Advanced GIS Applications in Urban Planning (URBP 608)
Fall 2011
Assignment 4: Land use Planning

Background

This "real-world" exercise helps you in thinking critically density, diversity and design in areas around current and future public transit stations. Your findings will be shown to the CMM and may in fact be used to influence policy decisions.

Assignment

The CMM has asked you to prepare a document that explores current land use mix around existing and proposed Metro and train stations. You need to concentrate on generating different density, diversity and design measures. In the new CMM plan these areas are identified as potential for transit oriented development or high density mixed use. The main goal is to increase the transit mode share in the region and especially for people coming to and leaving these areas.

Using the supplied buffers, and techniques and concepts learned in class, prepare a short document which explains the degree to which these areas display a mix of land uses, which areas might be improved, areas where demand potential is low etc. You may wish to concentrate only on new stations, or a particular line—if so, please justify your choice. If you decide to concentrate on a smaller area, the analysis would be expected to be more refined than a broad overall study.

You may wish to look at current and projected land use, socio-economic characteristics, and current transportation behavior, among other aspects. Think about how these could best be operationalized; many methods exist to measure land use mix, walkability, accessibility etc. think carefully about how you wish to measure the aspects of diversity and density and be prepared to defend your methodology. This assignment may require you to examine other sources of data—not all of which are located in the TRAM archive. You may wish to look at the Montreal Master Plan, for example, or other policy that might be in place in these areas to help predict future travel demand or demographic trends.

You will be supplied with the 156 station buffers and a layer of land use. Please provide a 2 page (maximum) memo with as many additional maps, tables, or figures as you would like. You are allowed an additional third page for references. In addition to printing your maps and 2 pages memo, electronic copies are required by email to the instructors. Also you will need to submit your final table with the generated measures electronically in a shared folder so make sure a read me file explaining all fields is included, so any person can use what you have generated or compare it to other measures that you did not generate.

Recommended Readings:

Cervero, R. & Kockelman, K. (1997), Travel demand and the 3Ds: Density, diversity, and design. *Transportation Research Part D: Transport and Environment*, 2(3), 199-219.

Frank, L. & Pivo, (1994). Impacts of mixed use and density utilization of three modes of travel: single-occupant vehicle, transit, and walking. *Transportation Research Record*, (1466), 44 - 52.

Hess, P., Moudon, A. & Logsdon, M. (2001). Measuring Land Use Patterns for Transportation Research. *Transportation Research Record*, (1780), 17-24.

Ritsema Van Eck, J. & Koomen, E. (2008). Characterising urban concentration and land-use diversity in simulations of future land use. *Annals of Regional Science*, 42, 123-140.