is provided in **Appendix B**.

Contact Stakeholders and Concerned Public

Notification to the public is important because it lets them know about proposed actions and informs them that their input is valued. By adhering to the following guidelines and utilizing existing participation in the process will be maximized.

- Provide concise information sent in a timely manner.
- Advertise or write articles in local newspapers, home owner association, civic clubs, and school/PTA newsletters.
- Participate in community events such as art shows, fairs, and church activities.
- Schedule public meetings or activities at convenient times and places (i.e. immediately before or after the workday at a site within the business district, in the evening at a community center or school within the neighborhood that is accessible by both public transit and those with disabilities).
- Avoid technical jargon, rephrase issues to encourage participation.
- Utilize community leaders (formal and informal) who can help notify the general public.

The following techniques will be employed to notify the stakeholders and public of the corridor management plan and to solicit input into the plan-

ning process. Samples of web sites, initial newsletters and check-off lists from other projects are provided in **Appendix B**.

Web Site

A corridor management plan specific web site should be created once the schedule and tasks are identified. The site will include, but is not limited to, the description of the corridor, schedule, information about the corridor management planning process, and different ways to get involved. The site will be updated throughout the study. In addition to specifying a contact person, agency, and address, an "e-mail button," on the web site provides a means by which citizens can directly e-mail ideas, suggestions or questions while visiting the site. Electronic correspondences will receive the same level of attention as all written letters received during the study. While a web site is only applicable to those households that are "wired," it does provide information 24 hours a day in a manner other media cannot duplicate.

Newsletter

Newsletters should be distributed to the community several times during the course of the corridor management planning process. The intent of each newsletter is to provide a plan update, announce any upcoming meetings, and to encourage the reader to share input. Once the mailing list is compiled, the schedule established, and the web site up and running, the first newsletter should be printed and distributed.

Get Organized

The challenge of this first step is to balance the interests of involved parties. Identifying and acknowledging issues and stakeholders, while managing expectations, early will shape the planning process. It is also best to establish the framework for these decisions at the beginning of the process so that overall community values are incorporated in the corridor management plan.

Step 2



KNOW THE CORRIDOR

*In Lexington, I
passed row after row
of tobacco warehouses
and auction barns on my
way into the thousand square
miles of bluegrass world once
called "God's footstool," a
fertile land where pumpkin
vines grow so fast that they
wear out the melons
dragging them along.*

- William Least Heat-Moon,
Blue Highways

In order to profile a roadway corridor, it is necessary to summarize the history, present conditions, and anticipated future of the area. This profile provides an overview or snapshot of the corridor and will serve as a basis for identifying potential impacts of proposed public non-roadway investment, private development, and roadway improvements. Typically, the profile will include a combination of the following:

- Visual maps - depict physical characteristics such as neighborhood boundaries, land uses, public facilities, and commercial centers.
- Narrative text - describes community characteristics, such as population demographics, economic and social history of the communities, the importance of various facilities, and plans for the future.
- Tables or graphs - summarizes important data or conclusions, such as growth in daily traffic volume.

Examples of each are provided in this section.

The process for understanding the roadway corridor includes collecting and reviewing data, determining the roadway corridor context, holding a workshop and finalizing/editing the data collection report.

Collect and Review Data

Once the parameters for data collection are identified, data may be collected and reviewed. Gathering data can be expensive and time consuming. When collecting data about a corridor, analysts should identify what data is needed for their specific purpose and what is readily available. In many cases, in-house staff have expertise with local issues. Also, in larger communities, various local and regional planning agencies and have information that can easily be obtained. Other sources may be obtained by referencing project files or earlier attempts at the current project. This information may then be updated. The following examples of data sources and their typical uses, Tables 2.1 and 2.2, must be recognized as mere guideposts rather than exact road maps. Other sources may be available or more applicable, so analysts should not limit themselves to these items.

When collecting information, it is important to recognize when the data was collected, the data sources used, and data reliability. Analysts should use the most up-to-date data available, understand the basic assumptions used in each compilation, and recognize the purposes for which data were originally collected.

Table 2.1
Resources for Data

Source	Primary Uses
Metropolitan Planning Organizations (MPOs)	Economic base, land-use and zoning plans, past and forecasted socioeconomic data, previous plans.
Regional development organizations and local government planning social service departments/agencies (i.e. BGADD)	Economic base, land-use and zoning plans, taxing districts, social and economic programs, and business and marketing information.
Kentucky employment agencies or labor departments	Employment trends, unemployment rates, and economic base.
Kentucky State Data Center	Population data and forecasts.
Kentucky Transportation Cabinet (KYTC)	Traffic information, growth projections, roadway level of service.
State, local, and university libraries	General information, community historical background, economic base, and business and marketing information.
Local historical societies and State Historic Preservation Officer (SHPO)	Community historical background, and location of historic structures, landmarks, and districts.
Other relevant data collection organizations, such as Chambers of Commerce, religious institutions, American Automobile Association (AAA), Meals-on-Wheels, American Association of Retired Persons (AARP), and social agencies	Special populations and needs, businesses, community issues, etc.
Transit agencies	Bus and train routes, frequency, and ridership.
Environmental	Topography, soil types, vegetation, and protected species.

Table 2.2
Data Collections and Activities

Source	Primary Uses
Census Bureau publications and statistical abstracts	Population trends and demographics, economic indicators, and housing.
Aerial maps and road maps	Community boundaries and physical characteristics, location of activity centers, infrastructure, houses, and businesses.
Field or windshield surveys and reviews	Locations and number of structures, and activity patterns.
Yellow Pages or city directories	Business and community facility locations and type.
Dun and Bradstreet (D&B) databases	Business location, type, and number of employees.
Donnelley Directory (available on CD-ROM)	Business location, type, and number of employees.
Tax Records	Property values, business location, type, and number of employees.
Building-permit records	Approved or built development.
Real estate market surveys, regional real estate journals, and interview with realtors	Housing prices, trends in sales, age or characteristics of structures, and neighborhood composition.
Interviews and public involvement with businesses, community leaders, and residents	Community values and issues.



Figure 2.1 - Aerial Photograph of a Roadway Corridor

Regional Context

The type of regional data to collect and incorporate into a corridor management plan includes, but is not limited to:

- Location map of region with highlighted corridor study area.
- Land use map of region with highlighted corridor study area.
- Aerial photograph of study area (1"= 400' or smaller).
- Property line map of corridor study area.
- Eye level photos of corridor.
- Aerial "oblique" shots of corridor.



Figure 2.2 - Aerial "oblique" Photograph of a Roadway Corridor

Step Two - Know the Corridor

Regional growth patterns and major environmental systems influence the form and function of a regional transportation network. The initial regional analysis examines the context of issues beyond the study area. Regional land use, environmental systems, and the existing transportation networks have the ability to influence the systems within the corridor.

Land Use

Regional land use identifies large concentrations of development and their intensity. The relationship of major activity centers, such as airports, malls, and universities, to municipal boundaries and downtown may indicate the direction of future growth.



Figure 2.3 - Regional Land Use

Environmental Systems

Environmental systems should dictate the location and intensity of future growth. The location and type of environmental features also have direct implications on the kind of transportation improvements available to the region, given strict regulations, and the need to preserve environmental resource.

Wetlands and endangered species are two issues which have federal laws and regulations which must be considered by both the public and private sectors.



Figure 2.4 - Regional Environmental Systems

Transportation Network

The transportation network connects cities and provides information on regional travel patterns. In order to examine through trips, analysis of only the corridor study area is not sufficient. Managing existing and future traffic traveling through the corridor is an issue that needs to be examined regionally.



Figure 2.5 - Regional Transportation Network

Step Two - Know the Corridor

Local Context

A detailed description of the physical environment of the corridor will help guide the analysis and preferred choice. Corridor issues extend beyond the local transportation network, especially in communities with so rich a heritage as those in the Bluegrass Region. The local context of the corridor must be fully examined to establish a baseline of understanding before any analysis and recommendations can be made.

The type of local data to collect and incorporate into a corridor management plan includes, but is not limited to:

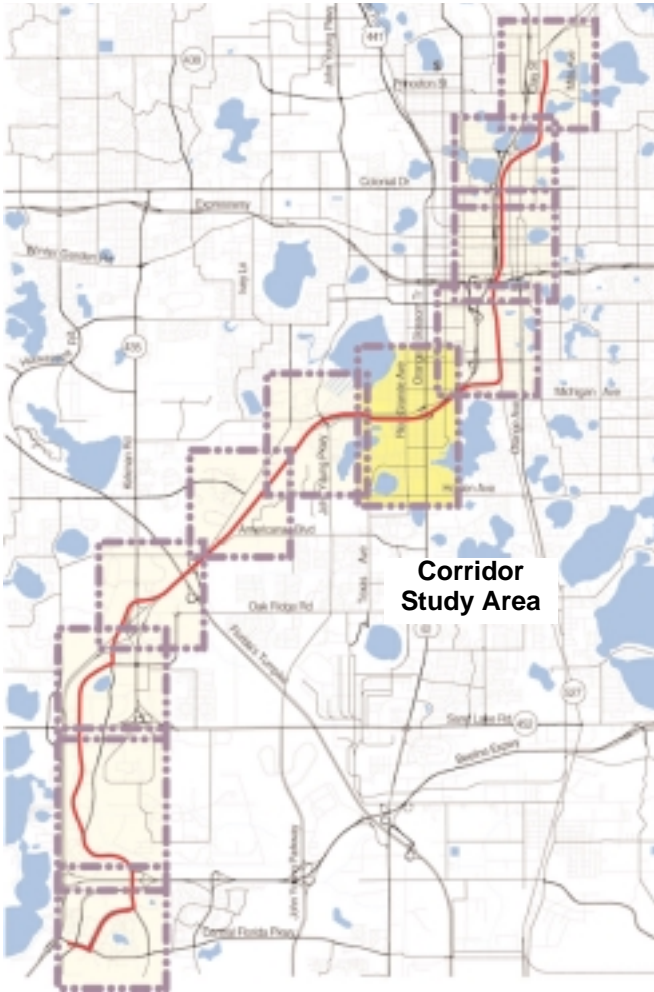


Figure 2.6 - Location Map

Land Use

Existing land use (including road network, parks and open space, institutional, residential, commercial).

- Future Land Use.
- Unincorporated Lands within the Region.
- Vacant and Agricultural Lands.
- Major Approved Developments.
- Allowable Densities.
- Zoning Map and Code.



Figure 2.7 - Future Land Use

Step Two - Know the Corridor

Cultural Features and Community Facilities

- Public and Private Schools.
- Cultural Features.
- Community Facilities.
- Planned Facilities.
- Archaeological and Historical Resources.
- Religious Institutions.

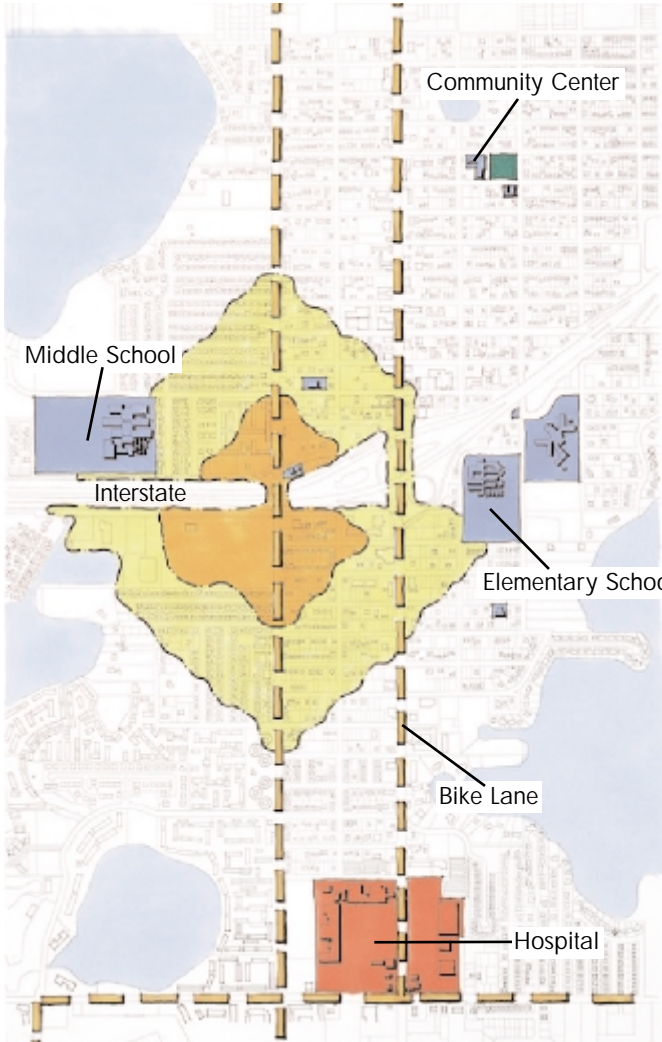


Figure 2.8 - Community Facilities

As parks, open space, and public facilities define the function of a community, our cultural and historic resources provide the spiritual framework to the community. These facilities give structure and focus to our daily lives. The community facilities diagram identifies a series of local neighborhood features, including parks, schools, rivers, bicycle routes, etc.



Figure 2.9 - Abandoned Homesite Remains, Bluegrass Region

Step Two - Know the Corridor

Natural Features

- Wetlands.
- Aquatic Preserves and/or Wild and Scenic Rivers.
- Floodplains and Floodways.
- Soils.
- Threatened and Endangered Species Habitat.
- Equine Resource Areas.
- Biological Assessment.
- Drainage.
- Aquifer Recharge Areas.



Figure 2.10 - Natural Features



Source:
University of
Kentucky
Landscape
Architecture

Figure 2.11 - Equine Resource Area

Local Transportation Plans Review

- City Comprehensive Plans.
- County Comprehensive Plans.
- Other Transportation Studies.

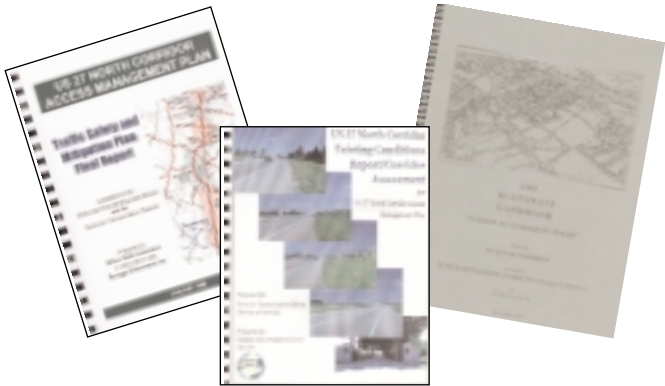


Figure 2.12 - Existing Transportation Studies

Step Two - Know the Corridor

Existing Transportation Facilities

- Roadway Network.
- Transit Network.
- Pedestrian/Sidewalk Network.

The study area may include road types ranging from local residential streets all the way to an Interstate. The identification of signalized intersections provides further understanding of the major traffic patterns and existing infrastructure investment.

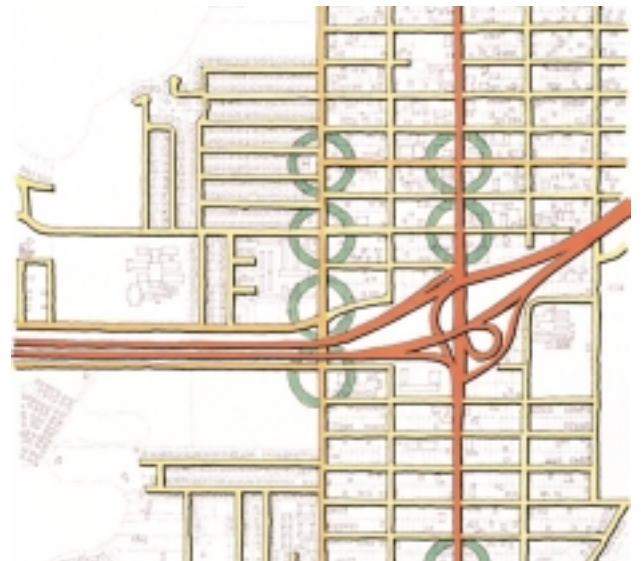


Figure 2.13 - Roadway Network

The identification of bus routes in the study area introduces the notion of identifying more than one mode of travel. The location of these routes also indicates the quality of service to non-motorized persons attempting to access uses along the corridor.

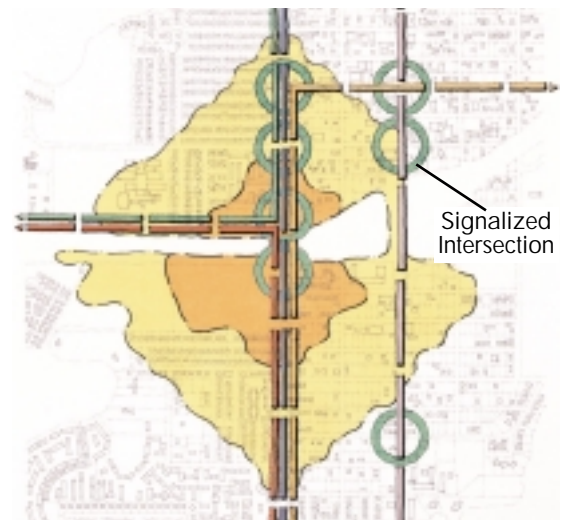


Figure 2.14 - Transit Network

The identification of the existing sidewalk network, pedestrian walking distances, and signalized intersections defines relationship of activity centers in terms of the pedestrian environment. The half and quarter-mile (10 and 5 minute) walking distances centered on a principal location identifies the critical pedestrian and streetscape improvement areas.

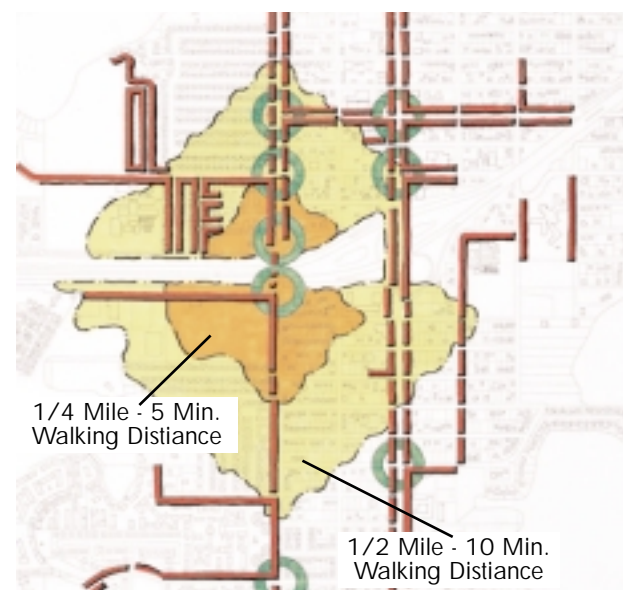


Figure 2.15 - Pedestrian/Sidewalk Networks

Step Two - Know the Corridor

Estimate Trip Characteristics

- Internal Trips.
- Internal/External Trips.
- External Trips.
- Work Trips.
- Recreational Trips.
- Pedestrian/Transit Share.

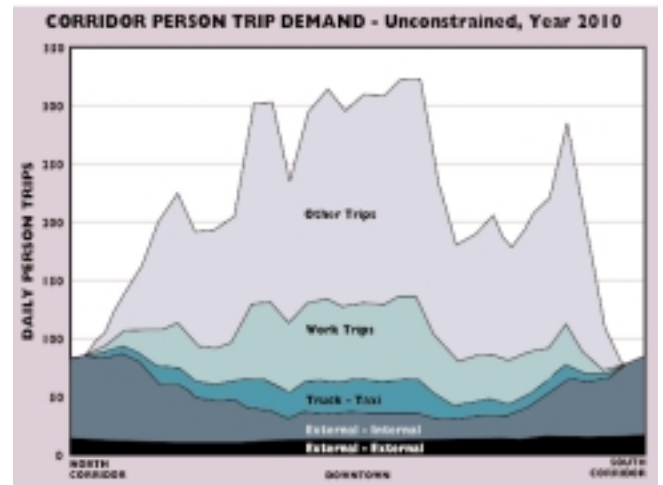


Figure 2.16 - Corridor Trip Types

Communities with a large employment base, attract large numbers of regional trips. Major activity centers and commercial corridors draw thousands of workers and shoppers into the city each day. For example, downtown Lexington serves as a regional hub of activity - employment, entertainment, academics, shopping and dining, while numerous commercial corridors also contain large numbers of shops and restaurants.

Identify Users of Roadways in Corridor

- Pedestrians/Cyclists.
- Shoppers.
- Drivers.
- Origin/Destination of Users.

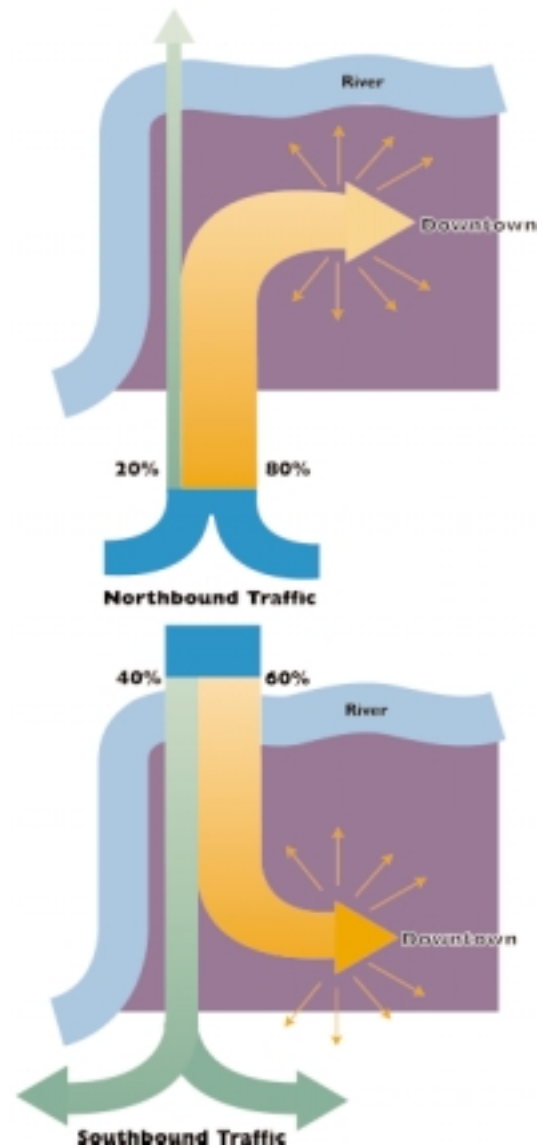


Figure 2.17 - Trip Distribution Diagrams

Step Two - Know the Corridor

Existing Highway Characteristics

- Identification of roadways.
- Beginning and end of segments.
- Length (miles).
- Posted speed limit (mph).
- Number of lanes.
- Right-of-way (feet).
- Functional classification.
- Congestion Level (peak hour travel times).



Figure 2.18 - Posted Speed Limits



Figure 2.19 - Control Devices

Table A
US 27 Existing Conditions

Beginning Mile Post	End Mile Post	Length	Description of Beginning	1997 Avg. Annual Daily Traffic ^a	% Commercial Vehicle
Fayette County					
0.000	1.000	1.000	Jessamine County Line	45600	3
Jessamine County					
0.000	3.332	3.332	Garrard County Line	13400	5.2
3.332	5.257	1.925	KY 1268	15600	
5.257	5.803	0.546	KY 3374 (Hoover Pike)	17100	
5.803	6.767	0.964	US 27 X	15100	
6.767	8.147	1.380	Shun Pike	21200	2.7
8.147	8.601	0.454	KY 29	14100	
8.601	9.552	0.951	Etter Road	24500	2.8
9.552	10.619	1.067	KY 169	24700	
10.619	12.603	1.983	US 27 X	50200	
12.602	14.599	1.997	KY 3375 (Catnip Hill Rd)	38000	4.5
14.599	15.070	0.471	KY 1980	35700	

(a) Kentucky Transportation Cabinet Highway Information System, August, 1997

Figure 2.20 - US 27 North Corridor Assessment, Analysis of Existing Conditions

Step Two - Know the Corridor

Existing Traffic Data

- Historic traffic volumes on roads in corridor
- Existing traffic counts on roads in corridor

Daily

By hour, by direction

Percent trucks

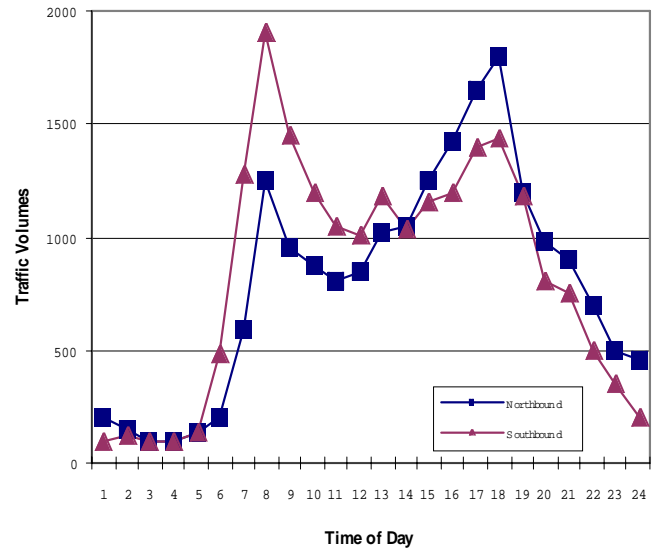


Figure 2.21 - US 27 South of Ash Grove RD Traffic Profile - October 4, 1995



Figure 2.22 - US 27 North Corridor Assessment, Existing Daily Traffic Volumes

Roadway Corridor Context

Although every community has specific and unique problems that they need to address, based on their particular needs, assets, and local and state planning laws, most communities have similar corridor types. For example, the four corridor types as defined in the Lexington-Fayette Urban County Government's *Corridor Enhancement Study* are urban developed corridors, urban undeveloped corridors, urban scenic corridors, and rural scenic corridors⁴.

For the purpose of this handbook, seven different, yet overlapping categories, are used to describe the context of the roadway corridor.

1. *Historic Center*
2. *Urban Neighborhood*
3. *Commercial Activity Center*
4. *Suburban Neighborhood*
5. *Suburban Fringe*
6. *Rural Growth*
7. *Environmentally Sensitive*

The classifications begin with the most built-out and developed category, historic center, to the most rural scenario, environmentally sensitive land. A summary of the direction each corridor type may lend itself to, and sample graphic depicting the existing condition is provided in this section.

Historic Center



Figure 2.23

A dense street grid is the most basic characteristic of roadways in the historic center. Within this grid area, are contained local and county government buildings, cultural activities, and major institutions such as universities and hospitals. The goal for the historic core is to establish it as a vibrant center for the community's commercial, institutional, entertainment, and cultural activities. Toward this goal it is recommended that the city encourage strategies that help to increase and create a critical mass of residents and jobs within the historic core. This development must be augmented by commercial development geared to the regional market as well as to neighborhood services, cultural and entertainment activities, and recreational opportunities. As a regional destination, the historic center offers an alternative location for projected growth. In so doing, it may help relieve suburban and rural development pressures.

The land development strategies within the historic center may include:

- Infill development.
- Continue rehabilitation and maintenance of the current housing stock.
- Encourage new higher density housing types where appropriate.
- Reuse existing historic structures.
- Encourage cultural and entertainment uses.
- Create a comprehensive public space system that encompasses pedestrian friendly streetscapes, parks, and open space.

⁴Division of Planning. Lexington-Fayette Urban County Government. Corridor Enhancement Study. Lexington, KY. 1992. P3

Urban Neighborhood



Figure 2.24

The basic building block of the vision plan is the neighborhood - but not the isolated, sprawling single-use residential development mandated by present zoning. The recommended neighborhood building block is well defined by a physical edge, with an identifiable center that is animated by a lively mix of activities in a well-defined public realm. The neighborhood is walkable because it is limited in size - approximately $\frac{1}{4}$ to $\frac{1}{2}$ mile in diameter or a 5 to 10 minute walk, with interconnected streets. Interspersed within the neighborhood is a civic structure of public buildings and open spaces that include schools, places of worship, and libraries. These are principles of good neighborhood design.

The essential strategies for these neighborhoods should be to enhance their attractiveness and livability. Toward this end, the following land development strategies may be recommended:

- Encourage infill housing.
- Encourage maintenance of existing housing stock and neighborhoods.
- Reuse existing historic structures.
- Encourage new open space, parks, and recreation facilities particularly along streambeds.
- Encourage creation of neighborhood centers.

Commercial Activity Center



Figure 2.25

Most of these corridors are existing commercial and industrial corridors with major highways that often develop with little concern for appearance, function or design. The strategies are intended to facilitate evolution of the activity center over time in response to market forces.

Roadway strategies may include:

- Access Management.
- Traffic improvements.
- Street network potential.
- Connections to existing suburban development.

Land development actions include:

- Establish future block and parcel configuration.
- Establish long-term mixed-use program.

Suburban Neighborhood



Figure 2.26

It is assumed that the development of single family detached houses on one-half to one-acre lots will continue within the suburban growth areas. It is recommended that this development be connected as much as possible to suburban neighborhoods in order to lessen traffic congestion and promote pedestrian and bicycle circulation. In addition, new suburban development proposed for areas designated as aquifer recharge zones, must incorporate storm water best management practices.

Suburban Fringe



Figure 2.27

Theoretically, a suburban fringe corridor overlaps with the developed and undeveloped corridor. The goal for these areas is to encourage the creation of a series of well-defined suburban communities. New and existing development is connected to these centers through traffic improvements and directing future growth. The essential corridor strategies in suburban fringe areas may focus on:

- Roadway improvements to the arterial street system.
- Creation of mixed-use neighborhood centers.
- Linking suburban development to the centers.

Rural Growth



Figure 2.28

It is anticipated that areas outside of historic urban centers will continue to develop as they have in the past. The single family detached house has been a successful building type in the Bluegrass suburbs, and this will continue to be the case unless and until the market demand for different products dictate otherwise. Nonetheless, future specifications might include:

- Flexible housing types.
- New public facilities within suburban centers.
- Conservation site design.

Environmentally / Historically Sensitive



Figure 2.29

Local, state and federal regulations throughout the country have emphasized protection of these corridor types. At the local level many of these efforts have been directly toward protection of rural scenic views along the major corridors into the community. Some strategies communities have taken include:

- Established rural historic or preservation areas adjacent to corridors.
- Define environmental edges to development.
- Restrictions on development of streams and other environmental conditions at edge.
- Purchase open space between communities.
- Transfer or purchase of development rights from open space to historic and suburban centers.
- Conservation easements.



Figure 2.30 - Citizens commenting during a workshop

Hold A Workshop

Information and data collected for the roadway corridor needs to be shared with the community, before proceeding with the corridor master plan. An effective way to do this is by holding an informal workshop. The purpose of this workshop would be to:

- share the information collected,
- learn about any additions or changes to the information, and
- show how to become involved in future project activities.



General information is provided for the notification process, workshop, and activities after the workshop.

Before the Workshop

Four to six weeks are generally needed to prepare for a workshop. Since this will be the first, allow six weeks. This extra time will be needed to review notification items as well as distribution.

However, before notification begins there are a series of steps that be undertaken and completed. Select a meeting location that is conveniently located within the corridor. The location should be accessible by public transit and the building ADA compliant. For this first workshop, a lot of open space will be needed for displays. Locations that are conducive to this arrangement include:

- school cafeterias,
- meeting halls,
- community centers, and
- hotel meeting rooms.

The location needs to be selected, and confirmed, at least six weeks in advance of the meeting date.

A refined mailing list of the previously identified agencies, stakeholders, corridor users, and interest groups should be ready for the various notification mailings.

An initial newsletter should provide information about the workshop, including location, time, date, and format. The newsletter should be sent to everyone on the project mailing list. Additional copies should be made so that they are available at local gathering places, such as libraries, city halls, community centers, and at the workshop. This newsletter needs to be mailed no later than two weeks before the workshop date.

Flyers should be used to supplement newsletter coverage. The flyers should be available at local community centers, community events (i.e. art shows, agricultural fairs, school events), and inserts in existing newsletters (such as neighborhood associations and civic groups). These should be available as soon as the workshop specifics are finalized. Targeted distributions should happen one week to 10 days before the meeting date.

At the Workshop

The format for the workshop should be an informal setting. By allowing three to four hours, individuals may come at any time during this time frame to review project information at their convenience, to share their input, and to learn about how they can

remain active as the corridor master plan is developed. Several members of the project team should be available to have "one-on-one" conversations with citizens and to respond to questions. Since this is the first workshop, a brief presentation (no more than 15 minutes) would be helpful in welcoming everyone to the workshop, highlighting the master plan process, and showing what is available at the workshop.

Other ideas for initial workshop activities include, but are not limited to:

- "hands on" table sessions,
- "delphi" style idea writing and facilitation, and
- visual preference measurements.

A checklist of items to have at the workshop is provided in **Appendix B**. The project team needs to meet at least four weeks before the workshop to review the needed displays and handouts, to assign responsibilities, and to set deadlines. The team should meet again, at least one week before the workshop to review the final materials.

Finalize/Edit Data Report

The guidelines and process described previously allows the group to collect data, determine the context of the corridor, and receive comments from the public in both an open forum and written manner. Based on this input, additional information or a reevaluation of existing data collected is possible. This refinement of the data collected should be reflected in the final data report. The data collection report and project documents will be made available to the public, and they should be concise and easy to understand.

The Delphi Method

The *Delphi Method* strategic planning technique permits you to interactively harness the knowledge, expertise and abilities of an entire group of different people - each with unique perspectives and knowledge in planning and design, engineering and construction, land development and real estate. Questionnaires are distributed repeatedly, each time with the information from previous questionnaires that has been interpreted and reformulated by a coordinating team. The questionnaire format is repeated until a certain level of consensus is reached.

- Source: Sahakian, Curtis. *The Delphi Method*. 1997.

Visual Preference Survey

Visual preference measurement begins with photographs of buildings, landscape designs, land uses, and densities from the community and other locations. The slides are shown at a workshop and participants are asked to rate each picture on a scale of one to ten. The evaluations are summarized and scenes that are rated high by most of the participants are interpreted to be acceptable by the community. Visual preference surveys enables citizens, government officials and developers to participate in creating a common vision for the roadway corridor.

Step



DEVELOP CHOICES

Each of the preceding steps is intended to assist in developing the best possible future corridor. The results of the work of the Corridor Advisory Group (CAG) to clarify issues, create shared goals and objectives, and communicate them to members of the larger community for feedback are used to develop additional corridor choices.

Understanding the context of the roadway corridor, as defined in **Step Two**, is important because roadways have several functions. They connect small settlements and provide access to the remainder of the highway network. In addition to these traffic functions, within towns, roadways may serve as the "Main Street," providing access to land, businesses and stores, social events, and celebrations - all of which are community functions. Based on this information and community derived goals and objectives, the applicable non-road, road, and land development actions that reflect the future corridor's vision are identified. This pack of information is what the community should evaluate at the next workshop.

Develop Future Vision

Each future vision that is developed will be communicated through policy statements and visuals. A clear statement that communicates the ideal future of the corridor will form the basis of the decision making and evaluation of each choice. Where necessary, preliminary sketches will be provided to clarify the ideas. A sample summary of a future corridor choice is presented on the following page.

The visuals' intent are to allow participants to compare the existing situation with proposed actions in order to fully realize the potential impact of the non-road, road, and/or land development activity. One type of visual commonly used to illustrate potential development scenarios is the before and after picture. The before illustration simulates the typical existing condition within the roadway cor-

ridor's context. The after illustration simulates the impact of an assumed hypothetical development program. Illustrations may be hand rendered or computer-enhanced photographs.

Develop General Suggestions for Implementation

In developing the various actions for each corridor, the character of the country and the distinctive characteristics of existing urban, suburban and rural areas shall be taken into account. Appropriate strategies are developed for each specific corridor. The roadway corridor context should guide this process. For example, the historic core of Versailles consists of a grid system focused around the courthouse. The urban neighborhoods around the core are a dense fabric of residential development with opportunities for infill and reuse of older structures. The close-in suburban areas are characterized by shopping centers and strip centers surrounded by disconnected residential neighborhoods. In rural areas, existing towns struggle to maintain their unique identity while farmland is being developed at low densities without services or connections to the villages. As a result, each corridor of the Bluegrass Region has special needs, and requires strategies, actions and policies tailored to these specific needs.

An explanation of capital improvements, roadway design standards, access management, tools that manage the non-roadway, roadway, and land development within the corridor are included in this section. Sample recommendations that are based on the corridor context and support a specific vision are summarized in this section. A summary of land use, transportation, and design principles that will aid in the developing choices that are appropriate to the preferred future vision is located in **Appendix A**.

A glossary of selected terms and sample language for land development regulations, as well as an annotated bibliography of references for each of the four elements is located in **Appendix C, D, and E** respectively.

1

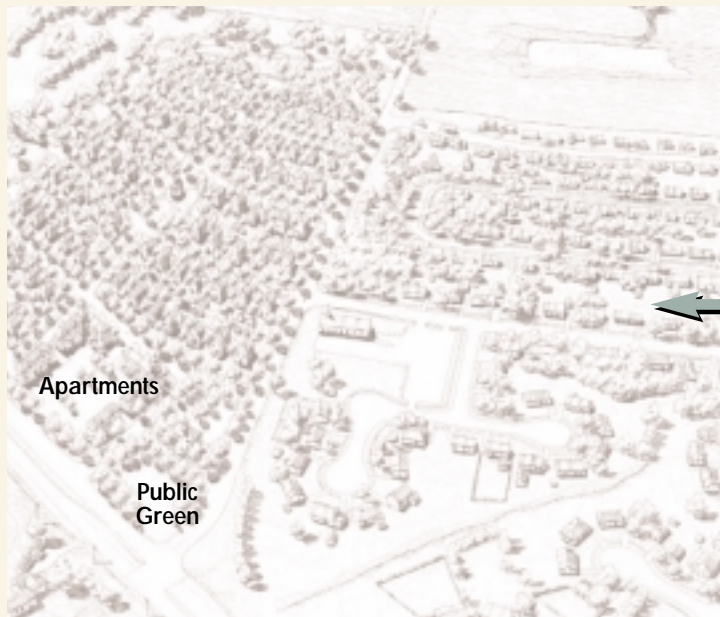
**Suburban
Club Road
South Side**

In addition to the roadway's name, the geographic location is provided.



Existing Corridor

An aerial perspective of the existing corridor provides context from which to generate a vision for the future corridor.



Future Corridor

An aerial perspective graphically illustrates the future of the corridor.

A general statement describes, in words, the ideal future of the corridor.

Future Corridor's Vision
"Maximize the potential capacity of the roadway by developing a compact residential neighborhood that serves as a center for both neighborhoods."

Figure 3.1 Sample Summary of Future Corridor Choice

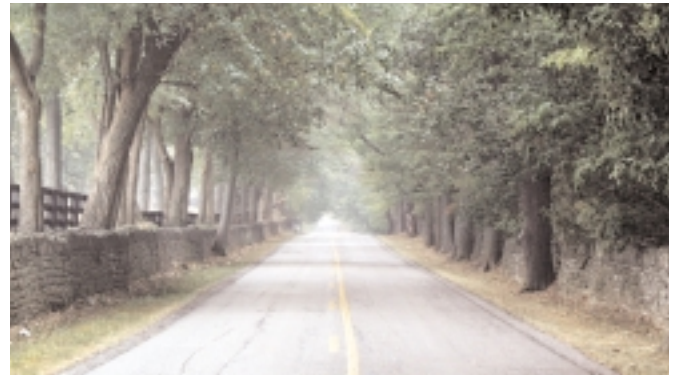
Capital Improvements

Capital improvements affect the roadway and are easily visible, but are not directly related to the pavement. Within the right-of-way, sidewalks, bicycle facilities, transit amenities and location of various utilities can do much to improve the friendliness of a corridor. Beyond the right-of-way, capital improvements such as off-street parking and open space are applicable.



Roadway Design Guidelines

Roadway or pavement management focuses on the quality and longevity of the pave surface of the roadway or from ditch to ditch. Issues such as sight distance, horizontal and vertical curvature and design speeds are addressed. Context sensitive design is just one type of roadway design process that is gaining popularity.



Access Management

Access management is defined as "a process that provides or manages access to land development while simultaneously preserving the flow of the traffic on the surrounding road system in terms of safety, capacity and speed⁵." Traditional access management limits left turns by introducing medians and spacing median breaks along a roadway. Right turns are limited through the consolidation of driveways accessing a roadway.



Development Guidelines & Regulations

The physical design, mixture of uses and density of activity associated with land development dictate the transportation demand on roadways. Land development regulations guide the implementation and realization of community-wide goals, policies and objectives.



⁵Michigan Department of Transportation. *Access Management*. P1.



Bluegrass Corridor Management Plan DEVELOP CHOICES

Roadway Corridor Context

Historic Center

Urban Neighborhood

Commercial Activity Center

Suburban Neighborhood

Suburban Fringe

Rural Growth

Environmentally Sensitive

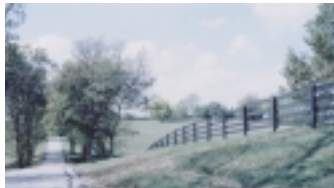
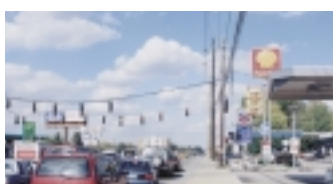
Urban

Rural



Future Choice

M A N A G E D G R O W T H



Development

Preservation



Role of the Corridor Advisory Group

Once future corridor choices are developed, the information is again brought before the CAG. The role of the CAG is to review the choices according to the previously defined goals and objectives, fine tune the future corridor choices, aid in the identification of general and detailed recommendations that are supportive of the future vision, and make sure that each choice is effectively communicated to the general public. The corridor choices should embrace the community's goals and objectives. Feedback from the CAG will allow the choices to be refined accordingly before it is presented to the larger community. Members of the CAG will also have additional local knowledge that should be utilized in identifying detailed recommendations that are specific to their community. Finally, since a diverse cross-section of the community is represented by the CAG, members will be able to make sure that information is not packaged in an overly technical manner that is difficult to understand.

Organize a Workshop

Once this information is developed, reviewed and refined, it is now ready for distribution to all stakeholders and the concerned public. A newsletter inviting the public to a workshop may be sent to the updated mailing list. The purpose of the workshop is to review the future options, question additional options and generate specific suggestions for the preferred corridor vision. A sample check list for an open house, notifications, newsletters, and handouts are located in **Appendix B**.

Step 4



SELECT PREFERRED
CHOICE

Comments from previous workshops, combined with plans and comments from previous projects begin to form alternative visions for the future development of the roadway corridor. Since the alternatives were developed in the public eye, each should have a degree of public ownership at this stage of the planning process. Evaluation and selection of the preferred vision should also be conducted in a public forum under the guidance of planning and design professionals.

Create Summary Worksheets

Prior to the evaluation of each vision, the concept should be refined in such a manner so that the results of its implementation are easily understood, whether in the form of a hand rendered drawing, photo simulation, and/or text. The one-page vision summaries, reviewed and revised by the corridor advisory group in **Step Three**, will be presented during the workshop for evaluation. The vision summaries may be presented in the form of an 8 ½ by 11 color print, large 36"-42" mounted board, or large 36"-42" plot. Larger summaries allow participants to make comments directly on each alternative.

Detailed evaluation of the individual tools necessary to implement the future vision requires additional information. Since it is not known which vision will be selected as the preferred choice, worksheets are necessary for all the generated alternatives. The sample worksheet illustrated on Figure 4.1 is but one example in which information may be presented during the workshop. This expanded vision summary should include general suggestions for implementation and relate each action to the corridor's goals and objectives. Sample action strategies, as they apply to different roadways and categorized according to their roadway, non-roadway, and land development impact are summarized in this section. Material such as this provides a starting point and encourages participants to make comments directly on the work-

sheet. For that reason, they are more applicable to small groups that already agree on the general intent of the future vision.

Hold a Workshop



A one-day event allows neighborhood residents, stakeholders, and local officials to evaluate and select a preferred vision and identify appropriate strategies for the implementation. Community leaders, such as those in the corridor advisory group, plus planning and design professionals participate in the charrette process to serve as a resource and ensure that informed decisions are made. This approach allows workshop participants to examine a broad range of alternative visions from which to select their preferred choice.

Preparation for the workshop utilizes the resources and information developed in **Step One** (Get Organized) and follows steps such as notification, selection of venue, and creation of worksheets, outlined in **Step Two**.

Evaluate Vision Choices

The aim of this evaluation workshop is to allow participants to evaluate and prioritize the alternative visions. The alternative plans consist of the one-page general vision statement and illustration. Participants may individually vote for their choice, rank their preferences, or comment directly on each plan. Regardless of the method utilized, the

1

Suburban Club Road South Side



Future Corridor



Future Corridor's Vision

“Maximize the potential capacity of the roadway by developing a compact residential neighborhood that serves as a center for both neighborhoods.”

General Suggestions for Implementation

Scratch out all suggestions that are no longer pertinent or have already been implemented.

- Promote additional street network.
- Provide a “boulevard” streetscape along club road.
- Establish long-term mixed use development program.
- Encourage creation of neighborhood centers.
- Establish block and parcel configuration.
- Restore natural streambed at edge of new residential neighborhood.

Goals/Objectives Related to the Corridor

Add and delete as the general goals are refined.

- A comfortable level of service is provided.
- Travel on the roadway is aesthetically pleasing.
- Travel time to shops is minimized.
- An identity is created for the area.
- Connect neighborhoods.
- Respect environmental features.

Figure 4.1 Sample Evaluation Worksheet of Future Corridor Choice



Road

Non-Road

Land Development

2-Lane Rural



In order to maintain and preserve the scenic/historic nature of the roadway, implement context sensitive design guidelines when improvements are made.



Capital improvements along the right-of-way can improve the character of the roadway.



Steer development along "cross-roads" to create a center of activity.

Preserve environmentally sensitive land through transfer or purchase of development rights.

4-Lane Rural



Viewshed preservation protects rural character.



Construct continuous sidewalks and bike lanes to improve access to developing activity centers.



Create a buffer zone between use and roadway.

Manage driveways through access management.

4-Lane Urban Residential



Landscaped boulevards ensure large residential streets and add dignity to neighborhoods.



On-street parking provides a buffer of safety between moving vehicles and pedestrians.



Encourage tree canopy and variety in housing type through design guidelines.

2-Lane Urban Commercial



Building and sidewalks enclose street which becomes public space.



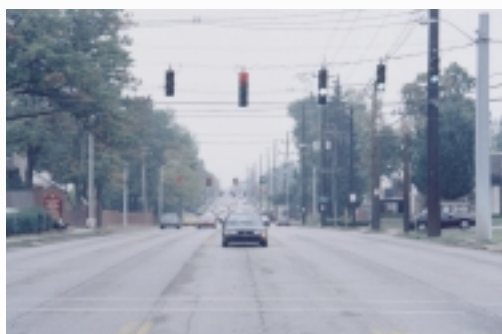
Wide sidewalks and buildings that respect the street provide a pleasant environment for pedestrians and motorists.



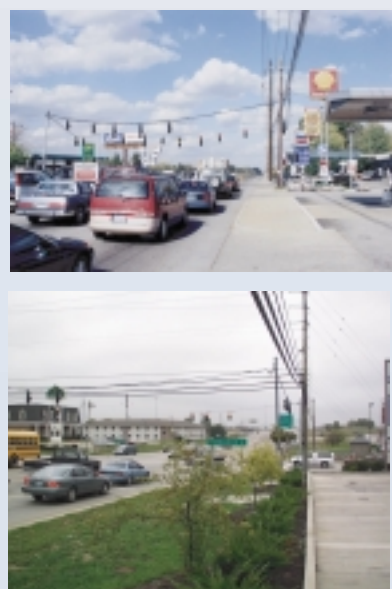
Encourage and maintain use of historic and civic spaces.

Encourage infill development and a mix of uses.

4-Lane Urban Commercial



The needs of the automobile must be balanced with the needs of adjacent land uses.



Well located utilities and clearly defined driveways cut minimizes confusion for both pedestrians and motorists.



Good site planning and shared parking promotes efficient use of land.



Figure 4.3 Initial presentation of key information

alternatives should be evaluated on the basis of whether or not the vision meets the goals and objectives. Often, an initial presentation of key information from previous workshops is helpful - by reminding participants of the original goal of the community.

The procedure for ranking each preference requires participants to fasten an appropriate colored tab to at least three visions. One-page summaries of each vision may serve as handouts. Participants utilize the large-scale graphic, whether in the form of a list or a "blown up" vision summary, to affix a colored tab and record their preference. A red tab indicates an unacceptable future vision, while a green tab represents the preferred choice. Yellow is used to indicate a choice that has both an acceptable and unacceptable vision. Since no more than five alternatives are presented, each participant is provided with 3 colored tabs (1 red, 1 yellow, 1 green).

A large-scale graphic of the plan may also be used by participants to note individual comments. Whether in the form of a laminated board or plot laid out on a table, this method allows participants to note both acceptable and unacceptable aspects of each alternative plan. This is especially helpful when it appears that the preferred choice is a hybrid of two alternative plans.



Figure 4.4 Large scale graphics allow participants to comment directly on the plan.

Generate Specific Suggestions for Implementation

Individuals then selected a group (roadway, non-roadway, land development) in which they wished to participate. Group sizes should remain small enough to allow all voices to be heard, but large enough to accommodate a variety of opinions, with a trained facilitator keeping the discussion focused. Each participant receives the more detailed 11x17 worksheet that asks participants to add and / or delete suggestions for implementation. Group discussions focus on matching tools to and developing an action plan for the selected future vision. Designers are also present in order to provide sketches to clarify the implication of certain ideas.

Upon choosing the pertinent tools for implementing the preferred vision, one summary worksheet is revised per the group's comments. Summary worksheets for each group are reproduced for overhead presentation at the end of the charrette, and copies are distributed to all participants.

The evaluation method described above is in no way inclusive and simple outlines a process that facilitates discussion.

Preferred Vision Plan

The preferred vision may now be refined into a working document that incorporates graphics and

narrative text. In addition to the existing conditions report which describes the role of the corridor today, a physical plan and an action plan work together to form the final corridor management plan. The physical master plan depicts the vision of the corridor in an easy-to-read illustrative format. The more detailed action plan contains the policy tools and outlines the investments necessary to successfully realize the vision illustrated in the physical master plan.

Physical Master Plan

The overall vision for the corridor is best communicated through the use of a professionally rendered master plan. At this stage, it is possible to reference changes in land development patterns. For corridor areas of concern, eye-level perspectives, whether digitally enhanced or rendered by hand, are another valuable tool for illustrating the relationship between the existing conditions and planned future. Roadway cross-sections used in conjunction with a plan view, convey roadway and non-roadway improvements. All of these corridor master plan elements are depicted on the following page.

Overall Master Plan

The vision plan is a complete summary of the corridor that locates and illustrates specific projects and actions. The colored plan view should include all existing buildings, property lines, roads, driveways and medians, as well as sidewalks and typical landscaping. Future development may be placed on the plan but should be distinguished with a different color or roof texture. The future vision of the corridor is overlaid on existing property lines. Where changes are made to reflect the future vision, annotated text shall explain the new measure. As always, a scale and north arrow will be placed appropriately on the plan.

Perspectives

Bird's eye perspectives and eye-level perspectives may be in the form of computer enhanced photos or colored hand renderings. These images are the

tools that aid in the visualization of proposed strategies. Perspectives also provide a "sense of place" that aids citizens in locating specific improvements. Depth, color, and texture of perspective drawings provide are typically easier to interpret than plans and cross sections which tend to be more technical in nature.

Cross Sections

Cross section(s) provide a conceptual roadway design that is easily interpreted by citizens and engineers. The right-of-way shall be labeled, as well as the widths of sidewalks, parking, and travel lanes within the right-of-way. A plan of the specific cross section is also a good method of illustrating a typical roadway treatment.

These powerful illustrations are useful in communicating anticipated public and private investment responses to the values and planning goals used to develop the plan. The illustrations easily communicate existing trends, needed first steps, and the potential for an "in our generation" (50-year) realization of the adopted plan.

Action Plan

The second component of the Corridor Management Plan is the Action Plan. The Action Plan contains implementation strategies which include land development regulations, guidelines and incentives, capital improvement programs, and a monitoring program to ensure successful achievement of the plan's vision.

As explained in previous sections, corridor planning elements fall into three general categories: non-roadway improvements, roadway improvements, and land development actions. Non-road improvements include capital investments such as streetscape and lighting enhancements. Road improvements include access management and roadway design guidelines. Land development actions include, but are not limited to, access management, signage codes, landscaping guidelines, and development guidelines and regulations. The

Figure 4-5
Action Plan Summary

Short Term (1-5 Years)	Amount	Source
Overlay Zoning District (Design Guidelines, Arch. Review Board, etc.)	Forthcoming	To Be Determined
Master Stormwater/Utility Planning	\$100,000 - \$300,000	Grants, special district funds, general funds
US Highway Redesign and Enhancement	\$2,450,000 currently budgeted	TIP
Mid-Range (3-5 Years)		
Neighborhood Traffic Calming and Safety Lighting	Forthcoming	To Be Determined
Long-Range (5-10 Years)		
Civic Center Park	\$687,000 currently budgeted	TIP
On-Going		
Comprehensive Bike and Pedestrian Connections	Forthcoming	To Be Determined
Economic/Land Use Study	Forthcoming	To Be Determined
Housing Development	Forthcoming	To Be Determined

overlap of some of these elements indicates that no single action is purely transportation or land use related. A sample Action Plan summary is located above in **Figure 4.5**. More detailed information is located in **Appendix A, Land Use, Transportation, and Design**. References and model language for regulations is located in **Appendix C**.

Public Investment

There are many avenues for funding projects recommended in the corridor management plan. However, to be eligible for city, state and federal funding, proposals must first be adopted as part of a local Comprehensive Development Plan (CDP).

Capital improvements typically require inclusion in the Transportation Improvement Program (TIP) for public investment.

The corridor advisory group will submit the corridor management plan to the city's planning and development commissioner and seek inclusion of all or part of the plan in the CDP. By including the plan in the CDP, projects recommended in the corridor management plan will be eligible to be included in the city's Capital Improvements Plan (CIP). Only projects listed in the CIP are eligible for city funding, as well as funding from state and federal sources disbursed through the city. For example, as part of the CDP and CIP, projects listed in the corridor management plan will be eligi-

ble for federal funds such as TEA - 21 (Transportation Equity Act for the 21st Century).

Access Management Plans

The implementation of access management standards should also be realized through the amendment of local government land development regulations. Therefore, access management standards should be implemented during the development approval process. As part of an overall corridor management strategy, the number of driveways, median openings, traffic signals and their spacing should be managed to ensure that important roadways maintain an appropriate balance between local access and through trip capacity. Through access management, a roadway's physical capacity can increase to serve more volume without additional travel lanes. The following techniques for managing access may be included in this land development regulation: driveway location and design, driveway spacing standards, corner clearance, joint and cross access, reverse frontage roads, frontage roads, and medians. A glossary of terms and resources related to access management are located in **Appendix C**.

Roadway Design Guidelines

An important point to remember is that in highway design, every project is unique and has its own challenges and opportunities. The setting and character of the area, the values of the community, and the needs of the highway users, are unique factors that designers must consider with each highway project. There are a number of options available to State and local highway agency officials that can assist / aid in achieving a balanced road design and to resolve design issues. This includes the following:

- Use flexibility within the standards adopted for each State.
- Recognize that design expectations may be optional, whereas environmental consequences are great.
- Be prepared to reevaluate and justify decisions

made in the planning phase.

- Lower the design speed when appropriate.
- Consider developing alternative standards, especially for scenic roads⁶.

Land Development Guidelines and Regulations

Whereas zoning governs the use of land, the character, intensity, and density of future development are governed by land development and subdivision regulations. Land development regulations that are useful in the implementation of a corridor management strategy include: sign guidelines, setback requirements, maximum parking requirements, minimum floor area ratios, architectural standards, landscape standards, and viewshed preservation guidelines.

The large majority of land development actions will be implemented through amendments to local jurisdiction's comprehensive plans, zoning codes, and/or subdivision regulations. These amendments might include modifications to local government zoning ordinances. Zoning is traditionally a tool for segregating incompatible land uses and changes to future land uses in the study area, should be realized through zoning code amendments.

Changing land development regulations is only one part of a comprehensive approach to achieving a development pattern that is supportive of corridor management. It is also important to manage development, by equalizing the cost of developing on existing urban spaces and on fringe locations. It is usually much cheaper to build on farmland, than downtown where an abandoned warehouse still stands and parking is hard to find.

Land Development Incentives

Impact fees are taxes paid by developers and ultimately by new house owners to offset the cost of

⁶U.S. Department of Transportation. *Flexibility in Highway Design*. 1997.

additional public services, especially new schools, roads, and sewers. At present, most impact fees are set too low (\$3,000-\$10,000 per dwelling unit or 2%-3% of a dwelling unit's value), well below the full cost of the new services a development requires. Consequently, impact fees typically have little impact on development decisions. Impact fees should cover "100 cents on the dollar" of the cost of the new services a development requires, except in inner city neighborhoods. Recent reports indicate that "full-cost" suburban development fees run at approximately \$48,000 per unit in Florida and should soon rise to about \$25,000-\$30,000 per unit nationally.

However, even high, full-cost impact fees for fringe growth will not, solely by themselves, turn around the development marketplace. What is needed is a complementary program that encourages and cheapens the cost of urban infill development to make private investment in the urban core more profitable. Freer public services and tax breaks, via tax incremental financing (TIF) and more direct subsidies in conjunction with impact fees on the fringe, can make downtown development a smarter investment.

Step

5



IMPLEMENTATION

Implementation of the plan, moving from vision to action, is the true test. Exciting designs are not enough. All of the careful study, thoughtful planning, and hard work invested in the development of the corridor management plan will not yield significant benefits to the community unless the plan is actually carried out. Partnerships with various public institutional, private enterprise, and community-based groups is often required for successful implementation of the plan.

Partnerships Required for Successful Implementation

Corridor management requires collaboration between agencies involved in transportation and land use planning. Coordinated planning is not a step that is limited to implementation; intergovernmental coordination throughout the entire planning process is essential to the success of the plan. Roles and commitments may be formalized through intergovernmental agreements or "joint policy resolutions."⁷

In order for communities to successfully implement meaningful changes in their growth and development patterns, it is necessary to first become familiar with the participants involved in the planning process. As a result of ISTEA, the responsibility for planning and funding transportation projects is shared between the locality and the state in urban areas. Most urban transportation projects start at a local level, require local MPO approval and local government funding shares. However, the state DOT has most of the money and the strongest role, especially in rural areas.

This section explores the roles of various agencies in the process, opportunities for partnerships with private enterprises, community based organizations, and the actions necessary for implementation of selected strategies.

Public Institutional Partners

The public agencies that play a role in the process

of planning and implementing a corridor management plan include, the regional planning agency (referred to as Area Development Districts in Kentucky), local governments, metropolitan planning organizations, and the state department of transportation.

Area Development Districts

Kentucky's counties are grouped into fifteen regions known as Area Development Districts (ADDs) and are also referred to as regional planning agencies. Although they are public bodies under Kentucky law, the ADDs are not State agencies, nor are they another level of government. Instead the ADDs should be thought of as partnerships of local units of government. Locally elected officials and citizen members comprise the ADD's Board of Directors. The ADD staff is made up of professionals with a wide range of backgrounds in community development, economic development, transportation, land use planning, public management, geographic information systems, and human services. By sharing their expertise, local governments are collectively able to afford the professional staff that many counties and cities could not afford by themselves. The Bluegrass ADD is made up of seventeen central Kentucky counties.

Through an agreement with the Kentucky Transportation Cabinet, the ADD's provides transportation planning activities in support of the Cabinet's statewide transportation planning process. For the purposes of corridor planning, the Bluegrass ADD (BGADD) is responsible for the transportation planning activities of the non-MPO counties of Bourbon, Clark, Madison, Scott and Woodford.

⁷For example, the Paris Pike Commission formed for the Lexington-Paris Pike is a corridor-wide transportation and land use authority that linked economic development, involved a non-profit organization, and included community planning. Model language for an Intergovernmental Agreement between a municipality and/or county, is provided in Bluegrass Tomorrow's *Tools for Implementation of a Planned Regional Vision*, prepared by Siemon, Larsen & Marsh, 1995.

A major biennial activity is the prioritization of unscheduled highway needs at the local and regional levels. The regional prioritization process requires the Transportation Advisory Committee to assign high, medium, or low priorities for each identified need. Their goal is to prioritize grouping (high, medium, or low) so that each level comprises approximately one-third of the total unscheduled needs in the ADD. Finally, the committee will be asked to rank the Top 10 "high priority" projects.

The ADD's also coordinates a similar prioritization process at the local level. The activity is part of a four-pronged approach to the prioritization process. Each project is prioritized at four separate levels-local (elected officials), regional (ADD), District Highway Offices, and Central Office (Secretary of Transportation) of the Kentucky Transportation Cabinet. Generally, projects with the most "high priority" rankings will advance to KYTC's Statewide Transportation Plan and their Six Year Highway Plan.

Additionally, the ADD's in 2000 will prepare a Regional Transportation Concept Plan for all counties in the district. The plan will address major issues, including transportation needs, while addressing vision and action strategies.

Local Governments

Local government is the level where the majority of land use decisions are made. County and municipal governments are able to predetermine the character and intensity of development through zoning ordinances and land development regulations that establish the type, density, and intensity of future land uses. Through land development regulations, local governments are able to implement a common vision regarding the scale and character of future growth.

Local governments establish the foundation for corridor management in the comprehensive plan. This can be accomplished by designating corridors

in the transportation element of the comprehensive plan and enacting goals, objectives, and policies that advance strategies of a corridor management plan.

Metropolitan Planning Organizations

Metropolitan Planning Organizations (MPO's) are charged with the responsibility for planning and programming transportation planning projects in urbanized areas. MPO's typically prepare a 20-year long-range transportation plan, and program funding for needed improvements and enhancements through a four-year transportation improvement program (the TIP). Federal regulations require that metropolitan transportation planning is conducted under what is often referred to as the "4C" model. The 4C's are: Coordinated (with local governments), Comprehensive (all modes must be considered), Consistent (with locally adopted plans) and Continuing (updated every three years). The actual planning activities of an MPO are programmed and funded through the Unified Planning Work Program (UPWP).

Metropolitan transportation plans could include an element that addresses the need for corridor management and measures to be pursued and implemented. MPO's can also provide technical assistance to local governments on corridor management and facilitate state and local coordination. For example, MPO's can raise local awareness for the need to manage a roadway corridor and encourage action.

Transportation improvement programs are another tool for coordinating corridor designation and management activities for representative local governments and Kentucky Transportation Cabinet. Specific corridor studies can be included in the MPO Annual Planning Work Program to provide a focal point for agencies and municipalities to evaluate needs and establish corridor management measures.

State Departments of Transportation

The State Department of Transportation for Kentucky is the Kentucky Transportation Cabinet (KYTC). KYTC prepares a Six Year Highway Plan which is based on anticipated demand or immediate needs. The Kentucky Transportation Cabinet's Six-Year Highway Plan is a listing of the major highway projects scheduled for either construction or preconstruction activity during the six year period covered in the Six-Year Plan document. The Six-Year Plan is updated every two years and formally adopted by state legislature. The first two years of the Plan are written into state law and serve to drive the biennial highway program. The remaining four years of the Plan are considered to be the second priority tier of the major project activities that the Cabinet intends to pursue in succeeding biennia.

The 1999 *Statewide Transportation Plan* is the second, multimodal, long-range plan produced by the Kentucky Transportation Cabinet. The first plan was developed in 1995. The *Statewide Transportation Plan* is a long-range 20-year plan for all modes of transportation: highways, air, bikeways, pedestrian, public transportation, rail, and waterways.

A major portion of the public involvement for the statewide planning process is accomplished through Kentucky's 15 Area Development Districts. Each ADD maintains a transportation advisory committee with representatives of local government, transportation interest groups, other special interest groups, and the general public. These committees play an important role in identifying and prioritizing transportation needs in their respective regions. Through the ADD, local governments are also directly consulted and given an opportunity to identify highway needs and priorities at the state level. Highway needs identified from all sources are recorded in a single "Unscheduled Needs" database until all project phases are advanced into the Six Year Highway Plan. This Six Year Plan is submitted to and

approved by the Kentucky General Assembly every two years. The ADD is also responsible for coordination with MPO's and other agencies in the region, as appropriate. Additional input on needs and priorities is solicited from other Kentucky Transportation Cabinet offices, including the 12 Highway District offices, as well as other state agencies such as the state historic preservation office. Statewide priorities are established by Central Office staff based in part on local, ADD, and District priorities, and in part on other considerations, such as input from other Kentucky and Cabinet offices, performance data, system continuity and connectivity, corridor priorities, recommendations from various planning studies, and socioeconomic and economic development factors.

The State Transportation Plan includes listings of specific projects for each mode (where available) in two phases: a short-range element (ranging from one to six years) and a long-range element (ranging from fourteen to fifteen years, beyond the short-range element), based on estimated funding over the 20-year period. This Plan only includes projects for which some type of funding is anticipated; therefore a listing of projects may not be available for all modes, due to the lack of federal or state funding (i.e., rail transportation and water transportation). Funding estimates for air transportation and public transportation have historically been provided for a two-year period, due to shorter-range federal funding appropriations and legislation for these modes. However, in the current Statewide Transportation Plan, the Transportation Cabinet has identified both short-range and long-range needs in air transportation, since funds are now anticipated over the next twenty years due to a recently enacted diversion of the state jet fuel tax to a dedicated aviation fund. The Cabinet's goal is to update the Kentucky Statewide Transportation Plan every four years.

Private Enterprise Partners

Private enterprise is also a major participant in the land use and transportation planning setting. These

partnerships include private developers, lending institutions, homebuilders, chambers of commerce, economic development groups, farmers, and major employers. A representative list of private enterprise partners from previous planning efforts is detailed in **Step Two, Know the Corridor**.

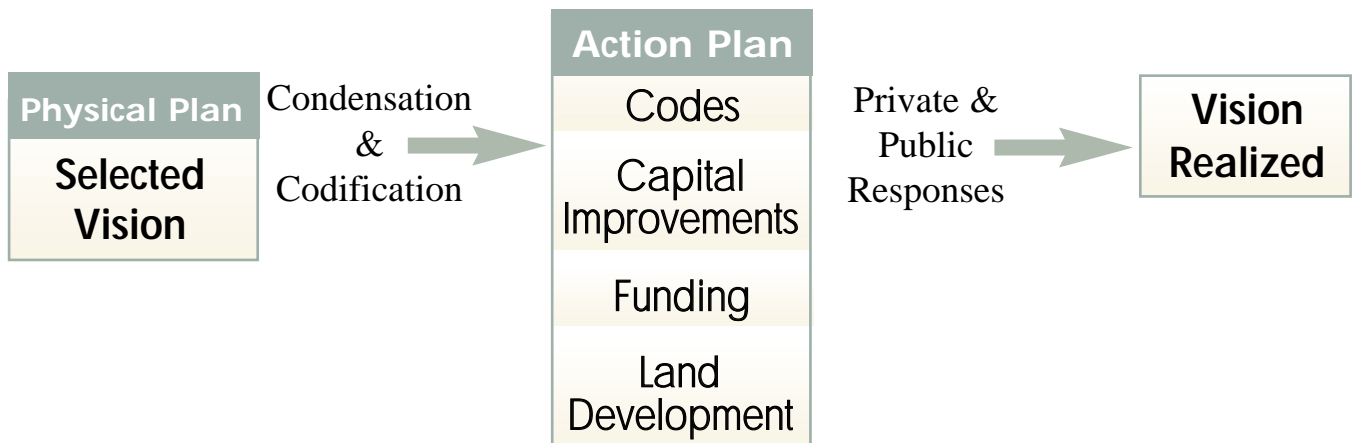
Community-Based Groups

This handbook is primarily intended to educate and empower such groups to influence transportation/land use planning at the corridor level. Community-based interest groups can and do influence a region's growth and development. These groups represent the diverse array of interests that must be heard to ensure that local and regional plans are sensitive to the entire community's needs and desires. These groups include:

smart growth advocacy groups, such as Bluegrass Tomorrow, as well as environmental interest groups, agricultural interest groups, historic preservation groups, and faith-based groups interested in community development.

Role of the Corridor Advisory Group

Recognizing that it will take careful monitoring and time for design and construction for their vision to be completely realized, many corridor advisory groups stay in place long enough to see their plans launched. When such groups continue to meet after they have completed the corridor management planning process, their focus will naturally shift to the new and equally critical tasks of tracking progress and assisting governing agencies with implementation of their recommendations.



Step



S U S T A I N I N G T H E
V I S I O N

Once the vision is established and a corridor master plan is implemented, it is important that a series of steps be taken in order to sustain the vision. Building awareness for the corridor does not stop once implementation policies are chosen or in place. Each corridor will have outstanding, one-of-a kind characteristics that deserve greater awareness. Among these attributes are natural beauty, environmental functions and values, the cultural history of the area, historic buildings of the roadways, wildlife, opportunities to experience a unique landscape from your car, opportunities to get out of a vehicle and walk, bike, hike, ride a horse, shop, etc., and local businesses and amenities including ranches, campgrounds, food services, tour services, etc. These attributes should be identified and highlighted for visitors and local citizens alike in order to emphasize the area's uniqueness. One process in which to sustain the vision includes a marketing and promotion plan, along with a monitoring program.

Marketing and Promotion Plan

A Marketing and Promotion Plan can be as simple as a status report or update, in the form of a newsletter. This task can be undertaken every other year or may include such promotional techniques as:

A Speakers' Bureau - (most effectively directed toward the tourism business industry, local civic associations such as Rotary, special interest organizations such as local history societies, Audubon chapters, etc.)

Printed Material - specially an overall map that shows the locations of all the amenities and attractions along the corridor. This technique is the most effective and should be undertaken as soon as possible. Suggested amenities include, but are not limited to:

- Gateways
- Wildlife Observation Points
- Education Centers

- Historic Areas
- Nature Walks
- Civic Buildings
- Scenic Vistas
- Religious Centers

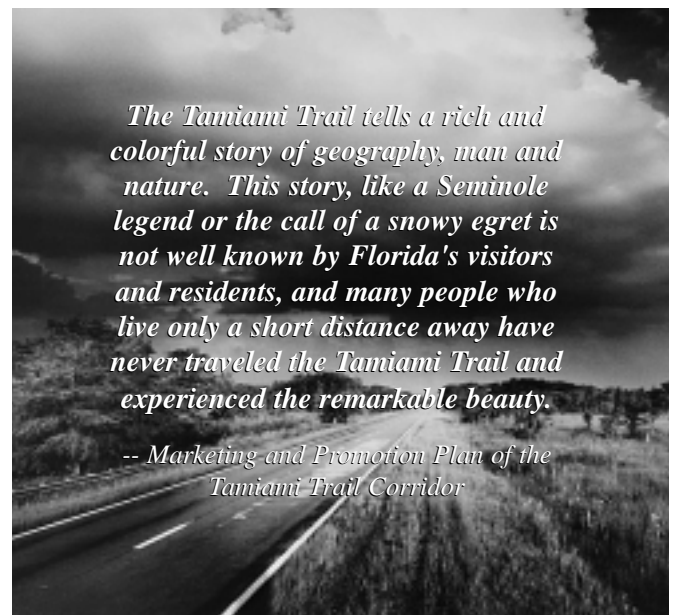
Festival and Special Event Booths - printed material should be displayed at festivals and special events in the area.

Web site - update and maintain project specific web site.

Press Releases - inform local newspapers and other media outlets with information.

Monitoring Program

A thorough Monitoring Program will be developed to determine the effects of the plan on local businesses, tourism, historic preservation, pedestrian traffic, noise, through traffic, property values, aesthetics, number of collisions, etc. This information would be shared with other communities across the state that wish to, or are in the process to develop a corridor management plan. Shared experiences will benefit all parties.



C Conclusion



A corridor management plan is a sound, worthwhile investment of time, energy, and resources for all stakeholders concerned with roadway corridors. Completion of a corridor management plan will streamline and add meaningful value to all aspects of developing or preserving a roadway corridor. In addition to a quality corridor management plan, a stronger sense of community, shared responsibility, and unity of purpose can be among the many positive results.

For communities, a corridor management plan is a clear depiction of the character and vision of the corridor that is the source of community pride and focus. The corridor management plan can bring the community together for a common positive purpose. Meanwhile, the process of preparing a corridor management plan calls for collaboration between neighbors, landowners, and government officials, often forming lasting partnerships and friendships that are vital to continued community vitality.

For landowners, including governments, a corridor management plan provides a level of certainty regarding the overall character of the corridor as well as the land uses on adjacent property. This certainty will allow owners to invest in the corridor with confidence about the future.

For local governments and land planning agencies, a corridor management plan provides a framework for making land use and zoning decisions on a comprehensive basis rather than an incremental parcel by parcel basis. The plan also provides a detailed guide for making future decisions regarding proposed rezoning and land use changes.

For the Kentucky Transportation Cabinet, a corridor management plan will make the process of planning, designing, and constructing roadway and corridor improvements more efficient. Such a plan, when included in the early stages of project development, will require only a small incremental investment of time and money that in turn, results

in a significant reduction in the time required and overall cost for implementing the appropriate corridor improvements.

This handbook is an invitation for action. Its intent is to inspire others to take unprecedented action, to use their collective imagination and skills to develop a future corridor that represents a deep caring for the communities in which we live. For when there is purpose and structure to such collaboration, creative and effective visions can be attained.

A p p e n d i x A



TRANSPORTATION, LAND USE & DESIGN

1.0 Introduction: Relationships Between Transportation, Land Use, and Design



The issues of transportation, land use, and design are very interrelated. An understanding of this interaction has become very important in the contexts of traffic congestion and environmental degradation. While highway systems of the past half-century have been planned primarily in reaction to uncontrolled urban growth, it has become standard practice in numerous sensitive regions to allocate and shape growth with an understanding of the implications for transportation. Likewise, regional transportation plans themselves are often now being generated with the intention of helping to direct growth to optimal target areas. This is the proactive approach to transportation and land use planning, and represents the best available method of preserving the environment while maintaining an efficient circulation system.

This appendix explores this approach to regional planning and explains the benefits and challenges. After a brief introduction to the terminology and concepts, the direct relationships between transportation, land use, and design are described. Lastly, the four Bluegrass "corridor types" are defined in terms of their transportation, land use, and design characteristics. General recommendations are made regarding how best to ensure the optimal integration of these principles for future transportation investment, given various land use and design parameters.

2.0 Background Principles and Terminology

The next few sections explain important definitions and concepts related to the subjects of transportation, land use, and design. Each of these concepts is integral to the understanding of how these different subjects interact with one another.

2.1 Transportation

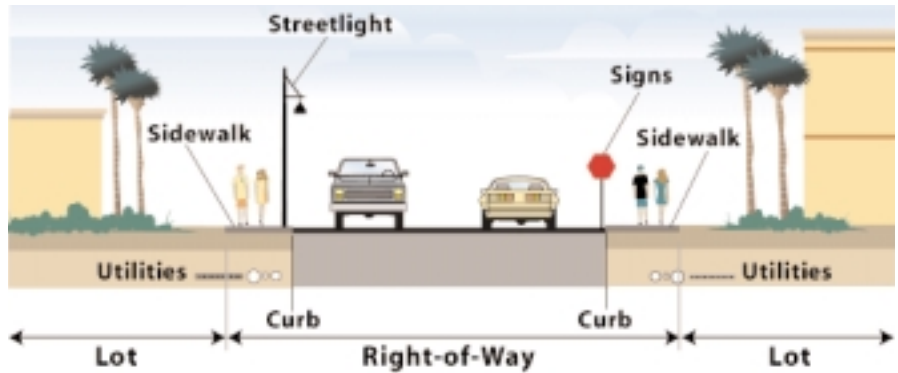
Although the span of the field of transportation is very large, several distinct terms and concepts are critical to understand the role of transportation in regional planning. These concepts are described below, beginning with basic definitions and progressing to emerging trends and practices.

2.1.1 Corridor

The corridor is the basic element of transportation planning. Most transportation projects are undertaken on a "corridor" basis. In essence, a corridor is the general path of travel between two endpoints. The endpoints are usually represented by major activity centers (central business districts, shopping districts, employment centers, etc.), political boundaries (municipal boundaries), natural features (rivers, ocean, etc.), or intersections of major transportation facilities. Along the length of the corri-

dor between these endpoints, there are generally additional employment areas, shopping centers, residential developments, and institutional uses, each of which generates its own share of total corridor travel demand.

Corridors are generally composed of a single roadway or several parallel transportation facilities. Each roadway itself is defined primarily by its cartway and right-of-way. The



What is Right-of-Way?

Transportation right-of-way is the strip of land occupied or intended to be occupied by a road, railroad, utilities, walkways, bikeways, bus turnouts, street trees, or other special uses.

cartway is the paved surface of the roadway, while the right-of-way is the legal "boundary" of the roadway facility. Within the right-of-way are the cartway, sidewalks, landscaping, drainage facilities, utilities, street lamps, and, often, a "reserve" area for the future expansion of the cartway.



Roadway Corridor

2.1.2 Origins and Destinations

Every corridor exhibits local, regional, and through-traffic, the specific proportions of which are determined by the distribution of origins and destinations in and around the corridor.

An origin represents a "residential" use that can be thought of as a "home-base" for all trips. In other words, origins are locations-usually coinciding with houses, apartments, and condominiums-where most people begin and end their days. Hotels and campgrounds also qualify as origins because they represent additional locations where people "reside," at least on a temporary basis.



Origin, multi-family residence



Destination, town center

Destinations are places that "attract" people during the course of a day, such as offices, shops, restaurants, entertainment venues, cultural and recreational facilities, and schools. Up until the mid-twentieth century, most destinations were clustered in central areas so as to be accessible to the greatest number of people by requiring the least amount of total travel. As we have evolved into a fully-mobile society, however, destinations have become scattered and hence reliant on a more extensive transportation network.



Origin, single family residence



Destination, suburban shopping center

2.1.3 Trip Types

There are three types of trips that characterize all corridors: internal trips, external trips, and internal/external trips. These trip types are defined by their interaction with the boundaries of the "study area," which typically includes all or part of the target corridor.



Internal: Internal trips have both their origins and destinations within the study area. In other words, an internal trip is one that is entirely contained within the study area and never crosses its boundaries. These are sometimes referred to as "local" trips.



External: External trips are the opposite of internal trips. In other words, neither the origin nor the destination of an external trip is contained within the study area. Resultantly, external trips are simply "passing through" the study area, generally on main thoroughfares.



Internal/External: The third category of trips has either its origin or destination-but not both-within the study area. For example, a resident of a neighboring county (not in the study area) who travels to an office complex within the study area engages in an internal/external trip. Likewise, a resident of a subdivision within the study area who travels to an entertainment destination on the other side of town likewise engages in an internal/external trip.

2.1.4 Mode Split

Mode split addresses the degree to which different modes of travel—that is, automobiles, transit, bicycles, walking—are used for internal, external, and internal/external trips.

In corridors where environmental concerns and traffic congestion are significant, a common goal is often to adjust the mode split in favor of transit, bicycles, and walking over automobiles. The strategy for achieving this entails increasing the attractiveness of "alternate modes"—by increasing transit service, creating bicycle lanes, or completing the sidewalk network—or, less frequently, decreasing the attractiveness of driving, usually by raising parking fees or tolls.

The most appropriate method of shifting mode split is best selected by first determining the targeted trip type. For internal trips of a very local nature—such as that between stores in a commercial area—enhancements to sidewalk facilities or improvements to pedestrian crossings can succeed in removing very short trips from the roadways. For longer internal trips such as those between two non-adjacent major destinations within the same study area, small transit shuttles or circulators would be more appropriate. Bicycle lanes often capture trips between home and local commercial establishments, i.e., distances that are too far to walk but that do not really require a car. For internal/external and external trips, longer-distance transit services are often employed, such as buses and light rail systems.

2.1.5 Capacity

Capacity is a measure of the total number of people that can be carried by a certain transportation mode in a given period of time. This measure is mostly used when referring to automobiles or transit, though it is also relevant with regards to heavily-used multi-use trails and bicycle storage facilities.

Vehicular capacity has two main categories: roadway capacity and parking capacity. Roadway capacity is typically the largest constraint of a regional transportation system, as the demand for automobile travel has quickly outstripped the available capacity on American roadways. While building



U.S. 27 Widening - Expanding roadway capacity



On-street parking - one component of total parking capacity



Sidewalk Improvements can "free" roadway capacity

more and more roadway capacity has been the preferred solution to traffic congestion for several decades now, limited overall available space—together with community concerns—now often require the exploration of alternatives to the expansion of roadway capacity. Shifting the mode split to "free" capacity rather than "creating" capacity is the most common of these alternative methods.

Parking capacity is an additional constraint because it addresses the number of vehicles that can be accommodated at the destination. Parking capacity limitations can be addressed in the same ways as roadway capacity, i.e., expansion or mode shift.

Expansion deals with the provision of additional parking spaces, whether in a garage, on a lot, and/or along the street. By focusing on mode shifting measures such as sidewalk improvements, the need for parking spaces by those who instead walk is eliminated.

Level of Service	
<p>LOS A - Free Flow Users unaffected by other in the traffic system.</p> <p>LOS B - Stable Flow Slight decline in the freedom to maneuver from "LOS A."</p> <p>LOS C - Stable Flow Operation of the vehicle becomes significantly affected by the interaction of others in the traffic system.</p> <p>LOS D - Approaching Unstable Flow High volumes of traffic, speeds adversely affected, and freedom to maneuver is severely restricted.</p>	<p>LOS E - Unstable Flow Operating conditions are at, or very near capacity. All speeds are low and the freedom to maneuver is extremely impaired.</p> <p>LOS F - Exceeding Capacity Point at which arrival flows exceed discharge flows causing queuing delays. Stoppages may occur for long periods of time because of the downstream congestion. Travel times are also substantially increased.</p>

2.1.6 Level-of-Service

Roadway capacity-the most common measure of corridor transportation conditions-is a key factor in determining roadway level of service. The level of service of a roadway is an assessment of the relationship between total roadway capacity and the volume of vehicles using the roadway at any given time, usually the peak morning and evening rush hours. Level of service is measured on a scale of A through F, with A being the best (unconstrained) condition and F being the worst (constrained) condition.

In urban areas, level of service E is often regarded as the minimum acceptable level of service. In lightly-developed fringe and rural areas, level of service D often serves as the standard.



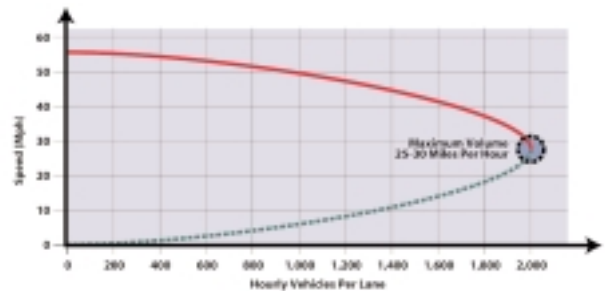
Low level of service

2.1.7 Speed vs. Capacity

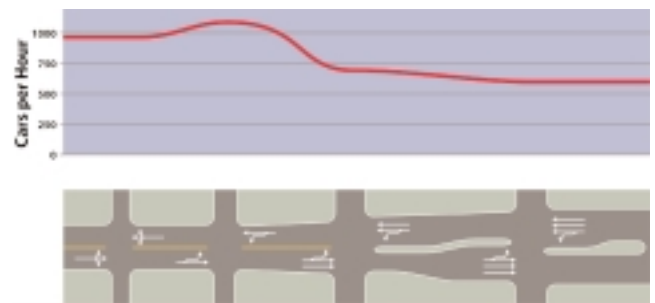
Contrary to common intuition, an increase in speed does not necessarily dictate an increase in capacity or an improvement in level of service. Similarly, a decrease in speed does not dictate a decrease in capacity.

The Highway Capacity Manual produced by the Transportation Research Board postulates that, under most circumstances, the hourly flow of vehicles per lane is maximized at a speed of 25-30 MPH. At higher speeds, the number of vehicles that can be carried in a lane per hour goes down, mainly for the following reasons:

- As higher speeds are attained, the natural inclination of motorists to increase spacing between vehicles offsets the potential capacity advantages of higher speeds.
- For multi-lane roads, higher speeds dictate a larger gradient in the different flow speeds per lane. This gradient leads to many "weaving" movements as motorists struggle to find the fastest lane, decreasing the overall capacity of the roadway. The more lanes there are, the greater the effect of weaving on capacity per lane.
- Intersections are the main determinants of capacity and level-of-service. Implementing coordinated signal systems and maintaining steady flows are simpler to accomplish at lower rather than higher speeds.



Speed-Flow Relationship



Hourly Capacity

Narrowing the Street



Stripe Lanes



Parking



Rebuild Street



Bulbout

Deflecting the Vehicle Path Vertically



Speed Bump



Speed Table



Textured Crosswalk

Deflecting the Vehicle Path Vertically



Chicane



Modified Intersection



Knockdown



Roundabout

Where new streets are to be built, however, they can be planned for slow speeds at the outset. The general principles are the same as for traffic calming, with an emphasis on narrow street widths.

2.1.9 Local Street Types

In terms of local street types, which include both "local" and "local collector" roadways, there are four primary types of flow conditions on which streets can be premised: yield, slow, free, and high-speed. The yield condition is appropriate for neighborhood streets with very low, local-serving traffic volumes, for which a single 10-12 foot lane would suffice for travel in both directions. When two cars approach each other from opposite directions, one motorist must pull aside into the parking lane to let the other pass, creating the calmest street type possible.

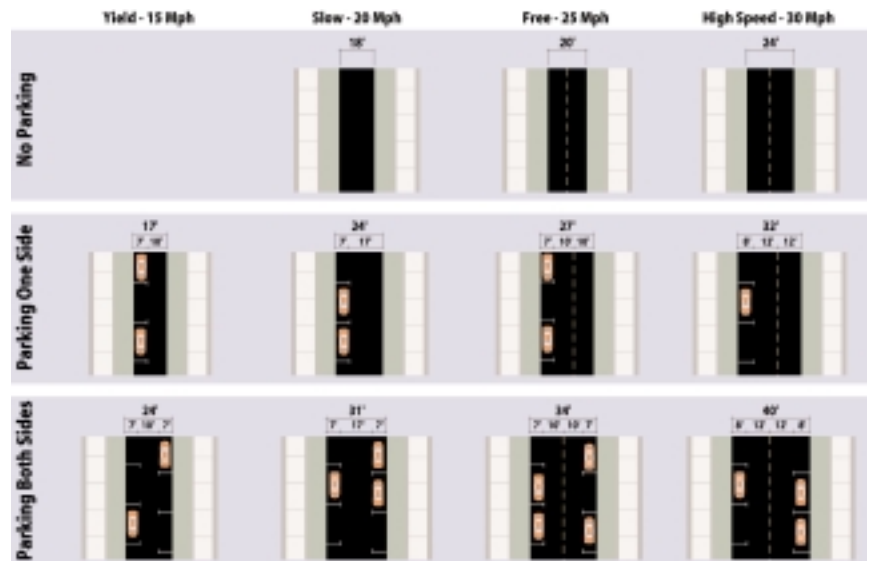
The slow-speed condition allows vehicles to pass side-by-side albeit at very low speeds. The free-flow condition-for roads of posted speed approximately 25 MPH-reserves two full (but narrow) 10-foot lanes for vehicular travel. Where local roads carry enough traffic to be described as local collectors, with at least a noticeable share of small trucks and buses, 12-foot lanes are the norm.

2.1.8 Traffic Calming

Given that reductions in vehicular speed do not necessarily dictate lower capacities, traffic-calming programs are becoming very commonplace as a means to re-create safe, slow neighborhood and commercial streets. Generally, the purpose of traffic calming is to control the speed of traffic while not restricting mobility.

Traffic calming techniques generally fall into three categories: narrowing the street; deflecting the vehicle path horizontally; and deflecting the vehicle path vertically.

The purpose of traffic calming is to retrofit existing streets for slower traffic speeds.



Local Street Types

2.2 Land Use

Land use refers to the types of activities that take place within a given area. Land use controls are a major part of most city and county development codes. The following are specific types of land uses that have varying effects on the transportation system.

2.2.1 Residential

Residential land uses refer to homes, apartments, condominiums, townhouses, and, sometimes, hotels. In other words, residential districts usually contain many trip origins within their boundaries, and few, if any, destinations.



Residential

Trip generation refers to the number of times that people arrive at and leave from certain locations during the course of a specific time period. In terms of residential development, a subdivision of single family homes will generate more trips than a small cluster of apartment buildings-given the same number of living units-due to the larger family size (and hence more trip needs) of larger living spaces. For purely residential districts, very few internal trips are observed, as almost all destinations are located outside the district (with the exception of house to house trips in large subdivisions).

2.2.2 Commercial

Commercial districts contain stores, restaurants, offices, banks, and other places of business. Each of these uses generates a different number of trips per day (or per peak period), so the total number of trips attracted to the district depends on the specific allotment of uses at the site. Commercial districts mainly contain destinations.



Commercial Use

2.2.3 Industrial

Industrial districts also consist mostly of destinations. However, whereas commercial districts represent a mixture of employment-based and retail-based uses, industrial uses are almost exclusively employment-based. The only notable exceptions are retail establishments located in industrial districts specifically to serve the large concentration of employment-such as supply stores and, sometimes, restaurants-and, in many cases, "undesirable" businesses (i.e., adult entertainment establishments) which are often limited to industrial zones.

2.2.4 Other

Other land uses include institutional uses, civic uses, recreational uses (i.e., parks and ballfields), and conservation areas. These are less prevalent than residential, commercial,



School - Institutional Use

and industrial districts, and are often mixed in with these other uses. For example, schools ("institutional") are often intermingled with residential areas, while government buildings ("civic") are often located in central business districts. Many recreational areas border or are integrated with commercial or residential districts, but conservation areas are, in general, spatially separate from the main areas of activity because of their large sizes and characteristic natural qualities.



Mixed-use small town

2.2.5 Mixed-Use

Mixed-use areas are exactly what the name implies—areas where two or more major uses are intermingled with each other. The most common mixed-use district contains both residential and commercial development, since these are generally very compatible uses. In fact, up until the onset of zoning codes in the early twentieth century, most cities developed in this manner, as is evident in older North American cities such as New York, Boston, Philadelphia, and New Orleans. Most small towns also developed in this manner, as limited transportation systems dictated that commercial and residential development needed to be as close together as possible.

Nearly all newer cities are now actively encouraging downtown residential development to create mixed-use environments that are freer from crimes often associated with lack of people on the sidewalks after the close of the business day. Today, mixed-use development is also very prevalent in smaller-scale projects such as new "town centers," which generally contain a mixture of office, retail, and residential uses.

The most common configuration of mixed-use buildings consists of retail on the ground floor and offices and apartments above. The transportation benefits of this type of development are numerous (see Section 3.1) and are based generally on the drastic reduction of trip distance between origins and destinations, which are mixed together rather than spread apart in separate designated districts.

2.3 Access Management

Access management is one of the tools recommended in this handbook to manage transportation and land use. Access management is defined as a process that provides or manages access between community development and surrounding roadways. As development occurs along highly traveled commercial roadways, certain policies and guidelines need to be in place to manage access within the corridor. Several

options are described within this section, with more detailed information found in references identified in **Appendix E**.

2.3.1 Shared Driveways



Shared driveways

The concept of shared driveways encourages access along the side street for corner parcels and joint access driveways when side street access is not available. Joint access driveways would be applicable to mid-block parcels.

2.3.2 Cross-access Connections



Cross-access

Cross-access connections allow motorists to complete short trips between adjacent uses without having to return to the primary arterial. Connections are provided through aisles and alleys that connect adjacent parcels and parking lots to one another. By minimizing the number of vehicles turning off and onto the arterial, through traffic will be able to flow in a more efficient manner. In addition, cross-access connections that are coordinated and well planned may begin to form a second parallel roadway.

2.3.3 Side Road Access



Side-road access

Side road access states that wherever possible, parcels provide driveways from the side street instead of the primary arterial. Corner parcels are the best candidates for this option. By encouraging driveway access from the side street,

the number of "friction points" along the primary arterial is drastically reduced. Again, side road access may be planned with the thought of forming a second parallel roadway in mind.

2.4 Urban Design

Urban design is also very integral to travel choice within a corridor. Design consists of specific fields such as urban design, town design, and site design, but their general principles and their effects on transportation are very consistent. While there are many design elements and concepts that are involved in the creation of buildings and development sites, the specific elements that are described below have very direct effects on transportation.

2.4.1 Scale

Scale refers to the size and orientation of buildings with respect to their users. More useful than the terms large-scale and small-scale are the parallel terms automobile-scale and pedestrian scale.

Automobile-scale refers to the condition where buildings are sized and oriented in a manner that caters to passing motorists. Such buildings are generally large and loosely spaced. While appropriate for motorists viewing them at speeds of 30-50 MPH, they create an unpleasant environment for people on foot moving at much slower speeds.

Pedestrian-scale refers to development that is built to be viewed and accessed by people traveling at very low speeds, i.e., on foot. Generally, buildings are small (or have varied facades) and close together, meaning that the pedestrian's view is constantly changing. Moreover, pedestrian-scale development is more clustered than automobile-scale development, so more buildings are accessible within a given walking distance.



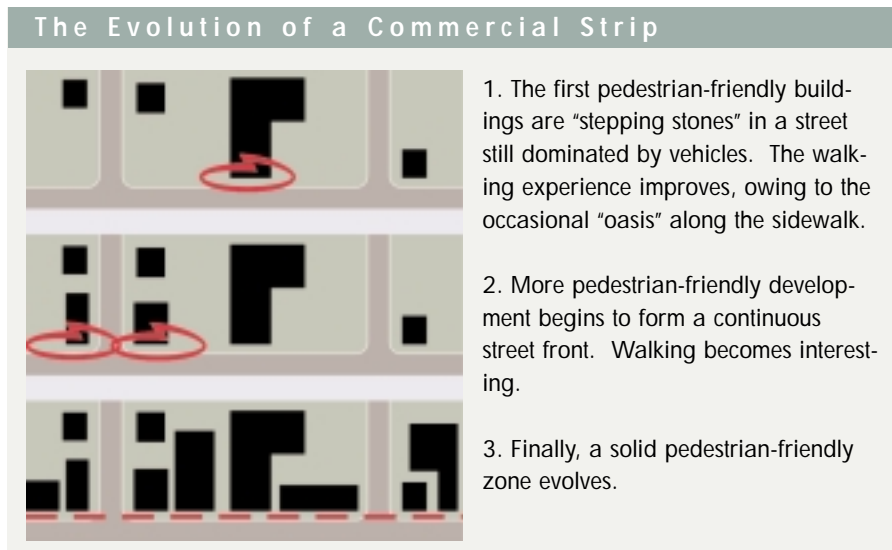
Automobile-scale vs. pedestrian scale development

2.4.2 Setback

Setback is another design element that has significant implications for travel behavior. Large setbacks are often indicative of automobile-scale development, as street-front space is reserved for parking and/or landscaping. Such large setbacks are inconvenient for pedestrians, however, since the total walking distance between buildings increases with the distance between the sidewalk and buildings.

In most pedestrian-scale developments, there are usually no (or very small) setbacks, with each building right up to the sidewalk. This is the optimal condition for pedestrians because the distance between the storefronts and the main walking corridor is minimized.

In instances where strip corridors are redeveloped as pedestrian-oriented districts, new buildings are often constructed in a manner that creates a desirable consistent street frontage by minimizing setback.



Travel behavior is very much influenced by both land use and design, each of which has implications for overall traffic, mode split, and parking requirements.

2.5 Context Sensitive Design (CSD)

"In the beginning of the interstate era, we built the greatest freeway system in the world; but aesthetics and preserving the environment weren't part of that mission. No we need another transformation. We're here to define a new vision, to change how we do business."

-- Tom Warne, President, American Society of State Highway and Transportation Officials

Departments of Transportation are retooling their approach to highway design and development in this post-Interstate era to create context-sensitive designs that fit better with a community's character and are respectful of special resources. This effective approach to highway and development design with stakeholders results in the optimal solution for all parties involved.

Context sensitive design is another way of saying "to think beyond the pavement" about the impact a travelway will have on the area it traverses, including the people who live, work, or pass through the area. Context sensitive design asks questions first about the need and purpose of the transportation project, and then addresses equally: safety, mobility, and the preservation of scenic, aesthetic, historic, environmental, and other community values. This requires a collaborative, interdisciplinary approach in which citizens are part of the design team.

This summary of context sensitive design includes the consensus vision from the Thinking Beyond the Pavement Workshop (see **Appendix E**); successful qualities identified by ASCE workshop participants for two case study examples that used the CSD approach; the role of the civil engineer in CSD; and the CSD approach to professional development.

2.5.1 Qualities of Excellence in Transportation Design

- The project satisfies the purpose and needs as agreed to by a full range of stakeholders. The project is a safe facility both for the user and the community.
- The project is in harmony with the community and preserves environmental, scenic, aesthetic, historic and natural resource values of the area.
- The project involves efficient and effective use of resources of all involved parties.
- The project is designed and built with minimal disruption to the community.
- The project is seen as having added lasting value to the community.

- The project exceeds the expectations of both designers and stakeholders, and achieves a level of excellence in people's minds.

2.5.2 Characteristics of the Process Which Will Yield Excellence

- Establish a multi-disciplinary team early with disciplines based on the needs of the specific project and include the public.
- Seek to understand the landscape, the community, and valued resources before beginning engineering design.
- Involve a full range of stakeholders with transportation officials in the scoping phase. Forge consensus on the scope before proceeding.
- Tailor the highway development process to the circumstances.
- Secure commitment to the process from top agency officials and local leaders.
- Communication with all stakeholders is open and honest, early and continuous.
- Tailor the public involvement process to the project. Include informal meetings.
- Use a full range of tools for communication about project alternatives (e.g. visualization)

2.5.3 Successful Case Study Qualities: Suburban Commercial Artery



Before



After

SeaTac, a city of 23,000 whose boundaries encompass the Seattle-Tacoma International Airport, developed in the early 1900's a Comprehensive Plan and a Transportation Plan. The Transportation Plan proposed that International Blvd. be expanded to increase traffic capacity and improve pedestrian access. It called for a major emphasis on aesthetics to change the area's appearance from a tacky commercial strip to an attractive gateway not only for residents, but also for some 24 million annual visitors. Phase 1 reconstruction comprised 6,500 feet and cost \$7.3 million. In order to keep its funding, Phase 1 had to go to bid within 15 months.

The successes of the CSD approach included the following:

- Stakeholders, their authority or interest in the project and their objectives were clearly set forth and understood by all involved.

- When explaining the project to stakeholders, project leaders focused on principles and concepts rather than specific designs.
- Early identification of stakeholder needs led to negotiation of design modifications.
- By involving a wider group of stakeholders, multi-modal features (including bike lanes, HOV lanes, wide sidewalks and enhanced bus zones) were better incorporated into the project.
- Deviations from design standards needed to satisfy the wider group of stakeholders, were accepted by the highway agency.
- A survey of roadway users yielded helpful information for designers.
- All property owners were involved early in the decision making process.

2.5.4 Case Study: A Scenic Suburban Arterial

Paris Pike is the name commonly used to describe the Paris-Lexington Road, a twelve-mile section of narrow road between Lexington and Paris, Kentucky. Lexington is the hub of Kentucky's Bluegrass Region and is one of the state's principal metropolitan areas. It has a population of approximately 240,000 and is the county seat of Fayette County.

The Paris Pike reconstruction project consists of improving safety and accommodating increased capacity by widening



On Paris Pike, a scenic two-lane road through horse farms from Lexington to Paris, Kentucky, community meetings resulted in a plan in which old stone walls and large trees that lined the road will be replaced as the road is widened. Instead of concrete shoulders, grass shoulders strengthened with rock and other materials will be used.

the road to four lanes. The project is wholly contained in a 10,000 acre historic district eligible for listing on the National Register of Historic Places. The area is also recognized nationally for its scenic beauty and contains settings which contribute to the unique Bluegrass landscape including rock fences, antebellum mansions and formal gated entrances. Greatly concerned that the proposal to add two

lanes to the highway would destroy the historic and scenic character of this area, residents fought the project for nearly 30 years. The project was stalled for years by a court ordered injunction that was lifted only after the principal stakeholders signed a memorandum of agreement.

The success of the CSD approach to this project included:

- Early coordination was established with involved environmental agencies that resulted in coordinated and proactive environmental mitigation efforts.
- The entire design process was steered by public involvement
- A non-standard, parkway type grassed shoulder design was implemented
- Stakeholders were identified, organized, and listened to
- Even the most vocal opponents were included as stakeholders
- Stakeholder consensus was required on all the primary project goals
- The process resulted in the gaining of stakeholder trust
- Designers found that the additional time required up front to design with full flexibility was a good investment and added value to the project

2.5.5 Role of the Civil Engineer

The civil engineer is no longer expected to be chained to a desk where he or she designs roadways in isolation. With the development of well-defined planning processes, increased involvement of stakeholders, and the ever increasing speed of land development, the engineer now has additional roles and responsibilities.

Project planning and development now calls for engineers to become involved in community impact assessment early in the project, allow sufficient project budget and time to “do it right the first time,” take the longer view of transportation needs/consider asset management, recognize the need for additional skill sets and use them, develop early project multi-disciplinary teams, including locals and consultants before scooping, train local officials and the public in the transportation development process, and increase public awareness of and involvement in regional transportation and land use planning.

An effective civil engineer will immerse himself in stakeholder involvement activities. This includes but is not limited to:

- Convincing the project owner of the importance of CSD principles,
- Demonstrating the effectiveness of good stakeholder involvement,
- Building a team of talented professionals,
- Providing good quality project management and facilitation,

- Becoming familiar with and utilizing the most appropriate techniques for the project,
- Identifying and coordinating with stakeholders, both individuals and groups, and
- Understanding the political realities of a project.

This redefined role of the engineer means that in the design phase of the project, public involvement is allowed in all phases, designers are included early in the public involvement process, stakeholders are well educated in design principles and practices, and alternatives are communicated as choices. By utilizing the skills and increasing the knowledge of others, stakeholders become more aware of the reasoning behind the standards. As important as it is to apply CSD principles where opportunities exist, the civil engineer should be willing to reevaluate designs based on changing public values.

2.5.4 Approach in Professional Development

To transform the approach to highway development, the individual must first be transformed. ASCE workshop participants identified these actions for key stakeholders in professional engineering development. Kentucky is at the forefront of this professional development approach. Through the Kentucky Transportation Center at the University of Kentucky, context sensitive design workshops and information is available and disseminated to professionals throughout the Commonwealth and beyond. The role of universities, employers, and professional associations is outlined below.

Universities

- Develop cooperative relations with employers
- Provide context for "number crunching"
- Provide practical experience
- Provide an understanding of how to translate fundamentals into practice
- Teach communications and team skills

Employers

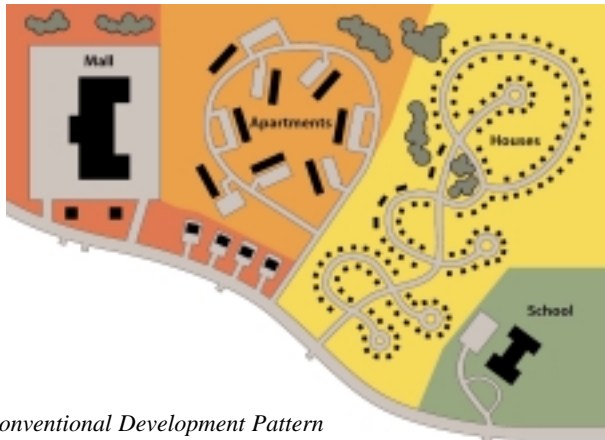
- Develop cooperative relations with Universities
- Provide practical experience to students
- Allow for continuous learning at workshops and conferences
- Include younger staff in meetings with stakeholders

Professional Associations

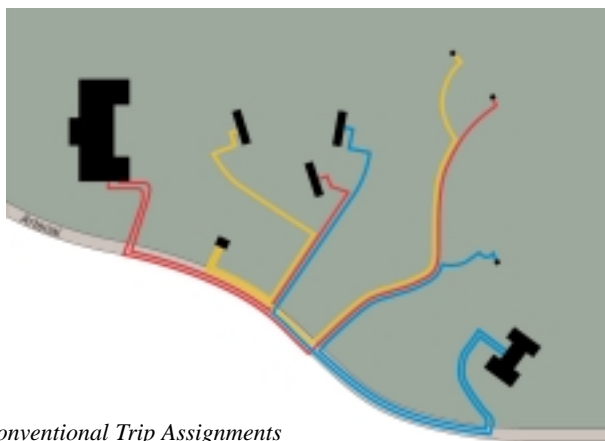
- Develop Case Studies and Teaching Modules for university use
- Sponsor coordinated, follow-up workshops on practical applications
- Communicate what's behind design "standards"
- Provide training to State DOT's

3.0 Primary Interrelationships

Travel choice is very much influenced by both land use and design, each of which has implications for overall traffic, mode split, and parking requirements. The following sections assess the relationships between transportation and land use and between transportation and design.



Conventional Development Pattern



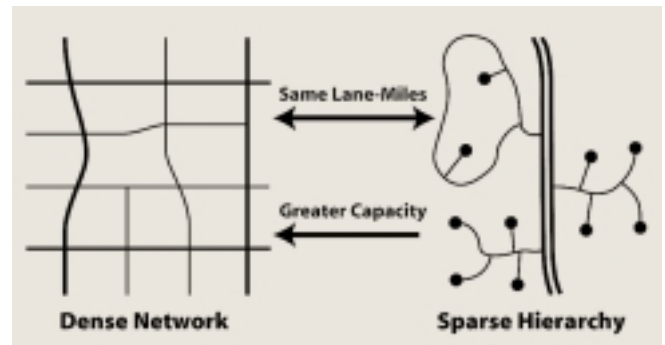
Conventional Trip Assignments

3.1 Transportation and Land Use

The organization and distribution of land uses is the primary determinant of travel patterns, since each land use contains a certain quantity of origins and/or destinations. While a reactive transportation plan simply accepts the distribution of origins and destinations as given and directs transportation investment to serve them, a proactive transportation plan examines the effects of better organizing these origins and destinations. The desired result is that the optimum arrangement of land uses can reduce the demand for scarce transportation resources.

3.1.1 Traffic and Travel

While the reorganization of origins and destinations can help reduce overall trip length-especially in total mixed-use environments-they also have very direct implications on the physical form of the roadway system.



Benefits of the Network

When land uses are functionally and physically separated, there is still a need for travel between them. Typically, these separate land uses are connected via major thoroughfares with a limited number of interconnected supporting roadways. In the worst-case scenario, all local travelers must use the same roadway to shuttle between adjacent land uses as regional travelers use to travel to, through, and out of the study area. This creates a large degree of traffic friction along the corridor and usually leads to the need to widen the roadway. In other words, all trips-local and regional-are "assigned" to the main roadway. The usual result of this type of trip assignment is a system of wide, heavily traveled main roadways feeding into local roadways that are lightly utilized.

Alternatively, consider the example of a mix of uses organized along a dense, interconnected local street network. The presence of multiple route options between different uses prevents any one thoroughfare from shouldering an unreasonable burden. Local trips are distributed along the roadway network, leaving the main regional thoroughfare to carry external and internal/external trips, without the traffic friction otherwise caused by short internal trips. The main thoroughfare can resultantly remain at a scale that is appropriate for the largely-rural surrounding context.

The key element of these two scenarios is the organization of land use. The spreading and isolation of different land uses requires significant main roadway capacity to serve local and regional trips alike. Conversely, the tightening and mixing of land uses increases the financial feasibility of connecting the different uses by multiple routes, and reduces the overall distances that need to be traveled to shuttle between them.

3.1.2 Mode Split

The organization of land use also has considerable implications on mode split. When different land uses are separated and widely distributed, the private automobile is by far the most efficient means of transportation available to travelers. For instance, few people would walk due to the fact that origins and destinations are so widespread. Bicycling would be a viable option but would entail long trips. Efficient transit

service would be difficult because land uses, in this scenario, would not be organized around natural activity centers or a consistent pedestrian framework.



Widespread uses and inconsistent pedestrian framework

On the other hand, when land uses are mixed and tightly woven, mode split shifts toward walking and transit. Walking becomes a feasible option because many origins and destinations would be within close proximity of one another. This would lead to the creation of a consistent pedestrian framework, generating an identifiable "activity center" and, hence, a focal point for transit.

3.1.3 Parking

When land uses are separated physically and functionally, each use requires its own dedicated parking supply. In other words, there is no opportunity for "shared" parking because the walk between isolated uses is generally large and/or non-enticing. Conversely, when different land uses are in close proximity to one another, their varying parking demand profiles lead to shared parking opportunities.

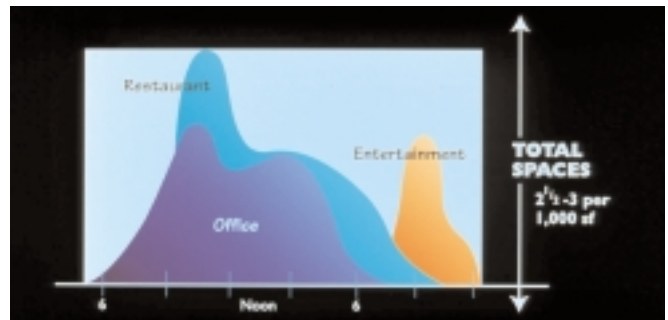


Large, mostly-empty, single-use parking lot



Shared parking facility

For example, imagine that the peak parking period for a certain large church is Sunday morning. An adjacent office development has a peak parking period of roughly 8 AM to 5 PM Monday through Friday, while a nearby cinema complex experiences its peaks on evenings and weekends. Using these three uses as examples, it is evident that proper management of a shared parking resource can reduce the total number of spaces needed, provided that the three uses are in close proximity and connected by attractive pedestrian facilities. In other words, since each of the three uses would fill up parking spaces at different times, a well-managed, well-located shared parking resource would be able to handle each use's peak and eliminate the need for three separate, often empty, parking supplies.



In instances where different land uses are isolated and widely-separated, however, the temporal differences between peak periods are irrelevant. In such cases, each specific use would have to maintain its own dedicated parking supply that is empty much of the time. There is therefore an inherent cost savings for developers of mixed-use areas, as they can take advantage of parking demands that are "out of phase" to build and maintain fewer overall parking spaces.

3.2 Transportation and Urban Design

The transportation implications of design are very similar in magnitude to those of land use. In particular, the two design elements described in Section 2.4—scale and setback—have considerable effects on travel patterns, mode split, and parking.



Pedestrian-scale design reduces local trips and vehicular speeds

3.2.1 Traffic and Travel

The travel implications of design are threefold:

- a. The compactness associated with smaller scales implies that origins and destinations are closer together, shortening overall trip lengths.
- b. Convenient pedestrian connections between origins and destinations reduce the total number of automobile trips by shifting the mode split.
- c. Smaller scales have the desirable side effect of decreasing vehicular speeds and hence reinforcing pedestrian-oriented areas as pleasant walking environments. A pedestrian-scale rather than automobile-scale arrangement of storefronts leads to motorists' perception that buildings are passing by more rapidly, often leading to a reduction in speed.

So the overall effect of pedestrian-scale design on travel patterns is that traffic is lighter, slower, and more acceptable for areas of high pedestrian and bicycle activity.

3.2.2 Mode Split

Pedestrian-scale design is targeted at exactly what its name implies, pedestrians. For a given amount of development, an increase in pedestrian travel implies a decrease in automobile travel. Because the very objective of designing at a pedestrian scale is to attract pedestrians, such design has very significant traffic benefits.



Isolated, stand-alone convenience store.



Walk-up drug store.

Pedestrian-scale design also increases the mode share of transit. The reason for this is that every transit rider is a pedestrian at the beginning and end of his trip. Therefore, improvements to the pedestrian environment at these locations will increase the attractiveness of using transit.

3.2.3 Parking

The creation of a good pedestrian environment can generate

a "park-once" environment, meaning that patrons to local establishments have the propensity to park once and subsequently walk between all their destinations. The impacts on overall parking requirements are profound.

In park-once districts, each specific use does not need its own separate parking supply because it is accepted that a large portion of the patron base is made up of "walk-up" (as opposed to "drive-up") customers. For example, imagine a trip "chain" that includes a visit to the drug store, a restaurant, and the post office. In the model where land uses are widely separated, three separate parking spaces are needed to accommodate this single person because the walk between the drug store, restaurant, and post office is lengthy and/or unpleasant. In contrast, in a park-once district-provided that there is a consistent pedestrian framework and the three uses are within walking range of each other (as is commonly the case)-only a single parking space is needed to serve this particular customer.

4.0 Corridor Types as Defined by Transportation, Land Use, and Design Characteristics

The transportation, land use, and design characteristics of a corridor will differ according to the context of the surrounding environment. For example, this section will take the four corridor types designated in the Lexington-Fayette Corridor Enhancement Study and define them in terms of their transportation, land use, and design characteristics.

4.1 Urban Developed

The emphasis for urban developed corridors is correction. The reason for this is that urban developed corridors are, by definition, mostly built-out and often exhibit a lack of coordination among transportation, land use, and design. As a result, travel conditions in these corridors are often characterized by traffic friction and few alternate routes as the various land uses are generally connected only via the various regional thoroughfares. The mixing of local and regional traffic in these corridors has frequently dictated the need for wide, multilane regional highways.



Example of an unattractive urban highway

In order to begin to address transportation challenges in urban developed corridors, it is important to examine how the principles described in this appendix can be applied in a



Short-term "corrections" include access management and beautification

"retroactive" manner. At the very least, pedestrian conditions and local circulation can be improved through sidewalk enhancements and cross-access, respectively.

Intermediate solutions might entail the creation of an alternative street network behind and between properties, so that internal and some internal/external trips can be accommodated without the need for travel on the main regional thoroughfare.

In the long term, a rearrangement of uses and structures along the corridor can begin to better approximate a sustainable, mixed-use development pattern. The addition of buildings along the strip-and the complementary establishment of shared parking facilities-can begin to cause certain focal points along the corridor to "evolve" into pedestrian-oriented districts. When this happens, traffic will become tamer, short trips will take place on foot rather than by car, and natural nodes for a regional transit system will be created.

4.2 Urban Undeveloped

The emphasis for urban undeveloped corridors is on prevention; in other words, doing things correctly right from the outset. This entails the creation of an interconnected supportive roadway network as the main corridor is developed. The establishment and designation of specific development nodes can create clusters of pedestrian-scale centers that serve as natural stopping points for transit buses. The mixing of uses in these nodes can provide people with housing options to residential-only subdivisions.

4.3 Urban Scenic

Urban scenic corridors, which often include parts of urban developed and urban undeveloped corridors, require further attention to the design controls and the minimization of excess transportation infrastructure. This logically requires maximizing the efficiency of a limited infrastructure supply, including the encouragement of shared parking areas and the



Attention to land use and design can prevent roads from becoming "frayed" and inefficient



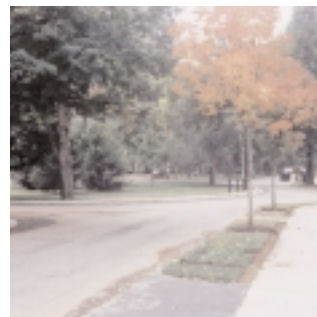
Reorganization of land use is a long-term prospect

minimization of overall automobile mileage.

Any excess use of infrastructure in these areas is likely to destroy the qualities that make such corridors "scenic" in the first place. Large parking lots and excess highway lanes are likely to detract from the quality of any particular view. To the extent that the need for these is limited, the better the prospects for accommodating all users without disrupting the scenic views.

4.4 Rural Scenic

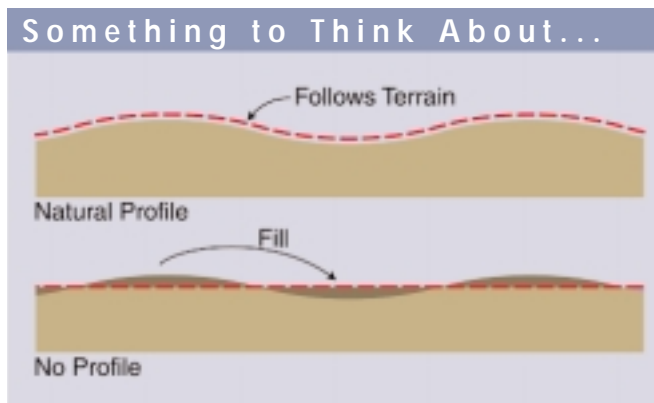
Rural scenic corridors require the utmost attention to the interactions among transportation, land use, and design, because these corridors are the most fragile and easiest to



Urban residential



Urban commercial



Maintenance of Natural Profile Preserves the Scenic Qualities of Urbanizing Roadways

disrupt. The character of rural scenic corridors depends upon the clustering of development in order to preserve the "rural" spaces in between. Continuous, automobile-scale strip development causes rural scenic corridors to cease to exist.

The most essential land use/design control along rural scenic corridors is the clustering of development. It is nearly impossible to stop growth into rural areas, but it is very possible to organize this growth into a series of pedestrian-scale nodes rather than continuous strips. Because of the inherent opportunities for shared parking, pedestrian trip-chaining, and focused transit service, the same total amount of development can be absorbed using much less total land area than the "strip" model. More importantly, the nodal organization of this development allows the preservation of contiguous tracts of pristine landscapes, the very essence of the rural scenic corridor.



Rural scenic corridors are defined by natural landscapes

There are many regularly-used tools available for fostering this type of focused development, including Transfer of Development Rights (TDR), Purchase of Development Rights (PDR), Preservation Funds, and Density Bonuses. Although these are not transportation policies per se, they are directly tied to the transportation planning process via the interrelationships described in this appendix.

5.0 Conclusion: Coordinated Regional Approach

In order to fully realize the potential positive benefits of land use and design control on transportation and environmental

preservation, it is essential that each of these subjects is addressed in a coordinated regional growth plan. The goal of such a plan would not be to restrict or prevent growth, but to direct it such that the unique characteristics and values that define the area are preserved.



Rural properties are often preserved through the transfer or purchase of their development rights

The Bluegrass region possesses numerous qualities that make it a desirable place to live and work. As a result, growth will continue to be attracted to the area and continue to threaten these very qualities. A coordinated regional approach to development as advocated in this report is the best way to ensure that growing transportation needs are accommodated with the least cost to the region, in terms of both money and quality of life.

A p p e n d i x



SAMPLE NEWSLETTER AND CHECKLISTS

NEWSLETTER CHECKLIST

☞☞ This checklist provides suggestions which should be helpful as the first newsletter is prepared and distributed.

Review Time

☞☞ Allow at least two weeks of interactive review (draft, review, revise, etc.) for the first issue. After the format and writing style is set, generally less review time will be needed for future issues.

“Return Address” Section of Newsletter

☞☞ Be sure that the return address is in the upper left hand corner (not mid page); when folded in half, the fold is at the bottom and page edge is at the top.

☞☞ Add Project Name (either in the return address or at the bottom, near the fold); on occasion, only the section with the address on it will be returned; difficult to determine which project it belongs to.

☞☞ Be sure to include underneath the return address “ADDRESS CORRECTION REQUESTED”, so that mailing addresses can be updated.

Use a White Background

☞☞ Having a white background is particularly important for the address area. If the address is printed directly on this area, the ink will not show up on a dark color. The same holds true for postage meter ink, which is usually red.

Print Time

☞☞ The time needed depends on quantity, number of folds, and number of colors; generally count on 1 – 5 working days.

☞☞ If only in black and white, printing can be completed within 1 – 2 working days.

☞☞ If printing in color, allow at least 5 working days.

☞☞ Be sure to print more than the mailing list so that extras can be distributed at local gathering places.

Mailing Tips

☞☞ Using a mailing service saves time.

☞☞ Depending on the quantity, a mailing service can send out the newsletters within 1 – 2 working days of delivery of newsletters and mailing list information.



Get Involved in the Tamiami Trail Scenic Highway

The Tamiami Trail Corridor Advocacy Group (CAG) is seeking to have the Tamiami Trail in Collier County designated a Florida Scenic Highway. The limits of the proposed Scenic Highway Designation are from the northern boundary of Collier-Seminole State Park at U.S. 41 to the Dade County line. The goals of the Tamiami Trail Scenic Highway Designation are:

- To preserve, maintain, and enhance the surrounding natural and scenic resources.
- To preserve and maintain the function of the roadway as a commercial corridor and major arterial while safely accommodating local traffic, as well as commercial and tourism travelers.
- Community Support and Participation.
- To provide educational opportunities for travelers that will explain the globally unique scenic and natural elements of the surrounding landscape.
- To support Economic Development and Tourism.

Public Workshop Scheduled

You are invited to a Public Workshop regarding the Tamiami Trail Scenic Highway. During this workshop the Tamiami Trail Corridor Advocacy Group will work with residents, business owners, and interested persons to develop a vision of this scenic highway for the future. *We need your ideas and your input.*

Thursday, February 26, 1998, 8:30 am to 8:00 pm
Everglades City Community Center
203 Buckner Avenue
Everglades City, Florida
(See Maps)



Get Involved!

Several opportunities are available for you to learn about this project and to provide input. Please call us to schedule a small group meeting or to add your name to the project mailing list.

For more information regarding the project, please contact Mary Raulerson Egan in the Community Involvement Office at (407) 843-6552, or Amy Taylor at the Naples/Collier County MPO at (941) 403-2319. You may also browse our website at [http://www.glatting.com/tamiami trail/](http://www.glatting.com/tamiami%20trail/).



Tamiami Trail Scenic Highway Public Workshop

February 26, 1998

Everglades City Community Center
203 Buckner Avenue
Everglades City, Florida

(See Map on Back)

Workshop Agenda

8:30 a.m. - 9:30 a.m.	Introduction Video/Slideshow History of the Trail Scenic Highway Designation Process
9:30 a.m. - 10:30 a.m.	Tamiami Trail User Groups
10:30 a.m. - 11:30 a.m.	User Groups Presentation
11:30 a.m. - 12:30 p.m.	Lunch (On Your Own)
12:30 p.m. - 1:30 p.m.	Tamiami Trail Vision
1:30 p.m. - 2:30 p.m.	Presentation of Visions
2:30 p.m. - 3:30 p.m.	Issues and Opportunities Map
3:30 p.m. - 4:30 p.m.	Concerns and Issues
4:30 p.m. - 5:30 p.m.	Action Plan
6:30 p.m. - 8:00 p.m.	Open House/Public Presentation

OPEN HOUSE / WORKSHOP CHECKLIST

☞☞ This checklist provides suggestions which should be helpful in organizing each workshop.

Handouts

- ☞☞ Comment Forms.
- ☞☞ Question and Answer Sheet.
- ☞☞ Replicate the Display Boards.
- ☞☞ Copies of Power Point Presentation (if applicable).

Display Boards

- ☞☞ Bluegrass Region Map.
- ☞☞ Corridor Aerials (scale 1" = 500').
- ☞☞ Data Maps & Figures (enlarged from the Data Collection Report).
- ☞☞ Completed Evaluation Measures.
- ☞☞ Final List of Goals & Objectives.
- ☞☞ Different Vision Choices.

Power Point Presentation (if applicable)

- ☞☞ Laptop Computer (presentation previously loaded).
- ☞☞ Projector.
- ☞☞ Laser Pointer.
- ☞☞ Microphone.

Information Table

- ☞☞ Extra Set(s) of Display Aerials (make notes on these instead of the displays; supplement availability if many more attend than expected).
- ☞☞ Project Reports (data collection, etc.) – available for reference; able for citizens to order; if reference only, clearly mark documents.

Other Materials

- ☞☞ Supplies Box – Tape, Pins, Scales, Pens, Pencils, Clips, Legal Pads.
- ☞☞ Engineering Scales.
- ☞☞ Directional Signs and Wickets.
- ☞☞ Easels.
- ☞☞ Name Tags for Project Team.
- ☞☞ Sign-In Sheets.
- ☞☞ Comment Form Box.
- ☞☞ Tent/Place Cards – Label Locations, like “Sign In”, “Comment Forms Here.”

A p p e n d i x



SAMPLE REGULATIONS

SAMPLE ACCESS MANAGEMENT REGULATIONS

Center for Urban Transportation Research/Florida Department of Transportation: **Model Land Development and Subdivision Regulations that Support Access Management for Florida Cities and Counties**: 1994.

[Example: Orlando, Florida, Access Management Regulations]

Corner Clearance

1. Corner clearance for connections shall meet or exceed the minimum connection spacing requirements for that roadway.
2. New connections shall not be permitted within the functional area of an intersection or interchange as defined by the connection spacing standards of this code, unless:
 - A. No other reasonable access to the property is available, and
 - B. The (permitting department) determines that the connection does not create a safety or operational problem upon review of a site specific study of the proposed connection prepared by a registered engineer and submitted by the applicant.
3. Where no other alternatives exist, the (permitting department) may allow construction of an access connection along the property line farthest from the intersection. In such cases, directional connections (i.e. right in/out, right in only, or right out only) may be required.
4. In addition to the required minimum lot size, all corner lots shall be of adequate size to provide for required frontyard setbacks and corner clearance on street frontage.

Joint and Cross Access

1. Adjacent commercial or office properties classified as major traffic generators (i.e. shopping plazas, office parks), shall provide a cross access drive and pedestrian access to allow circulation between sites.
2. A system of joint use driveways and cross access easements shall be established wherever feasible along (name affected corridors, including FIHS, or refer to a list) and the building site shall incorporate the following:
 - A. A continuous service drive or cross access corridor extending the entire length of each block served to provide for driveway separation consistent with the access management classification system and standards.
 - B. A design speed of 10 mph and sufficient width to accommodate two-way travel aisles designed to accommodate automobiles, service vehicles, and loading vehicles;
 - C. Stub-outs and other design features to make it visually obvious that the abutting properties may be tied in to provide cross-access via a service drive;
 - D. A unified access and circulation system plan that includes coordinated or shared parking areas is encouraged wherever feasible.

SAMPLE ACCESS MANAGEMENT REGULATIONS (CONTINUED)

Reverse Frontage

1. Access to double frontage lots shall be required on the street with the lower functional classification.
2. When a residential subdivision is proposed that would abut an arterial, it shall be designed to provide through lots along the arterial with access from a frontage road or interior local road. Access rights of these lots to the arterial shall be dedicated to the (city/county) and recorded with the deed. A berm or buffer yard may be required at the rear of through lots to buffer residences from traffic on the arterial. The berm or buffer yard shall not be located within the public right-of-way.

Access Connections and Driveway Design

1. Driveway approaches must be designed and located to provide an exiting vehicle with an unobstructed view. Construction of driveways along acceleration or deceleration lanes and tapers is discouraged due to the potential for vehicular weaving conflicts.
2. Driveway width and flair shall be adequate to serve the volume of traffic and provide for rapid movement of vehicles off of the major thoroughfare, but standards shall not be so excessive as to pose safety hazards for pedestrians, bicycles, or other vehicles.

Flag Lot Standards

1. Flag lots shall not be permitted when their effect would be to increase the number of properties requiring direct and individual access connections to the State Highway System or other major thoroughfares.
2. Flag lots may be permitted for residential development, when deemed necessary to achieve planning objectives, such as reducing direct access to thoroughfares, providing internal platted lots with access to a residential street, or preserving natural or historic resources, under the following conditions:
 - A. Flag lot driveways shall be separated by at least twice the minimum frontage requirement of that zoning district.
 - B. The flag driveway shall have a minimum width of 20 feet and maximum width of 50 feet.
 - C. In no instance shall flag lots constitute more than 10% of the total number of building sites in a recorded or unrecorded plat, or three lots or more, whichever is greater.
 - D. The lot area occupied by the flag driveway shall not be counted as part of the required minimum lot area of that zoning district.
 - E. No more than one flag lot shall be permitted per private right-of-way or access easement.

Shared Access

1. Subdivisions with frontage on the state highway system shall be designed into shared access points to and from the highway. Normally a maximum of two accesses shall be allowed regard-less of the number of lots or businesses served
2. Direct access to individual one and two family dwellings shall be prohibited on the Florida Intrastate Highway System.
3. Subdivisions on a single residential access street ending in a cul-de- sac shall not exceed 25 lots or dwelling units, and the cul-de-sac shall have a minimum cartway radius of 30 feet.

SAMPLE ACCESS MANAGEMENT REGULATIONS (CONTINUED)

Connectivity

1. The street system of a proposed subdivision shall be designed to coordinate with existing, proposed, and planned streets outside of the subdivision as provided in this Section.
2. Wherever a proposed development abuts unplatted land or a future development phase of the same development, street stubs shall be provided as deemed necessary by the (city/county) to provide access to abutting properties or to logically extend the street system into the surrounding area. All street stubs shall be provided with temporary turn-around or cul-de-sacs unless specifically exempted by the Public Works Director, and the restoration and extension of the street shall be the responsibility of any future developer of the abutting land.
3. Collector streets shall intersect with collector or arterial streets at safe and convenient locations.
4. Subcollector and local residential access streets shall connect with surrounding streets to permit the convenient movement of traffic between residential neighborhoods or facilitate emergency access and evacuation, but such connections shall not be permitted where the effect would be to encourage the use of such streets by substantial through traffic.

SAMPLE LAND DEVELOPMENT REGULATIONS

Modified Land Development Regulations Do Not Necessarily Change Zoning Ordinances

For the most part, LDRs should be distinct from a community's zoning code. Traditionally, zoning codes are concerned only with allowable uses and densities. Conversely, LDRs address the character, intensity, and location of development on what is assumed to be an already allowable use of a subject property. Other development-related issues easily addressed through amended land development regulations include signage, access management, landscape and parking standards.

[Example: Austin, Texas, Hill Country Roadway Corridor Regulations]

The City of Austin, Texas has adopted land development regulations to preserve the unique character of the Texas Hill Country.

The Hill Country Roadway Regulations are designed to achieve the following purposes:

1. To maintain the rugged natural beauty of the eastern edge of the Texas Hill Country as currently exists along Hill Country Roadways;
2. To encourage development that is compatible with and, whenever possible, enhances such natural beauty;
3. To allow people of the city to be able to live, work, and enjoy recreation within the area without reducing its natural beauty;
4. To encourage safe and efficient traffic flow along Hill Country Roadways.
5. To preserve the environment by providing clean air, clean water, and a greenbelt of natural vegetation and wildlife;
6. To preserve the scenic character of the Hill Country Roadways Corridors and, where possible, scenic vistas from the roadways;
7. To encourage only orderly and sensitive development as appropriate in the city's environmentally sensitive watersheds; and,
8. To accomplish the foregoing goals through thoughtful and cooperative planning in order to benefit all the people of Austin.

The Hill Country Corridor Development Standards are in addition to previously adopted zoning and subdivision ordinances. Therefore, site development regulations focus upon appropriate development *intensities* for developable land. These intensity zones are defined as follows:

1. *Intensity Zones.* Floor-to-area ratios and height shall be determined relative to low-, moderate-, and high-intensity zones indicated below, consistent with applicable comprehensive plan.
 - A. *High Intensity*—All land within 1,000 feet of the right-of-way of two intersecting state-maintained roadways, and with frontage on both highways or on one highway and an intersecting arterial or collector roadway...
 - B. *Moderate Intensity*—All land not included in the High Intensity Designation and with frontage [a number of local roads listed here]...A Hill Country Roadway and an intersecting arterial or collector street, limited to land within 500 feet of the right-of-way of the intersecting street.
 - C. *Low Intensity*—All land not included in the Moderate- or High-Intensity designation.

SAMPLE LAND DEVELOPMENT REGULATIONS (CONTINUED)

2. *Nonresidential Floor-to-Area Ratio.* All nonresidential buildings shall be limited to a maximum floor-to-area rations computed be reference to slope gradients and intensity level as follows:

Slope Gradient of Land	Intensity Level		
	Low	Moderate	High
0-15%	.20	.25	.30
15-25%	.08	.10	.12
25-35%	.04	.05	.06

“Floor-to area ratio,” is defined as the ratio of gross floor area (exclusive of parking structures and atriums) to site area within the appropriate slope class within the Hill Country Roadway. In no event shall the floor-to-area ratio on the 0 to 15 percent slopes exceed the following maximums, including any additional credits added by this ordinance:

	Intensity Level		
	Low	Moderate	High
	.25	.30	.35

Performance Incentives

In addition to the regulation of the intensity and character of development, performance incentives can also be a very powerful tool for influencing development which consistent with the vision expressed in a corridor master plan. The Corridor Development Standards for the Texas Hill Country provide the following incentives for new development proposals.

1. Floor-to-area ratio increases of up to .5 to 1 for land of 0-15 percent slope.
2. Building height increase not to result in a maximum height exceeding 40 feet in Low-Intensity areas, 53 feet in Moderate-Intensity areas, and 63 feet in High-Intensity areas.
3. Reduced setbacks of up to 25 feet less than those required.

Performance criteria to be considered in recommending bonuses should relate reasonable to the bonuses being approved and may include the following:

1. Preserving scenic vistas, including the provision of public observation points. This incentive is allowed only where a view can be preserved. For the purposes of the Hill Country Roadway Regulations, a scenic vista means a generally recognizable, noteworthy view of Lake Travis, Lake Austin, the valleys of the Colorado River...[numerous other natural features of value to the Texas Hill Country].
2. Limiting access to roadways other than Hill Country Roadways where such roadways do not encourage traffic through residential areas.
3. Reducing impervious cover by 15 percent or more beyond the minimum standards allowed by this or other regulations.
4. Increasing landscaping or setbacks by more than 50 percent and increasing natural areas.

SAMPLE LAND DEVELOPMENT REGULATIONS (CONTINUED)

5. Providing mixed-use developments, particularly those that include residential uses and community facilities.
6. Reducing building mass by breaking up buildings.
7. Using “pervious pavers” when not receiving impervious cover credit.
8. Consolidating small lots to create parcels with a minimum of 300 feet of frontage on a Hill Country Roadway.
9. Using pitched roof design features.
10. Constructing or dedicating public facilities such as parks, roadways and rights-of-way, police, fire, or EMS sites, regional drainage facilities, or other facilities in excess of that required by city ordinance.
11. Maintaining the construction of all buildings and parking areas on 0 to 15 percent slopes.
12. Using energy conserving or water conserving devices that reduce consumption below what is required by city ordinances.

In order to qualify for bonuses under this section, a development should demonstrate compliance with at least 50 percent of the above criteria. The use of bonuses is limited to unusual circumstances that involve:

1. An undue hardship imposed on a tract by the Hill Country Roadway Regulations or the cumulative effect of regulations in this Land Development Code, due to the peculiar configuration, topography or location of the tract; or
2. Demonstration of highly innovative architectural, site planning, and land-use design of a caliber not previously used in the Austin area, and of such quality as to set an excellent example for subsequent developments.

This ordinance also requires that the planning department also closely monitor development in the Texas Hill Country. The following section describes this monitoring program:

The Office of Land Development Services of the city of Austin shall compile and maintain a current master file of the Hill Country roadway corridors consisting of the following:

1. A master contour map of all of the Hill Country Roadway Corridors indicating all proposed and approved land uses.
2. A master file of all site plans for the Hill Country Roadway Corridors, including all submitted site plans, whether ultimately approved, disapproved, or withdrawn.
3. A master map showing all specific existing or potential scenic vistas, scenic overlooks, etc. as identified by the Office of Land Development Services and by the scenic view analysis.

A p p e n d i x



GLOSSARY OF TERMS

GLOSSARY OF TERMS

Access: A way or means of approach to provide vehicular or pedestrian entrance or exit to a property.

Access Connection: Any driveway, street, turnout or other means of providing for the movement of vehicles to or from the public roadway system.

Access Management: The process of providing and managing access to land development while preserving the regional flow of traffic in terms of safety, capacity, and speed.

Access Management Plan (Corridor): A plan illustrating the design of access for lots on a highway segment or an interchange area that is developed jointly by the state, the metropolitan planning organization, and the affected jurisdiction(s).

* **Adjacent and Surrounding:** Those properties next to and near the property under review.

Adverse Impact/Negative Impact: Used interchangeably to describe the result of changes in historic and architecturally significant areas which do not reinforce the character and characteristics of individual elements, sites, structures, streets or whole districts.

* **Agricultural Use:** The use of a tract of land or at least five (5) contiguous acres for the production of agricultural or horticultural crops, including but not limited to livestock, livestock products, poultry, poultry products, grain, hay, pastures, soybeans, tobacco, timber, orchard fruits, vegetables, flowers or ornamental plants, including provision for dwellings for persons and their families who are engaged in the above agricultural use on the tract but not including residential building development for sale or lease to the public.

Americans with Disabilities Act of 1990 (ADA): Federal law that requires public facilities, including transportation services, to be fully accessible for persons with disabilities. ADA also requires the provision of complementary or supplemental paratransit services in areas where fixed route transit service is operated. Expands definition of eligibility for accessible services to persons with mental disabilities, temporary disabilities, and the conditions related to substance abuse. The Act is an augmentation to, but does not supersede, Section 504 of the Rehabilitation Act of 1973 which prohibits discrimination on the basis of disability against otherwise qualified individuals in programs receiving federal assistance.

Arterial: A highway intended primarily for through traffic and where access is carefully controlled.

Average Daily Traffic (ADT): The average number of vehicles passing a fixed point in a 24-hour time frame. A convention for measuring traffic volume.

Base Year: The lead-off year of data used in a study.

Bicycle: A vehicle having two tandem wheels, propelled solely by human power, upon which any person or persons may ride.

Bicycle Facilities: A general term denoting improvements and provisions made by public agencies to accommodate or encourage bicycling, including parking facilities, maps, all bikeways and shared roadways not specifically designated for bicycle use.

Bicycle Lane (Bike Lane): A portion of a roadway which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.

Bicycle Lane (Bike Path): A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way.

Bicycle Route (Bike Route): A segment of a system of bikeways designated by the jurisdiction having authority with appropriate directional and informational markers, with or without a specific bicycle route number.

Bikeway: A facility designed to accommodate bicycle travel for recreational or commuting purposes. Bikeways are not necessarily separated facilities; they may be designed and operated to be shared with other travel modes.

Bikeway: Any road, path, or any way which in some manner is specifically designated as open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

Class I – A bikeway completely separated from vehicular traffic and within an independent right-of-way or the right-of-way of another facility. In this report, travelways separated from vehicles but shared by bicycles and pedestrians are included in this classification.

Class II – Any bikeway which is part of the roadway or shoulder and delineated by pavement marking or barriers such as extruded curb or parking bumper blocks. Vehicle paring, crossing or turning movements may be permitted within the bikeway.

Class III – Any bikeway sharing its traffic right-of-way with motor vehicles and is designated by signing only.

Bikeway Potential: Projection of future use on a planned or existing facility and premised on relative data.

Bikeway Recreational: Generally environmentally and aesthetically pleasing routes totally separated from motorized transportation facilities. Particularly appealing are corridors along greenways, rivers on streams, utility right-of-ways and right-of-ways in most cases recreational bikeways are to be shared with joggers and walkers.

Buffer: Utilization of land area, a landscape treatment, a particular use or a structure to separate and/or screen one use from another, to provide a transition from one use to another, or to inhibit the view, noise, lights or other public nuisances. (See Screening)

Building: A structure created to shelter any form of human activity, such as a house, barn, church, or similar structure.

Bus Lane: A lane reserved for bus use only. Sometimes also known as a “diamond lane.”

Canopy Tree: A tree which at maturity creates a roof like layer of spreading branches. Generally any tree variety expected to reach a height in excess of thirty (30) feet at maturity (such as oaks, pines, sycamores, some maples, etc.) Richmond Road near downtown and Old Frankfort Road are two examples of roads with canopy trees.

Central Business District (CBD): The most intensely commercial sector of a city.

* **Character:** The qualities and attributes of any structure, site, street or district which separate and distinguish the individual from its context.

Cohesiveness: Unity of composition between design elements of a building or a group of buildings and the landscape development.

Compatibility: Harmony in the appearance of two or more external design features in the same vicinity.

* **Comprehensive Plan:** The Comprehensive Plan serve as a guide for public and private actions and decisions to assure the development of public and private property in the most appropriate relationships. Such plan shall include all elements whether expressed in words, graphics, or other forms. (KRS 100) The Comprehensive Plan in many instances must be refined to be sensitive to the particular needs of smaller neighborhood areas. The resulting subarea/small area (corridor) plans serve to amend and refine the Comprehensive Plan. (1988 Comprehensive Plan)

Conservation: The protection and care that prevent destruction or deterioration of historical or otherwise significant structures, buildings, or natural resources.

Conservation Corridors: Conservation corridors conserve environmentally sensitive lands, protect water quality in creeks, streams and lakes, provide habitat for wildlife and spatial separation between development. Conservation corridors do not provide for the right of public access. These lands can be publicly or privately owned.

* **Conservation Easement:** A nonpossessory interest of a holder in real property imposing limitations or affirmative obligations, the purposes of which include retaining or protecting natural, scenic, or open-space values of real property, assuring its availability for agricultural, forest, recreational, open-space use, protecting natural resources, maintaining or enhancing air or water quality, or preserving the historical, architectural, archaeological, or cultural aspects of real property. Conservation easements may be held by a governmental body or a charitable organization whose purposes include retaining or protecting the natural, scenic, or open-space values of real property. KRS 382.800

Conserve: To manage in a manner which avoids wasteful or destructive uses and provides for future availability.

* **Context:** The setting in which a historic element, site, structure, street or district exists.

Coordination: When agencies share responsibilities related to transporting clients: carrying others' clients, arranging with other agencies to carry clients, or sharing vehicles or vehicle support services including maintenance, etc. Example: a provider whose major activity is transporting elderly clients may make midday schedule space to serve clients of an AFDC, WIC, or substance abuse prevention program.

Corridor Overlay Zone: Special requirements added onto existing land development requirements along designated portions of a public thoroughfare.

Cross Access: A service drive providing vehicular access between two or more contiguous sites so the driver need not enter the public street system.

Dedication: A conveyance of property by a private owner to the public.

Deed: A legal document conveying ownership of real property.

Density: The average number of families, persons or housing units per acre of land.

Design Standards: Development objectives relating to considerations such as site organization, landscaping, architecture and site details of projects under review.

Develop: To bring about growth or availability; to construct or alter a structure, to make a physical change in the use or appearance of land or to divide land into parcels.

Distinctive Visual Resource: An area of view from a roadway characterized by special visual qualities as identified and mapped in a Visual Resource Inventory.

District: A geographically defined area, urban or rural, possessing a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united by past events or aesthetically by plan or physical development. A district may also comprise individual elements separated geographically but linked by association or history.

Easement, Conservation: An easement precluding future or additional development of the land.

* **Easement:** The right to use another person's property but only for a limited and specifically named purpose. The owner generally may continue to make restricted use of such land since he has given up only certain, and not all, ownership rights.

Edge: An abrupt change from commercial, industrial or office land use to any density of residential land use. The property line edge where these land uses abut is the source of traffic, aesthetic and functional conflicts due to the lack of inadequacy of screening and/or consideration of potential problems.

Encourage: Stimulate; give help to; foster.

Enhancement Activities: Refers to activities related to a particular transportation project that "enhance" or contribute to the existing or proposed project. Examples of such activities include provision of facilities for pedestrians or cyclists, landscaping or other scenic beautification projects, historic preservation, control and removal of outdoor advertising, archaeological planning and research, and mitigation of water pollution due to highway runoff.

* **Environmentally Sensitive Area:** This term applies to any area which due to its natural or physical setting may have environmentally problems with regard to development or use. Areas included are (but are not limited to) areas of steep slope (over 15%), floodplains, sinkholes, areas of poor soil, improper fills, wetlands, significant tree stands, aquifer recharge areas, and similar areas. Lexington-Fayette Urban County Subdivision Regulations, section 1-11.

Exactions: Contributions or payments required as an authorized precondition for receiving a development permit. (Exactions may refer to mandatory dedications of land for road widening, or monetary assessments, such as transportation impact fees. In all cases, there must be a nexus and rough proportionality between the amount of the exaction and the purpose for which it is used.)

Exception: Permission to depart from design standards in an ordinance due to unique circumstances of the site or project. This does not require the same findings of hardship as with variances, but does involve findings of fact to support the need for an exception.

External Design Feature: The general arrangement of any portion of a building, sign, landscaping, or structure and including the kind, color, and texture of the materials of such portion, and the types of roof, windows, doors, lights, attached or ground signs, or other fixtures appurtenant to such portions as will be open to public view from any street, place, or way.

Façade: The exterior wall of a building exposed to public view, or that wall viewed by persons not within the building.

* **Floodplain:** That land adjacent to a stream, channel, or a body of water which has been or may be hereafter covered by flood water, including but not limited to the regulatory flood.

Freeway: A divided arterial highway designed for the unimpeded flow of large traffic volumes. Access to a freeway is rigorously controlled and intersection grade separations are required.

Frontage Road: A public or private drive which generally parallels a public street between the right-of-way and the front building setback line. The frontage road provides access to private properties while separating them from the arterial street. (See Service Road)

Functional Classification: A system used to group public roadways into classes according to their purpose in moving vehicles and providing access.

Future Traffic Circulation Map: A map in the Traffic Circulation Element that depicts the general location of future collector, arterial, and limited access roads and related transportation facilities. The map must depict functional classifications of roads as principal, major, or minor and must identify the proposed number of lanes for future roadways.

* **Geologic Hazard Area:** An area in which environmental problems are so numerous that even severely limited development/use could pose a serious problem to the immediate or surrounding areas. Examples include excessive floodplain areas, clustering of sinkholes, cliff areas, areas that have potential collapse problems due to the underground caves near the surface, and similar areas. Lexington-Fayette Urban County Subdivision Regulations, Section 1-11.

* **Grade:** The inclination, with the horizontal, of a road, unimproved land, etc., which is generally expressed by stating the vertical rise or fall as a percentage of the horizontal distance.

Greenbelt: Generally regarded as a system of open-space land which may include agricultural and recreational land that sets limits to the growth of a city while ensuring the most efficient use of urban space. In some cases, a greenbelt might have restrictions on use and design of development so as to make it compatible with the natural environment and adjacent farmland. In Fayette County the greenbelt is the large expanse of rural land surrounding Lexington's urban service area boundary and separating Lexington from satellite cities of Georgetown, Winchester, Paris, and Versailles.

Greenspace: Also known as open space, greenspace is any land in an area which is provided or preserved for park or recreational purposes; conservation of land or other natural resource purposes; historic or scenic purposes; or community development purposes.

Greenways: Lineal open space designed to conserve the natural environment and to integrate people into that environment in a way that does not permanently destroy the functional, aesthetic, or ecological values of that environment. Greenways may include environmentally, culturally, or architecturally significant areas and often are systems linking existing natural and cultural features.

Historical Area: Land with sites, structures and objects that have local, regional, statewide, or national historical, cultural or archaeological significance.

* **Infill:** Infill is the development of vacant or bypassed land within the existing development area. Infill does not include the revision or replacement of an existing building(s). Most frequently infill involves small-scale development of scattered vacant or bypassed land, but it can encompass the assemblage and development of larger tracts of land.

Intensity: The degree to which land is used, generally measured by a combination of the type of land use and the amount of land or flood area devoted to that use.

Interstate System: The system of highways that connects the principal metropolitan areas, cities, and industrial centers of the United States. The Interstate System also connects the U.S. to internationally significant routes in Mexico and Canada. The routes of the Interstate System are selected jointly by the state department of transportation for each state and the adjoining states, subject to the approval of the U.S. Secretary of Transportation.

Inverse Condemnation: The taking or reduction in the value of private property as a result of governmental activity, without any formal direct exercise or eminent domain.

Joint Access (or Shared Access): A driveway connecting two or more contiguous sites to the public street system.

Land Use: Refers to the manner in which portions of land or the structures on them are used, i.e., commercial, residential, retail, industrial, etc.

Line of Sight: An imaginary level plane located above a specified grade.

Linkage: Linkages are open space connections between two geographic points. They may be greenways, parkways, landscaped boulevards, linear parks, median green strips, trailways, or drainage courses available for hiking, bicycling or horse riding. Historically they include park, recreation or ornamental facilities along their length. They are also used to conserve drainage courses and natural areas.

Long Range: In transportation planning, refers to a time span of more than five years. The Transportation Improvement Program (TIP) is typically regarded as a short-range program, since ISTEA has changed the TIP from a five-year to a three-year document. (See Transportation Improvement Program)

Maintain: Support, keep and continue in an existing state or condition without decline.

Major Ridge: A ridge backed primarily by sky as viewed from the right-of-way.

Major Vista Point: An area in or adjacent to the right-of-way which has been designated as an area to be set aside for public use. An example is the staging area.

Man-Made Focal Point: As with a natural focal point, this is an object or group of objects to which one's eyes are naturally drawn because of the way it is framed in its natural setting. The difference is that this is one of human rather than natural origin. One example is a small community in the distance, framed by farm field and wooded hills. Another, closer to the road, may be a single object of cultural interest, such as a stone fence.

Median: That portion of a roadway separating the opposing traffic flows. Medians can be depressed, raised, or flush.

Median Opening (Crossover): An opening in a raised median that allows turning movements.

Metropolitan Planning Organization (MPO): The organizational entity designated by law with lead responsibility for developing transportation plans and programs for urbanized areas of 50,000 or more in population. MPO's are established by agreement of the Governor and units of general purpose local government which together represents 75 percent of the affected population or an urbanized area.

Model: A mathematical and geometric projection of activity and the interactions in the transportation system in an area. This projection must be able to be evaluated according to a given set of criteria which typically include criteria pertaining to land use, economics, social values, and travel patterns.

Monument: A sign, marker, emblem or structure which commemorates or identifies an event, past ownership, age of building, structure or area along a community entryway or entrypoint.

* **Natural Area:** Any area of land or water, or both land and water, in public or private ownership, which either retains, or has reestablished to some degree in the judgment of the commission its natural character, though it need not be completely natural and undisturbed, or which has natural flora, fauna, biological, ecological, geological, scenic or archaeological features of scientific, aesthetic, cultural or educational interest. KRS 146.415.

Natural Ground Surface: Any ground surface in its original state before any grading, excavation or filling.

* **Natural Preserve:** A natural area, and land necessary for its protection, any estate, interest of right in which has been formally dedicated under the provision of KRS 146.410 to 146.530 to be maintained as nearly as possible in its natural condition and to be used in a manner and under limitations consistent with its continued preservation, without impairment, disturbance or artificial development, for the public purposes of present and future scientific research, education, aesthetic enjoyment and habitat for plant and animal species and other natural objects. KRS 146.415.

Network: A graphic and/or mathematical representation of multimodal paths in a transportation system.

Official Map: An ordinance in map form adopted by the governing body that shows the location and width of proposed streets, public facilities, public areas, and drainage right-of-way (the purpose of which is to prevent private development from encroaching on sites for proposed public improvement).

Outparcel: A lot adjacent to a roadway that interrupts the frontage of another lot.

Parkways and Scenic Corridors: Essentially elongated parks with a road extending throughout their length. Parkways generally serve to connect large units in the par system, connect greenways or to provide a pleasant means of travel within the city and between the city and on outlying region. The parkway usually follows steam or river alignments, shorelines of large lakes, or natural wooded areas.

* **Parking Lot, Area, or Structure:** A structure, or an off-street area for parking, or loading or unloading, whether required or permitted by the Zoning Ordinance, including driveways, access ways, aisles, and maneuvering areas, but not including any public or private street right-of-way.

Peak Hour: The 60-minute period in the a.m. or p.m. in which the largest volume of travel is experienced.

Pedestrian: An individual who travels on foot.

Performance Standard: Criteria that are established and must meet before a certain use will be permitted. These criteria, or standards, may be a set of economic, environmental or social factors or any combination of these factors.

Person-Trip: A trip made by one person from one origin to one destination.

Plat: An exact and detailed map of the subdivision of land.

Preserve: To save from change in loss and reserve for a special purpose.

* **Preservation:** Retaining the integrity of a building, site or structure through reconstruction, restoration, rehabilitation, adaptive use or compatible design.

Private Road: Any road or thoroughfare for vehicular travel which is privately owned and maintained and which provides the principal means of access to abutting properties.

Promote: To contribute to the growth or prosperity.

Public Road: A road under the jurisdiction of a public body that provides the principal means of access to an abutting property.

Purchase of Development Rights (PDR): Purchase of the right to develop from owners of specific parcels, leaving the owner all other rights of ownership. The price of the rights is the diminution in the market value of the land as a result of the removal of the development rights. The remaining value of the land is the farm use value.

Purchase and Resale or Lease with Restriction: Purchase of land, imposition of restrictions on use and development, and resale at market price. End result is equivalent to purchase of developing rights.

* **Redevelopment:** Redevelopment is the revision or replacement of an existing building(s). Through acquisition, clearance or rebuilding of a previously developed area according to the Comprehensive Plan, positive long-range land use and social goals are to be achieved (1988 Comprehensive Plan). It should be noted that redevelopment also means that significant existing buildings can be put to use, preserving characteristics which make them historically and/or architecturally significant.

* **Regulatory Flood:** Shall mean a flood of 100 year frequency. This shall be the basis for determining the regulatory floodway, flood-fringe, flood discharge, flood-profile, and flood protection elevation. Important considerations in selecting the regulatory flood were: the degree of protection required for life and health; consistent standards among adjoining communities; and the requirements for flood protection of state laws, and federal agency requirements. Base flood shall be synonymous with regulatory flood.

* **Rehabilitation:** Construction work to put together historic elements, structures and sites. This activity involves retaining and restructuring historic elements, structures and sites.

* **Restoration:** Construction work which puts an element, site or structure back to a historic configuration and condition.

* **Retained/Maintained:** Used in conjunction with one another to describe both the keeping of an element, site, structure, street or district and the assurance of physical repair and upkeep to those elements, sites, structures, streets and districts.

Reverse Commute: Commuting against the main directions of traffic. Often refers to the central city to suburb commute.

* **Right-of-Way:** Land used generally for streets, sidewalks, alleys, or other public uses. Right-of-way also is a land measurement term, meaning the distance between lot property lines which generally contains not only the street pavement, but also the sidewalks, grass area, and underground and aboveground utilities.

* **Roadway:** The portion of the street right-of-way which contains the street pavement and gutter and is used primarily as a channel for vehicular movement and secondarily as a drainage channel for storm water.

Rock Fence or Wall: The more popular and common term for a stone fence, sometimes used to distinguish a fieldstone fence from a quarried-stone fence. (See Stone Fence)

Scenic Areas: Lands that are valued for their aesthetic appearance, generally are open areas with natural features that are visually significant or geologically or botanically unique.

Scenic Corridor: The scenic corridor and the scenic road go together: the corridor frames and enhances the road. For this reason, the corridor is a much wider area than just the highway right-of-way. It includes outstanding scenic vistas and facilities, which may be within the immediate roadside area or part of a sweeping distant panorama.

* **Scenic Easement:** An interest in land transferred by the owner thereof to the public, either in perpetuity or for a term of years. A scenic easement may be created by sale, gift, lease, bequest, or otherwise. An instrument which creates a scenic easement shall contain a covenant whereby the owner of the land promises neither to undertake nor to permit the construction of any improvements upon the land, except as the instrument provides and except for public service facilities installed for the benefit of the land subject to such covenant or public service facilities installed pursuant to an authorization by the governing body of the urban county or the energy regulatory commission or utility regulatory commission. Any such 65.460 or with the findings of the urban county pursuant to KRS 65.466 and shall not permit any action which will materially impair the open-space character of the land. Scenic easements may be held only by a local governmental body or a state agency. KRS 65.410.

Scenic Highways: Scenic highways are made up of the road and its right-of-way, and the scenic corridor. The scenic corridor is the visible area outside the highway's right-of-way, generally described as the view from the road. The boundaries of the scenic corridor vary with the natural characteristics of the landscape as viewed by a motorist. Scenic highways provide recreational value for their visual relief as a result of nature or the designed efforts of man.

Scenic Parkway: A safe, slow speed, low intensity street and its right-of-way and the scenic corridor within which scenic resources are enhanced and preserved; land uses and parkway environment are compatible; recreational and educational facilities are developed and maintained; grading, street and driveway access and the visual impact of lighting are minimized; and ecological balance and natural environment are preserved.

Scenic Terrain: A variety of roadside topographic features may provide scenic interest. Such features include gullies and ravines, rolling foothills and mountain lands, and meandering river plains.

Scenic Zones: The scenic corridor may be divided into three distance zones: foreground, middleground, and background zones.

The **foreground** is generally that area which is adjacent to the roadway and readily experienced by the traveler. It provides the frame of reference, detail and sense of scale for all views. Along narrow county roads the foreground is in intimate connection with the motorist and is of prime concern for the framing or screening of views.

The **middleground** is the intermediate landscape and often provides the linkage between units or elements in the landscape. Features or scenes in this zone characterize the landscape. Middle ground views tend to be important to the visual experience of the scenic corridor.

The **background** provides the backdrop for views from the roadway. They are often minor components of the total view, especially in ridge and valley regions. However, in large scale panoramic views the background assumes greater importance as landscape backdrop. The general background views tend to be simplified, flattened, and grayed down or softened in color contrasts.

Screening: A method of visually shielding or obscuring one abutting or nearby structure or use from another by fencing, walls, berms or mounting or densely planted vegetation. (See Buffer)

Service Road: A public or private street or road, auxiliary to and normally located parallel to a controlled access facility, that maintains local road continuity and provides access to parcels adjacent to the controlled access facility.

Setback: The distance between the edge of a building (the front, rear and sidewall construction) and the property line.

Shared Roadway: Any roadway which a bicycle lane is not designated and which may be legally used for bicycles regardless whether such facility is specifically designed for preferential or exclusive use by pedestrians.

Sidewalk: Means that portion of a street lying outside the curb lines or lateral lines of a roadway, and within the street line, intended for use of pedestrians.

Sight Distance: The length of roadway visible to the driver of a vehicle, as measured along the roadway to a specified height above the roadway.

* **Sign:** Any writing, pictorial representation, form, emblem, trademark, flag, banner, decoration (including material used to differentiate the sign copy from the background) or any figure which is written, printed, projected, painted, constructed, or otherwise displayed upon or designed into a building, board, plate, canopy, awning, window, vehicle, or upon any object or device which by reason of its form, color, wording, symbol, design, illumination, motion or other characteristic is designed to attract attention to the subject thereof or is used as a means of identification, advertisement, announcement, or of illustrating products.

* **Slope:** Any inclined, exposed surface of a fill, excavation, or natural terrain.

State Implementation Plan (SIP): Required documents prepared by states and submitted to EPA for approval. SIP's identify state actions and programs to implement designated responsibilities under the Clean Air Act.

Stone Fence or Wall: The more formal term for a rock-fence, sometimes used to distinguish a quarried-stone fence from a fieldstone fence. (See Rock Fence)

Stream: A watercourse having a source and terminus, banks and channel through which waters flow at least periodically.

* **Street:** any vehicular way, a general term used to describe right-of-way which provides a channel for vehicular and pedestrian movement between certain points in the community, which may provide for vehicular and pedestrian access to properties adjacent to it, and which may also provide space for the location of under or above-ground utilities. Street are classified by function as follows:

Expressways: Hold the first rank in the classification of streets, and are used only for movement of vehicles, providing for no vehicular or pedestrian access to adjoining properties; interchange of traffic between an expressway and other streets is accomplished by grade separated interchanges with merging deceleration and acceleration lanes, and no at-grade intersections are permitted. Expressways generally carry higher volumes, require greater right-of-way width, and permit higher speed limits than any other class of street, and should be depressed in urban or urbanizing areas. Arterials are the only class of street which generally should be connected with expressways at interchanging points.

Arterials: Hold the second rank in the classification, and should be used only for the movement of vehicles, and preferably should not provide for vehicular access to adjacent properties. Interruption of traffic flow should be permitted only at street intersections which should contain medians, deceleration lanes, and left turn storage lanes. Arterials are the link between expressways and collectors, and rank next to expressways in traffic volume, speed limit, and right-of-way width.

Collectors: Hold the third rank in the classification of streets, and are used both for movement of vehicles and for providing access to adjacent properties. Access to adjoining properties should be planned and controlled so that minimum disturbance is made to the traffic moving efficiency of the collector street. Intersections should contain medians, deceleration lanes, and left turn storage lanes. Collectors are the link between arterials and local street, and generally rank next to arterials in traffic volume, speed limit, and right-of-way width.

Locals: Hold the fourth rank in the classification of streets, and are used primarily for providing access to adjacent properties. Vehicles moving on these streets should have an origin or destination in the immediate vicinity, and all types of through traffic should be eliminated through initial design of its connections with other streets. Local streets are the primary link between trip generation points (homes, offices, stores, work) and collector streets. Locals have the least right-of-way, the lowest speed limit, and the least amount of vehicular traffic.

Alleys: Alleys generally have two open ends, each end connects with different streets, and property generally backs onto both sides of the alley.

Street Furniture: Man-made, above-ground items that are usually found in street rights-of-way, including benches, kiosks, litter containers, planting containers, plants, letter boxes, canopies, shelters and phone booths.

Street Hardware: Street hardware are mechanical and utility systems within a street right-of-way such as hydrants, manhole covers, traffic lights and signs, lamp posts, utility poles and lines, parking meters and the like.

Streetscape: The scene as may be observed along a public street or way composed of natural and man-made components, including buildings, paving, planting, street hardware, and miscellaneous structures.

Strip Development: Development occurring in a linear pattern, usually one-structure deep, adjacent to an existing roadway.

Structure: A combination of materials to form a construction for use, occupancy, or ornamentation whether installed on, above, or below the surface of land or water.

* **Style:** A distinctive quality, form and type of element, site or structure of or pertaining to a specific architectural period or design.

Surface Transportation Program: A new categorical funding program created with ISTEA. Funds may be used for a wide variety of purposes, including: roadway construction, reconstruction, resurfacing, restoration and rehabilitation; roadway operational improvements; capital costs for transit projects; highway and transit safety improvements; bicycle and pedestrian facilities; scenic and historical transportation facilities; and, preservation of abandoned transportation corridors.

Thoroughfare Plan Map: A map that depicts all roadways contained on the long range traffic circulation map and identifies the right-of-way widths for each roadway. The thoroughfare plan map is the official listing of rights-of-way to be reserved.

Traffic Circulation Element: The portion of a comprehensive plan designed to establish the desired and projected transportation system in local jurisdictions and plan for future motorized and non-motorized traffic circulation systems.

Transfer of Development Rights (TDR): Development rights on land in a designated preservation area may be purchased by a developer and transferred to a designated development area where the equivalent amount of additional development can be constructed.

Transportation Improvement Program (TIP): This is a document prepared by states and planning commissions citing projects to be funded under federal transportation programs for a full-year period. Without TIP inclusion, a project is ineligible for federal funding.

Travel Time: Customarily calculated as the time it takes to travel from “door-to-door.” In transportation planning, particularly in forecasting the demand for transit service, measures of travel time include time spent accessing, waiting, and transferring between vehicles, as well as that time spent on board.

Undeveloped Land: Land in its natural state before development.

Unique Natural Feature: That part of the natural environment which is rare or is not generally duplicated in the community or region.

Unusual or Picturesque Buildings and Structures: Homes, churches, stores, barns and the like, alone or in pleasing combinations, may be noted as positive values. In determining whether a structure may add to the quality of the landscape, consider its setting, use of indigenous materials, unique features such as gables, towers, porches, and details of historical or architectural significance. Horse farm, stone fences and tobacco related structures are also included as positive scenic elements because they are characteristic of the region and style.

Urban Design: The architecture and planning of open spaces and common areas, i.e., streetscape design, site planning, corridor design, etc., including an emphasis on the aesthetic relationships among and between structures and neighborhoods.

* **Utility Easements:** Any easement labeled as a utility easement shall be for the provision of utility services by franchised local electric supply company, water supply company, natural gas supply company, telephone service provider, and cable television franchise. The Urban County Government shall also have the right to utilize such easements for the provision of street light and sanitary sewer services.

Utility Hardware: Devices such as poles, crossarms, transformers and vaults, gas pressure regulating assemblies, hydrants that are used for water, gas, oil, sewer, communication, and electrical services to a public or private building or project.

Utility, Private or Public: (1) Any agency which, under public franchise or ownership, or under certificate of convenience and necessity, provides the public with electricity, gas, heat, steam, communications, rail transportation, water, sewage collection, or other similar services: (2) A closely regulated private enterprise with an exclusive franchise for providing a public service.

Utility Service: Any device, including wire, pipe, and conduit, which carries gas, water, electricity, oil, and communications into a public or private building or development.

Vehicle Miles of Travel (VMT): A standard areawide measure of travel activity. Most conventional VMT calculation is to multiply average length of trip by the total number of trips.

View: Something that is looked upon or kept in sight.

Viewscope Corridors: Are routes which traverse a defined visual corridor within which scenic resources and aesthetic values are found. The emphasis of these corridors is scenic vistas and natural viewshed. This designation is intended to protect and enhance the significant resources along the route and provide visual relief. In addition to the development of designated riding and hiking trails and bikeways, vista points and rest stops should be developed, when feasible, to enhance any exceptional scenic values. A viewscope corridor is defined by the viewshed from the roadway.

Viewshed: A visual field with a seven degree angle determined by the line of sight at four feet above the edge of the right-of-way.

Visible: Capable of being seen with 20-20 vision.

Vista: A distant view through or along an avenue or opening.

Waiver: Permission to depart from the requirements of an ordinance where required conditions are satisfied. (See also Exception)

Walkway: Means a dedicated public right of way limited to pedestrian traffic.

* **Watershed:** Is the region or area which drains into a river, lake or stream. The total area included within a watershed will vary depending on the drainage system being considered, but usually the total area above a given point on a stream, channel, or lake that contributes runoff water to the stream, channel or lake at that point is called a watershed.

Wetlands: Wetlands are transitional areas between terrestrial and aquatic environments where the water table (the level of groundwater) is at or near the ground surface or the land is covered by shallow water. Wetlands are a diverse lot, ranging from tidal flats, salt-hay marshes, and mangrove swamps on the coast, to prairie potholes, peat bogs, and cypress swamps inland, to name just a few. Wetlands provide habitat for numerous fish, waterfowl, and other wildlife, many of which have economic value. In short, given the great variety of species that depend on wetlands directly or indirectly, there are few ecosystems that are more important. In some communities wetlands are the primary water-supply or recharge areas for aquifers. Wetlands also help to purify the water passing through them by filtering out silt and nutrients.

SOURCES: Lexington Fayette Urban County Government: **Corridor Enhancement Study:** Lexington, Kentucky: 1992. Appendix C.

Center For Urban Transportation Research: **Managing Corridor Development – A Municipal Handbook:** University of South Florida, College of Engineering: 1996. Pp. 57-59.

Surface Transportation Policy Project: **ISTEA Planner’s Workbook:** Washington, D.C.: 1994. Pp. 153-170.

NOTES: * Definitions were excerpted from the Kentucky Revised Statues, Lexington-Fayette Urban County Government 1988 Comprehensive Plan, Zoning Ordinance, Subdivision Regulations, and Board of Architectural Review Local Historic District and Local Historic Landmark Design Guidelines.

A p p e n d i x

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REFERENCES

GENERAL CORRIDOR STUDY RESOURCES

Carlson, Daniel, and Billen, Don: **Transportation Corridor Management: Are We Linking Transportation and Land Use Yet?** University of Washington, Graduate School of Public Affairs: Institute for Public Policy and Management: 1996.

Academic article that examines eleven cases from across the United States (including Lexington-Paris Pike, KY) where institutional, implementation, and planning mechanisms are either in place or being contemplated to address the transportation/land use connection. The focus is on transportation corridors. Lessons learned in terms of the political landscape, structure for corridor management, planning and implementation frameworks, and the suburban sprawl future are also summarized.

Center for Urban Transportation Research: **Managing Corridor Development: A Municipal Handbook:** University of South Florida, College of Engineering: 1996.

This handbook defines corridor management and explains the corridor planning process, updating regulations, preserving right-of-way, right-of-way acquisition, access management, funding, and legal considerations. This handbook is Florida specific but incorporates many issues that are applicable and relevant to corridors in the state of Kentucky.

Division of Planning, Lexington-Fayette Urban County Government: **Corridor Enhancement Study:** Lexington, Kentucky: 1992.

This Kentucky specific study examined the types of corridors found in the county and surrounding community, suggested appropriate goals and policies, and proposed directions for ordinance development to achieve these goals.

New Jersey Department of Transportation: **Managing Transportation in Your Community: A Municipal Handbook:** 1992.

This handbook emphasizes the links between planning of land use and the planning of transportation systems, links between local decision-makers and state officials, and links among professionals. The handbook established those links by describing how the planning process should reflect the inseparable elements of how land is used and how and why people move through the community.

GENERAL CORRIDOR STUDY RESOURCES (CONTINUED)

Transportation Research Board, National Research Council: **NCHRP Report 423A: Land Use Impacts of Transportation: A Guidebook**: 1999.

This report contains the results of research into the land use implications of transportation investments and decisions. Presented as a guidebook, it provides reference information on land use planning and its integration into the multimodal transportation planning process. The guidebook should be especially valuable to state departments of transportation, metropolitan planning organizations, and local transportation planners as well as other practitioners concerned with assessing transportation impacts on land use.

Transportation Research Board, National Research Council: **NCHRP Report 435: Guidebook for Transportation Corridor Studies: A Process for Effective Decision-Making**: 1999.

This report contains the results of research into the design and management of corridor and subarea transportation planning studies. Presented as a guidebook, it brings together lessons learned from different regions of the country on corridor and subarea studies with different scopes and levels of complexity. It provides a structured approach to the process of conducting corridor studies, with an emphasis on designing each study to address the conditions unique to the particular physical, social, and institutional environment.

CONTEXT SENSITIVE DESIGN RESOURCES

Burrington, Stephen H.: **Restoring the Rule of Law and Respect for Communities in Transportation**: *New York University Environmental Law Journal*, vol. 5 #3, 1996 (reprint).

This journal article explains conventional traffic policy and design parameters such as design speed, speed limits, level of service and stopping sight distance. It is written from the perspective that identification of community interests such as children safety should balance motorists' speed. The article also stresses ISTEA and FHWA provisions that "strongly encourage" states to develop and apply flexible guidelines for non-National Highway System projects in an historic or scenic area.

U.S. Department of Transportation: **Flexibility in Highway Design**: 1997.

This guide is about designing highways that incorporate community values and are safe, efficient, effective mechanisms for the movement of people and goods. It is written for highway engineers and project managers who want to learn more about the flexibility available to them when designing roads and illustrates successful approaches used in other highway projects. It can also be used by citizens who want to gain a better understanding of the highway design process.

Maryland Department of Transportation: **Thinking Beyond the Pavement: A National Workshop on Integrating Highway Development with Communities and the Environment**: Conference Summary, May 3-5 1998.

This summary report is from a national conference aimed at discussing how to encourage flexible, context sensitive design in all projects. The report was designed to develop a consensus on the characteristics of the highway development process which could integrate transportation facilities with communities and the environment, develop implementation actions to overcome barriers to context sensitive design and to educate transportation professionals and stakeholders on this approach to design. Ten successful projects are highlighted.

Taking Back Your Street: How to Protect Communities from Asphalt and Traffic: Conservation Law Foundation: 1995.

This guide is a narrative source for citizens who wish to take a grass roots approach to transportation related issues in their community. The guide provides an explanation of roadway design and traffic calming and summarizes relevant laws in each of the six New England states.

CONTEXT SENSITIVE DESIGN RESOURCES (CONTINUED)

Residential Streets: American Society of Civil Engineers, National Association of Home Builders, The Urban Land Institute: 1990 (second edition).

This book outlines appropriate residential street designs that balance considerations of safety and efficiency, cost effectiveness, livability and community attractiveness. Based on this principle, the book discusses design considerations such as neighborhood accessibility, pavement widths, alleys, speed, streetscape and curbs, intersection design criteria and specifications, streets as drainage systems and pavement.

Burden, Dan: **Street Design Guidelines for Healthy Neighborhoods:** Center for Livable Communities: 1999.

This guidebook describes how to understand, preserve and resurrect characteristics of older neighborhood streets and how to build them again with urban infill and new development. It specifies that in contrast to the flexibility exhibited in conventional street design and construction, traditional, healthy neighborhood street measures must be exact. Healthy streets, conventional street design problems and healthy neighborhood street design principles are defined and explained in detail.

ACCESS MANAGEMENT RESOURCES

Sokolow, Gary H.: **Practical Considerations for Beginning a Comprehensive Access Management Program**: 1993 Conference on Access Management Compendium of Papers. Pp. 69-73, 1993.

This paper provides guidance to state and local governments on practical considerations when considering the institution of a comprehensive access management program. It covers the topics of management of access features, process for developing a classification system for roadways, handling variances to standards, dealing with land that has been subdivided into small lots, charging fees, permitting, and “grandfathering” land uses that redevelop.

Koepke, Frank J.: **What is Access Management**:

This article defines access management and goes into depth of why access management is necessary, methods used to manage access, the consequences of not managing access, and basic principles of access management. These issues focus on improving the flow of traffic along adjacent streets.

Michigan Department of Transportation: **Defining Access Management**:

The intent of this booklet is to promote and support cooperative efforts of MDOT and local agencies to better manage access between community development and the state highway system. It explains the concepts of access management and its benefits to motorists, property owners and the community. The booklet also provides in depth explanations of key techniques employed in access management aimed at local planning officials and developers. In addition, focus on MDOT’s current driveway permit program and a framework for coordinating driveway permits with local development approval procedures is also covered.

Florida Department of Transportation: **Basic Site Planning: Access Management**: 1998. Contact: Gary Sokolow, (850) 414-4912.

This slide show presentation offers an introduction to access management principles. Additional topics include site design principles, access management along access or service roads, turn lane guidelines, sight distance issues, and site design considerations.

ACCESS MANAGEMENT RESOURCES (CONTINUED)

Florida Department of Transportation: **Use of the Access Management Standards**: 1995.
Contact: Gary Sokolow, (850) 414-4912.

This presentation offers guidelines for the design of site accesses. It provides tables and illustrations showing the standards used by FDOT as well as Florida statutes governing the designs for access management. It covers spacing issues (i.e., median spacing, driveway spacing, corner clearances) as well as various design guidelines for specific conditions.

Northwest Regional Planning Commission: **Access Management Guidebook**: 1996. Contact:
Executive Director, Northwest Regional Planning Commission, (802) 524-5958.

This guidebook provides an overview on access management with a focus on how access management strategies can be integrated into the planning and design of roadway corridors. It defines access management, explains the land use transportation connection, present land use strategies and cites other useful resources on access management.

Internet Access Management Resources

(links accurate as of August 1, 2000)

U.S. Department of Transportation / FHWA: **FHWA Kentucky Division - Access Management Page**: <http://www.fhwa.dot.gov/kydiv/accsmtg.htm>. Contact: Brent A. Sweger, P.E., (502) 223 - 6743

This website explains access management; it's benefits, goals and techniques. Links are provided to additional references.

University of South Florida, Center for Urban Transportation Research: **CUTR's Access Management Home Page**: http://www.cutr.eng.usf.edu/research/access_m/intro.htm

This website contains research related to access management projects and publications and an access management manual. Links are provided to downloadable reports.

A p p e n d i x



INTERNET RESOURCES

FEDERAL INTERNET RESOURCES

(links accurate as of August 1, 2000)

Bureau of Transportation Statistics: **National Transportation Data Archive (NTDA):**
<http://www.bts.gov/ntda>

The internet library at the Bureau of Transportation Statistics offers over 1,000 links to full-text reports contributed by approximately 120 agencies. The National Transportation Data Archive provides updated data, graphs and charts on nationwide transportation statistics. Links are provided to searchable data files for such statistical sources as commodity flow survey, fatal accidents reporting system, highway statistics, national transportation statistics, state freight profiles, and truck inventory and use survey. In some files, users can develop customized charts and graphics for statistical data.

Transportation Research Board: **Transportation Research Board Homepage:**
<http://www.nas.edu/trb>

The Transportation Research Board (TRB) sponsors transportation related research, programs, conferences, workshops, and publications. For example, the website features information on Cooperative Research Programs (NCHRP, TCRP), national applied research programs that address national issues in highway transportation and in transit.

United States Census Bureau: **U.S. Gazetteer:** <http://www.census.gov/cgi-bin/gazetteer>

The U.S. Census Bureau is a well known source of socio-economic data for the entire nation. In addition to on-line decennial count information, the U.S. Gazetteer allows users to search and view maps of locations throughout the Tiger Map Server.

United States Department of Transportation, Federal Highway Administration: **Turner-Fairbanks Highway Research Center Homepage:** <http://www.tfhrc.gov/>

The Turner-Fairbanks Highway Research Center provides FHWA and the highway community with the advanced research and development related to new highway technologies. Their website provides information on current research at the center in the areas of intelligent transportation systems, pavements, structures, human factors, and traffic operations. Also provides information on current projects and the full text of some research reports. The full text of the journals Public Roads and Research and Technology Transporter is available on line.

KENTUCKY INTERNET RESOURCES

(links accurate as of August 1, 2000)

Commonwealth of Kentucky: **KY: Commonwealth of Ky. Homepage:** <http://www.state.ky.us/>

The information provided on the Commonwealth's website is diverse and abundant. A link is provided to Governor Patton's website as well as to information such as Kentucky's agriculture, applications and forms, and public services. The Transportation/Hwys. shortcut will lead users to information such as a map of current road conditions, daily road reports, state and county maps, monthly construction reports, on-line real-time traffic cameras, the six year road plan, and the special I-75 report.

Kentucky Transportation Cabinet: **The Kentucky Transportation Cabinet: Your Guide To Travel in Kentucky:** <http://www.kytc.state.ky.us/>

The Kentucky Transportation Cabinet oversees highways, bikeways, public transportation, waterways, railways, aeronautics, and motor vehicles for the commonwealth. Navigate to the "Traffic Center," a clearinghouse for Kentucky's maps, travel conditions and construction reports.

University of Kentucky, College of Engineering: **Kentucky Transportation Center Homepage:** <http://www.engr.uky.edu/ktc/ktctmb.html>

The Kentucky Transportation Center located at the University of Kentucky is a Technology Transfer Center and conducts workshops for local government employees. The center's website includes information on their context sensitive design workshops, present research, and transportation center library.

EDUCATIONAL RESEARCH INTERNET RESOURCES

(links accurate as of August 1, 2000)

Georgia Institute of Technology, School of Civil and Environmental Engineering: **Transport Research and Education Center (TREC)**: <http://www.ce.gatech.edu/research/centers/trec>

The Transportation Research and Education Center (TREC) at Georgia Tech is a focal point for a wide variety of research and education activities. Brief descriptions of advanced transportation technologies and research programs are available at this web site; they include poor visibility warning systems, traffic monitoring accuracy, geotechnical engineering, and an Advanced Traffic Management system human factors study.

University of California, Davis: **Institute of Transportation Studies Homepage**: <http://www.engr.ucdavis.edu/~its>

The web site contains information about the Institute and its people, as well as brief summaries about on-going research projects. Sample research topics include electric drive vehicles, energy and environment, intelligent transportation systems, traffic behavior analysis, and safety.