

## **Integrating Land Use and Transportation**

*by Whit Blanton, AICP*

**F**or years the transportation profession has emphasized mobility in the development of plans, programs, and projects. This emphasis on mobility – moving people and goods conveniently and efficiently between places – has surely increased our society’s productivity and economic wealth. But it has also fostered the creation of homogeneous and inaccessible places, striking in their lack of character, comfort, and variety.

We tend to deal with mobility and livability as separate, often competing, concepts. The tools of the transportation planner are geared toward measuring and providing mobility. While we have institutionalized measures of traffic congestion (volume-to-capacity, average travel speed, and vehicle hours of delay), we have too often ignored measures of livability and community character – those factors that determine the quality of the places we are striving to reach so quickly. This article looks at the connection between land use and transportation, and focuses on how one metropolitan area – Gainesville, Florida – has begun to rethink its approach to transportation planning.

### **If All Your Tools are Hammers ...**

It has been said that if all your tools are hammers, then everything begins to look like a nail. Using traditional transportation measures based on travel speed and delay, urban area transportation plans and corridor studies emphasize building new or wider roads, or increasing the efficiency (read: increasing speed) of existing roads. They are *Visine* plans (not *Vision* plans) – as they seek to “get the red out” (red meaning severe congestion on most transportation planning maps) by using measures of speed to determine needs and project priorities. Such plans say nothing about the desired growth pattern or community character and only incidentally consider impacts on land use and the quality of the developed environment. They rarely consider how transportation can support land use objectives to create highly accessible places with a true choice of travel options.

Too often, quality of life or “livability” concerns are only considered as a reactionary response when neighborhood groups protest a proposed transportation project. Until our planning processes for land use and transportation are more integrated, we can expect more of the same.

### **Putting Land Use and Transportation in Balance**

A growing number of communities are attempting to fundamentally change the process so that land use and transportation are more closely linked, bringing the concepts of mobility and livable communities into a single focus. From efforts to promote smart growth initiatives, redevelop old shopping malls into mixed-use walkable town centers, encourage in-fill residential development, and create pedestrian- and transit-friendly streets, communities of all sizes are beginning to consider transportation and land use as part of an interrelated system in which mobility and livability are in proper balance.

The importance of integrating land use and transportation cannot be overstated. Thinking more strategically about land use-transportation relationships can lead to reduced vehicle miles of travel; improvements in air quality; increased levels of walking, bicycling and transit use; economic and community revitalization; and the preservation of neighborhood character -- not to mention a more visually appealing landscape.

Transportation's role in creating livable communities requires balancing mobility -- the movement between places -- and accessibility -- the ease with which desired activities can be reached from any particular location. Good mobility provides the economic impetus necessary for growth and investment, such as safe and convenient transportation facilities or services linking residential and employment centers. Highly accessible places offer a diversity of development, with activities in close proximity and connected with multiple travel paths.

**MOBILITY:** The door-to-door experience of traveling or shipping goods throughout an area or corridor, measured in terms of travel time, comfort, convenience, safety, and cost. Measures the ease with which individuals can move about on various transportation modes.

**ACCESSIBILITY:** The ease with which desired activities can be reached from any particular location by physical connections (roads, sidewalks, buses, etc.), travel options, and development proximity. The more activities available within a given travel time, the better the accessibility. Thus, accessibility is a function of both land-use patterns and the transportation system that serves them.

We want good mobility and accessibility to go together. For this to happen, communities need to carefully consider the intended function and purpose of their roadways. This is no small task given the wide range of groups that have an interest in the transportation network.

#### **Thinking Strategically in Gainesville, Florida**

When the Metropolitan Transportation Planning Organization (MTPO) for the Gainesville, Florida, Urbanized Area gathered in 1998 to set annual funding priorities, it faced a dilemma: widen SW 20th Avenue, a congested roadway connecting a dense concentration of off-campus student housing to the University of Florida (as called for in the existing long range plan), or address the congestion by promoting alternatives to the automobile and building an interconnected system of narrower roads to help create an environment more supportive of walking and bicycling.

To help resolve the question, the MTPO sponsored a community planning charette. The charette generated a vision centered on the concept of creating a walkable student village. To implement this vision, charette participants recommended keeping SW 20th Avenue at two through lanes, building bicycle paths and wider sidewalks, funding increased bus service, interconnecting a series of smaller streets, and installing roundabouts (a modern, smaller-scale variant of the traffic circle) at key intersections. Stronger links between the residential areas and a large (approximately one million square foot) nearby commercial activity center were also recommended. *See also Sidebar, "Facility Expectations & Guidelines."* The MTPO commissioners concurred with the charette's recommendations.

In a rapidly growing community with an urban area population of 190,000 and the state's largest university, MTPO commissioners realized SW 20<sup>th</sup> Avenue was only one of many controversial transportation projects they would face. Emboldened by the outcome of the SW 20<sup>th</sup> Avenue process, and recognizing the need to update the metropolitan area's long-range transportation plan, the commissioners (who are also the elected governing body members of Gainesville and Alachua County) approved a scope of services to develop a strategic vision for transportation and land use. This approach would include examining alternative land use patterns and housing options, while considering transportation as a strategy for a new kind of investment in community-building, particularly in economically disadvantaged areas of the county.

Work on the "Strategic Vision Long Range Transportation Plan" for the Gainesville MTPO is nearing completion. Unlike traditional long-range transportation plans, in which a fixed forecast of population and employment is developed and alternative transportation system improvements are evaluated, the heart of the new plan is the development and evaluation of *urban form alternatives*. Each of these alternative development patterns, in order to be implemented, would require a different set of transportation investments.

Before taking a look at the urban form alternatives, however, let me back up for a moment to touch on the start of the long range planning study. In public workshops held throughout the county, participants were asked to identify the top five issues or problems facing the region's transportation system. It was interesting that among all the workshops and responses from the public traffic congestion was a relatively minor complaint. "The worry many people have," one workshop participant explained, "is that Alachua County will, if it continues on its pattern of growth, one day resemble sprawling places like Broward County or Pinellas County in South Florida – ugly, congested, polluted, and high in crime." The majority of the comments related to unsafe streets for walking and bicycling, a lack of street connectivity, infrequent or nonexistent bus service, and complaints about suburban sprawl limiting travel choices.

When you think about it, these are fundamentally land use problems that influence the location and nature of the transportation system. Addressing them requires a concerted land use-transportation strategy -- not the traditional method of developing a plan to widen roads because a 20-year traffic projection merely says whether the road will become congested.

## **The Urban Form Alternatives**

The urban form alternatives being evaluated in Gainesville represent different approaches to development. Each is supported by a unique mix of transportation strategies, with differing levels and characteristics of transit service, bicycle and pedestrian pathways and roadway projects. Figure 1 shows the four urban alternatives being considered. To briefly summarize each of the four:

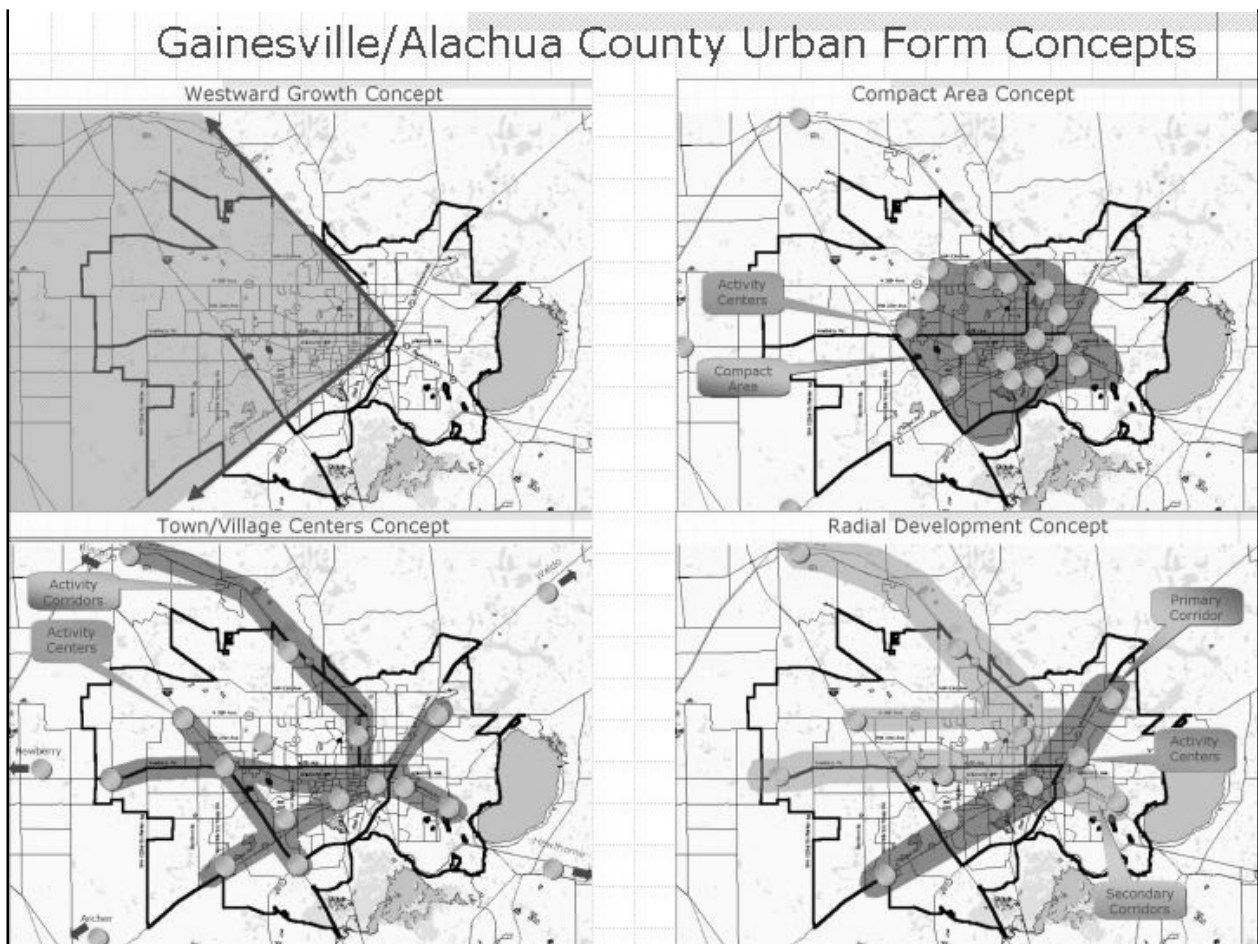
*1. Westward Growth Alternative* – Would support the future growth and development of Gainesville and Alachua County through a regional transportation system that improves mobility and connectivity throughout Alachua County, reduces automobile congestion, and maintains a highway-oriented transportation network within a primarily low density, single-family residential environment.

2. *Compact Urban Form* – Would create a high quality walking, bicycling, and transit-supportive environment with a focus on reinvestment in the traditional core area of Gainesville and the towns of Alachua County. Reflects a greater mix of land uses and increased density of development. Proposed transportation projects would include reducing the number of travel lanes on certain roads to create a more pedestrian environment, enhancing bus service, developing on- and off-road trails, and constructing a dedicated lane for transit vehicles.

3. *Town/Village Center Concept* – Would focus the region’s transportation system on connecting a limited number of intensively developed, mixed use centers of activity located throughout the County and on maintaining the character of existing towns and neighborhood villages. Projects would include express bus service linking the region, strategic road expansion projects, and dedicated lanes for buses -- which might eventually become a passenger rail corridor.

4. *Radial Development Pattern* – Would create a multi-modal transportation system serving highly developed, mixed use centers located along major linear corridors linking outlying communities with the University of Florida campus and downtown Gainesville -- while preserving open space, agricultural lands, and lower-density residential areas located outside the corridors. The emphasis of transportation projects would be on high-capacity bus and rail service into the University and downtown area.

Figure 1



As part of the planning process, each urban form alternative was evaluated using both traditional and non-traditional methods. For example, traditional computer travel models were used to assess each alternative's impact on regional travel patterns and on the effectiveness of transportation system strategies. Along less traditional lines, bicycle and pedestrian levels of service were considered, as well as regional and local accessibility, transit service quality, and the proximity of jobs to housing. *See Sidebar, "Performance Measures."*

The testing of these urban form concepts will lead to the development of a preferred strategic vision, providing the framework for the region's new Long Range Transportation Plan. Since the city-county Metropolitan Planning Organization is composed of all five elected Alachua County Commissioners and all five elected Gainesville City Commissioners, the resulting plan should have the strong potential to guide city and county land use policies and development regulations. In fact, Alachua County has deferred adoption of its new comprehensive plan until after the MTPO 2020 Strategic Vision Plan is completed.

### **Summing Up:**

Properly integrating land use and transportation requires a clear vision and policy framework developed through active citizen participation. Communities must more broadly define the objectives of the transportation system and how its performance is measured. We have to remove ourselves from the single-minded notion that transportation planning's sole focus is on how to move the maximum number of cars with the minimum delay. If this remains the focus, transportation planning and land use planning will remain disconnected – with citizens wondering why their community's development goals seem so hard to achieve.

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### **Sidebars:**

#### **Facility Expectations & Guidelines**

The SW 20<sup>th</sup> Avenue charette established facility expectations centered on the concept of a "walkable student village." This meant that traffic speeds would be slow, sidewalks wide and buffered from the roadway with shade trees, bike lanes provided, and buildings oriented toward the street for more convenient access to bus routes.

The next step involves developing operational and design guidelines to support these expectations. The guidelines need to reflect the walkable village concept through narrow travel lanes and use of roundabouts at intersections to keep traffic moving at slower speeds. County engineers are working to prepare "enhanced" roadway cross-sections to convey the relationship

of land uses to the roadway. For example, the cross-sections will reflect the setback and height of adjacent buildings, and indicate the type of pedestrian, bicycle and transit treatments expected, as well as landscaping and buffers. These illustrations will help clarify the guidelines and lessen any ambiguity.

## **Performance Measures**

One of the most critical steps of land use-transportation integration is the establishment of performance measures to guide the selection of strategies. As long as transportation decisions are primarily based on comparisons of traffic volume to road capacity, or on measures of travel speed along roads and delay at intersections, transportation and land use will always be addressed separately and in relative isolation.

For example, many communities require adequate infrastructure in place concurrent with development approval. The problem is not with this requirement, but rather in how it is measured and applied. Most of these communities define adequate infrastructure as available roadway capacity, often in terms of an acceptable level of service. This type of measurement tends to promote roadway-oriented solutions, such as adding turn lanes, which may not be supportive of a desire to create a more pedestrian- and transit-friendly environment.

The solution is to develop measures that effectively address progress toward, or away from, the overall vision for an area. If a corridor is to emphasize mobility, then perhaps roadway level of service and measures based on speed are appropriate. However, if accessibility and livability are important (as they often will be) different measures must be used.

One example is the growing interest in measures of “bicycle and pedestrian level of service” – quantifying the walking and bicycling experience in much the same way as the driving experience is categorized in the traditional roadway level of service. Of course, quite different variables are taken into account, variables such as the width between the sidewalk and roadway; the presence of an on- or off-street bicycle path or lane; the presence and width of a sidewalk; and posted traffic speed and average daily traffic volume on the adjacent roadway. *[Note: for additional information on how Bicycle/Pedestrian Level of Service is being applied in Gainesville and other areas, contact Bruce Landis, of Sprinkle Consulting, Inc., at 813-949-7449, or blandis@sciworld.net].*