

Planning for Whom and When?

Bicycle and Pedestrian Demand

Overview

1. Planning for whom?
2. Estimating current travel
3. Future demand



Image courtesy pedbikeimages.org, Patrick David Barber

Planning for Whom?

Do we plan for who we are?
(Census)

Planning for Whom?

Do we plan for who we think we will be? (forecasts)

Planning for Whom?

Do we plan for who we want to be?
(visioning)

Vision within Reality



Capital Area Metropolitan
Planning Organization

Image courtesy pedbikeimages.org, Dan Burden

Estimating Current Travel

example site: Manor Road near Airport Blvd.

- Bike/Ped Traffic Counts (few exist)
- Auto Traffic Counts X Bike Trip Rate = Bike Trips
7,000 X ~2% = 140

Estimating Demand

Turner, Shunk & Hottenstein. 1998. Texas Transportation Institute Report 1723-S

Project Sponsor: TXDOT with FHWA

1. Define Study Corridor
2. Define Influence Area
3. Quantify Land Uses
4. Apply Trip Generation Rates
5. Sum Trip Estimates for Sub-Sections
6. Sum Trips for Study Corridor
7. Reasonableness Checks

1. Define the Study Corridor

- Divide the corridor into sub-sections:
Bicyclists: 2-3 miles long
Pedestrians: 0.5 – 1 mile

2. Define the Influence Area

- Bicyclists may ride 1-3 miles to get to the facility, and then their destination
- Pedestrians may walk 0.5-1 mile
- Use land use and local knowledge to adjust size and shape
 - Recreational uses may extend distances

3. Identify and Quantify Land Uses

- Single-family residential (dwelling units)
- Multi-family residential (dwelling units)
- College/university (full-time equivalent students)
- Commercial (square feet of occupied space)
- Others: transit stops, schools, parks

4. Apply Trip Generation Rates

Daily Bicycle Trip Generation Rates

	Suburban	Mixed-Use Urban	Dense
SFR	0.6 trips per 100 units	3 trips per 100 units	5 trips per 100 units
MFR	0.2 trips per 100 units	2 trips per 100 units	4 trips per 100 units
university	0.2 trips per 1000 students	2 trips per 1000 students	6 trips per 1000 students
commercial	4 trips per Million sq. ft.	8 trips per Million sq. ft.	12 trips per Million sq. ft.

4. Apply Trip Generation Rates

Daily Pedestrian Trip Generation Rates

	Suburban	Mixed-Use Urban	Dense
SFR	0.5 trips per 100 units	1 trip per 100 units	2 trips per 100 units
MFR	1 trip per 100 units	2 trips per 100 units	4 trips per 100 units
university	0.3 trips per 1000 students	1 trips per 1000 students	2 trips per 1000 students
commercial	5 trips per Million sq. ft.	10 trips per Million sq. ft.	20 trips per Million sq. ft.

5. Sum Trip Estimates for each Sub-Section

6. Sum Trips for Study Corridor

7. Apply Reasonableness Checks, make adjustments if necessary

Predicting Demand

‘Guidelines for Analysis in Bicycle Facilities’

www.bicyclinginfo.org/bikecost/

*Benefit-Cost analysis
of Bicycle Facilities*

<i>Adding a 1-mile bike lane</i>	Mid Estimate
Residents	25,061
Existing Commuters	58
New Commuters	16
Total Existing Cyclists	4,330
Total New Cyclists	1,332