Urban and Regional Planning 5716 examines the critical relationships between the transportation system and the built environment. During the semester, we will explore the histories, theories, empirical research, models, and analytic tools that have emerged from this important field of urban planning research. There is no prerequisite for the course, although knowledge of basic statistical techniques, including multivariate regression, will make some of the class readings easier to understand.

Course Objectives
By the end of the course, you will:

- Understand the theories of transportation and land use interaction
- Understand the nature of the effects of transportation infrastructure on land use and the effects of land use on the way we use the transportation system
- Be able to critically examine this relationship using established analytic techniques
- Be able to assess the likely effects of different transportation and/or land use policy decisions
Course Materials
All readings that are available for free via the FSU library e-journals site or through the internet will be posted to the class Blackboard site (campus.fsu.edu) as Adobe .pdf files (denoted as BB in the syllabus). Other readings will be available in plastic magazine holders located in the DURP Reading Room (338 Bellamy) (denoted as RR in the syllabus). The access code for this room is 5-3-1. Supplementary readings may be distributed as needed. Please see me if you have any difficulties obtaining the readings. Topic schedules and readings are listed starting on page 17 of the syllabus.

Course Requirements
The course is structured as a combined lecture-discussion course. You are expected to have read all the required readings ahead of time, and be prepared to actively participate in class discussions. For some topics, I will post discussion questions to Blackboard. The formal requirements of the class are listed below:

Participation 5%
Your participation grade will be based on your demonstrated level of preparedness and active participation in class discussions. We will also have smaller group discussions, in order to further encourage all members of the class to participate.

Midterm Examination 25%
There will be an in-class midterm examination on March 3rd. The mid-term will cover readings and lecture material up to and including Topic 9.

Assignments two assignments worth 15% each = 30%
You must complete two of the five assignments described on pages 4-14.

Term Paper 40%
The final assignment for the course is the preparation of a 12-to-15-page double space term paper that examines some aspect of the transportation-land use relationship. For example, you may: prepare a case study report looking at one geographic region over time, explore the application of a particular policy in multiple locations, or present an empirical analysis of policies within a region or across regions. You will find a list of possible topics, as well as a few more details about this assignment starting on page 14 of the syllabus. You should discuss potential paper topics with me. I am pretty flexible on topics, as long as they relate in some way to the content of the course. Think of topics that interest you. You will submit a short proposal 1) to the class for peer review on February 17th and 2) to me by 5pm on February 27th. The final paper will be due by 5pm on April 24th.
URP 5711  Grade Scale
96 and above  A
92 to 95.9  A-
88 to 91.9  B+
84 to 87.9  B
80 to 83.9  B-
77 to 79.9  C+
73 to 76.9  C
70 to 72.9  C-
68 to 69.9  D+
65 to 67.9  D
62 to 64.9  D-

Course Policies

Late Assignments
All late assignments will be penalized five points for every day they are late.

Fairness
It is unfair to other students in the class for you to ask for a deadline extension except when justified by extenuating circumstances.

Readings and Class Attendance
You are expected to complete the assigned readings prior to attending class. Failure to do so makes it difficult for you to understand the materials presented in the lecture or to fully participate in class discussions.

Attendance
Attendance at all classes and lab sessions is mandatory. Unexcused tardiness or early departure from class will be recorded as absence. Unless approved by the instructor ahead of time, all absences will be unexcused. Three unexcused absences will result in the loss of a letter grade in the class. Five unexcused absences will result in failure of the course. The following absences are eligible to be excused: documented illness, deaths in the immediate family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. Consideration will also be given to students whose dependent children experience serious illness. While one is not penalized per se for excused absences, s/he is nevertheless responsible for all content missed, including any assignments, knowledge, or skills covered or assigned.

AMERICANS WITH DISABILITIES ACT
Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Student Disability Resource Center; and (2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class. This syllabus and other class materials are available in alternative format upon request. For more information about services available to FSU students with disabilities, contact the:
ACADEMIC HONOR POLICY
The Florida State University Academic Honor Policy outlines the University’s expectations for the integrity of students’ academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to “. . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University.” (Florida State University Academic Honor Policy, found at http://dof.fsu.edu/honorpolicy.htm.)

Violations of the Academic Honor Policy will not be tolerated in this class.

Assignments
You must complete any two of the following five assignments. Due dates vary based on the assignment, and are noted at the end of each assignment description.

Option 1. Book Review

Below is a list of books dealing with one or more aspects of the transportation-land use relationship. Your assignment is to prepare a review of one of these books. You should evaluate the main argument or arguments in the book in light of your own experiences and any related materials covered in class readings, class lectures, or non-class readings. Your assignment is not to simply summarize the book’s contents. You should summarize the principal findings and conclusions of the author, but keep the amount of your review devoted to a summary to a minimum. Your primary task is to evaluate the author’s argument and to assess the evidence the author uses in support of their assertions.

If you are unsure what a book review should look like, consult the book review section in any issue of the Journal of the American Planning Association or Journal of Planning Education and Research. Use the reviews published in these leading planning journals as your model. Your review should be approximately 1,000 words in length. See me if you have any questions.
The books listed below are available in Strozier library, or in Dirac library (if labeled as DIRAC). The Call Numbers are also noted. Please do not wait until the last minute to complete this assignment. If there is a book not on the list that interests you, please see me. I will probably add it to the list.


The book review is due in my office or my mailbox on February 13th by 5pm. You are to work alone on this assignment.

### Option 2. Measuring Sprawl

You are a planner for the Metropolitan Council in Minneapolis-St. Paul. The Minneapolis-St. Paul region has exemplified progressive regional governance, having enabled property-tax sharing and other measures explicitly designed to increase cooperative regional governance and aimed at decreasing sprawl.

One day, the director of the Metropolitan Council comes into your office with blood in his eyes waving a Wall Street Journal article that lists Minneapolis-St. Paul as “one of the most sprawling cities of the U.S.” The article cites a report called *The Costs of Sprawl* (TCRP Report #74), available on Blackboard in the Topic 6 Readings folder, in the DURP Reading Room and at the TCRP website (www.tcrponline.org). In Appendix E of the report, the authors have created a series of composite variables that are then used to calculate a “composite sprawl index.” The ratings of this new report show that the Twin Cities Minneapolis has the 34th highest (most sprawling) score, way above places like Las Vegas (#141), Los Angeles (#150), and Phoenix (#151)! In fact, the 2nd lowest city in the sprawl index is San Jose -- where you lived for several years. San Jose! You moved from San Jose to the Twin Cities partly because you saw that Silicon Valley city as the apotheosis of auto-oriented development and dismal-looking tract housing that many people associate with sprawl.

Your supervisor would like you to write him a memo that:

1. Describes the method for creating the index and rankings in a concise—and
non-technical—manner so that he can explain it to the mayor. The method for creating the sprawl index is laid out in the report text.

2. Evaluates the index in terms of its explanatory power. That is, does the index measure what it claims to measure? Is it a good basis for evaluating sprawl? Your supervisor suggests that you use the data from Appendix D of the report on population and land areas to construct simpler measures of residential density for both inside and outside the central city. Then rank those. How do these measures correspond to the composite sprawl indices in Appendix E? Construct a table of the top and bottom ten for the simple measure you have constructed and the composite measures. Which is more believable?

3. A few days go by, and one of your smart coworkers says in front of the supervisor, “Hey, that composite sprawl index only considers how autos can disperse land uses. Bus rapid transit or rail can spread land uses, too, especially when combined with park-and-ride facilities. Is that anywhere in the index?” Your supervisor likes this question, and wants you to discuss this in the memo. Do any of the indicator variables used in the index control for the possibility that any motorized transit can disperse human activity? Why should this problem with the index concern us? Or shouldn’t it? How do you think transit should be factored in to measures of sprawl?

4. Finally, given your research and the data from the Costs of Sprawl study, what would you propose as a reasonable way to measure sprawl. Be specific and show how the results of your sprawl index would rank Minneapolis, San Jose, and ten other cities of your choice.

You should consult the cost of sprawl study (in the DURP reading room) as well as the required readings listed under Sprawl and Alternatives to Sprawl before you complete this assignment. This assignment is due in my office (or mailbox) by 5pm on March 20, 2009. You are to work alone on this assignment.

**Option 3. Level of Service (LOSPLAN) Assignment**

**Background**
This exercise requires you to perform level-of-service analysis using the LOSPLAN software developed by Florida Department of Transportation. LOSPLAN is a fairly user-friendly diagnostic tool, and consists of ARTPLAN (for arterial roads), HIGHPLAN (for highways), and FREEPLAN (for freeways). You will use the ARTPLAN module to examine multimodal level-of-service on a hypothetical arterial road. Consult the LOSPLAN Handout sheets and the FDOT Level-of-Service Handbook (posted to Blackboard under Topic 8) for guidance. You are to work on this exercise alone. (Note: We will use this tool as a class on February 12th.) LOSPLAN is installed on computers in the DURP Lab. To work at home, download LOSPLAN from the course library to your local computer.
Revised October 23rd, 2008

Premise
You are a transportation planner for a city named Collegeville. Collegeville is a rapidly growing community with more than 200,000 residents. Your supervisor has asked you to conduct a series of level of service analyses for various facility design scenarios in the two-mile long Suburban Boulevard travel corridor, and then to make a policy recommendation that selects from among the three design scenarios. Suburban Boulevard is an east-west arterial road that serves a rapidly growing suburban area.

You should present the results of your analysis in the form of a memo addressed to your supervisor. Any tables or graphs you include must be referenced in the text of the memo.

1. **Current Conditions Analysis**
The first analysis will be to determine the current levels of service for automobiles, bus, bike, and pedestrian travel modes. Your study hour is the 100th highest traffic volume hour, one of the most commonly examined study periods for planning purposes. Most of the input values are taken from the FDOT Level of Service Tables for Urbanized Areas.

**Current Condition Data for Suburban Boulevard Corridor**

<table>
<thead>
<tr>
<th>Peak Direction: Westbound</th>
<th>Arterial Class: Class I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posted Speed: 50 miles per hour</td>
<td>Number of through lanes (both directions): 4</td>
</tr>
<tr>
<td>Median Type: Restrictive</td>
<td>Left Turn Lanes: Yes</td>
</tr>
<tr>
<td>AADT: 27,500</td>
<td>K Factor: .095</td>
</tr>
<tr>
<td>D Factor: .55</td>
<td>PHF: .925</td>
</tr>
<tr>
<td>Percent Turns from Exclusive Lanes: 12</td>
<td>Base Sat Flow Rate: 1900</td>
</tr>
<tr>
<td>Percent Heavy Vehicles: 8</td>
<td>Local Adjustment Factor: 1</td>
</tr>
<tr>
<td>Control Type: Actuated</td>
<td>Signals per mile: 2</td>
</tr>
<tr>
<td>Arrival Type: 3</td>
<td>Cycle Length: 120</td>
</tr>
<tr>
<td>Through g/c: .44</td>
<td>Paved shoulder/bike lane: No</td>
</tr>
<tr>
<td>Sidewalk: No</td>
<td>Outside Lane Width: Typical</td>
</tr>
<tr>
<td>Pavement Condition: Typical</td>
<td>Bus Frequency: 1 per hour</td>
</tr>
<tr>
<td>Bus Service: 13 hours per day</td>
<td></td>
</tr>
</tbody>
</table>

The corridor has no sidewalks and no bike lanes.

Cross Streets (spaced at ½ mile intervals): Alpine, Birch, Cedar, Dogwood, and Eucalyptus. Total length of the corridor is two miles.

Be sure to Apply General Facility Data to “Edit Intersection and Segment Data”
Be sure to Apply Multimodal Facility Data to “Multimodal Segment Data”

Note: If you don’t click these two apply buttons after you make design changes, they will not be applied to the segments of your corridor.

When you report the baseline conditions (traffic volumes, traffic speeds, multimodal LOS), be sure to comment on whether the LOS is desirable or undesirable from a
planning point of view, and note some of the design features or control features that you suspect lead to poor level of service for your various travel modes.

Over the next several years, large population increases are expected in the communities along the Suburban Boulevard corridor as new development comes on line. Your supervisor wants you to incorporate this increased growth into your analysis as you consider three proposed facility design scenarios: roadway expansion, bike/ped friendly, and mixed. You should conduct the level of service analyses and make a recommendation for developing the road to encompass the design features incorporated in one scenario. Be sure to justify your decision to your supervisor, who will then have to present the information to local policymakers.

2. **Roadway Expansion Scenario**
The first scenario calls for an expansion of roadway capacity in the corridor. For this scenario, assume that AADT will increase by 35 percent above current conditions as new development occurs in the corridor. You should increase the number of through lanes to eight to accommodate the increased travel. All other values are assumed to remain the same as for the current condition scenario. Conduct a level of service analysis for all four travel modes under this scenario and report the results in your memo. Comment on the desirability/undesirability of the resulting LOS for the various modes. *Note: be sure to double-check all of your input values and to apply them to all segments of your facility.*

3. **Bike/Ped Friendly Scenario**
The second scenario calls for the adoption of a bike/ped friendly approach to transportation planning in the corridor. We will reclassify the arterial from Class I to Class III, to allow for a changed roadway design and signaling structure. For this analysis: assume that AADT will only increase by 4300 trips per day above current conditions (because of the smaller road capacity we will provide), drop the number of through lanes to four, change the posted speed to 40 mph, change the arrival type to 4, change the control type to semi-actuated, change the local adjustment factor to 0.95, add a paved shoulder/bike lane, add a sidewalk with wide separation, add a sidewalk protective barrier, and reduce bus headways from one hour to thirty minutes. The other signal and traffic settings remain unchanged from the first two scenarios. Conduct a level of service analysis for all four travel modes under this scenario and report the results in your memo. Comment on the desirability/undesirability of the resulting LOS for the various modes. *Note: be sure to double-check all of your input values and to apply them to all segments of your facility.*

4. **The Mixed Scenario**
The third scenario lies somewhere between the first two. In this scenario, we reclassify Suburban Boulevard from a Class I to a Class II arterial. In this scenario, we assume that: AADT increases by 25 percent from current conditions, the number of through lanes is six, the posted speed is 45 mph, the local adjustment factor is 0.98, the arrival type is 4, the control type is semi-actuated, add a sidewalk with typical separation, do not add a sidewalk/roadway protective barrier, add a paved shoulder/bike lane with narrow width, and reduced bus headways to 30 minutes. *All other values are assumed to remain the*
same as for the current condition scenario. Conduct a level of service analysis for all four
travel modes under this scenario and report the results in your memo. Comment on the
desirability/undesirability of the resulting LOS for the various modes. **Note: be sure to
double-check all of your input values and to apply them to all segments of your facility.**

At the close of the memo, recommend one of these three scenarios to your supervisor. Be
sure to justify your recommendation. **This assignment is due in class on March 27th.**
**You are to work alone on this assignment.**

**Option 4. Infill Project Traffic Impact Analysis Assignment**

This exercise requires you to forecast trip levels for different development configurations
(using trip rates), load the trips into the HCS 2000 software, and evaluate the level of
service for each scenario.

**Premise**

You are the transportation planner for the city of Springfield. Local city officials are
eager to develop vacant property in the center of the city, just downstream from the local
nuclear plant. One 10-acre site appears to be particularly promising, but the city is
concerned about the traffic impacts of development on the site. They are particularly
concerned about traffic impacts on the intersection of Shelbyville Highway (a major
arterial highway) and Old Krustie Road (a minor collector road). Your task is to conduct
a series of analyses using the HCS2000 software to evaluate the traffic impacts of infill
development on the site. Our analysis is for the AM peak hour, so all the volumes are
hourly volumes.

**Step 1** – Load the existing traffic volume and signal characteristics (Table 1) onto the
intersection using the HCS2000 signals software (operations option).

**Table 1**

<table>
<thead>
<tr>
<th>Lane Configuration</th>
<th>Southbound Shelbyville Hwy</th>
<th>Northbound Shelbyville Hwy</th>
<th>Eastbound Old Krustie Rd.</th>
<th>Westbound Old Krustie Rd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>R Turn Volume</td>
<td>200</td>
<td>40</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>Thru Volume</td>
<td>1600</td>
<td>600</td>
<td>50</td>
<td>20</td>
</tr>
<tr>
<td>L Turn Volume</td>
<td>40</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase setup</td>
<td>Phase 5</td>
<td>Phase 5</td>
<td>Phase 1</td>
<td>Phase 1</td>
</tr>
<tr>
<td>Green</td>
<td>Th/R/L 120</td>
<td>Th/R/L 120</td>
<td>Th/R 70</td>
<td>Th/R 70</td>
</tr>
<tr>
<td>Yellow</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Red*</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Indicates time for which signals in all directions are red at the end of that phase. For this case, assume
this is 0, although it may be a bit dangerous for it to be configured this way in the real world.
Save a file with the existing parameters: traffic volume, signal setup, delay, level of service, etc.

**Step 2** – Calculate the AM Peak trip generation rates for the development described in Table 2 using the trip rates in Table 3a and the pass-by percentages in Table 3b. Use the excel spreadsheet to help run your analysis, but construct your own tables to report results. When you calculate trip generation, round the result to two decimal places. Be sure to enter the pass-by percentages as decimals in the spreadsheet: ex. enter .15 for 15%.

Assumptions:
- Residential units are all *apartment building*
- Retail is all *specialty retail* and a single store more than 100,000 sq. ft
- Office is all *general office building*.

*The following assumptions are built into the spreadsheet template.*
- For the household trips, 70% go North on Shelbyville Hwy, with the share turning left and right equal to the current proportions. (See site map)
- For the retail and office trips, assume that 60% approach from the North (Southbound on Shelbyville Hwy.)

<table>
<thead>
<tr>
<th>Table 2 Proposed Development</th>
<th>Background data</th>
<th>Units for Calculating Trip Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10 Land Area (Acres)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Residential units</td>
</tr>
<tr>
<td></td>
<td></td>
<td>436</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Retail sq ft</td>
</tr>
<tr>
<td></td>
<td></td>
<td>130,680</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Office employees</td>
</tr>
<tr>
<td></td>
<td></td>
<td>523</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 3a Land Use</th>
<th>Base Unit</th>
<th>AM Peak</th>
<th>PM Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Family Home</td>
<td>per dwelling unit</td>
<td>0.75</td>
<td>0.87</td>
</tr>
<tr>
<td>Apartment Building</td>
<td>per dwelling unit</td>
<td>0.41</td>
<td>0.48</td>
</tr>
<tr>
<td>Condo/Town Home</td>
<td>per dwelling unit</td>
<td>0.44</td>
<td>0.76</td>
</tr>
<tr>
<td>Retirement Community</td>
<td>per dwelling unit</td>
<td>0.29</td>
<td>0.33</td>
</tr>
<tr>
<td>Retail</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shopping Center</td>
<td>per 1,000 sq. ft.</td>
<td>1.03</td>
<td>4.12</td>
</tr>
<tr>
<td>Discount Club</td>
<td>per 1,000 sq. ft.</td>
<td>65</td>
<td>260</td>
</tr>
<tr>
<td>Restaurant (High-turnover)</td>
<td>per 1,000 sq. ft.</td>
<td>9.27</td>
<td>37.08</td>
</tr>
<tr>
<td>Convenience Market</td>
<td>per 1,000 sq. ft.</td>
<td>65.3</td>
<td></td>
</tr>
<tr>
<td>Specialty Retail</td>
<td>per 1,000 sq. ft.</td>
<td>6.41</td>
<td>25.64</td>
</tr>
<tr>
<td>Office</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 3b

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Pass-by Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialty Retail (configuration)</td>
<td></td>
</tr>
<tr>
<td>100,000 to 400,000 sq. ft.</td>
<td>25</td>
</tr>
<tr>
<td>Smaller than 100,000 sq. ft.</td>
<td>35</td>
</tr>
<tr>
<td><strong>Other Uses</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Convenience Market</strong></td>
<td></td>
</tr>
<tr>
<td>Convenience Market</td>
<td>40</td>
</tr>
<tr>
<td>Fast Food Restaurant</td>
<td>40</td>
</tr>
<tr>
<td>Sit Down Restaurant</td>
<td>15</td>
</tr>
<tr>
<td>Supermarket</td>
<td>20</td>
</tr>
</tbody>
</table>

### Site Map

![Site Map Image]

**Step 3** – Load the additional trips onto the intersection. What happens to the level of service?

**Step 4** - How much is the traffic impact mitigated if we assume the surrounding area has a higher density and better accessibility?

1. Let’s assume that the ITE trip rates are based on a density of 750 persons per square mile but that our area has a density of 7500 persons per square mile. We should expect to find a higher share of trips using transit, bike, and walk modes at this higher density, and thus a decline in the automobile share. Based on research conducted by Urban Land Institute in 1995, let’s assume that the number of auto trips is reduced by **15 percent** due to increased density. (Enter this value in your spreadsheet as .15 in the appropriate cell.)

*Enter the new level of trips onto the network and evaluate the new LOS.*
2. The long-term objective is to improve accessibility. Let’s suppose we were able to improve accessibility at the site through a combination of increased density (as noted above) and more diverse uses on the site. Assume that we are able to reduce the number of auto trips by **9 percent** under our increased accessibility (“better urban design”) scenario. (Enter this value in the spreadsheet as .09 in the appropriate cell.)

*Enter the new level of trips onto the network and evaluate the new LOS.*

**Step 5** – Change the land use type of the project and analyze how that would change the number of additional trips added to the intersection?

- Make half the residential units a retirement oriented complex.
- Break up the specialty retail into several tenants of less than 100,000 sq. ft. each.

This step requires you to change your trip generation calculations. Load the trips onto the intersection, but be sure to apply the pass-by, density, and design reduction factors to the new trip totals—before you run the final intersection analysis.

Write a memo summarizing the results of the analysis for Mayor Quimby. Be sure to highlight the potential points of controversy the project may face as the public hearing and approval process moves forward.

**This assignment is due April 3rd by 5pm. You are to work alone on this assignment.**

**Option 5. How does urban form influence travel behavior?**

You are a staff member to the House Committee on Transportation and Infrastructure. Last summer several of the committee members went on a junket to Europe and Asia to do “first-hand” research on the transportation systems in Eurasian cities. Several members concluded from this trip that promulgating legislation encouraging cities to increase population and/or employment densities would significantly increase transit use and substantially reduce auto dependence. Other members, however, argue that land use control is and should be a local issue. They argue instead that legislation should be promulgated to significantly increase investment in public transit systems and decrease investment in highways. This, they argue, will help to gradually transform sprawling American cities into the more compact, dense cities of Europe and Asia.

Your boss (the lead staff person to the committee) is concerned about promulgating such legislation without a clearer understanding of the causal links between urban form and travel behavior. She has asked you to analyze the relationship between urban form and transportation using data from a widely cited 1999 study by Newman and Kenworthy (*Chapter 3 and Appendix 1 are available in one of our class readings holders in the DURP Reading Room*), which provides various measures of urban form and transportation in thirteen large U.S. cities and a number of international cities. Your job is to explore the relationships between the urban form and transportation variables for the US cities and to develop some hypotheses that could be tested by subsequent in-depth study. The hypotheses should express a relationship between one land use variable and one transportation variable (be sure to note the direction(s) of causality).
Use quantitative analysis techniques to explore three or four relationships. These can include descriptive statistics, graphs and plots of relationships between variables, and calculating correlation coefficients. Think of this work as your preliminary exploration of the data before defining a major research project for the House Committee on Transportation and Infrastructure. Because so much data are provided, you must decide (and defend) which variables are of the greatest interest, and focus your investigations on these variables.

For each relationship you examine, write a clear statement of the hypothesis, report on your visual analysis of the data, including comments on outliers, report on the calculated correlation coefficients, and provide a written commentary on whether the analysis supports or does not support your initial hypothesis. In concluding your memo comment on the degree to which your exploration shows that urban form indicators are related to travel behavior, and if they are, whether the relationships are consistent with the literature we discussed in class for *The Effects of Land Use on Transportation*. You may wish to consult the additional readings under *The Effects of Land Use on Transportation (available in the DURP Reading Room)* as you prepare to complete this assignment, including the Newman and Kenworthy book. You might also skim the required readings under *The Effects of Transportation on Land Use* to see the other direction of the relationship.

This assignment is due by 5pm on April 10\textsuperscript{th}. You are to work alone on this assignment.

********************************************

**Term Paper**

The major assignment for this course is a term paper. There are two milestones for this paper prior to the final due date of April 24\textsuperscript{th}. Please see me to discuss any questions you have about potential topics or expectations for the paper.

**Proposal**

On February 17\textsuperscript{th}, a draft paper proposal is due for peer review in class. You should bring two copies of the proposal. You will give and receive feedback from your classmates on your proposals. This draft proposal will not be turned in to me. You will have the opportunity to refine your proposal subsequent to the in-class peer review. The paper proposal will be due to me by 5pm on February 27\textsuperscript{th}.

The proposal should outline the following:

- General introduction to the topic your interested in
- Proposed scope of examination (single case, multiple cases, study area for empirical paper)
- Proposed sources of information for case evaluations
- Proposed data and method for empirical studies
Some Example Paper Topics (But do not feel limited by this list)

- Infill development
  - Transportation related barriers to infill development
  - Innovative programs to overcome such barriers
  - Concurrency and infill development
- Successful models for mitigating the impacts of transportation infrastructure on environmentally sensitive lands
  - Wetlands offset/banking programs
  - Storm water runoff treatment
  - Avoiding habitat fragmentation / impact mitigation
- Effective integration of travel demand models with land use simulation models
- Innovative transit agency programs
  - Land development programs
  - TOD planning
  - More flexible transit systems or effective transit models for lower density/suburban areas
  - Marketing / service design to attract non-traditional customers (e.g. tourists, high income commuters)
- Transportation impact fees
  - The impact of impact fee structure on infill development
  - The adequacy of impact fees in supporting infrastructure expansion
  - Innovate policies / assessment structures
- Urban design innovations
  - Traffic calming / pedestrian safety
  - Transit station design
  - Pedestrian / bicycle corridors and networks
  - Design standards / ordinances to improve alternative transit accessibility
- Regional planning initiatives
  - Creating a town center network / retrofitting the suburbs (e.g. San Diego “City of Villages” concept)
  - Other regional transportation / land use programs (Eastward Ho! – Southwest FL, Envision Utah – Salt Lake, Sound Move - Seattle, etc.)
  - Parking and road pricing reform
- Educational initiatives to change behaviors and attitudes
  - Encouraging non-motorized travel
  - Softening “neighborhood resistance” to increased density (e.g. visual preference surveys or other outreach / educational programs)
  - Increasing citizen involvement in transportation / land use planning
- Combining economic development and transportation investments
  - Employment center co-location with transit
  - The use of infill / brownfields development for neighborhood revitalization / job creation
Spatial mismatch
   - The effectiveness of welfare to work and other employment accessibility programs
   - Regional / State initiatives to improve jobs housing balance

Final Paper

The final paper will be between 12 and 15 double-spaced pages in length, and is due on April 24th at 5pm. All sources must be cited in the text and in a Bibliography.

You should use the APA method of citation. A useful guide to APA citation may be found at http://www.dianahacker.com/resdoc/social_sciences/overview.html

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Topic Schedule and Class Readings

Note: This schedule is subject to revision, based on class needs.

**Required Readings** are the key readings we will use in our discussion of each topic. **Additional Readings** are other articles or manuscripts you should consult if you are particularly interested in a topic. **References** are materials that serve as background materials, and are mainly used in the context of our discussion of various analytic techniques. You are expected to read all required readings before each class session.

**Topic 1: Course Introduction and Overview (Week 1a)**
This topic provides a general overview of the literature on the link between transportation and land use. Please read the Giuliano and Cervero and Landis pieces for the first class meeting. We will jump right in to the course material on the first day of class.

**Required Readings**


(Note: *Access* is a reader-friendly research synopsis publication—which you can subscribe to for free! I recommend it. Visit [www.uctc.net](http://www.uctc.net) and click on Access Magazine.)

**Additional Readings**


**Topic 2: Fundamentals of Travel Behavior (Week 1b)**
This topic provides some context for our subsequent class discussions by discussing why we travel, what factors influence our decisions to travel, and how we travel. This is the first of two topics that apply economic concepts to transportation. We also discuss the issue of traffic congestion.

**Required Readings**


**Topic 3: Fundamentals of Urban Economic Theory (Week 3a)**
This topic applies insights from urban economic theory to the relationship between transportation and land use.

**Required Readings**

**Additional Readings**


**Topic 4: Accessibility (Week 3b)**
This topic introduces the concept of accessibility. We will discuss the concepts of access and accessibility, note the different ways people have measured accessibility, and consider the influence of two kinds of accessibility on travel behavior. Bring a calculator to class.

**Required Readings**


Revised October 23rd, 2008

Additional Readings


Topic 5: The Evolution of Transportation and Urban Form (Week 4a)
This topic explores the evolving relationship between transportation and urban form in the United States.

Required Readings


Additional Readings


Topic 6: Sprawl and Its Alternatives (Weeks 4b, 5a)

Sprawl and the Sprawl Debate: Week 4b Required Readings


Alternatives to Sprawl: Week 5a Required Readings


Additional Readings


**Topic 7: Trip Generation (Week 5b)**
This topic introduces one tool that planners use to assess the effects of land use (different kinds of development) on the transportation system: the ITE Trip Generation Manual. We will discuss the manual, apply it to calculate trips, and discuss some of its strengths and weaknesses as a means of estimating travel activity. Bring a calculator to class.

**Required Readings**
Institute of Transportation Engineers. *Trip Generation Handbook*  
(Excerpts are in the Reading Room in two folders: parts one and two)

**Additional References**


**Topic 8: Measuring Transportation System Performance: LOS (Weeks 6a, 6b)**
This topic introduces the notion of level of service (LOS) as a means of grading transportation system performance. Level of service is at the core of Florida’s transportation concurrency requirements instituted through the Growth Management Act. We will introduce LOSPLAN, a software package developed by FDOT for assessing LOS, and we will use the software’s ARTPLAN module to examine multimodal level of service for arterial roads.

**References**
(FDOT. 2002 LOS Tables  
Tallahassee LOS Standards)

**Topic 9: Transportation and Land Use in Florida (Weeks 7b, 8a)**
This topic examines the link between transportation and land use in Florida, focusing on the state’s transportation concurrency requirements. In the first session, we will discuss the origins and evolution of transportation concurrency. In the second session, we will critique it and debate its future.

**Transportation Concurrency: Rationale and Evolution—Week 7b Required Readings**
Steiner, Ruth. 2001. “Florida’s Transportation Concurrency: Are the current tools adequate to meet the need for coordinated land use and


FDOT Summary document

Debating the Future of Transportation Concurrency—Week 8a Required Readings


Topic 10: The Effects of Land Use on Transportation: Overview and The 3Ds (Weeks 9b, 10a)
This topic provides a detailed examination of the literature on the influence of land use on our use of the transportation system.

Overview and Density: Week 9b Required Readings


(note: You can order all TCRP reports for free at http://www.tcrponline.org)

Diversity and Design: Week 10a Required Readings


Jacobs, Allan. 1995. Chapter One (Requirements for Great Streets) and Chapter Two (Qualities that Contribute) from Great Streets. MIT Press. (RR)

Additional Readings


**Topic 11  Land Use, Transportation, and Health  (Week 10b)**

This topic is an opportunity to extend the literature that relates land use to travel behavior to a consideration of the potential physical activity and public health consequences.

**Required Readings**


(BB)
Topic 12: The Effects of Transportation on Land Use (Week 11a)
This topic discusses the effects of transportation infrastructure on land use patterns.

Required Readings

Additional Readings

Topic 13 Parking: Intersection of Transportation and Land Use (Week 12a)
This topic discusses one of the most important intervention planners make in the built environment, one that has enormous implications for urban form and travel behavior, and one that until very recently has received precious little attention from anyone whose name isn’t Donald Shoup: parking.

Required Readings
Additional Readings


Topic 14: Transit-Oriented Development: Definitions, Policies, and an Assessment (Weeks 12b, 13a)
This topic introduces the concept of transit-oriented development.

Overview of TOD and Policy Environment: Week 12b Required Readings


Assessment: Week 13a Required Readings


Strickland, Eliza. “Ghost Town: What if they built the development of the future and no one came?” (Handout)

Additional Readings


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**Topic 15: Transit-Oriented Development Case Study** (Week 13b)
This topic examines domestic case studies of using transit to shape land use and land use to support transit.

**Required Reading**

**Topic 16: Adapting Transit to Fit Land Use** (Week 14a)
This topic explores research being conducted at FSU that explores the alternative (to TOD) strategy of adapting transit to fit land use—in an effort to make transit more viable to users and boost ridership.

**Required Readings**


**Topic 17: Modeling the Transportation-Land Use Relationship** (Week 14b)
This topic provides an overview of the forecasting tools that are used by practitioners and/or researchers to model the relationship between transportation and land use.

**Required Readings**
Author Unknown. Florida Urban Land Use Allocation Model Overview. Pages 1-5. (BB)


Additional Readings


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<thead>
<tr>
<th>Week</th>
<th>Lecture 1</th>
<th>Lecture 2</th>
<th>Readings</th>
<th>Assignment</th>
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<tr>
<td>2</td>
<td>January 12th - January 16th</td>
<td>TRB Conference -No Class</td>
<td>TRB Conference -No Class</td>
<td>No Readings</td>
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<tr>
<td>6</td>
<td>February 9th- February 13th</td>
<td>Level of Service I</td>
<td>Level of Service II (Lab)</td>
<td>FDOT 2002, Tallahassee LOS</td>
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<td>7</td>
<td>February 16th - February 20th</td>
<td>In-class peer review of draft paper proposals</td>
<td>Transportation and Land Use in Florida 1: Transp. Concurrency Rationale and Evolution</td>
<td>Nicholas and Steiner 2000, Steiner 2001, Greenberg Traurig 2005, FDOT Summary; Draft term paper proposal due for in-class peer review on 2/17</td>
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<td>8</td>
<td>February 23rd - February 27th</td>
<td>Transportation and Land Use in Florida 2: Debating the Future of Transportation Concurrency</td>
<td>HCMS (Lab)</td>
<td>Chapin, Thompson, and Brown 2007, Downs 2003</td>
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<td>9</td>
<td>March 2nd- March 6th</td>
<td>Midterm Exam</td>
<td>Effects of Land Use on Transportation: Overview and Density</td>
<td>Cervero and Kockelman 1997, Ewing and Cervero 2002, TCRP 95:Ch 15; Midterm on March 3rd</td>
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<td>10</td>
<td>March 9th - March 13th</td>
<td>Effects of LU on Transportation: Diversity and Design</td>
<td>Land Use, Transportation, and Health</td>
<td>TCRP 95: Ch. 15, Jacobs 1995, Frank 2006, Handy 2005; Assignment Option 2 due 3/20 by 5pm</td>
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<td>11</td>
<td>March 23rd - March 27th</td>
<td>The Effects of Transportation on Land Use</td>
<td>Assessment of The Effects of Transportation on Land Use and Land Use on Transportation (Discussion)</td>
<td>Giuliano 2004, Boarnet and Haughwout 2000, Ryan 1999; Assignment Option 3 due 3/27 in class</td>
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<td>13</td>
<td>April 6th - April 10th</td>
<td>TOD: Assessment</td>
<td>TOD Case Study: The Gold Line LRT</td>
<td>TCRP 2004, Belzer and Aufer, Strickland; Lund and Wilson 2005; Assignment Option 5 due 4/10 by 5pm</td>
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<td>14</td>
<td>April 13th - April 17th</td>
<td>Adapting Transit to Fit Land Use</td>
<td>Modeling the Transportation-LU Relationship</td>
<td>Brown and Thompson 2007, Thompson and Matoff 2003, Thompson, et al 2006; Beimborn, et al; Waddell and Ulfastson; FULUAM Overview</td>
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<tr>
<td>15</td>
<td>April 20th - April 24th</td>
<td>TBD</td>
<td>Concluding Thoughts</td>
<td>TBD</td>
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<td>PW</td>
<td>Finals Week</td>
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