



FLORIDA STATE UNIVERSITY

Healthy Communities Program Report

An Analysis and Critique of Tallahassee Transportation Funding by Residential Project Size



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This project was funded by CNL Real Estate and Development, 2008

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Special thanks to Keith Burnsed, Sandra Whitehead, Tim Allen, Ruth Steiner, David Powell and Tim Chapin.

Overview

This report examines Tallahassee Growth Management (TGM) information concerning residential dwelling unit permits by project size and transportation concurrency funding. In order to understand the situation in Tallahassee, the report reviews statewide transportation concurrency requirements. It notes critiques of transportation concurrency and explores applicability of the critiques to Tallahassee. The report then analyzes residential housing unit permits by size of project, automobile trips generated, and transportation concurrency funding. I give consideration to the findings in the context of the change over time to commute times to work. Finally, the report offers recommendations for improving both transportation concurrency equality and methodology in Tallahassee. Finally, it will discuss the limitations of the data.

Transportation Growth Management and Concurrency in Florida

The Florida Local Government Comprehensive Planning and Land Development Regulation Act of 1985, also called the Growth Management Act, requires all local governments to develop concurrency-management systems. These systems ensure that public facilities and services (including transportation), which are needed to support development, shall be available concurrent with the impacts of such development (FDCA 2007; Steiner 2001). In each area of concurrency, local governments have to define what constitutes an adequate level of service. Levels of service for roads are labeled from A to F, with A having the most capacity and least congestion and F having the least remaining capacity and most congestion (see Figure 1).

When a new development is proposed, local government officials determine if the transportation needs of the new development exceed existing capacity on affected roads and scheduled improvements for those roads. If adequate capacity is not available, then the developer must provide the necessary improvements, provide a monetary contribution toward the improvements, or wait until government provides the necessary improvements. These general concepts are further defined through state statutes and the minimum criteria rules of the state land planning agency, the Florida Department of Community Affairs (FDCA 2007).

Transportation Concurrency Requirements

A focus of the growth management legislation is the concept of concurrency. Concurrency is a state requirement that development is not to proceed unless infrastructure capacity and specific urban services are available. Chapin and his colleagues have explained concurrency more extensively elsewhere (Chapin, Thompson and Brown 2007). Chapin et al. state that concurrency can generally be explained in this way:

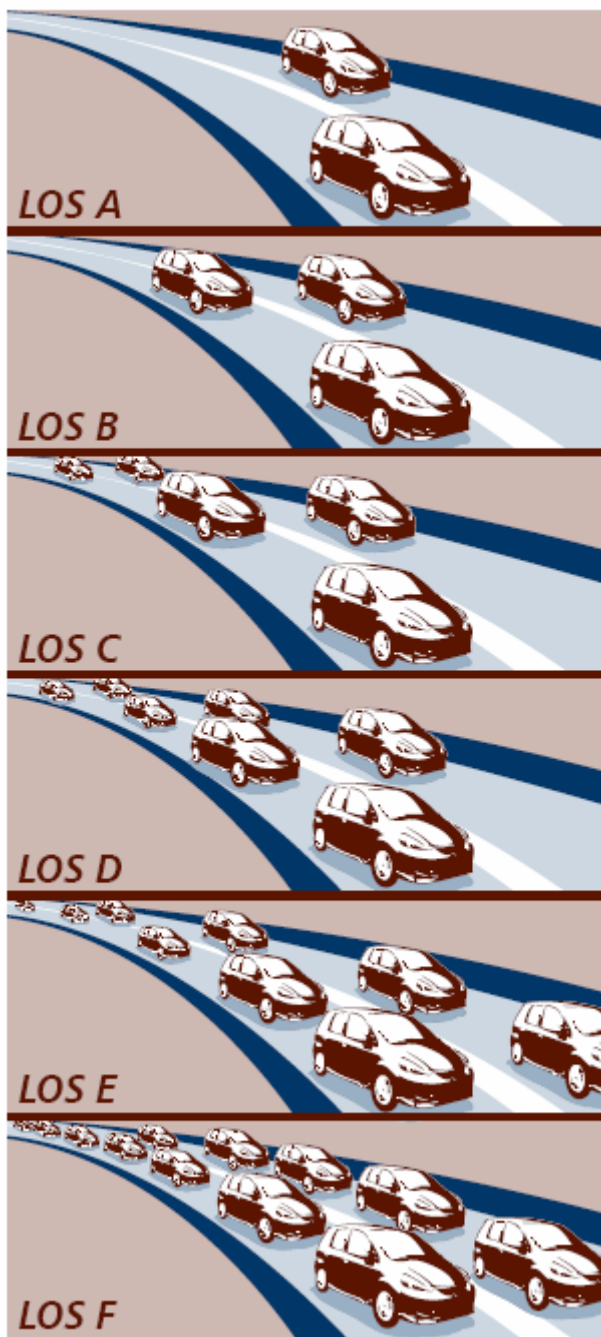
Local governments develop a comprehensive plan that includes goals, objectives, and policies for managing growth. These plans describe the local government's "concurrency management system" (CMS), a system that "ensure(s) that issuance of a development order or development permit is conditioned upon the availability of public facilities and services necessary to serve new development" (Chapter 9J-5.0055). As part of the CMS, local governments:

- identify adopted level of service standards for the six types of facilities required by Chapter 163;
- develop a Capital Improvements Element that illustrates how the adopted LOS standards will be achieved and maintained through infrastructure investments or improvements in service provision;
- lay out a system for monitoring public facilities and testing for concurrency; and
- adopt land development regulations (LDRs), included in which was a provision that development orders are not to be issued unless adequate public facilities are in place at the time of issuance.

Under this system, local LOS standards represent the backbone of the concurrency approach to be implemented by local governments. Adopted LOS standards “indicate the capacity per unit of demand for each public facility” (F.A.C. Chapter 9J-5.0003). [...]Transportation concurrency in Florida typically takes the form of transportation LOS standards outlined by the Transportation Research Board in their Highway Capacity Manual as interpreted in the Florida Department of Transportation's (FDOT) Quality/Level of Service Handbook.¹ Under this approach, levels of service are assigned to roadway segments or classes of roadways, using the scale A-F. LOS “A” roads experience free flow and no congestion problems, whereas LOS “F” roads experience stop-and-go traffic amidst heavy congestion (Figure 1). To arrive at these designations, transportation planners tend to look at three factors, each observable and measurable: average travel speed, traffic density, and road flow rate (Rosenbloom 1988). These quantitative measures are assessed and then translated into a qualitative LOS rating (Chapin, Thompson and Brown 2007)

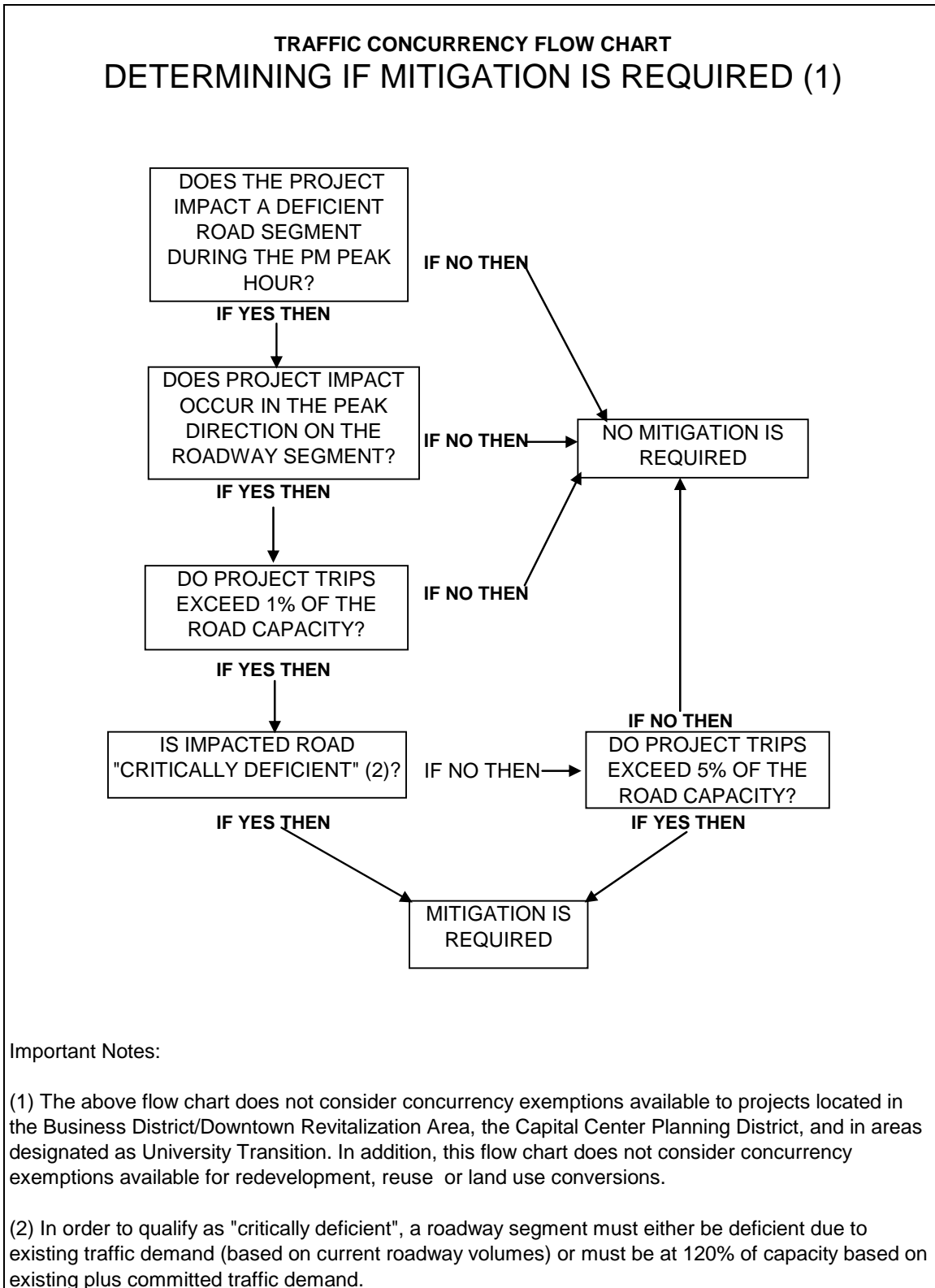
¹ <http://www.dot.state.fl.us/planning/systems/sm/los/pdfs/QLoS2002.pdf> accessed 6/23/08

Figure 1: Level of Service Standards.



Source: Transportation Concurrency Best Practices Guide, Florida Department of Community Affairs, September 2007, page 16.

Figure 2: Tallahassee Growth Management Transportation Concurrency Flow Chart



A “pay and go” option for concurrency, known as proportionate fair share mitigation, was authorized by legislation in 2005 and revised in 2007. The proportionate fair share option allows developments to proceed under certain conditions, notwithstanding a failure to meet transportation concurrency, where applicants contribute their fair share of the cost of improving the transportation facility. Developers are eligible for impact fee credits to offset their contribution “to the extent that all or a portion of the proportionate fair share mitigation is used to address the same capital infrastructure improvements contemplated by the local impact fee ordinance” (FDCA 2007).

Exceptions from concurrency are provided under certain circumstances. Public transportation facilities, certain infill or redevelopment projects, and projects whose impacts may be considered insignificant or *de minimis* are exempted from concurrency, where certain criteria are met (FDCA 2007). Figure 2 shows the decision chart for this determination by Tallahassee Growth Management.

***De Minimis* Impacts**

Florida law defines *de minimis* impact as “an impact that would not affect more than one percent of the maximum volume at the adopted level of service of the transportation facility as determined by the local government” (s. 163.3180(6), Florida Statutes). In addition, if a road segment is at or exceeds 110% of its service capacity, no further developments with *de minimis* impact are to be approved until the necessary improvements are in place. The roadway can also be operating within 110% of its service capacity. In Tallahassee, a road operating above the 110% of capacity is called a “critically deficient” roadway.²

Jurisdictions quantify *de minimis* impact in a variety of ways. Most local governments use the statutory definition of *de minimis* impact, whereas some local governments define *de minimis* impact based on the type and density of development. Alternative methods include using square footage of the new use, the number of dwelling units, or the average daily trips measured (FDCA 2007).

Tallahassee defines the *de minimis* exemption by the roadway segment impacted and the number of peak afternoon rush hour trips generated by the residential project. Currently, mitigation is required under the City of Tallahassee's concurrency system if the number of project trips exceeds 1 percent of the roadway capacity for roadways at or above 120 percent of traffic capacity (see Figure 2).

Changes to this system are being proposed. Under the current Leon County concurrency system (and similar to the newly proposed City of Tallahassee procedures), mitigation is required under two different circumstances for either the comprehensive area or a small neighborhood level area. For the large area, if the number of project trips exceeds one percent of the roadway capacity for roadways at or above 110 percent of traffic capacity when the roadway is inside a radius that can vary from one to ten miles (Comprehensive Transportation Analysis Network). Within the neighborhood area, if project trips exceed one trip for roadways at or above 110 percent of traffic capacity when within an area from a quarter to 1.5 mile radius (Immediate Transportation Impact Network).

² The threshold is 110% based on pending changes to the Florida Administrative Code Rule

Critiques of transportation concurrency

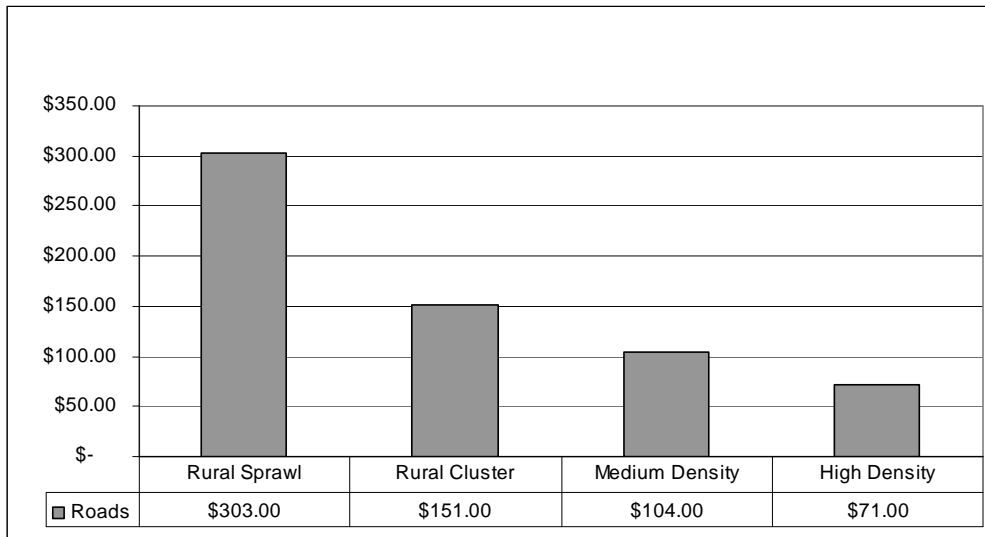
Sprawl

Since transportation concurrency statewide is tied to roadway capacity, in many ways it has contributed to sprawl (Litman 2008). Sprawl refers to relatively dispersed, homogeneous and automobile-dependent land use development. In a recent interview, Department of Community Affairs Secretary Tom Pelham says the way Florida has implemented transportation concurrency has contributed greatly to sprawl (FSU 2008). He states that the intention of the growth management policy was to encourage development in the major urban areas and urban centers. However, he says, the implementation of transportation concurrency has created a huge obstacle to development in the urban core. Further, he adds that development has been driven out to where land is cheaper, where more road capacity is available, and therefore, where developers do not have to pay as much for transportation improvements.

There are societal costs as well as infrastructure costs of sprawl. Providing road infrastructure in low density sprawl is less cost effective than at the urban core. According to research, providing more capacity on roads is least expensive for high density areas and most expensive for low density sprawl (Figure 3; see Smyth 1986). The mobility of automobiles within a sprawling environment contributes to climate change (Ewing, Bartholomew, Winkelman, Walters and Chen 2008), degrades air and water quality (Cieslewicz 2002), and decreases the amount of time out the car participating in civic events or with family (Putnam 2000; Williamson 2002).

A look at Tallahassee's level of service standards published by FDCA indicates that there is currently more roadway capacity outside the urban service area than inside (Figure 4, FDCA 2007). This supports Pelham's view that transportation concurrency encourages residential development outside urban centers. However, Tallahassee encourages development in the urban core as well. It has several exempt areas for transportation concurrency including the business district/downtown revitalization area, the Capital Center Planning District, and the University Transition area. These exempt areas encourage infill.

Figure 3: Per Household Annual Municipal Costs for Roadways.



Per household public service cost increase due to sprawl--Source: Smythe 1986 adjusted for inflation

Capacity = Automobiles

Another criticism is that Florida's transportation system is concerned with traffic flow, (defined as moving cars and trucks) rather than accessibility (defined as people's ability to reach goods, services and activities). Conventional transportation planning practices tend to focus on traffic flow at the expense of accessibility, and therefore lead to automobile dependency and sprawl. This trend skews consumer decisions toward sprawl and automobile dependency (Litman 2008).

Figure 4: Tallahassee/Leon County Transportation Level of Service Standards.

TALLAHASSEE/LEON COUNTY LEVEL OF SERVICE STANDARDS	
"The peak hour roadway level of service for Tallahassee and Leon County is established as follows:	
■ Outside the Urban Service Area:	
Interstate, Limited Access Parkways:	B
Principal Arterials:	C
Minor Arterials:	C
Major and Minor Collectors:	C
Local Streets:	D
■ Inside the Urban Service Area:	
Interstate, Limited Access Parkways:	C
Principal Arterials:	D**
Except Capital Circle NW from I-10 to SR 20	
Capital Circle NW from I-10 to SR 20:	E
Minor Arterials:	D / E*
Major and Minor Collectors:	D / E*
Local Streets:	D
* For Minor Arterials, and Major and Minor Collectors located inside the Urban Service Area and south of U.S. 90, the Level of Service shall be "D" for purposes of establishing priorities for programming transportation improvements, and "E" for meeting concurrency requirements, to support the Southern Strategy. Roads north of U.S. 90 shall be LOS D for both programming improvement and concurrency purposes.	
** The Level of Service for Monroe Street from Gaines Street to Tennessee Street shall be "E."	
Source: Tallahassee-Leon County Comprehensive Plan. Policy 1.4.1 [T], Revised Effective 7/25/03.	

Source: Transportation Concurrency Best Practices Guide, Florida Department of Community Affairs, September 2007, page 16.

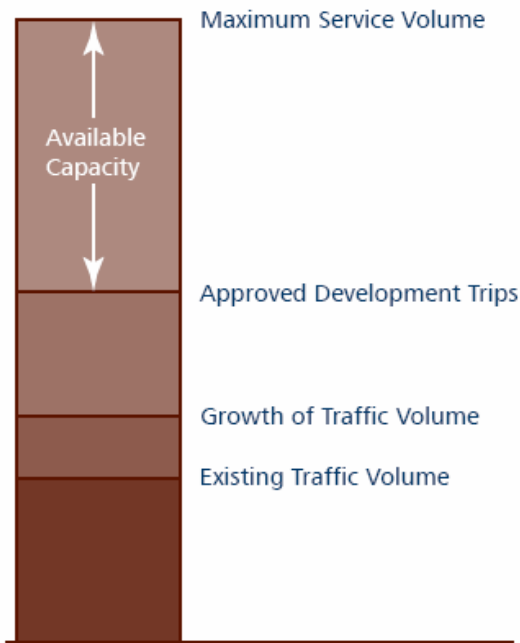
In fact, the FDCA defines capacity in terms of automobiles trips only. It states specifically: "capacity is determined by subtracting existing traffic volume, traffic growth, and approved development trips from the service volume of the roadway" (FDCA 2007; see Figure 5). This definition of capacity implies that it is automobile trips rather than

person-trips which are captured. Pelham agrees with this view. He states, “Our current transportation concurrency system is geared strictly to the automobile. And it focuses all of our resources on roads.” FDCA publications also infer awareness of the problem through the following statement: “The application of traditional level of service analysis (volume to capacity ratios) results in an emphasis on road widening solutions to maintain roadway capacity and detracts from transit or multimodal solutions” (FDCA 2007). Multimodal options include walking, biking, and transit.

Additionally, planning for the mobility of automobiles neglects a significant proportion of the population. Fully 22 percent of the population in Leon County is under age 17 and older than 80 (2006 American Community Survey). Another segment of the population either does not have cars or has disabilities that prevent driving. National estimates of the transportation disadvantaged are about 30 percent (Litman 2001). Tallahassee’s transportation disadvantaged is probably below this estimate since the County has such a large population of college students. Although everyone could benefit from multimodal transportation, disadvantaged travelers have the most to gain from a transportation system that is concerned with accessibility over capacity. Additionally, the latest data available show over half (53 percent) of adults in Leon County are overweight or obese (2002 BRFSS). And yet the ability to walk or ride a bike to work, stores and schools is severely constrained by streets oriented to cars with high speeds and lack of safety infrastructure like shared-use paths or sidewalks.

FDCA cites the need for additional guidance on the overemphasis on automobiles (FDCA 2007, p. 21). In fact, the agency encourages local governments to seek new approaches to transportation concurrency to accomplish local planning objectives. These include encouraging urban infill and redevelopment, emphasizing use of alternative modes of transportation, or addressing constrained facilities and concurrency deficiencies.

Figure 5: Determining available Capacity



Source: Transportation Concurrency Best Practices Guide, Florida Department of Community Affairs, September 2007, page 10.

Multimodal transportation planning contrasts with exclusive dependence on the automobile and auto-oriented residential development. Multimodal transportation districts are defined in local comprehensive plans within urban areas. These plans create special multimodal districts where walking, biking, transit and car sharing receive more consideration. Communities incorporate community design features that reduce automobile usage while supporting an integrated multimodal transportation system. Common elements include the presence of mixed-use activity centers, connectivity of streets and land uses, transit-friendly design features, and accessibility to alternative modes of transportation (Williams and Segerman 2004). Tallahassee is in the process of defining a multimodal transportation district that encourages alternative transportation modes.

Urban Form and Travel Behavior

A rapidly growing body of evidence indicates that “new urbanist” or neo-traditional neighborhood design which typically includes more compact, mixed-use, multimodal areas significantly reduces automobile usage because they provide alternatives to automobile travel. Pelham agrees: “It (new urbanism) accomplishes a lot of things that the growth management act is trying to accomplish. It’s a way to create a more livable community, with less dependence on the automobile Compact urban or neo-traditional developments can internalize traffic and create a mixed use community that affords people opportunities to live and work and recreate in one place without having to jump into a car and drive everywhere. This is really key to making growth management work,” (FSU 2008).

Studies have found higher pedestrian or transit travel in neo-traditional neighborhoods compared to conventional neighborhoods built with cul-de-sacs and limited roadway access (Shay Khattak 2005; Khattak and Rodriguez 2005; and Rodriguez, Khattak and Evenson, 2005). Cervero and Kockelman (1997) found that the “3Ds” of density, diverse land use, and neo-traditional (compact urban) design were positively associated with reduced trip generation and greater use of non-automobile travel modes. Friedman et al. (1994) found that neo-traditional development offered greater travel mode diversity, such as walking, biking and transit, while residents of conventional neighborhoods relied more on private automobiles.

In 2001, Ewing and Cervero reviewed 50 studies concerning travel and the built environment (2001). Ewing and his colleagues are now working on a meta-analysis of 150 studies comparing neo-traditional neighborhoods to conventional neighborhoods with cul-de-sacs and limited access (personal communication 4/11/08). Table 1 shows the number of studies that found a statistically significant relationship between the urban form and travel behavior that controlled for socioeconomic factors. Fully ten studies found that trips by walking and biking were higher in traditional developments compared more modern developments. Six studies found that transit share of trips were higher among the traditional rather than modern auto-oriented developments. A comparison of trip frequencies was found to be lower with traditional design in four studies. Likewise, three studies found vehicle miles traveled was less as well as two studies found that trip lengths were shorter in traditional compared to modern developments.

Table 1 Summarizes the Findings from a Review of 50 Transportation and Built Environment Studies.

Travel Measures	Number of Studies with Significant Findings
Mixed Land Use, Neo-traditional Development Compared to Developments with Curvilinear Street Networks and Strip Commercial Districts	
Trip Frequencies Lower	4
Walk/Bike Shares Higher	10
Transit Share Higher	6
Trip Lengths Shorter	2
Person Miles Traveled Less	1
Vehicle Miles Traveled Less	3
Mixed Land Uses compared to Separated Land Uses	
Walk/Bike Shares Higher	5
Transit Share Higher	2
Vehicle Miles Traveled Less	4
Vehicle Hours Traveled Less	1
Vehicle Occupancy Higher	1

Source: Ewing and Cervero 2001

Another comparison looked at mixed use developments compared to developments with separated land uses. Five studies found that walking or biking was higher in mix compared to developments with separated land uses. Vehicle miles traveled were less for the same comparison. Two studies found that transit was higher within this comparison and one study each found that vehicle occupancy and vehicle hours traveled were less in mixed compared to separated land use developments.

In a more recent study, Khattak and Rodríguez (2005) also studied a neo-traditional neighborhood compared to a matched conventional neighborhood with cul-de-sacs and limited access. They examined the distinction between internal and external trips of these two developments. They looked at the potential to reduce mean trip lengths by keeping some trips within the neighborhood rather than loading them onto the regional network. After controlling for household size, number of vehicles and the bias of self-selecting into conventional or neo-traditional neighborhood, the authors found that single-family households in the neo-traditional neighborhood make 1.6 fewer daily automobile trips and 1.8 fewer external trips. They also travel 14.7 fewer miles. In a study with the same matched neighborhoods, Rodríguez, Khattak and Evenson (2005) found utilitarian walk trips substituted for automobile trips more often in the neo-traditional neighborhood.

Despite this growing body of evidence, existing transportation concurrency requirements do not promote density and mixed use developments per se. Contrary to the intent of transportation concurrency, anecdotal information from Tallahassee indicates that in the past developers have reduced the number of dwelling units after determining that the rush hour trips of more dense development exceeds the *de minimis* threshold. In the transportation concurrency flow chart for Tallahassee (Figure 2), there is no methodological distinction between automobile trips created by neo-traditional developments with greater density and mixed land uses compared conventional neighborhoods with cul-de-sacs that lack mixed use and road interconnectivity.

Opportunities for Inequality

At least two opportunities for inequality exist in the current method of establishing the amount of funds or resources from developers are needed to meet transportation concurrency. A limitation of existing transportation concurrency requirement is the notion of “free” capacity (FDCA 2007). When a transportation facility is improved, new capacity for automobiles becomes available. This new capacity becomes a free commodity for development permitting until it is ultimately consumed by the new trips from approved developments. This process creates certain inequities. For the developer, the timing of a development application in relation to scheduled transportation improvements affects whether or not a deficiency is triggered and mitigation payments are required. The latest developer may indeed pay for the capacity consumed by previous developments. These earlier developers may get a “free ride” by not having to pay for capacity they consumed merely because of the date of their application (FDCA 2007, page 42).

The second opportunity for unequal treatment concerns the cumulative impact of small developments that come under the *de minimis* threshold. Local government establishes the methodology for determining the number of new trips generated by a proposed development which will impact road segments. In Tallahassee, if a project generates more than 100 afternoon rush hour trips, the project must have a formal transportation impact study. Otherwise, the trip impacts of small projects are studied by Tallahassee Growth Management.

Small projects are more likely to come under the *de minimis* threshold even though the particular builder may have a large cumulative transportation impact from many small projects. Planned Unit Developments, or PUDs, are typically medium to large scale developments that have a variety of residential uses and open spaces with an accompanying variety of zones and regulations. A Development of Regional Impact (DRI) is generally the largest development that can constitute new towns with the widest variety of zoning, codes and regulations.

The next sections provide the analysis of Tallahassee Growth Management residential housing unit permits by project size, automobile trips generated and transportation concurrency funding. One of the main issues that will be analyzed is the inequality of assessing fees and resources for concurrency by size of project.

Methodology

All permitted residential projects with electronic records were collected from the Tallahassee Growth Management Permit Tracking Data. Project size was defined within the Permit Tracking Data. Projects listed as “DRI” or “PUD” were described in those terms in the database. Projects that were neither DRI nor PUD were coded as “small projects.” Table 2 shows the average number of permitted dwelling units by project size and the number of those projects permitted from 2000-2007. The concern about the *de minimis* criteria for small projects is that each project may be considered separate even though the impact of each project, no matter how small, adds trips to roads that may cumulatively cause the road to fail to meet the adopted level-of-service standard.

Table 2: Average number of dwelling unites by project size and the number of projects permitted from 200 to 2007.

	Average Number of Dwelling Units	Number of Projects
Small Projects	51	346
PUD	234	10
DRI	1908	3

Tallahassee exacts fees and/or resources for transportation concurrency. Tallahassee began collecting proportionate fair share assessments in 2007. Another exaction occurs through development agreements. Projects that exceed the capacity of the impacted roadway can meet concurrency through by paying to improve an intersection or by giving land to the city for right of way, for example. The Southwood DRI paid an exaction as part of its development orders.

For this study, permit tracking data by project were flagged if an exaction occurred. A meeting with Tallahassee Growth Management Department confirmed the accuracy of the data (April 2, 2008). The analysis only includes dwelling units permitted from 2000 to 2007. Unfortunately, the roadway segments that were impacted by a residential project were *not* included in the permit tracking data. So it is impossible to tell if the projects with or without exactions were associated with roadway segments that fail to meet the adopted level-of-service standard.

All residential projects that occurred prior to 2000 were excluded in the analysis. The remaining residential projects were grouped into four dwelling types: single family residential, multifamily residential, apartments, and student-oriented units. Included in the multifamily category are attached single family residential units. There were two projects that did not fit neatly into the four categories; one was an assisted living facility with 45 dwelling units that was coded as a small apartment project. The other was a renovated mobile home park featuring affordable housing with 10 dwelling units that was coded as a small single family residence category.

The number of automobile trips was estimated from a combination of the Trip Generation 7th Edition published by the Institute of Transportation Engineers (2003) and local Tallahassee estimates of trip generation indicators. The estimates were for peak weekday, 4 to 6 pm, trips by dwelling unit type. The formulas for the trip generation by dwelling unit are:

- Single family residential peak hour trips= $\text{Exp}(0.89 \ln(x)+0.61)$ where x is the number of single family residences.
- Multifamily residential peak hour trips= $0.78(x)$ where x is the number of multifamily residences.
- Apartment peak hour trips for apartments with over 100 units = $0.55(x)+17.65$ and for Apartment peak hour trips for apartment with less than or equal to 100 units = $0.62(x)$ where x is the number of apartments

- Student-oriented units (assumes 3 bedrooms per unit) peak hour trips = $0.4(x \times 3 \text{ bedrooms})$ where x is the number of student-oriented units.

The number of trips generated is broken down by dwelling unit type and if there was an exaction. The percentage of unfunded trips represents the proportion of trips generated that were not required to provide mitigation or exaction to fund them. The percentage of funded trips represents the proportion of trips generated that did have some sort of funding. All data are presented in tables in the results section.

Mean commute times to work were captured from the 1990 and 2000 Censuses and the 2006 American Community Survey. The US Census data are based on a five percent sample of Leon County residents. The ACS data uses an annual pooled sampling methodology that collects much fewer responses. As a result, the data from the ACS is not as good quality as the US Census data.

Results

Table 3 shows Tallahassee permit tracking data from 2000 to 2007. A surge in real estate development is evident by the increasing number of permitted units up to 2006 as well as a sharp decline in 2007.

Table 3: Total Number of Projects Seeking Permits from 200 to 2007 in Tallahassee

Year	Number of Projects Permitted
2000	880
2001	1,282
2002	2,514
2003	2,012
2004	4,493
2005	6,599
2006	7,150
2007	671
Total	25,601
The source of the number of projects is the Tallahassee Growth Management Permit Tracking Data	

Table 4 shows an analysis of the differences between small projects, PUDs and DRIs, these projects generally correspond to small, medium and large developments respectively. The dwelling units are grouped into single family residential, multifamily residential, apartments and student-oriented units for the different size projects. The first column shows the number of dwelling units permitted. For small projects, the total number of units permitted in this time period is 17,517. The number of peak hour trips estimated from the units is less than the total number of units. Only 367 of those units were determined to have a transportation impact above the *de minimis* threshold on roads without capacity and paid an exaction. Out of all of the small projects, only 338 (2%) of the total of 14,925 rush hour trips were funded to meet transportation concurrency capacity requirements.

Further, Table 4 shows the medium sized developments, PUDs, in the middle of the table. Exactly 2,303 units were permitted in the category between 2000 and 2007, and

840 units funded increased roadway capacity. As a result, roughly 40 percent of the PUD units funded transportation concurrency. The bottom of Table 4 shows the DRI transportation impact. Here, 5,764 units were permitted, and 53 percent of the trips from those units funded transportation concurrency.

Table 4: Peak Hour (4 to 6 pm) Automobile Trips Generated by Dwelling Type, Development Size and Units Charged a Transportation Exaction, 2000 through 2007

Dwelling Type	Total Dwelling Units Permitted	Total Trips Generated	Units Charged a Transportation Exaction	Number of Trips Funded Through Exaction	Percent of Trips Funded Through Exaction	Number of Unfunded Trips	Percent of Unfunded Trips
Small Projects							
Single Family Residential ¹	4,283	3,142	262	261	8%	2,880	92%
Multifamily Residential ²	6,270	4,891	72	56	1%	4,834	99%
Apartments ³	2,494	1,546	33	20	1%	1,526	99%
Student Oriented Units ⁴	4,437	5,324	0			5,324	100%
Small Project Total	17,484	14,903	367	338	2%	14,565	98%
PUD							
Single Family Residential ¹	793	700	420	398	57%	303	43%
Multifamily Residential ²	1,117	871	420	328	38%	544	62%
Apartments ³	393	244			0%	244	100%
Student Oriented Units ⁴							
PUD Total	2,303	1,815	840	725	40%	1,090	60%
DRI							
Single Family Residential ¹	2,828	2,171	1,028	882	41%	1,289	59%
Multifamily Residential ²	2,936	2,290	1,897	1,480	65%	810	35%
Apartments ³							
Student Oriented Units ⁴							
DRI Total	5,764	4,461	2,925	2,362	53%	2,100	47%
Overall Total for All Development Types	25,551	21,180	4,132	3,425	16%	17,754	84%

The source of the dwelling units is the Tallahassee Leon County Growth Management Permit Tracking Data, an "other" category of units was omitted

1=Trips for Single Family Residential units = $\text{Exp}(0.89 \text{Ln}(x)+0.61)$

2=Trips for Multifamily Residential units= $0.78(x)$

3=Trips for Apartments greater than 100 units= $0.55(x)+17.65$ and Apartments less than or equal to 100 units= $0.62(x)$

4=Trips for Student Oriented Units assumes 3 bedrooms per unit= $0.4*(x*3 \text{ bedrooms})$

where x is the total number of units

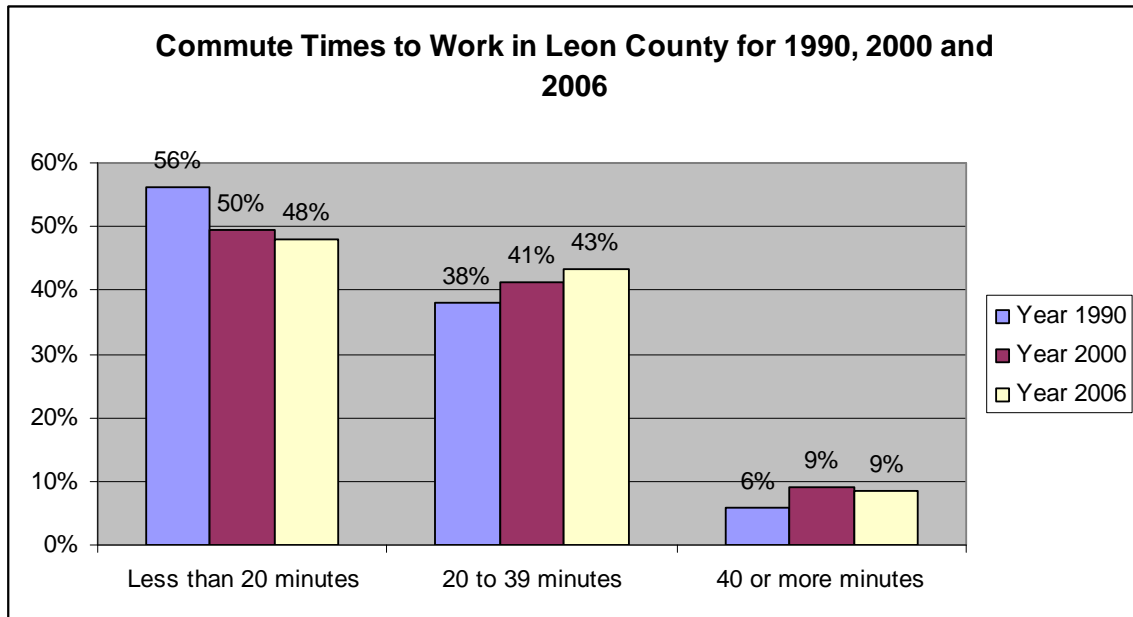
Table 5: Comparison between dwelling unit type and DRI, PUD or Small Projects by the Risk of Fee Assessment, Development Agreement or Order

Dwelling Unit Type	Relative Risk of Transportation Exaction	Relative Risk Lower Confidence Interval	Relative Risk Upper Confidence Interval
DRI compared to Small Projects			
Single Family Residential	4.9**	4.3	5.6
Multifamily Residential	56.3**	43.4	73.4
Total Dwelling Units	23.4**	21.0	26.1
PUD compared to Small Projects			
Single Family Residential	6.9**	6.0	7.9
Multifamily Residential	32.7**	25.0	43.2
Total Dwelling Units	17.6**	15.7	19.9
PUD compared to DRI			
Single Family Residential	1.4*	1.3	1.5
Multifamily Residential	0.6	0.5	0.1
<i>(Inverse) DRI compared to PUD Multifamily Residential</i>	1.7*	1.6	1.9
** p<0.01, *p<0.05			

Table 5 compares the likelihood that small projects, PUDs or DRIs funded transportation concurrency. Compared to small projects, DRIs are 4.9 times as likely to fund trips from single family units and are 56.3 times as likely to fund trips from multifamily units. These are statistically significant differences with a less than one percent probability that these differences occurred by chance ($p < 0.01$). PUDs are 6.9 and 32.7 times as likely to fund single family and multifamily residential trips, respectively, compared to small projects ($p < 0.01$). The comparison between PUDs and DRIs is less clear. PUDs are slightly more likely to fund trips from single family units, whereas DRIs are more likely to fund the trips of multifamily residential units.

The following three factors influence daily driving experiences in Leon County: roadway improvements, expansion of land development in the county, and population growth. Tallahassee and Leon County both continue to update and increase its roadway capacity through mechanisms such as road widening, new construction, and traffic light sequencing. Since 1990, housing developments have extended away from the urban center and further out into the unincorporated area. Sometimes the city has expanded as well, annexing new development into the city. The population in Leon County has increased from around 100,000 in 1990 to 122,000 in 2006. Regardless of the expansion of the city and county, roadway improvements and population growth, commute times to work have changed over time. In 1990, 56 percent of people drove to work in less than 20 minutes, as shown in Figure 6. In 2006, only 48 percent were able to drive to work in less than 20 minutes.

Figure 6:



Source: 1990 and 2000 US Census Bureau, 5 percent sample and US Census Bureau 2006 American Community Survey.

Discussion and Recommendations

Small projects are often exempted from transportation concurrency (98 percent exempt), through the *de minimis* exemption. Yet these small projects have had a cumulative effect of adding the largest number of new trips to Tallahassee roads (70 percent of new trips). Larger projects (PUDs and DRIs) are much more likely to be exacted transportation concurrency mitigation (49 percent of new trips fund transportation concurrency) even though these projects put fewer trips on local roads (30 percent of new trips).

Clearly, small developments have added the most automobile trips to Tallahassee roads and have invested the least into the transportation system. This study does not suggest that the standards for exacting funds and resources for transportation concurrency are subjective. Yet, the *de minimis* exemption means that current standards applied by COT result in small projects being excused from paying for impacts while large projects are forced to pay because they do not fit under the *de minimis* exemption. Additionally, the *de minimis* threshold for trip impacts has created a large and significant cumulative impact to Tallahassee roads that cause specific road segments to fail to meet the adopted LOS standards. While the trips generated for each small project may be insignificant by themselves, the impact has accumulated over time (EPA 1999). Commute times have increased. Development has been automobile-oriented and citizens must get in their cars to go almost anywhere. The size of the county's land area devoted to residential development is increasing. The expansion of the city limits has also likely caused an exponential increase in the cost of road building and maintenance (Smythe 1986).

A limitation of this study is that the residential permitting data and the information collected concerning exactions do not account for the availability or lack thereof of roadway capacity near the project. As a result, this analysis may present a biased view of the trip impacts of small projects. These small projects may tend to be built on local roads with greater capacity, whereas PUDs and DRIs may be more likely to be built on major arterials and state roads where capacity is lacking. This is unlikely, but remains a possibility which is not controlled for in the analysis.

At a minimum, Tallahassee Growth Management should address the concerns that the *de minimis* exemption allows small projects to escape paying for level-of-service failures on road segments. This shifts the financial burden for mitigating those failures to larger projects including PUDs and DRIs. These larger projects are typically better planned and tend to have multiple land uses. Multiple land uses creates greater land use efficiencies equating to fewer external and more internal trips, some of which use alternative modes like walking or biking.

Next recommendations are given to address the inequality concerning *de minimis* exemption. Other recommendations are made to improve transportation concurrency to address some of the concerns Pelham and others raised.

Recommendations:

- Repeal the *de minimis* exemption. Consider replacing residential transportation concurrency with impact fees. Impact fees should vary by location so that fees increase as projects build farther from the urban core. Impact fees can be fairly assessed from permitted dwelling units with a possible exemption for individuals building a single dwelling unit. Developers will have the advantage of being able to know for certain the cost of the impact fees and plan accordingly. City of Tallahassee would benefit from a steady revenue stream for transportation.
- If the City of Tallahassee decides to keep the *de minimis* exemption, they should consider reducing the *de minimis* exemption to one house per permit to ensure that projects and developers are treated equally with respect to transportation impacts regardless of project size. As *de minimis* is now implemented now, only two percent of projects with an average size of fifty houses incur exactions.
- Provide neo-traditional communities that have good alternatives to automobile travel with concurrency credits. The findings by Khattak and Rodriguez (2005) can be adapted to the existing trip Tallahassee Growth Management generation formulas or to vehicle miles traveled. Khattak and Rodriguez found that people in neo-traditional communities made 1.6 fewer daily automobile trips and traveled an average of 14.7 fewer miles. This study provides a legitimate basis for such a decision by the City of Tallahassee.

Other recommendations:

- Redefine capacity as accessibility for people to reach goods, services and activities rather than defining capacity as traffic flow. Consider the transportation disadvantaged who need to independently access work, recreation and retail.
- For data collection and management, permit tracking data should have associated transportation impact study conclusions included in the database.

The database should also include indicators, such as latitude and longitude, of each permitted residential unit.

- Tallahassee should be applauded and encouraged to continue to promote infill through the downtown redevelopment concurrency exception area and should enlarge the exception area to the maximum size allowed by law. Likewise they should be encouraged to create the multimodal district as planned. Walking, biking, transit and car sharing should be emphasized over automobiles. Elements could include the presence of mixed-use activity centers, connectivity of streets and land uses, walk/bike/transit-friendly design features, and accessibility to alternative modes of transportation. Additionally, if a residential development meets a set criterion for multimodal transportation uses, consider designating those developments as multimodal exception areas.
- Wider roads do not offer a community a “sense of place” and often do not promote biking or walking. When widening roads or increasing capacity, consider the impacts on non-motorized travel, including reduced pedestrian access from inadequate walking facilities, wider streets, increased vehicle traffic speeds and increased traffic volumes and more dispersed destinations. Place power lines underground to promote tree lined roads befitting Tallahassee desired character.

Goals of the FSU Healthy Communities Program:

This study fits into the overarching goals of the FSU Healthy Communities Program. The goals of the program are to improve the built environment and human health through the smart growth principals and alternative modes of transportation. By improving the ways people access goods and services and reducing exclusive dependence on automobiles, the following benefits are possible:

1. reduce motor vehicle emissions (air, water and green-house gas pollution)
2. reduce traffic-oriented injuries and fatalities
3. reduce obesity rates
4. reduce congestion
5. improve physical activity
6. improve social cohesion
7. improve accessibility to health care and services
8. improve quality of life by enhancing a sense of place and community

To increase alternative modes of transportation and improve community environmental health the following are necessary:

1. transit
2. affordable housing
3. shared use paths and, to a lesser degree, bike lanes
4. sidewalks
5. higher population densities
6. mixed land uses
7. access to nutritious foods
8. greenspace

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