Geography & Planning (SURP) 889: Sustainable Transportation - Policy and Planning; Winter Term 2017: Course Outline/Syllabus: Draft: Dec. 2016; subject to change by notification. Wed. 6-9PM; 554 Sutherland; Instructor: Preston L. Schiller, Ph.D.; preston.schiller@queensu.ca; office & hours: 529 Sutherland; office hours: Mon. 4:30-5:30pm

Course Description: Transportation, the movement of people, goods and information, is a vital but largely taken-for-granted aspect of everyday life. The significant impacts of our “business-as-usual” (BAU) approaches are often overlooked in policy formulation and the planning and provision of transportation services and infrastructure. Sustainable transportation (ST) is an effort to apply principles and lessons derived from sustainability efforts in a variety of fields to the effort of reducing BAU impacts and creating sustainable mobility. We will explore a range of matters involving unsustainable versus sustainable transportation including: How we arrived at our current situation; the “car culture;” modes, infrastructure and technologies; investments and pricing; freight movement; energy, environment and health; public participation and integrated planning; exemplary models for sustainable transportation at various societal levels; and an in-depth exploration of transit and intercity public transportation.

Students will engage in activities related to sustainable transportation and prepare brief papers related to course materials and the course project focused on Kingston, which will be a comparative exploration of the treatment of walking, walkability and pedestrianism in planning, public policy and “on the street and sidewalk.” It will rely on many points of comparison; provinces within Canada; Kingston and various Ontario cities; Canada and the rest of the world; etc. The findings of this exploration will be presented to invited guests including experts and transportation stakeholders for discussion at the end of the term. It is hoped that the course will attract students from several disciplines interested in transportation (Policy Studies, Geography, Engineering, Environmental Studies, Sociology, Health, etc.) so that a variety of perspectives and expertise will be brought to bear in this exploration.

Visiting speakers are anticipated, but not yet finalized, for the sustainable transportation class, winter term 2017. Past visitors included representatives of Kingston Transit, Cornell University energy expert Francis Vanek, former Speaker of the House, Peter Milliken, B.C. Ministry of Transportation Transit planner Ross Long, several Kingston officials and Ted Hsu, M.P.

About the instructor: Preston L. Schiller, Ph.D., has degrees in Sociology and Anthropology and Information Science. Before turning to transportation issues he worked extensively on health and medical issues. He has taught at several universities including the School of Public Health of the University of North Carolina, Huxley College of the Environment (Western Washington University) and the University of Washington’s Masters in Sustainable Transportation. He focuses his attention exclusively on transportation and environmental issues, working on a number of policy and planning issues at several levels of government and society in the U.S. and Canada. He is the author of numerous transportation and public health reports and publications.

Weekly Expectations: Students are expected to attend class regularly and to be prepared to discuss the assignments (readings, exercise), discussion topics and guest presentations as well as to bring additional readings and experience to bear upon the subjects under examination. All e-mail will be sent to your Queen’s U. e-mail address, so please keep it below the MB limit.
Activities:
• An “Inter-modal exercise” involving observation and brief reporting is required (see Guidance Sheet). Other optional activities are also indicated.

Term Expectations: Each student will be expected to undertake these (see "Guidance" at end):
• Review and presentation of a reputable journal article related to the theme of this course. The student will write a brief review of an article (2-4pp or 1000-2000 words, not including bibliography, appendices, etc.) and present it to the class for discussion. The article must be approved by the instructor (to assure quality and non-duplication by other students. The article could be chosen from the recommended readings for each class or from our text's chapter bibliographies or a bibliography attached to this syllabus.
• Review and presentation of a reputable book related to the theme of this course. The student will write a brief review of the book (4-6pp or 2000-3000 words, not including bibliography, appendices, etc.) and present it to the class for discussion. The book must be approved by the instructor (to assure quality and non-duplication by other students).
• Students will present their article and book reviews either during the term when their topics are appropriate or in a class partly devoted to their presentations towards the end of the term.
• Term group project: The class will explore the current situation of walking, walkability and pedestrianism with special emphasis on Kingston. “Walking” refers to the very basic human capacity, if not impaired, to place one foot in front of another in order to move from place to place. “Walkability” refers to whether or not a locale, such as a neighborhood or commercial zone is amenable to walking. ‘Pedestrianism” refers to the numerous dimensions of urban planning, policy and investment and development strategies that affect walking. Students will form themselves into small groups around topics of mutual interest relevant to the overall project. The last session of the class will entail a presentation of findings and recommendations to specially selected invitees. (see Guidance Sheet: Term Project below)

Grading and Assignments Due Dates:
20% Class Participation (attendance, discussion, readings, participation in group project)
20% Inter-modal Exercise (see guidance below; due Jan. 30)
20% Term Group Project (see guidance below; indicate your area of interest by Jan. 23)
20% Article Review/Bibliographic Search (see guidance below)
20% Book Review (see guidance below)

Lateness or absence: Assignments not done on time will be penalized 5% per day late and regular attendance is expected unless there is a documented medical or family emergency. If you have any issue with regular attendance, meeting assignments, participating in class discussions or making presentations please make an appointment with me to discuss this matter early on and find solutions.

Text: An Introduction to Sustainable Transportation: Policy, Planning and Implementation (2010), Preston L. Schiller, Eric C. Bruun & Jeffrey R. Kenworthy (Routledge-Earthscan) available at Queen’s bookstore; text copies and e-book on reserve at Stauffer Library. Other assigned or recommended readings will be available on reserve at Stauffer Library, or on the web, in the SURP office, or distributed to the class via e-mail.
Course Outline and information:

The “Readings & Resources” section of each week below indicates required readings or resources to be consulted unless “Recommended” is stipulated.

Bibliography: a comprehensive bibliography follows each chapter of the text and many of the assigned readings also offer extensive bibliographic information. The instructor will be pleased to offer advice on bibliographic materials for your individual and group projects.

Course Calendar:

**Week 1. Jan. 9, 2017:** Introduction-Overview: Sustainable and Unsustainable Transportation

**Readings & Resources:** Students should come prepared to discuss: Introduction To Sustainable Transportation, Foreword, Introduction, Chapter 1. (On reserve, Stauffer Library)

**Presentation and discussion topics:**
Class introductions: Instructor expectations, assignments (weekly readings, exercises, class and individual projects, speakers), student expectations;--Definitional issues; sustainable/unsustainable; problems with definitions and emergent phenomena; ST in contrast to conventional transportation policy and planning or “Business As Usual” (BAU);--Predict and Provide vs. Deliberate and Decide--value of a comparative approach--the “problems” sustainable transportation must address: overdependence on automobiles; economic and planning distortions (subsidization, etc) feeding the overdependence; appropriate infrastructure, energy consumption, space consumption--Dimensions of the problem: urban-rural-intercity-passerenger and freight--pluralility of modes--energy; urban space; travel behavior; environmental impacts; tourism; hypermobility--Differing theoretical frameworks and perspectives on ST: evolution; critical moment; hypermobility; exemplary models; transition/multi-level perspective (MLP); what previous 889 classes have done for their Group Projects.

**2. Jan. 16:** Historical considerations and Major factors in sustainable transportation:


**Presentation and discussion topics:**
--Hypermobility and its manifestations--The way we were or were not --paths taken and not taken--Critique of conventional views of transport history--Weight of the past on present transportation planning, structure and service--Social and cultural patterns (the “fly-drive-JIT culture”)--Land use/urban design connections--Governmental/Civic/Policy factors (priorities, traditions, citizen influences, etc)--Planning factors (including transit planning)—planning styles--socialization into the “car culture;”” films and popular media; automobile advertising—given all the forces arrayed against it, is sustainable transportation possible? **Due:** (1)Your ranking of which work/presentation group you want to be in for Course Project. (2) Title(s) of one (or more) journal article(s) you propose to review and present. (3) Title(s) of one (or more) book(s) you propose to review and present.
Recommended: Vuchic, V.; “The Family of Transit Modes” in (2007) Urban transit: systems and technology; Chapt. 2, sec. 2.3 (on reserve and available in class files in SURP office);
Project team interest area preference proposals due
Presentation and discussion topics:
--What is a mode? Hybrid modes (e-bike, tram-train) What is the “family of modes?”--Modal performance; in isolation or interrelatedness? (networks or disconnects?)--Uni-modal, multi-modal or intermodal approaches?--Policy/planning issues regarding various modal and infrastructural commitments.--Divergences between the “ideal” (“test track”) and the “real.”—Urban space (time-area) consumption as an underexamined transportation modal effect.--Environmental effects of various modal and infrastructure commitments--Walking, bicycling, transit; the misfit between perceptions and realities--aviation, maritime, intercity rail (brief overview), modal competition or cooperation?-- Modal energy intensities ---- Efficient vehicles or efficient systems and cities? Broad issues for public transit.
Due: Instructor will communicate, before or by this class, with you about:
(1) your Course Project preference; (2) your article preference; (3) your book preference

Presentation and discussion topics: Types of transit systems; styles of transit planning; types of transit routes (regular, peak, express, specialty); differences between large city, small city, suburban, rural transit; public viewpoints on transit; transit in the media; What is a “transit metropolis?”; Transit Oriented Development (TOD) or Transit Adjacent Development (TAD)?
Activity Due: Intermodal exercise (for discussion and to be handed in)

5. Feb. 6: Transit 2: Nuts & bolts issues and case studies (Visit from Kingston Transit?)
Presentation and discussion topics:
--transit examples from Kingston, Queen’s, and around Canada and the planet--transit finances; revenues, subsidies, investments--transit planning and operations--transit politics and policies; is the McCoy shuttle a “transit service?”; is it needed?

6. Feb. 12: Transportation Energy, Freight Movement, Economics & Environmental Issues: and
Public participation in planning and policy: (Possible Speaker T.B.A.)

**Readings & Resources: Required:** *Introduction To Sustainable Transportation*, Chaps. 5, 6, 7

**Presentation and discussion topics:**

-- Globalization (fast food/fast travel?) vs Localization (slow food—slow travel?)—Interactions and relations between freight and passenger transport—Comparisons; US/Canada/EU—Case Study: “The well-travelled yogurt jar,”-- Is slow food realistic? Different perspectives on “Green Transportation,” transportation “footprints,” transportation profile for your favorite staples, etc.

--Investment analysis and strategies; public and private--Privatization versus public sector “natural monopolies?”--How are transportation costs calculated and accounted for in society? Government? Universities?--Comparison of various economics-based orientations and ideologies and their consequences for transportation investment, performance, externalization or sustainability?--your personal transportation economics-finances-investment strategy--Subsidization or full-cost pricing? (“Getting the prices right”) Bundling/unbundling of costs.--Who is the public? What is “public?”--Hierarchical or participatory planning and policy--Types of participation and approaches to participation--Case studies: Bogota, Curitiba, Boulder-- How to improve public participation and deliberation--Are online communities participative?--Your observed meeting impressions (if you’ve been able to attend a public meeting, especially the City of Kingston’s EITP or full council, where citizen input was allowed?)

Feb. 19: (no class; Reading Week; don’t forget to take the text book along to the Caribbean)

7. Feb. 27: New Paradigm: Planning and policy for sustainable transportation and Models for sustainable transportation and forces working against them.

**Readings & Resources: Required:** *Introduction To Sustainable Transportation*, Chap. 8;


**Presentation and discussion topics:**

----Sustainability versus business as usual (BAU)--Elements of sustainable planning (TDM, backcasting, applying economics, etc)--Integrated policy, integrated planning.--Emerging phenomena; Active transportation/healthy communities--Public transportation; some system approaches are more sustainable than others.--Intercity transportation; Cars, trains or planes?--Freight sustainability--The pro and anti-sustainability forces--What could move city, provincial and federal planning and policy away from BAU?--Why are the national and international levels so difficult for sustainability actions?; Why are cities more fertile territories for sustainability?; Urban design; which cities you know are moving towards sustainable transportation, and how?--From our experience what are some exemplary cities, regions, policies, programs, plans, citizen and NGO efforts?

8. March 6: *Exemplars of Sustainable Transportation: How to grow more exemplars?*
Readings & Resources: Required: Intro to Sustainable Transportation: Chaps. 9, 10, Appendix 2;

Presentation and discussion topics:
What makes for an "exemplar"--Overview of Pedestrian, Walkability and Pedestrianism Issues from these chapters. 1st half of class; then work groups; prepare Group Project Presentations for 2nd half of class; Preston will try to have other rooms for groups available)

8. Mar. 13: Presentations of article and book reviews if not presented previously. Project work groups; prepare Group Project Presentations (meet in class, Preston will try to have other rooms for groups available) Invitation list and RSVPs for April 3?

9. Mar. 20: Group Project Presentation rehearsal and final tune-up

10. Mar. 27: Group Project Presentation.

11. April 3: No class; work on final drafts of work to be submitted (before April 10 welcome)

April 10; Individual and Group Projects Due via e-mail to preston.schiller@queensu.ca

Guidance: Article Review/bibliographic Search and book review (indicate your proposed choice(s) of interest by Jan. 23 with a submission of one paragraph for each; instructor will respond within one week in regards to its appropriateness and when you should present; if your choice fits well with a specific class you may be asked to present then; if not there will be a date towards the end of the course) You may also choose to review one of the recommended items or a required article to review at its place in the syllabus.
• Choose a topic or author(s) of interest to you and of relevance to this course' group emphasis.
• Using appropriate bibliographic and search tools develop a brief bibliography (save for appending to your oral and written report submission)
• Decide on one work and proceed to review it in terms of its main points, general relevance, quality (sources, data, readability, etc) and whether its findings and conclusions seem consistent with what it claimed to accomplish.
• Be prepared to give a brief presentation (5 minutes/article-10 minutes/book) to the class.
• Write up and submit to instructor at end of term (April 10 or before)
Guidance: Course Group Project: Walking, Walkability and Pedestrianism

- Submit a brief description of what group or topic you would like to be in by Jan. 23 class; see more below.

Possible areas of focus (the list will change, as will issue groupings, after class deliberations):

- **Walking**:
  -- Human Development and walking
  -- Basic necessities (personal)
  -- Community Necessities: Operations and hardware (sidewalks, crosswalks, traffic controls, other system issues?)
  -- Walking and health
  -- Transit and Walking

- **Walkability**:
  -- What is “walkability”?
  -- Review of research studies.
  -- What are the elements of walkability?
  -- Policy and planning environments
  -- Financing and related (investment, revenue streams—current and potential)
  -- TOD and walkability
  -- Transit and walkability

- **Pedestrianism**
  -- Definitional issues
  -- Models for comparison and cost/performance comparisons
  -- Financing and related (investment, revenue streams—current and potential)
  -- Review of studies
  -- What is the problem that pedestrianism is supposed to solve?
  -- Who and where is the market for pedestrianism?
  -- What are some other countries experiences?
  -- Pedestrianism and sustainability
  -- Transit and pedestrianism
  -- TOD and pedestrianism

- For the Jan. 23rd class students should have decided upon an area of interest and submitted their proposal (100-250 words +/-. Submissions will be returned with comments by the next class; it is possible that students will have to do extra work on their submissions and resubmit before they are finally approved for proceeding with the proposal.

The instructor will review and respond to the proposals and then group students in teams accordingly. It is possible that other topic areas or sub-areas will emerge in addition to or supplemental to those identified above. It is also possible that there may need to be some readjustments made in order to assure that all necessary areas are addressed. After teams are formed the following needs to occur:
  -- Nominate a team spokesperson/representative (for communications with prof./other teams)
  -- Each team will develop a problem statement and outline of how they will approach their issue.
  -- Collection of documents and other materials relevant to their project.
  -- Interview stakeholders and key players
  -- Develop analysis
  -- Proceed from analysis to findings and proposals.
  -- Each team should prepare a brief presentation (15-20 minutes, max. + discussion) for April 3.
Guidance: Intermodal Exercise (Please use the following as a template for your submission)

Due: Jan. 30

The student will plan and undertake a trip by public transport: From your residence to a local transit stop or station and then to an intercity railway or coach station. One direction of your trip should be on a Kingston Transit Express Bus, the other direction should be one a regular Kingston Transit route(s)?—you may need to transfer for either direction. It would be great if this could be combined with an actual intercity rail or coach trip (optional), if not a “virtual” rail or coach round-trip could be taken by exploring VIA Rail’s website and that of Coach Canada/Megabus, choosing a destination and exploring what sorts of public transportation services can be accessed at the destination to your ultimate destination (a family visit, a performance, a friend’s house, etc.) and back.

The student will report on several aspects of the trip:

I. Pedestrian component: It is assumed that the first and last legs, at least, of this trip will be as a pedestrian. Please observe and report on the following:

   A. Whether or not there is a sidewalk or path from your residence to the nearest transit stop or station.
   B. The quality of this pedestrian facility;
      1. Is it separated at all from the traffic lanes of the street? Please describe.
      2. How wide is it?
      3. What is the quality of the sidewalk or walking path?
      4. Are crosswalks marked or signed?
      5. Are there traffic controls at crossings with heavy traffic streets?
      6. Evaluate the ease or difficulty of crossing streets along your route.
      7. How much traffic did you encounter?
      8. Evaluate the relative pleasantness/unpleasantness of this segment.

II. Transit component: Please observe and report on the following:

   A. Please evaluate the ease of obtaining transit information as well as its quality.
      1. How you obtained the information you needed to use in planning your trip.
      2. Was the information accurate?
   B. The transit stop or station:
      1. Is the stop/station well marked and recognizable? At what distance could you see the sign?
      2. Is there transit information (map, schedule, etc.) at the transit stop-station?
      3. Is there shelter at the stop-station? How adequate is it? Is there a bench or seating?
      4. Does it have adequate night lighting? Does it feel "secure?"
      5. Is there a public phone there or nearby, or means of communication with the transit service?
      6. Is there a public bathroom at the stop-station or nearby? Any public amenities or stores?
      6. Please note the presence or absence of other amenities or necessities.
   C. The transit trip:
      1. How does the combined walk to stop or station, wait for bus (or train), and time on vehicle compare with the time the same trip would take door-to-door by automobile?
      3. Are stops/stations identified over the P.A. system? Is there an electronic signboard at the front of the vehicle identifying the next stop-station?
4. Is there transit information available on the vehicle? (maps, schedules, etc.)
5. Other observations? (Technology, hardware, noise, etc., etc.)

III. The railway or inter-city coach station:
A. Please evaluate the ease of obtaining transit information at the railway station as well as its quality.
B. Access and the intermodal connection:
   1. Describe and evaluate the connection/interface of transit and the railway station, also please describe and evaluate the situation for pedestrians and cyclists at and around the railway station; is there a paved and lighted path or walkway connecting the street to the station? Is there bicycle storage? Secure? Covered?
   2. Describe and evaluate signage and information displays.
   3. Describe and evaluate the interface with station personnel.
   4. What access modes, other than transit, appear to be accommodated at the station? How does transit's accommodation compare with the accommodation of other access modes?
   5. Please describe the amenities/utilities at the station.
C. The intercity trip: (virtual or real)
   1. How does the combined wait time at the station plus time on intercity conveyance compare with the time the same trip would take by automobile?
   2. How does the out-of-pocket cost compare?
   3. Please describe the comfort of the trip itself (if real rather than virtual).
   4. Please describe on-board information. (if real rather than virtual; see related transit items above)
D. The destination station: Repeat of III.B. above.
E. (Optional): The pedestrian and transit segments at destination: repeat of I and II above.

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Readings:

Req. = Required; Rec. = Recommended;

**Text:** *An Introduction to Sustainable Transportation: Policy, Planning and Implementation* (2010), Preston L. Schiller, Eric C. Bruun & Jeffrey R. Kenworthy (Routledge-Earthscan) available at Queen’s bookstore; text and e-book on reserve at Stauffer Library. Other assigned or recommended readings will be available on reserve at Stauffer Library, on the web, in the SURP office, or on the class e-site or somewhere.

**More PEDESTRIANISM/WALKING SOURCES to be added**

Class Meetings 1-7 (General Sustainable Transportation) Required or Recommended:

--Adams, John (2006), “Cross-thinking about sustainability: Hypermobility: a challenge to governance” 11/05/2006 (go to: http://www.john-adams.co.uk/presentations/ then scroll down to 11/05/2006 and download (Req. week 2)


--David Banister, 2000, “Sustainable urban development and transport – a Eurovision for 2020” *Transport Review*, 20, 1, pp113-130 (good discussion and examples of backcasting, scenario building.) (Rec. Week 7)


--Pucher, J. (1998). “Back on track: Eight steps to rejuvenate public transportation in Canada.” Alternatives Journal, 24(1), 26-34. (pdf) weblinks to be made available and/or copies to be available in SURP office 889 file; (Req. Week 5)


--Schiller, Preston L (2011), "Getting outside the box of the automobile" *Canadian Civil
--Strickland, James; “Energy efficiency of different modes of transport”
http://bc.transport2000.ca/debate/issues/pollution.html; Rec. Week 5
--Vuchic, Vukan; “The Family of Transit Modes” in (2007) Urban transit: systems and technology; Chapt. 2, sec. 2.3 (on reserve and class files in SURP office) (Rec. Week 3)