

URBPLAN-721: Applied Planning Methods

Syllabus (9/3/13)

Fall 2013—3.0 Credits
Tuesday, 5:30 p.m. to 8:10 p.m., AUP Room 194

Course Instructor: Dr. Robert Schneider (rjschnei@uwm.edu)

Course Teaching Assistant: Josh Depies (jwdepies@uwm.edu)

Schneider Office Hours: M, 11:00 a.m. to 12:30 p.m. & TU, 1:30 p.m. to 3:00 p.m., AUP Room 334

Depies Office Hours: TU, 12:00 p.m. to 2:00 p.m. & TH, 12:00 p.m. to 2:00 p.m., AUP Room 208

Course Background

As a professional planner, you will be an important participant in long-term decision-making processes. These decisions are often complicated and controversial. Some decisions may have consequences for the natural and built environments for decades and even centuries. Other decisions may create institutional frameworks that establish how organizations regulate development, communicate with the public, evaluate proposals, and measure progress toward long-range goals. While many factors contribute to these decisions, including political forces, data are almost always part of the argument. As a planner, people will look to you to understand, collect, analyze, and present data that can help inform long-term decisions.

This graduate-level course will help you learn about methods that are often used in the planning field. Broadly, the course is organized into five main parts: 1) understanding and interpreting data, 2) collecting secondary data, 3) collecting primary data, 4) analyzing data, and 5) presenting results. Advanced statistical analysis methods (e.g., regression modeling) and Geographic Information Systems are also common techniques used in planning practice, but they are covered in other courses.

Certain methods are used regularly in particular branches of the planning field (e.g., housing, economic development, transportation) but are less common in other branches. Therefore, you may have a natural interest in some methods but not in others. Keep an open mind. The approaches taught in this class may grow on you and may be useful in future years.

Students come to the urban planning field from many different backgrounds, so you may already be familiar with some of the methods covered in this course. Even if you are comfortable with a particular technique, it is usually possible to improve your understanding of the method. In addition, if you already have some experience, this course represents an opportunity to share your knowledge with other students. The best professional planners continue to teach, learn, and collaborate with their peers throughout their careers, so this course will facilitate this type of interaction. Several assignments are set up to allow students to collaborate—working together will help everyone develop and refine their skills.

The course includes lectures, assignments, and a final project, and these are discussed in greater detail, below.

I am looking forward to a great semester with all of you!
Bob

Required Text

- *The Planner's Use of Information*, edited by H. Dandekar. Second Edition, Chicago: Planners Press, 2003.

This book is available from the UWM Bookstore or from your favorite online bookseller.

Readings and Class Participation

A different topic will be covered each class session. The readings listed under each session below are required readings that should be done before you get to class. Some of the readings will come from the required text, and others will be posted under "Content" on the class D2L website (<http://d2l.uwm.edu/>, Applied Planning Methods - UWMIL_2139_1_URBPLAN_721_SEC001_41871). All students are expected to read all the assigned readings BEFORE class and to actively participate in discussions.

In order to provide a productive learning environment for everyone, it is important for all students to engage in class. This includes showing up for class and asking questions and participating in discussions. In the interest of promoting a productive learning environment for all, please:

- Arrive on time and stay for the duration of class.
- Turn off or mute audible cell phones, pagers, and watch alarms for the duration of class.
- Turn off laptops unless instructed otherwise and refrain from accessing the internet on any other device during class.

Behaviors that detract from class learning will be penalized in the class participation grade. A sign-in sheet will usually be circulated at the beginning of class. Class participation may also include several quizzes on readings throughout the semester.

Assignments

The course assignments are designed to help you practice understanding, collecting, analyzing, and presenting planning-related data. Your assignments should be written to a professional standard, and writing quality will be considered in your grades. Communicating your ideas clearly and effectively through writing is essential for your career, so it is important for this class. For this course, it is appropriate (and encouraged) to discuss and work together on some assignments. For group assignments, only one assignment needs to be submitted for the group, but each person should be able to explain and understand all responses. In addition, group members will evaluate other members' contributions to the group. All assignments should be uploaded to the course D2L site by 5:00 p.m. on the due dates listed. If you have any problems with the D2L site, you can e-mail your assignment to rjschnei@uwm.edu. The assignments are listed below.

For each assignment, track the number of hours you (or your whole group) spends on thinking/preparation and producing the document that you submit. These two hourly numbers should be listed under your name on your assignment. Note that this should be a rough estimate of time, and it will not factor into your grade. In other words, you are graded on the quality of your work, not the time you report (although there may be a correlation). The main purpose of this is to help you understand how long it takes to think, collect data, conduct analyses, and write documents. As a professional, you will develop your own budgets with labor-hours and review budgets from other people with labor-hours, so this is an important but often overlooked skill in school. It may even help you budget your time in future graduate school classes.

Assignment #1: Write a Memo on a Planning Issue (Individual Assignment; Distribute 9/3/13, Due 9/17/13) (10%)

This individual assignment will give you practice summarizing how a planning issue is being portrayed in the media and sifting through media-reported statistics to identify original data sources that are the basis of these statistics. For the assignment, choose one of the following planning issues to study: “big box” store development, Waukesha Great Lakes water use, automated traffic speed enforcement, and the connection between housing vouchers and crime.

Assignment #2: Explore the American Community Survey and other Secondary Data (Work in Pairs; Distribute 9/17/13, Due 9/24/13) (10%)

Use American Factfinder (Factfinder2) (<http://factfinder2.census.gov/>) to find planning-related data for Wisconsin from the American Community Survey (ACS). Use Microsoft Excel (or another spreadsheet program) to analyze geographic characteristics and population, household, and economic trends.

Assignment #3: Collect Field Data (Group Assignment—Group of 4-5; Distribute 9/24/13, Due 10/8/13) (10%)

Develop and use a field data collection instrument to gather information related to housing, economic development, transportation, water resources, or other planning issues in a neighborhood study area of your choice. Use this instrument as a guide to organize your data.

Assignment #4: Design and Implement an Online Survey (Group Assignment—Group of 4-5; Distribute 10/8/13, Due 10/22/13) (10%)

It can be useful to ask a sample of the community about their experiences and opinions during a planning process. This assignment allows you to practice designing and implementing a survey on a planning issue of your choice.

Assignment #5: Apply Common Planning Methods (Individual Assignment; Distribute 10/22/13, Due 11/5/13) (10%)

This assignment will help you learn more about the Milwaukee region and practice using several of the economic analysis methods discussed in class. These methods will include population projections, Gini Coefficient, shift-share analysis, and net present value.

Assignment #6: Conduct a Market Analysis (Group Assignment—Group of 4-5; Distribute 11/5/13, Due 11/19/13) (10%)

Use ArcGIS Business Analyst to conduct a market analysis for a commercial store or restaurant in a Milwaukee neighborhood of your choice. You may choose any common type of business, such as a grocery store, pharmacy, clothing store, or sit-down restaurant.

Final Group Project: Present Results from a Survey (Group Assignment—Group of 4-5; Distribute 11/19/13, Due 12/3/13) (30%)

Analyze data from your own survey (Assignment #4) or another survey besides the ACS (e.g., Wisconsin, Milwaukee, or neighborhood data from national transportation, health, or economic surveys). Present key results from the survey as they apply to a real or plausible planning problem. This will include a two-stage presentation process. The first presentation will be given in the second-to-last class session, and will be an overview of preliminary findings from the survey. This presentation will seek feedback from the public (the class) about which key findings to emphasize and how to present the results in the most relevant way. The second presentation will be a formal presentation of the survey, analysis methodology, and results, framed by the feedback from the previous presentation.

Conduct and Ethics

Much of this class is about gathering data. Cite your sources. If you get information from a printed, online, video or other source, cite it. If you cite a reference word for word, put those words in quotes. Don't using someone else's work as if it was your own without citing it. Citing sources, even if it takes extra time, enhances your professional credibility.

"As a general working definition, the Graduate School considers plagiarism to include both the theft or misappropriation of intellectual property and the substantial unattributed textual copying of another's work."

–University of Wisconsin-Milwaukee Graduate School, "Plagiarism," Website, Available online: <http://www.graduateschool.uwm.edu/research/data-policy/policies/plagiarism/>, August 2013.

Grading

Grades will be given on an A to F scale based on the following components of the class:

- Overall class attendance and participation, including possible quizzes (10%)
- Assignments (60%)
- Final Group Project (30%)

Assignments are due by 5:00 p.m. on the dates listed above. Each calendar day late will result in loss of one grade (i.e., an "A" assignment will be given a "B"). A paper received at 5:01 p.m. on the due date is considered one day late.

The grading scale will be based on points earned out of 100 possible points in each component area.

Number grades correspond with the following letter grades:

98 and above = A+
93 to 97.9 = A
91 to 92.9 = A-
88 to 90.9 = B+
83 to 87.9 = B
81 to 82.9 = B-
78 to 80.9 = C+
73 to 77.9 = C
(and so on)

Class Topics and Reading List

Part 1: Understanding and Interpreting Data

Class 1: Introduction (9/3/13) [Distribute Assignment #1]

Introductions

Course background

Course overview

Examples of how data are used in planning documents & arguments (Examples from Milwaukee Comprehensive Plan components; Milwaukee Bicycle Plan; Milwaukee Sustainability Plan)

Approaches to critique planning documents & arguments

1.1. Dandekar, H. "Introduction" and "A Planning Case Study." In *The Planner's Use of Information*, edited by H. Dandekar. Second Edition, Chicago: Planners Press, 2003. (Read pp. 1-9, 15-20)

1.2. Badger, E. "A Terrifying, Fascinating Timelapse of 30 Years of Human Impact on Earth," *The Atlantic Cities*, Available online, <http://www.theatlanticcities.com/technology/2013/05/terrifying-fascinating-timelapse-30-years-human-impact-earth-gifs/5540/>, May 9, 2013. (Zoom in on the world map to Milwaukee and your hometown area)

1.3. Cable, D.A. University of Virginia, Weldon Cooper Center for Public Service, Demographics & Workforce Group, Reference Data by Stamen Design, <http://demographics.coopercenter.org/DotMap/index.html>, 2013. (Zoom in on the US map to Milwaukee and your hometown area)

Class 2: Critical Thinking and the Political Context (9/10/13)

Finding original data sources

Using data in an argument

Representing opposing viewpoints

Anticipating opposing arguments

Anticipating public reaction

Disclosing limitations and considerations

Writing memos

Basics of Jobs, Labor Force, and Unemployment

2.1. Ford, K. "Planning in the Political Context." Chapter 11 in *The Planner's Use of Information*, edited by H. Dandekar. Second Edition, Chicago: Planners Press, 2003. (Read pp. 341-373)

2.2. Armentrout, V.N. "Written Communication." Chapter 9 in *The Planner's Use of Information*, edited by H. Dandekar. Second Edition, Chicago: Planners Press, 2003. (Read pp. 263-271)

2.3. Hornstein, A. and K. Rhodes. "Will a Surge in Labor Force Participation Impede Unemployment Rate Improvement?" Federal Reserve Bank of Richmond Economic Brief, EB13-08, Available online, https://www.richmondfed.org/publications/research/economic_brief/2013/pdf/eb_13-08.pdf, August 2013.

Part 2: Collecting Secondary Data

Class 3: The US Census and American Community Survey (9/17/13) [Distribute Assignment #2]

American Community Survey background
Different types of data tables available (e.g., housing age; journey to work)
Sampling from a population
Sample size
Margin of error
Basic statistical concepts
MS Excel database functions
MS Excel pivot tables

3.1. US Department of Commerce, US Census Bureau. *A Compass for Understanding and Using American Community Survey Data: What General Data Users Need to Know*, Available online, <http://www.census.gov/acs/www/Downloads/handbooks/ACSGeneralHandbook.pdf>, October 2008. (Read pp. 1-15, 22-24, A18-A21)

3.2. US Department of Commerce, US Census Bureau, American Community Survey Questionnaire, Available online, <http://www.census.gov/acs/www/Downloads/questionnaires/2013/Quest13.pdf>, 2013.

3.3. US Department of Commerce, US Census Bureau. "American FactFinder," Available online, <http://factfinder2.census.gov/>, 2013.

3.4. US Department of Commerce, US Census Bureau, Census A to Z: <http://www.census.gov/main/www/a2z/>, 2013.

3.5. US Department of Commerce, US Census Bureau, *2007-2011 ACS 5-Year Summary File Technical Documentation*, Appendix E: Detailed Tables for the 2007-2011 ACS 5-year Estimates, Available online, http://www2.census.gov/acs2011_5yr/summaryfile/ACS_2007_2011_SF_Tech_Doc.pdf, 2012. (Skim Appendix E)

3.6. US General Accounting Office. *Quantitative Data Analysis: An Introduction*, GAO/PEMD-10.1.11, Available online, <http://www.gao.gov/special.pubs/pe10111.pdf>, May 1992. (Read p. 20-50) (Optional)

3.7. Niles, R. "Statistics Every Writer Should Know," Available online, <http://www.robertniles.com/stats/>, 2013. (Optional)

Class 4: Other Major Planning Data Sources (9/24/13) [Distribute Assignment 3]

Open Street Map
LEHD "On The Map"
Economic Census
Bureau of Labor Statistics
US Census Bureau County Business Patterns
Local Data Sources (Map Milwaukee; Crime Data)
Performance measures

4.1. Yen, M. and G. York. "Information from Secondary Sources." Chapter 3 in *The Planner's Use of Information*, edited by H. Dandekar. Second Edition, Chicago: Planners Press, 2003. (Read pp. 80-86, 92-122)

4.2. US Department of Commerce, US Census Bureau. Longitudinal Employer-Household Dynamics (LEHD), Available online, <http://lehd.ces.census.gov/>, 2013. (Explore the "On The Map" tool)

4.3. Summary of Common Planning Data Sources. Available from Course D2L site.

4.4. Wisconsin Department of Health and Family Services (DHFS). *A DHFS Simple Guide to Performance Measurement*, Available online, <http://www.dhs.wisconsin.gov/publications/P0/P00214.pdf>, 2005.

4.5. Wisconsin Department of Transportation. *Mobility, Accountability, Preservation, Safety, Service (MAPSS) Performance Improvement Report*, Available online, <http://www.dot.state.wi.us/about/performance/docs/perf-report.pdf>, July 2013. (Skim document)

Part 3: Collecting Primary Data

Class 5: Field Data Collection (10/1/13)

Research question (purpose)

Data collection forms

Database organization

Community participation in field research

Objective vs. subjective data

Variation over time

Google Earth

5.1. Dandekar, H. "Field Methods for Collecting Information," Chapter 1 in *The Planner's Use of Information*, edited by H. Dandekar. Second Edition, Chicago: Planners Press, 2003. (Read pp. 23-48)

5.2. Federal Highway Administration, National Highway Traffic Safety Administration, Environmental Protection Agency, National Center for Safe Routes to School, and Pedestrian and Bicycle Information Center. *Walkability Audit: How Walkable is Your Community?* Available online, http://katana.hsrb.unc.edu/cms/downloads/walkability_checklist.pdf?/pdf/walkingchecklist.pdf, No Date.

5.3. National Park Service, National Center for Preservation Technology and Training in collaboration with Heritage Emergency National Task Force. *Rapid Building and Site Condition Assessment*, Developed for the Federal Emergency Management Administration, Available online, http://www.parks.ca.gov/pages/22491/files/ncptt_building_and_site_condition_assessment_form.pdf, 2005.

5.4. Crump, J. *A Guide to Neighborhood Housing Assessment: A Student Workbook*, University of Minnesota Housing and Community Development Course, Available online, <http://faculty.design.umn.edu/jrcrump/pdf/assessment.pdf>, No date. (Read Appendix 3: Housing Conditions Survey Form)

5.5. Community Planning Workshop. *West University Neighborhood Housing Condition Assessment*, Draft Report prepared for City of Eugene Planning and Development Department, Available online, http://pages.uoregon.edu/schlossb/arcpad/housing/WUN_Housing_Assessment.pdf, August 2004. (Skim Appendix C: External Condition Evaluation Methodology)

Class 6: Survey Design (10/8/13)

Research question (purpose)

Survey structure

Survey questions

Continuous, Categorical, Nominal, Ordinal, Interval, Ratio

6.1. Nishikawa, N. "Survey Methods for Planners," Chapter 2 in *The Planner's Use of Information*, edited by H. Dandekar. Second Edition, Chicago: Planners Press, 2003. (Read pp. 49-73)

6.2. Fink, A. *How To Conduct Surveys: A Step-By-Step Guide*, Fourth Edition, Los Angeles: Sage, 2009. (Read pp. 13-31, 35-38, 44-45)

6.3. US Department of Commerce, US Census Bureau, American Community Survey Questionnaire, Available online, <http://www.census.gov/acs/www/Downloads/questionnaires/2013/Quest13.pdf>, 2013. (Review form, thinking about how carefully it was constructed)

Class 7: Survey Sampling and Distribution & Fundamentals of Analysis (10/15/13)

Target population

Survey distribution

More sampling (types of error; bias)

Nonprobability sampling (convenience sampling; availability sampling)

Response rate

Sample size

Confidence level

Statistics Basics

Unit of analysis (more)

Limitations and considerations

7.1. Fink, A. *How To Conduct Surveys: A Step-By-Step Guide*, Fourth Edition, Los Angeles: Sage, 2009. (Read pp. 51-63, 77-86, 90-97)

7.2. Groves, R.M., F.J. Fowler, Jr., M.P. Couper, J.M. Lepkowski, E. Singer, and R. Tourangeau. *Survey Methodology*, Hoboken, NJ: John Wiley & Sons, Inc., 2004. (Read pp. 39-60)

7.3. Crepeau, R. "Analytical Methods in Planning." Chapter 4 in *The Planner's Use of Information*, edited by H. Dandekar. Second Edition, Chicago: Planners Press, 2003. (Read pp. 125-140, 143-148)

Part 4: Analyzing Data

Class 8: Common Planning Analysis Methods, Part 1 (Projections) (10/22/13)

Population Projections

Cohort-Component Analysis

Traffic Projections

8.1. Crepeau, R. "Analytical Methods in Planning." Chapter 4 in *The Planner's Use of Information*, edited by H. Dandekar. Second Edition, Chicago: Planners Press, 2003. (Read pp. 143-148)

8.2. Southeastern Wisconsin Regional Planning Commission (SEWRPC). *The Economy of Southeastern Wisconsin*, Technical Report No. 10, Fifth Edition, Available online, <http://www.sewrpc.org/SEWRPCFiles/Publications/TechRep/tr-010-5th-ed-economy-se-wisc.pdf>, 2013. (Skim pp. 1-15, 27-35, 39-40)

8.3. Southeastern Wisconsin Regional Planning Commission (SEWRPC). *The Population of Southeastern Wisconsin*, Technical Report No. 11, Fifth Edition, Available online, <http://www.sewrpc.org/SEWRPCFiles/Publications/TechRep/tr-011-5th-ed-population-se-wisc.pdf>, 2013. (Skim pp. 1-16, 27-43, 45-61, 82) (pp. 45-61 includes the cohort-component method)

8.4. Southeastern Wisconsin Regional Planning Commission (SEWRPC). *A Regional Transportation System Plan for Southeastern Wisconsin: 2035, Planning Report No. 49*, Available online, http://www.sewrpc.org/SEWRPCFiles/Publications/pr/pr-049_regional_transportation_system_plan_for_se_wi_2035.pdf, 2006. (Read pp. 175-176, 191-192, 240-241, 301-302, 313-314, 327, 340-344, 419-423)

8.5. Linebaugh, K. "Detroit's Population Crashes," *Wall Street Journal*, Available online, <http://online.wsj.com/article/SB10001424052748704461304576216850733151470.html>, 2011. (Optional)

8.6. Detroit Metropolitan Area Regional Planning Commission. *1970 and 1980 Population Projections*, Available online, <http://babel.hathitrust.org/cgi/pt?id=mdp.39015055054665;view=1up;seq=27>, 1956 (Read p. i-iii, 1-3; the City of Detroit is Wayne County Development area 11) (Optional)

8.7. Southeast Michigan Council of Governments. *Population and Households in Southeast Michigan, 2000-2010*. Available online, <http://library.semco.org/InmagicGenie/DocumentFolder/PopulationandHouseholdsinSoutheast%20Michigan2010.pdf>, September 2010 (Read pp. 5-8) (Optional).

8.8. City of Detroit, MI. *Detroit Recreation Department Strategic Master Plan: Demographic Index & Trends Report*, Available online, <http://www.detroitmi.gov/Portals/0/docs/recreation/pdf/PDF%20files/Demographic%20Report/Demographic%20Report.pdf>, 2005. (Read pp. 1-4) (Optional)

Class 9: Common Planning Analysis Methods, Part 2 (Income & Economic Analysis) (10/29/13)

Gini Coefficient
Lorenz Curve
Location Quotient
Shift-Share Analysis

9.1. Crepeau, R. "Analytical Methods in Planning." Chapter 4 in *The Planner's Use of Information*, edited by H. Dandekar. Second Edition, Chicago: Planners Press, 2003. (Read pp. 148-152)

9.2. Chapin, T. "Location Quotient Technique," Florida State University Department of Urban and Regional Planning, Planning Methods III: Forecasting, Available online, <http://mailer.fsu.edu/~tchapin/garnet-tchapin/urp5261/topics/econbase/lq.htm>, 2013.

9.3. Washington Regional Economic Analysis Project (REAP). "Shift-Share Analysis of Employment Growth: King County, 2006-2011," Available online, <http://washington.reaproject.org/analysis/shift-share/>, 2013. (Need to select "Counties" and then "King" to see the analysis.)

9.4. Klosterman, R.E. "Constant-Share and Shift-Share Approaches," Chapter 12 in *Community Analysis and Planning Techniques*, Lanham, MD: Rowman & Littlefield Publishers, 1990. (Optional)

Class 10: Common Planning Analysis Methods, Part 3 (Discounting) (11/5/13)

Discounting
Net Present Value
Cost-Benefit Analysis & Challenges

10.1. Boardman, A.E., D.H. Greenberg, A.R. Vining, and D.L. Weimer. "Benefits and Costs in Different Time Periods: The Mechanics of Discounting," Chapter 4 in *Cost-Benefit Analysis: Concepts and Practice*, Prentice Hall: Upper Saddle River, NJ, 1996. (Read pp. 119-145)

10.2. New Zealand Treasury. *Cost Benefit Analysis Primer*, Available online, <http://www.treasury.govt.nz/publications/guidance/planning/costbenefitanalysis/primer/cba-primer-v12.pdf>, 2005. (Read pp. 5-31) (Optional)

10.3. Centers for Disease Control and Prevention. "Cost Benefit Analysis," Available online, <http://www.cdc.gov/owcd/eet/cba/Fixed/PrintAll.html>, 2013. (Read the following three sections: Introduction, Framing a CBA, and Calculating and Presenting the Summary Measures...do not read the Valuation of Health Outcomes section) (Optional)

10.4. Cost-Benefit Knowledge Bank for Criminal Justice. "Reporting the Results of Cost-Benefit Analysis," Available online, <http://cbkb.org/toolkit/reporting-cost-benefit-results/>, 2013. (Optional)

10.5. Voogd, H. "Evaluation of Visitability of Public Urban Places." *Beyond Benefit Cost Analysis: Accounting for Non-Market Values in Planning Evaluation*, edited by Miller, D. and D. Patassini, Burlington, VT: Ashgate, Available online, <http://www.henkvoogd.nl/pdf/visitability.pdf>, 2005. (Optional)

Part 5: Presenting Results

Class 13: Graphic Representation of Planning Data (11/26/13)

Developing tables and figures

Excel graphic options

Examples of good and bad tables and figures

Tell a story or make an argument

Advice on presentations to 1) ask for public feedback and 2) present polished final information

13.1. Rosling, H. "The Best Stats You've Ever Seen," TED Talks, Available online, http://www.ted.com/talks/hans_rosling_shows_the_best_stats_you_ve_ever_seen.html, 2006.

13.2. Rosling, H. "New Insights on Poverty," TED Talks, Available online, http://www.ted.com/talks/hans_rosling_reveals_new_insights_on_poverty.html, 2007.

13.3. City of Portland, OR. *Portland Bicycle Count Report 2012*, Available online, <http://www.portlandoregon.gov/transportation/article/448401>, 2013.

13.4. Centers for Disease Control and Prevention. "Overweight and Obesity," Available online, <http://www.cdc.gov/obesity/data/adult.html>, 2010. (Go to the "Download the Historical Maps" section on the lower-right side of the web page, download the presentation, and view the slides)

13.5. Streetmix. Website for visualizing street design, Available online, <http://streetmix.net/-/15230>, 2013.

Class 14: Preliminary Group Presentations: Asking for Public Feedback (12/3/13)

Different types of public meetings (purposes: educating, information gathering, feedback on alternatives, presenting planning recommendations)

"Public Q & A Session" for Groups

Class 15: Final Group Presentations: Polished Final Presentation (12/10/13)

Formal Group Presentations

(Potential) Class X: Planning Applications of Technology & Social Media

Big Data

Crowdsourcing

Real-time traffic

Potential planning applications of technology and social media

X.1. Burgess, R. "Google Maps gets Real-Time Traffic, Crowdsources Android GPS data," Techspot: Technology News and Analysis, Available online, <http://www.techspot.com/news/48015-google-maps-gets-real-time-traffic-crowdsources-android-gps-data.html>, March 30, 2012.

X.2. Waze. "Waze: Outsmarting Traffic, Together," Available online, <http://www.waze.com/livemap/>, 2013.

X.3. Sadilek, A. "Research Overview", Available online, <http://www.cs.rochester.edu/~sadilek/research/>, 2013.

X.4. National Public Radio Staff. "Tech-Savvy Cities May Be 'Smart,' But Are They Wise?", Available online, <http://www.npr.org/blogs/alltechconsidered/2013/07/18/200792512/DG-TOWNSEND>, July 11, 2013.