

Transportation Finance, Planning & Regulation

Course Description

This course further develops context and concepts introduced in the *Transportation Systems & Operations* course. Students will learn how transportation systems evolved through technological change and private and public investments. The course will explore government and private frameworks to build and maintain transportation infrastructure. Students will analyze transportation regulatory systems and discuss future funding scenarios and investment strategies within these systems. The course will broadly address the global transportation system with an emphasis on the US and Vermont. Recommended prior learning: *Transportation Systems and Operations*.

Essential Objectives

1. Describe the legal and regulatory environment within which transportation decisions are made in Vermont, including: municipal development and access regulations; state transportation agency, legislative and gubernatorial roles; and the impacts of USDOT, USEPA, and Congressional actions.
2. Understand the dynamic environment within which transportation planning, finance, regulation and project selection takes place in Vermont and at the national level. Examine the opportunities, constraints, and influences affecting transportation.
3. Understand the history and evolution of transportation system technology and investment.
4. Recognize the role of emerging technologies in improving transportation efficiencies.
5. Describe and compare the various sources of transportation finance and their ability to address future needs.
6. Understand the coordination of local, regional, statewide and national needs with transportation system planning, financing and project implementation.
7. Describe the influence of sustainability trends on transportation operations and finance.
8. Demonstrate the ability to apply a multimodal approach to transportation analysis and problem solving.

Textbook

The Geography of Transport Systems, third edition, 2013, by Jean-Paul Rodrigue et. al., Routledge.

Methods

Readings, video, class field trips, guest speakers, case studies, homework, short papers, class discussions, etc.

Grading Criteria Factors

Attendance will account for 5% of the course grade; classroom participation 25% (**please come prepared for each classroom discussion**); the two exams 50% (25% each); the two short papers 10% each.

Syllabus

CLASS	TOPICS, ETC.	READINGS, ASSIGNMENTS
#1	<p>Preliminaries, introductions, classroom protocols and learning environment</p> <p>Overview of course description, objectives and class syllabus</p> <p>Content Background I - Lecture and discussion on the following:</p> <ol style="list-style-type: none"> Defining transportation, accessibility vs. mobility The existing global transport system and how it evolved Transportation and the evolution of cities <p>View film: <i>The End of Suburbia</i></p>	<p>Read pages 4-22 of "Transportation 101" http://t4america.org/docs/Transportation%20101_1.pdf</p> <p>Read pages 1-7 of <i>History and Politics of Transportation in the US</i> http://www.saferoutestoolschools.org/documents/Transportation_History.pdf</p> <p>Read Textbook Chapter 6 section on "Transportation and Urban Form:" http://people.hofstra.edu/geotrans/eng/ch6en/conn6en/ch6c1en.html</p>
#2	<p>Content Background II</p> <p>Our transportation system runs almost entirely on petroleum derived fuels: Gasoline, diesel, jet fuel. This fossil fuel dependency has many consequences - some of which we seldom, if ever, think about.</p> <p>Also continue class #1 discussion on transportation history and background - The transport system at the US, VT and local levels</p> <p>Guest Speaker: Richard Watts, UVM, Transportation Past and Future</p> <p>Finish viewing <i>The End of Suburbia</i></p>	<p>Read: "A Tank of Gas, a World of Trouble," from August 2006 <i>Chicago Tribune</i>, See: http://www.chicagotribune.com/chi-oil-email_0,1188245.story In class discussion to follow</p> <p>Read: Textbook, chapter 2 concepts, "Transportation and Spatial Structure" http://people.hofstra.edu/geotrans/eng/ch2en/ch2menu.html</p>
#3	<p>Transportation Planning I</p> <ol style="list-style-type: none"> Transportation Planning vs. project development The coordination of local, regional, statewide and national needs with transportation system planning, financing and project implementation – an overview of urban, regional and statewide planning, the parties, their coordination and their respective roles The multimodal approach to transportation analysis and problem solving <p>CASE Study: Chittenden County 2012 Survey</p>	<p>Textbook, chapter 9 concepts, "Transportation Planning and Policy" See: http://people.hofstra.edu/geotrans/eng/ch9en/conn9en/ch9c1en.html,</p> <p>2012 Chittenden County Survey Report: http://www.ccrpcvt.org/library/other_surveys/Trans_Survey_2012_Final_Report_20121108.pdf</p> <p>Assignment: Go to http://www.walkscore.com/ Get the score for where you live. Write a short paper commenting on how this was calculated, whether or not you agree and why, and what value this tool provides.</p>
#4	<p>Transportation Planning II</p> <ol style="list-style-type: none"> Transportation and the environment Transportation and land use Transportation and climate change – mitigation and adaptation Transportation and Demographics – 	<p>Read: <i>Aging in Place, Stuck Without Options</i> by T4America See: http://t4america.org/docs/SeniorsMobilityCrisis.pdf</p>

	<p>Impacts from an ageing population</p> <ul style="list-style-type: none"> e) Analytical Tools for transportation planning f) Setting Future Transportation Policy <p>Guest Speakers: Pam Brangan and Jason Charest (Chittenden County Regional Planning Commission - CCRPC) Geographic Information Systems (GIS) and Transportation Demand Models</p>	<p>Textbook, chapter 8 concepts, "Transportation Energy and Environment" http://people.hofstra.edu/geotrans/eng/ch8en/ch8menu.html</p> <p>Assignment: Go to http://maps.ccrpcvt.org/ChittendenCountyVT/ Explore the mapping capabilities here by examining the many data layers. Come to class prepared to discuss how this tool can help transportation planning.</p>
#5	<p>Transport Finance in the US I</p> <ul style="list-style-type: none"> a) Government Programs – Federal, State and Local b) Funding Sources at each government level c) Private sector role –Public/private partnerships (PPP) – Design/Build and other emerging options <p>Potential Case Study : Efforts by some States to eliminate gas taxes and switch to other revenue sources</p> <p>Guest Speakers: Matt Langham (VTrans) and Christine Forde (CCRPC), Transportation Programming and Funding</p>	<p>Read pages 23 - 29 of "Transportation 101" http://t4america.org/docs/Transportation%20101.pdf</p> <p>Read pages 21 – 36, "Equity of Evolving Transportation Finance Mechanisms" http://onlinepubs.trb.org/onlinepubs/sr/sr303.pdf</p> <p>Textbook chapter 7, The financing of Transportation Infrastructure: http://people.hofstra.edu/geotrans/eng/ch7en/appl7en/ch7a2en.html</p> <p>Read chapter 1 of: http://www.transportation-finance.org/pdf/50_State_Review_State_Legislatures_Departments_Transportation.pdf</p> <p>See:http://www.businessweek.com/articles/2013-01-31/virginias-bold-plan-to-fund-roads-without-a-gas-tax</p>
#6	<p>Transport Finance in the US II</p> <ul style="list-style-type: none"> a) Transportation and Social Equity b) Problem - Current sources of transportation finance and their inability to address future needs c) Future funding scenarios and investment strategies <p>Potential Case Studies: 1) The Chittenden County Metropolitan Transportation Plan (MTP) Financial Plan, 2) Chittenden County Transportation Authority's (CCTA) efforts to reduce dependency on local property taxes</p> <p>Guest Speakers: Joe Segale (VTrans), Aaron Frank (CCTA), Transportation Funding Challenges</p>	<p>Read chapter 2 of: http://www.transportation-finance.org/pdf/50_State_Review_State_Legislatures_Departments_Transportation.pdf</p> <p>Read pages 1 -19 and 39 – 63 of TRB Equity Report: http://onlinepubs.trb.org/onlinepubs/sr/sr303.pdf</p> <p>UPLOAD MTP Financial Plan to moodle</p> <p>Review: http://www.vtppi.org/tranfund.pdf</p> <p>Assignment: Following review of VTPI link above, come prepared to make the verbal case for what the student feels is the best suited transit funding sources in Vermont. Roundtable discussion.</p>
#7	<p>In class, written, Mid-Term Exam</p>	

<p>#8</p>	<p>Transportation Law & Regulations I</p> <ul style="list-style-type: none"> a) Legal Frameworks – International, National, State and Local b) International and national rules c) Impacts from treaties d) USDOT, Code of Federal Regulations (CFR) e) USEPA, National Environmental Policy Act (NEPA) <p>Potential Case Studies: 1) Consequences if VT exceeds Clean Air Act Amendment (CAAA) regulations on air emissions, 2) Regulatory implications of defining CO2 as pollutant</p> <p>Guest Speaker: Gina Campoli (VTrans) Environmental Regulations and Transportation</p>	<p>Read Textbook Chapter 5 Concept 1: http://people.hofstra.edu/geotrans/eng/ch5en/conn5en/ch5c1en.html</p> <p>Review: US Environmental regulations http://www.dot.gov/regulations http://www.epa.gov/OMS/stateresources/laws.htm</p> <p>Read: US transportation regulations: http://www.fhwa.dot.gov/map21/summaryinfo.cfm</p>
<p>#9</p>	<p>Transportation Law & Regulations II</p> <p>Moves toward Deregulation – US and international:</p> <ul style="list-style-type: none"> (1) Aviation (2) Rail (3) Roads (4) Public Transport <p>Potential Case Study: Pros and Cons of airline deregulation and impacts to Burlington International Airport (BTV)</p> <p>Guest Speaker: Bob McEwing (BTV) History of Deregulation on BTV</p>	<p>Deregulation: http://www.internationaltransportforum.org/jtrc/DiscussionPapers/DP200920.pdf</p> <p>Textbook Chapter 9, rail deregulation: http://people.hofstra.edu/geotrans/eng/ch9en/app19en/ch9a1en.html</p> <p>Assignment: The CATO Institute is a libertarian think tank advocating for less government in virtually all sectors including transportation. Review this site: http://www.downsizinggovernment.org/transportation and come prepared to advocate for, or argue against, government involvement in transportation.</p>
<p>#10</p>	<p>Transportation & Politics I</p> <p>The Politics of Transportation Decision-Making - The opportunities, constraints, and influences, within which transportation planning, finance, regulation and project selection take place.</p> <ul style="list-style-type: none"> a. Recent history - ISTEA and its successors b. The congressional process to develop authorization bills c. Republican vs Democratic/Rural vs. Urban priorities d. The politics of the federal gas tax e. The roles of USDOT and USEPA <p>Guest Speaker: Chris Cole (VTrans) Transportation and politics in VT and the US</p>	<p>Read: http://www.fhwa.dot.gov/planning/publications/transportation_decision_making/decisionmaking.pdf</p> <p>Assignment: Select two US House Representatives serving on the House Transportation and Infrastructure Committee - http://transportation.house.gov/about/membership one representing an urban district and the other a rural one and write a short paper comparing/contrasting their transportation policy statements from their websites.</p>

#11	<p>Transportation & Politics II Local/Regional – Selectboards, City Councils, Metropolitan Planning Organization (MPO) roles 1) Regional vs. local at the MPO 2) Transit and VTrans roles 3) The Chittenden County Transportation Improvement Program (TIP) and its development process Local government’s (Selectboards, City Councils, Village Trustees) role 1) Access permits 2) Investment decisions 3) Road foremen/DPW directors The citizens’ role; Planning for the regional airport (BTV); Problems with political/governmental involvement in transportation</p> <p>Potential Case Study: Burlington International Airport (BTV) 2013 Strategic Plan</p> <p>Guest Speaker: Karen Paul (Burlington City Council) on the BTV Plan</p>	<p>Read Textbook Chapter 9 section: http://people.hofstra.edu/geotrans/eng/ch9en/conn9en/table_common_problems_govt.html</p> <p>Assignment: Attend 1) a meeting of the VT House or Senate Transportation Committee in Montpelier and take notes describing their deliberations and your reaction to the process; or 2) attend a local selectboard/city council meeting when transportation issues are discussed and prepare notes on the topics and process.</p> <p>NOTE: This assignment will be made Week 1 or 2 and student observations will be discussed during class #11.</p>
#12	<p>Emerging Technologies, Sustainable Transportation & Climate Change I a) Intelligent Transportation Systems (ITS) to improve transportation efficiencies b) Emerging transportation fuels c) Sustainability Concepts and their role in future transportation decisions i) Defining Sustainability – environmental, social, economic, transportation ii) Sustainability Strategies iii) Transportation and public health iv) Financing sustainable transport</p> <p>Potential Case Study: ECOS, the Chittenden County Regional Sustainability Plan</p> <p>Guest Speaker: Ed DeMott or Heather Danis, VT Dept. of Health</p>	<p>ITS Primer, read: http://ntl.bts.gov/DOCS/itsprime.html</p> <p>Alternative transportation fuels, read: http://ec.europa.eu/transport/themes/urban/cts/future-transport-fuels_en.htm, http://ec.europa.eu/transport/themes/urban/cts/doc/jeq_cts_report_201105.pdf</p> <p>General Transport Sustainability, review: http://www.itdp.org/</p> <p>Transportation & Health, read: http://www.apha.org/NR/rdonlyres/43F10382-FB68-4112-8C75-49DCB10F8ECF/0/TransportationBrief.pdf</p>
#13	<p>Emerging Technologies, Sustainable Transportation & Climate Change II a) Sustainable Transportation in the age of climate change b) International Initiatives</p>	<p>Read Textbook Chapter 8 section on Transport & Sustainability: http://people.hofstra.edu/geotrans/eng/ch8en/conc8en/ch8c4en.html</p> <p>Climate Change 101, read:</p>

<p>#13 Cont'd.</p>	<p>c) National Initiatives d) State and Local Initiatives – UVM and Champlain College</p> <p>Guest Speakers: Goia Thompson (UVM) and Val Esposito (Champlain) on college/university sustainability initiatives, especially those related to transportation</p> <p>The internet is rife with what's purported to be the transportation technologies of the future. There's plenty on technology but little on practicality – like funding, operations and responsibilities.</p>	<p>http://www.c2es.org/docUploads/climate101-overview.pdf</p> <p>German example, read: http://policy.rutgers.edu/faculty/pucher/Freiburg_IJST_BuehlerPucher.pdf</p> <p>US Initiative, <i>Moving Cooler</i>, read: http://www.fta.dot.gov/documents/MovingCoolerExecSummaryULI.pdf</p> <p>Assignment: Explore the internet's offerings on future transportation and come to class to share what you've learned but also the ways you see these new technologies getting implemented.</p>
<p>#14</p>	<p>Challenges and the Future of Transportation</p> <p>Loose ends, Final exam review, discussion of transportation careers</p> <p>Guest Speaker: Karen Glitman (Vermont Energy Investment Corporation – VEIC)</p> <p>View a series of short films on Sustainable Transportation</p>	<p>Textbook Chapter 2, read: http://people.hofstra.edu/geotrans/eng/ch2en/conn2en/ch2c5en.html</p> <p>The end of oil? See: http://transportbeyondoil.wordpress.com/</p>
<p>#15</p>	<p>In class, written, Final Exam</p>	