Planning for Bicycles in Regional Transit
Lookout Room, Boise State University Student Union
Thursday, May 4, 2006

Program

8:45 a.m.  Doors open for seating and visiting

9:00 a.m.  Introductory Remarks

9:15 to 10:30 a.m.  Hillary Isebrands, Iowa State University:

School Transportation Modes and Safety for Elementary and Middle Schools in Iowa
Remember when most trips to neighborhood schools were by school bus, walking or biking? In today’s school zone traffic, passenger vehicles dominate. They compete for space with buses, bicycles, and pedestrians. Safety concerns arise. Isebrands summarizes trip generation studies from 23 schools, and suggests how to mitigate interaction of transportation modes at schools.

10:30 to 10:45 a.m.  Break

10:45 a.m. to Noon  Gary Barnes, University of Minnesota:

A Longitudinal Analysis of the Effect of Bicycle Facilities on Commute Mode Share
If we build it, will they come? To answer, we would want reliable tools for estimating current share, and predicting future share, of bicycling relative to other commuting modes. High rates of bicycle use tend to be observed in places with better facilities, but it is not necessarily clear which is the cause, and which the effect. Barnes presents a four-step analysis of these issues.

12:00 to 1:30 p.m.  Break for Lunch

1:40 to 2:55 p.m.  Mia Birk, Alta Planning + Design:

Bridging the Gaps: How Quality and Quantity of a Connected Bikeway Network Correlates with Increasing Bicycle Use
“Build it and they will come” has been the strategy over the past 15 years in Portland, Oregon. The city has invested in bicycle infrastructure, and has seen bicycle usage soar. Birk presents evidence that improvements on Willamette River bridges, improvements in travel corridors serving the bridges, and improved traffic designs combine to explain increased bicycle usage.

3:10 p.m. to 4:25 p.m.  Chanam Lee, Texas A & M University:

Cycling and the built environment, a US perspective
Who rides? What conditions of the built environment contribute to the likelihood of bicycle usage? Lee finds that the likelihood of cycling is explained differently by objective as compared to perceived conditions of the built environment, and proposes that policy and infrastructure improvements can target environmental conditions both actual and perceived.

4:25 p.m.  Closing Remarks

4:45 p.m.  All are welcome to join a group that will proceed by bicycle from Memorial Plaza (at the flagpoles, in quad between Library and Business Building) to downtown Boise to attend the Fettuccine Forum.
Abstracts:
Planning for Bicycles in Regional Transit – 2006

Hillary Isebrands

School Transportation Modes and Safety for Elementary and Middle Schools in Iowa

Elementary and middle school transportation modes have undergone a shift that has elevated traffic safety concerns in school zones with the increased number of vehicles competing for space with buses, bicycles, and pedestrians. In the past, most trips to neighborhood schools in urban areas were by school bus, walking or biking; however, passenger vehicles have become the predominant transportation mode for students with the percentage of trips averaging 50%.

A trip generation study conducted at 23 elementary and middle schools in Iowa, in both urban and suburban neighborhoods, to evaluate and quantify the current trip-making characteristics and transportation modes for Iowa schools. The study showed that the number of passenger vehicles dropping off students in the morning is 1.7 times higher than the number of vehicles picking students up in the afternoon for both urban and suburban schools. Busses and passenger vehicles carried 80 to 85% of the students to and from school.

Passenger vehicles accounted for 53% of the urban school students who were being dropped-off and 42% of those being picked-up compared to 38% of suburban students being dropped-off and 32% being picked-up. Approximately 80% more children at urban schools are walking and biking to school than suburban schools and 50% more children are riding the bus to and from suburban schools compared to urban schools. Solutions were recommended to improve and decrease the interaction between transportation modes in school zones. These minor changes to before and after school operations have the potential to increase the safety and efficiency of the peak periods at schools. The results of the study also conclude that regular communications between school officials, traffic engineers, law enforcement, parents, and school transportation personnel are all critical to promoting safe operations within school zones.

Gary Barnes

A Longitudinal Analysis of the Effect of Bicycle Facilities on Commute Mode Share

There is a need for simple and reliable tools for estimating and predicting the amount of bicycling in an area and how it might be affected by new facilities. Previous efforts to develop such tools have typically tried to develop demand estimates from basic descriptors of the population, land use, and bicycling facilities of an area, or by parallels to apparently similar situations elsewhere. However, this method is risky, as variations in the amount of bicycling in different places are much larger than demographic differences. And while places with high bicycling rates tend to have better facilities, it is not necessarily clear which is the cause and which the effect.

This presentation addresses these issues through four steps. The first is a general discussion of the total amount of bicycling in the United States and how it varies across places, based on a number of surveys and some original data analysis. The second is an argument that predictive models based on land use and transportation factors, in the manner of an automobile traffic forecasting model, are unlikely to ever be very accurate or useful due to a number of intractable problems. Third, a simple model is presented for estimating the current level of bicycling in a given geographic area, with reasonable and known accuracy and using easily available data.

The fourth step is an analysis using census data to describe changes in bicycle commute mode shares between 1990 and 2000 in the Minneapolis-St. Paul, MN area, and specifically the impact of new bicycle facilities that were created during this decade. We find that the locations where facilities were built did in fact already have very high bicycle commute mode shares relative to the rest of the region; but also that these differences became even larger after the facilities were built.
Abstracts:
Planning for Bicycles in Regional Transit – 2006

Mia Birk

Bridging the Gaps: How a connected bikeway network correlates with increasing bike use
Between 1992 and 2005 Portland increased its developed bikeway network by 215%, from 83 miles to 260 miles. During this same period, bicycle use in Portland soared. A comparison of 1990 and 2000 census data shows a doubling of bicycle commute trips citywide, with more dramatic increases in close-in neighborhoods. Annual bicycle counts on Portland’s central city bridges, which connect close-in residential neighborhoods across the Willamette River to the city’s primary commercial and employment center, show a 210% increase in bicycle trips between 1991 and 2004. This dramatic increase in bicycling occurred primarily in those corridors where the city has made significant investment to: improve bicycling conditions on the river bridges; create connected bicycle facilities leading to the bridges; and mitigate for traffic designs that are not particularly bicycle-friendly. The corridors where the network is most connected, and where the quality of the facilities is the highest, display the largest growth in bicycle trips. Data collected by Portland demonstrates a strong correlation between a connected, bikeway system constructed to the highest standards, and increases in bicycle use. The City’s investments in specific facility improvements to its downtown Willamette River bridges, as well as to key bridge access routes and connections, have been the primary impetus behind increasing bicycle use.

Birk will also incorporate her paper, Portland: The making of a Bicycle Friendly City to provide an overview of the history of bikeway planning in Portland, focusing on development of a bicycle master plan, bikeway network implementation, bicycle parking, education and outreach, and institutionalization throughout the way the City does business. Both presentations include analysis and results of Portland’s investments in bicycle infrastructure.

Chanam Lee

Cycling and the Built Environment
The promise of cycling as a travel mode and a form of exercise and recreation is well recognized, but a comprehensive understanding of cycling behavior and its environmental correlates is lacking. This presentation first introduces ways that the built environment can be quantified for this type of inquiry, and then discusses various factors that influence people’s decision to cycle in their neighborhoods. It focuses on the roles of supportive built environments in promoting cycling, especially those modifiable factors that can be directly translated into policy and interventions.

We found various personal, social, and environmental factors to be related to cycling. Cycling was more popular among male, younger adults, transit users, and those who are physically active and in good health. Both perceived and objective environmental conditions contributed to the likelihood of cycling. When measured objectively, living closer to trails was positively and having larger/more convenience stores near home was negatively correlated with cycling. A non-linear relationship was found with the perception of traffic problems and automobile-oriented facilities. Overall, we found that built environmental factors are moderately and personal factors are strongly associated with cycling.