Bicycle and Pedestrian Connectivity through Comprehensive Planning

Dream San Marcos - Citizen Advisory and Steering Committee Joint Meeting

June 13, 2012 – Greg Griffin, AICP

Texas Transportation Institute

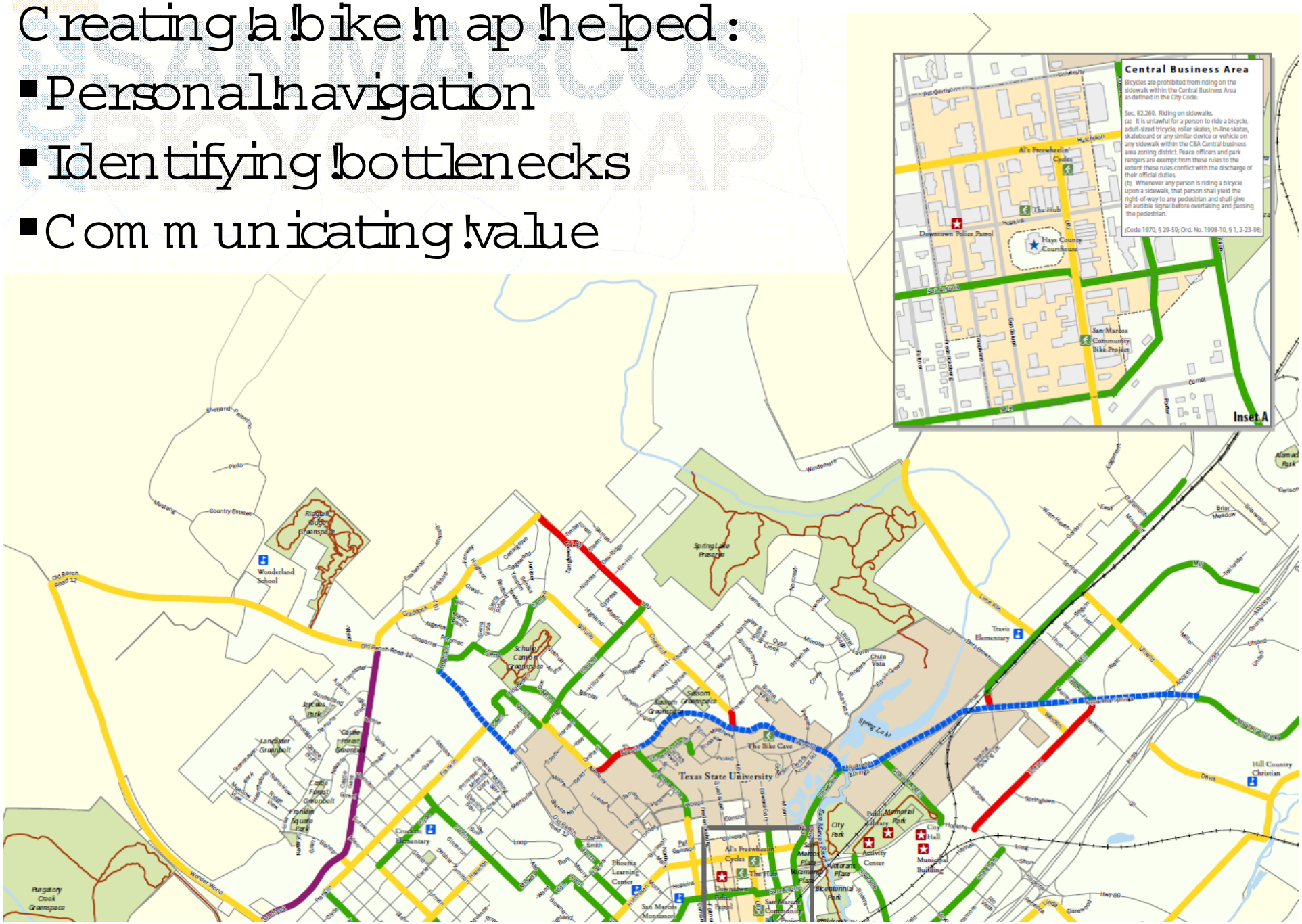
The Texas A&M University System

Overview

- Why plan for bicycling?
- Who do we plan for?
- How do we serve their needs?
- Concepts for Comprehensive Planning

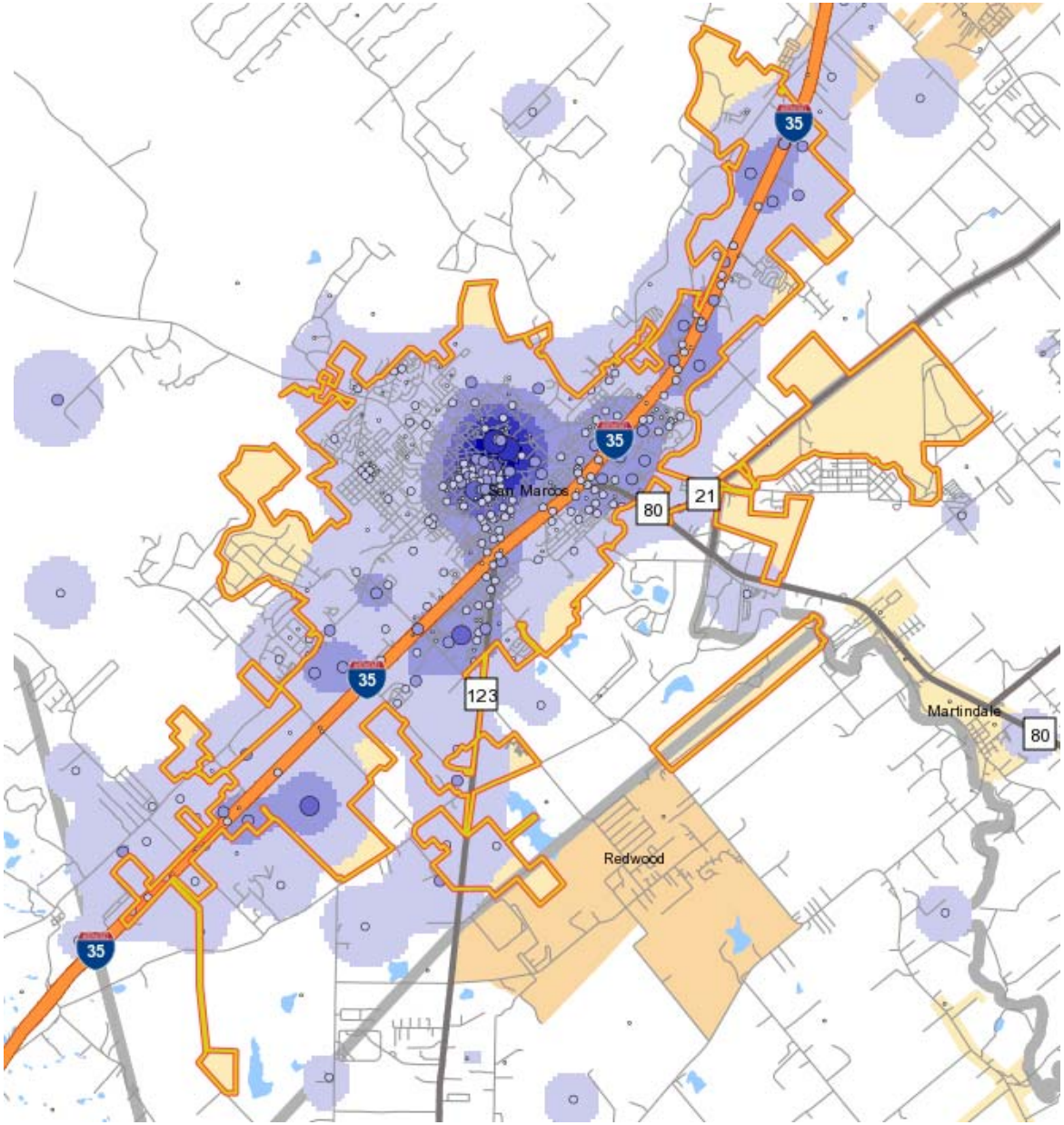
Creating a bike map helped:

- Personal navigation
- Identifying bottlenecks
- Communicating value



- 35.8% of San Marcos jobs < 10 miles of workers' homes.

Source: U.S. Census Bureau, Center for Economic Studies



- 1 - 2 Jobs
- 3 - 20 Jobs
- 21 - 98 Jobs
- 99 - 309 Jobs
- 310 - 754 Jobs

Why plan for bicycling?

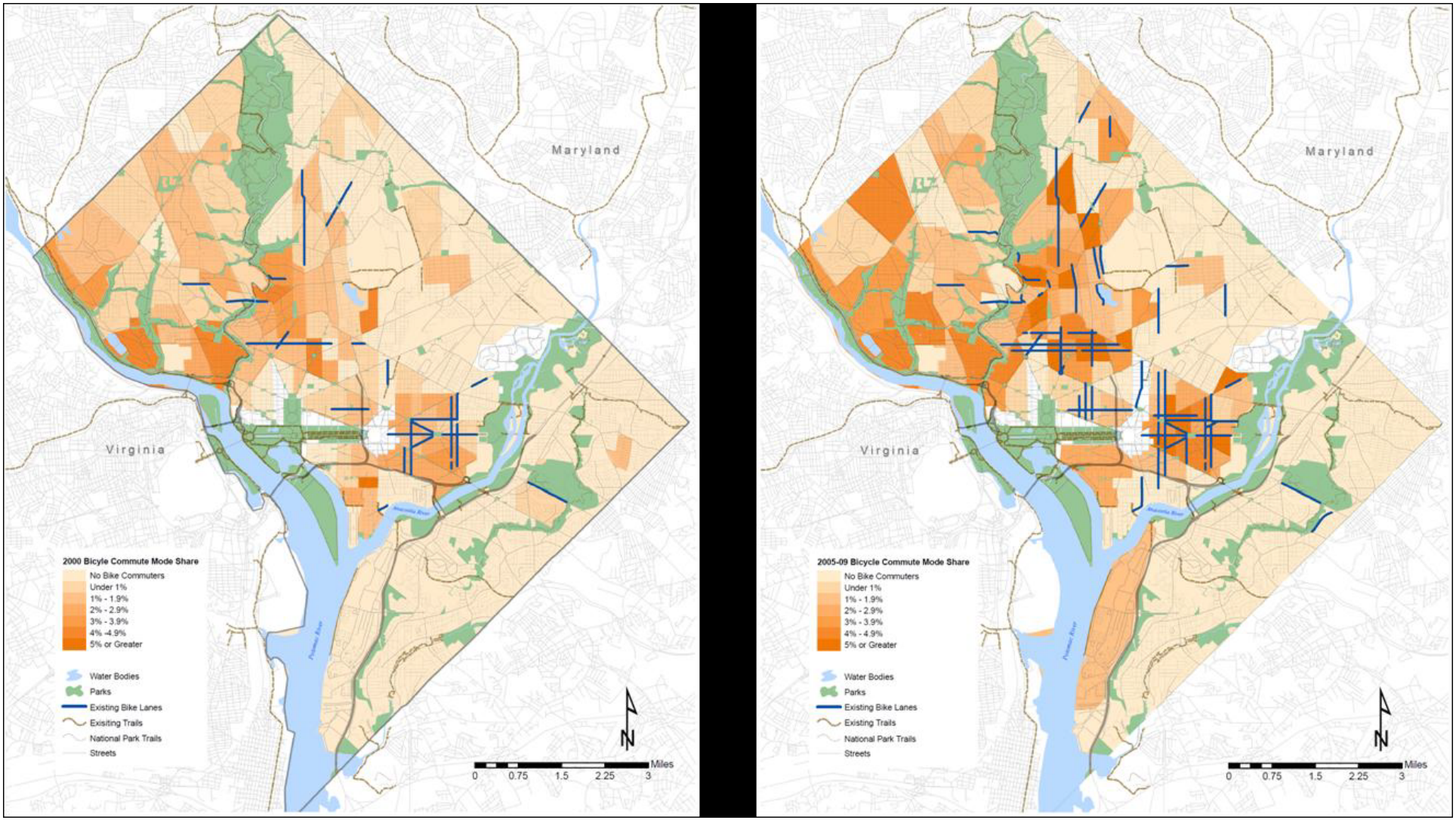
- Good facilities induce bicycling if land use is complementary (Krizek et al 2006)

	Count Date	Bicyclists (in 2-hour, peak period)
Aquarena Springs Dr near Bobcat Ln, San Marcos	Mar 30, 2011	30
SH 150 at Colorado River Bridge, Bastrop	July 2010	13
Lance Armstrong Bikeway near Shoal Creek, Austin	Sept 14, 2011	59

Bike Lanes and Mode Share (Buehler et al. 2012)

Washington, D.C.

2000 2005-2009



Myth: Bicyclists prefer to be treated just like automobiles

Image: http://atxbikette.blogspot.com/

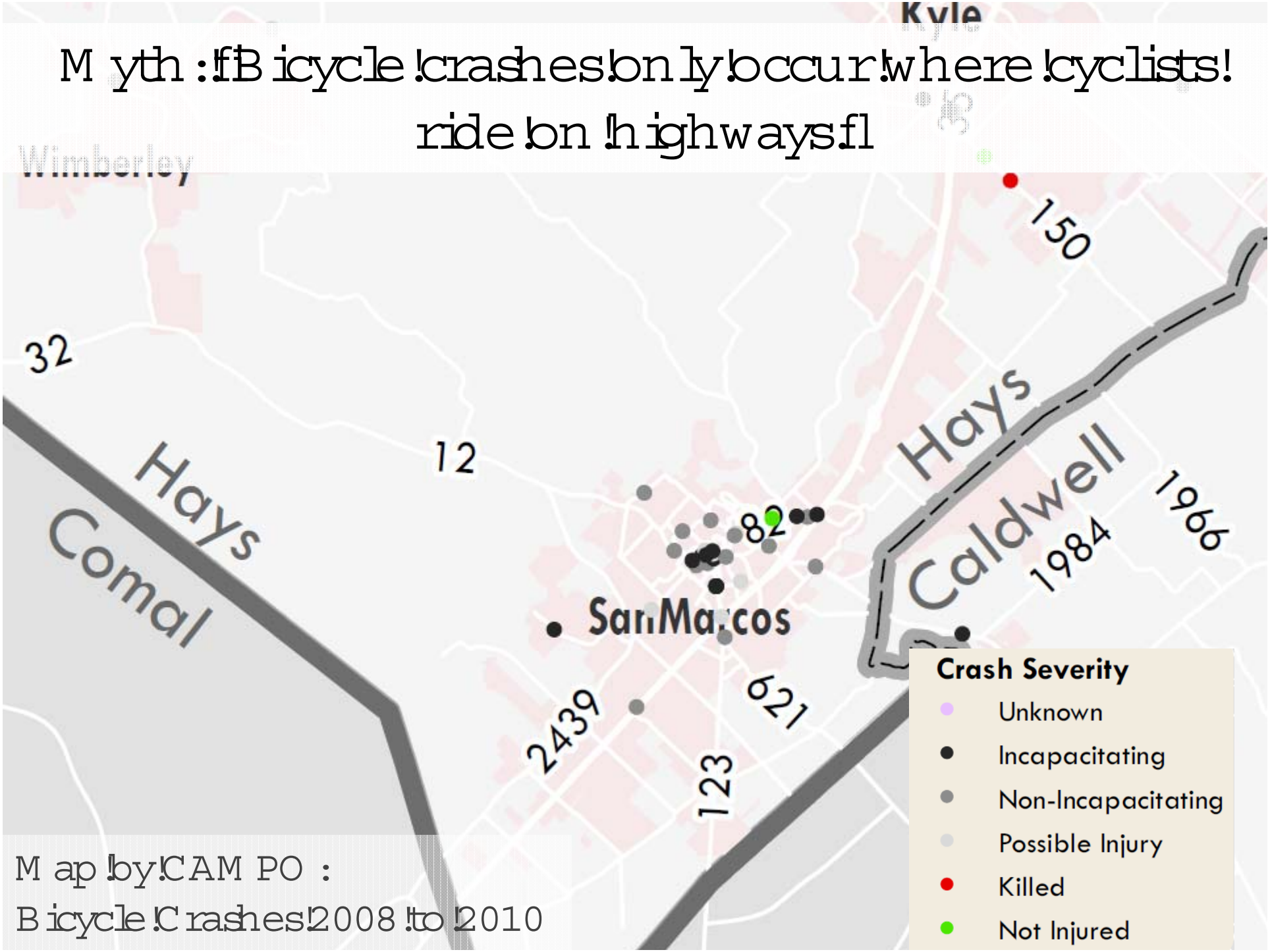
Myth: "There's not enough dem and for these facilities right now, they can be added later if needed (at $800k+)

Image Google Streetview

Myth: "We have an ordinance that requires facilities to be built with development fl

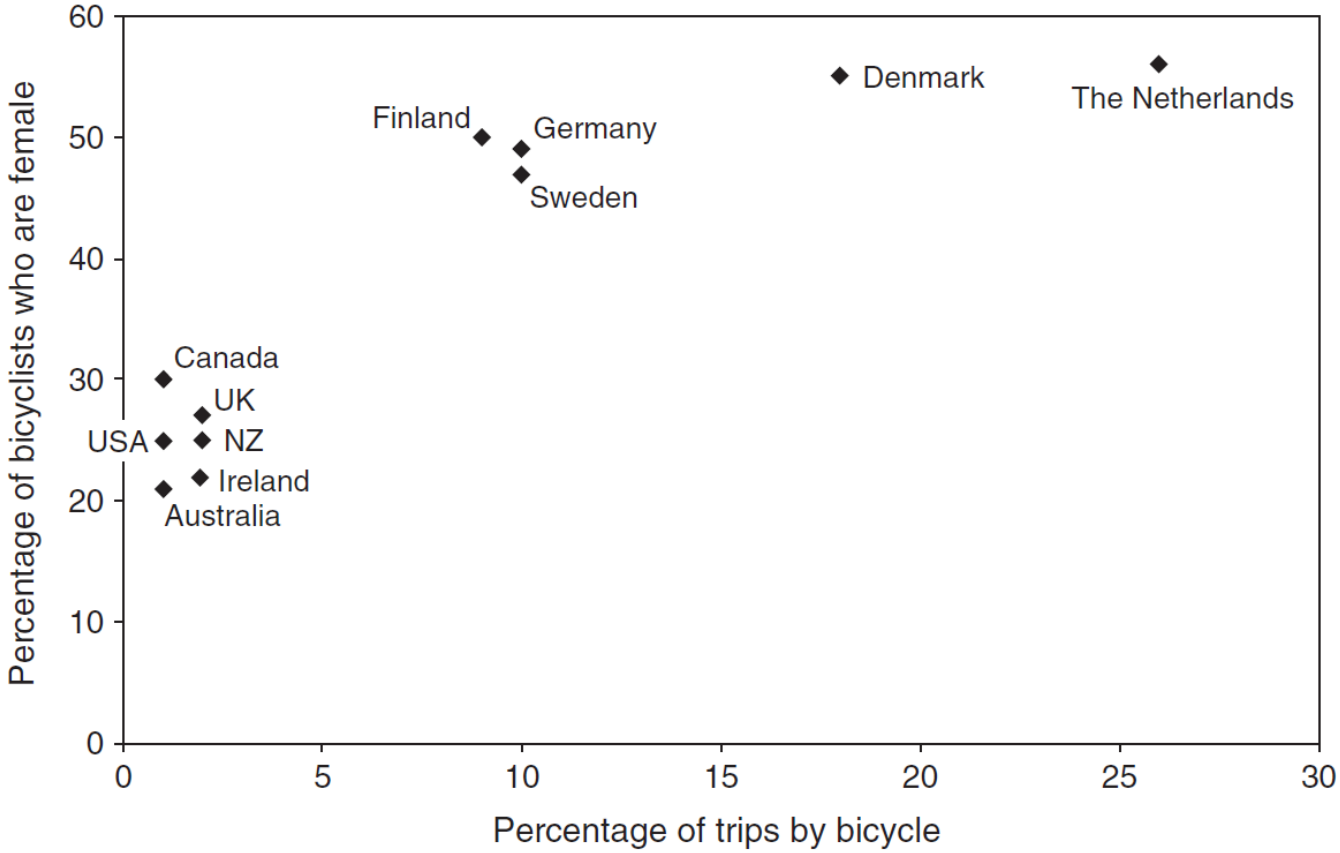
Image Google Streetview

Myth: "Bicycle crashes only occur where cyclists ride on highways."



Map by CAMPO:
Bicycle Crashes 2008 to 2010

Who do we plan for?



Bicycle mode share of trips and percentage of female cyclists (Pucher & Buehler 2012)

How do we serve their needs?

1. Retrofit facilities: road diet w/ bike lane

How do we serve their needs?

1. New facilities: 2-way cycle track w/bike corral

How do we serve their needs?

2. Innovative + traditional funding:

- Parking benefits districts
- Interjurisdictional partnerships
- Capital Improvements programs

How do we serve their needs?

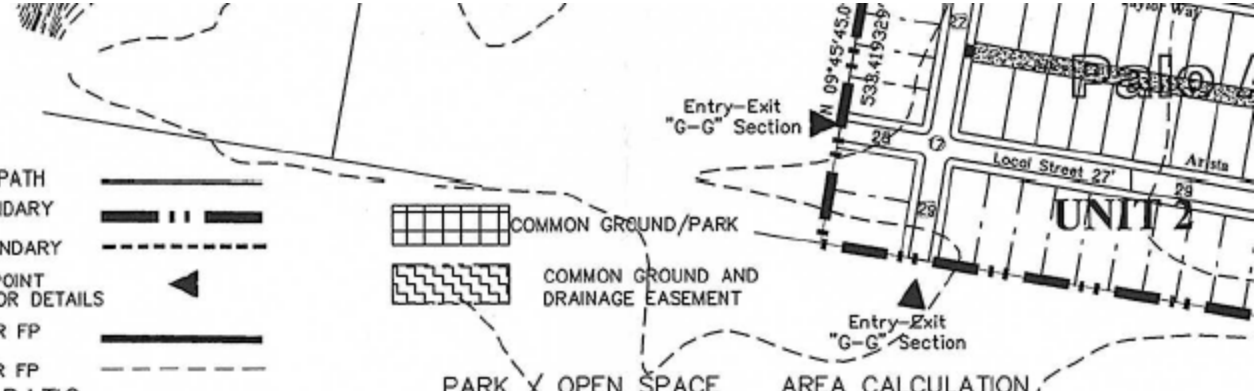
3: Eliminate barriers to bicycling

- Ownership & maintenance?! bike sharing
- Connectivity?! ordinances
- Security?! parking structures

Connectivity through development ordinances – Davis, CA bikeways

Connectivity through Ordinances

- Portland, OR Code, Chapter 33.654.110 (C):
  –Through streets should generally be provided no more than 530 feet apart, and pedestrian connections¥ no more than 330 feet apart.†



BIKE PATH
MDP BOUNDARY
PHASE BOUNDARY
ACCESS POINT
SEE SHEET 2 FOR DETAILS
100 YEAR FP
500 YEAR FP

COMMON GROUND/PARK
COMMON GROUND AND DRAINAGE EASEMENT

CONNECTIVITY RATIO

NUMBER OF LINKS	NUMBER OF NODES	RATIO
30	20	1.5

[4] Link (2) Node

PARK X OPEN SPACE AREA CALCULATION

PARK / OPEN SPACE AREA RATIO	NUMBER OF ACRES REQUIRED	NUMBER OF ACRES PROVIDED
274 UNITS / 70 UNITS PER ACRE	3.91 ACRES	*5.7 ACRES SHOWN VILLAGE GREEN NOTE #17

DEVELOPMENT INFORMATION							
TYPE/PHASE	ZONING	APPROXIMATE ACREAGE	DWELLING UNITS	DENSITIES	PASSIVE OPEN SPACE	ACTIVE OPEN SPACE	OFF STREET PARKING
RESIDENTIAL	UD	58.1 ACRES	274	4.65/AC.			2 PER LOT
Palo Alto Trails Unit 1	UD	26.6 ACRES	124	4.85/AC.			
Palo Alto Trails Unit 2	UD	30.4 ACRES	134	4.3 /AC.	3.6 AC.	2.42 AC.	
Palo Alto Trails Unit 3	UD	1.1 ACRES	16	14.5 /AC.			
PARK= 274 / 70 = 3.91 AC.		TOTAL PARK SHOWN = 5.7 AC.			3.3 AC.	2.4 AC	
		ADDITIONAL CREDIT FOR PLAYGROUND ON VILLAGE GREEN 1 1/2 AC					

"All bicycle facilities will be designed and constructed in compliance with the Texas MUTCD and AASHTO guidelines for bicycle facilities, including crosswalk and signage requirements".

Innovative parking - Bike corral, Austin, TX

Trades 1 car space for 14 bikes, plus traffic visibility

Davis, CA: A peer?

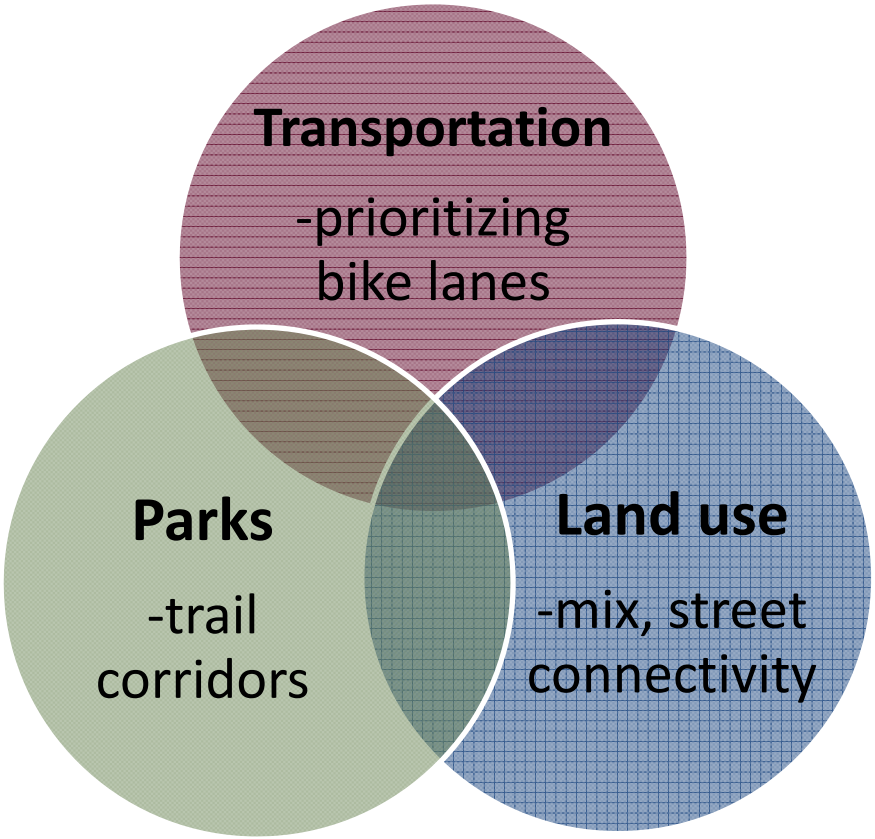
image Kate McCarthy on Flickr

2008-2010 3-year est.	San Marcos, TX	Davis, CA
Workers 16+	20,264	30,890
Drove alone	78%	57%
Walked	5%	3%
Biked	0.45%	19%
Female bike	23%	38%
Source: U.S. Census Bureau, 2008-2010 American Community Survey		

For more, see: "Fifty Years of Bicycle Policy in Davis, California" by Ted Buehler and Susan Handy in *Transportation Research Record: Journal of the Transportation Research Board, No. 2074*, Transportation Research Board of the National Academies, Washington, D.C., 2008, pp. 52-57.

Concepts for Comp. Planning

- Review interaction of plans



Some ideas for goals

Year	Goal	Evaluation
2015	Bronze Bicycle Friendly Community	League of American Bicyclists
2020	Increase avg. bicycle counts at 2 monitoring points by 20% from 2010	CAMPO/TTI baseline study, annual monitoring
2025	>40% of all bicycling commuters female	American Community Survey
2035	Silver Bicycle Friendly Community	League of American Bicyclists

Policies from the Austin Comp. Plan

- Create healthy and family-friendly communities through development that includes a mix of land uses and housing types, affords realistic opportunities for transit, bicycle, and pedestrian travel…(LUT P5).
- Promote complete street design that includes features such as traffic calming elements, street trees, wide sidewalks, and pedestrian, bicycle, and transit access¥ considering the safety needs of people of all ages and abilities (LUT P11).

Policies from the Austin Comp. Plan

- Incorporate provisions for bicycles and pedestrians into all roads such as freeways, toll roads, arterial roadways, and to and from transit stations and stops, and major activity centers (LUT P15).

References

Buehler, R., Hamre, A., Sonenklar, D., Goger, P. 2012. Cycling Trends and Policies in the Washington, DC Region. *World Transport Policy and Practice, Vol. 18, No. 2*, pp. 6-29.

Krizek KJ, et al. NCHRP Report 552 *Guidelines for Analysis of Investments in Bicycle Facilities*. The National Academies Transportation Research Board; 2006. Available from: http://www.bicyclinginfo.org/bikecost/.

Pucher, J. & R. Buehler, eds. 2012 (forthcoming) *City Cycling*. Boston, MA: MIT Press.

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