



MEMORANDUM

TO: Transportation Commission
FROM: Franz Loewenherz, Senior Transportation Planner [425-452-4077]
SUBJECT: ProWalk/ProBike Conference Summary Briefing
DATE: February 12, 2009

Purpose

At the February 12 Transportation Commission meeting, Transportation Department staff will brief the Commission on the ProWalk/ProBike conference (PWPB), held in Seattle in early September of 2008. There is no action required of the Transportation Commission on this item. The briefing will include an overview of the conference and a presentation of highlights from specific informational workshops, oriented around the "Five E's" of transportation planning:

- Engineering
- Education
- Encouragement
- Evaluation
- Enforcement

Staff will present data on a variety of topics within these categories, including strategies for: sharing limited right-of-way, constructing facilities in a built environment, implementing safe intersection crossings, and filling gaps in facilities. Attached are the slides staff will reference during the presentation.

Background

The National Center for Bicycling & Walking's Pro Walk/Pro Bike biennial conference series is an international gathering of more than 600 bicycle and pedestrian program specialists, advocates, and government leaders committed to improving conditions for bicycling and walking. Conference participants include federal, state and local agency staff; engineers; planners; transportation officials; educators; public health specialists, park and recreation managers; and advocates who range from executives of international organizations to lay people with an interest in improving the quality of life and health in their community.

Conference organizers chose Seattle to host PWPB 2008, with the City of Bellevue and other organizations joining as co-sponsors. Transportation Commissioner Larrivee attended the conference, as did Transportation Department staffers Franz Loewenherz, Kevin O'Neill, Darek Jarzynski, Mike Mattar, Mike Ingram, Paul Krawczyk, Vangie Garcia, and Nancy LaCombe.

PRO WALK PRO BIKE 08

Transforming Communities

SEPTEMBER 2-5, 2008
SEATTLE, WA



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The 5 E's

A Comprehensive Solution

- **Engineering** safe and accessible non-motorized facilities.
- **Educating** roadway users about rules, rights, and responsibilities.
- **Encouraging** use of various modes of transportation.
- **Enforcing** proper use of roadway facilities.
- **Evaluating** performance of programs and projects.

Considerations for Bellevue

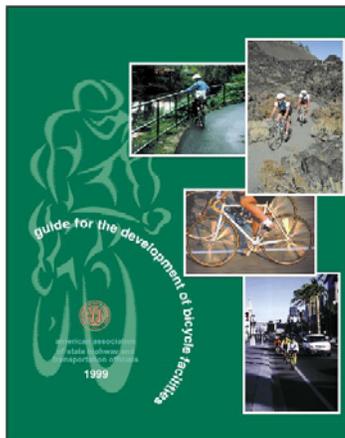
- Competing uses for right-of-way
- Difficulty implementing projects in built environment
- Highlighting pedestrian and bicycle movements thorough intersections
- Filling gaps in pedestrian & bicycle network



Engineering



What's New in the Upcoming Edition of the AASHTO Guide for the Development of Bicycle Facilities? Jennifer Toole, Toole Design



National guideline for planning and design of bikeways in the U.S. Next edition, to be released in 2009.

“All roads, streets, and highways, except those where bicyclists are legally prohibited, should be designed and constructed under the assumption that they will be used by bicyclists.”

Seattle's Complete Streets Program, Barbara Gray, SDOT

Complete Streets: The Seattle Definition

"Streets that are designed to encourage walking, bicycling and transit use while promoting safe operations for all users."
 ~2007 Complete Streets Ordinance

Policy foundation in the Transportation Strategic Plan (1998 & 2005)
 Bridging the Gap Council Resolution

Recent Project: Repaving 2nd Ave

- 2009 project runs through the entirety of downtown Seattle along a principal arterial
- Significant challenge to balance needs of transit, bicycle, pedestrian, freight, and general purpose traffic
- Complete Streets "checklist" and review process a major factor in incorporating more sustainable transportation elements

Making 2nd Ave "Complete"

Transit only lanes through heart of downtown

Multiple lanes, including "Green Lanes"
 Pedestrian, bicycle, transit, and trucking all of interactions with Green Lanes

Advance stop bars and wide crosswalks for pedestrian safety

In April 2007, the Seattle City Council adopted an ordinance defining a Complete Streets policy for Seattle.

The principles and practices defined by this legislation further the livable city goals for compact, walkable neighborhoods that are well-served by transit articulated in Seattle's Comprehensive Plan.

Legislation provides guidance to the implementation of the \$540 million street improvement funding package (Bridging the Gap).

The Truth about Lane Widths: Providing Bike/Ped Facilities in Constrained Rights-Of-Way, Theo Petritsch, P.E., PTOE, Sprinkle Consulting

What is the Standard?

- Lane widths may vary from 10 to 12 ft.
- The 12-ft lane widths are most desirable and should be used, where practical, on higher speed, free-flowing, principal arterials.

page 472
 Chapter 2
 Rural and Urban Arterial Corridors

The Truth about Lane Widths 11 of 28

What about capacity?

"Thus, so long as all other geometric and traffic signalization conditions remain constant, there is no measurable decrease in urban street capacity when through lane widths are narrowed from 12 feet to 10 feet."

Summary of Studies presented to Sprinkle Consulting by
 Dr. David Hovmoller, Assistant
 Professor of the Traffic, Safety, Security
 and Quality of Service Institute

The Truth about Lane Widths 12 of 28

What about safety?

"all projects evaluated during the study that consisted exclusively of lane widths of 10 feet or more resulted in accident rates that were either reduced or unchanged."

The Truth about Lane Widths 13 of 28

Competition for Space

Can't we just narrow the lanes to make space?

12 feet 12 feet
 Before...

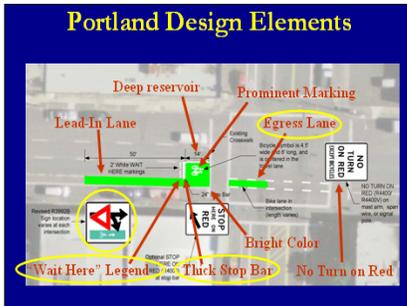
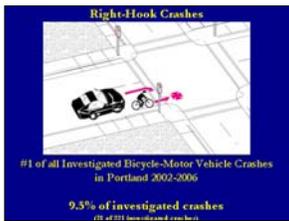
3 ft 10.5 feet 10.5 feet
 After...

The Truth about Lane Widths 3 of 28

Main messages:

- AASHTO green book is *advisory* (not meant to stifle innovation).
- Narrow lanes do not have significant capacity impact.
- Narrow lanes correlated with lower crash frequencies.

Portland's Bike Boxes, Roger Geller, City of Portland



Why?

- Eases left turns by giving cyclists a designated space to wait ahead of traffic.
- Allows them to get ahead of traffic then pull back into the bicycle lane (or make turns).
- Particularly helpful in reducing prevalence of "right hook" crashes.

Bicycle Boulevards and You, Jessica Roberts, Alta Planning + Design



Characteristics:

Low Traffic Volumes: diversion

Low Speeds: traffic calming

Easy Crossing of Arterial Streets: signalization; curb extensions; median refuges

Way-Finding: signs, markings

Priority for People on Bicycles: impediments to motor vehicles; bike boxes; prominent markings

Thinking (& Building) Outside the MUTCD/AASHTO Box: The 9th Avenue Complete Street & Bicycle Path (NYC DOT)

1. Higher Quality Experience for Cyclists of All Levels

Attracting New Cyclists

- 9 months after completion, cycling up 40%
- 12 hour weekday – 780 cyclists before – 1,100 cyclists after
- Sidewalk cycling down



2. Secure & Pleasant Pedestrian Experience

- Pedestrian Refuges Shorten Crosswalks
- Greener Streetscape
- Conflict-Free Crosswalks on Side Streets



3. Safe Turning Movements

Configuration After Project

- Left Turn Lane
- Signal Protected Movements
- Bicycle Signal and Left-Turn Signal Separate conflicting movements



9th Avenue Pre-Project Configuration

Cyclist Experience – Poor

- No Bicycle Facility
- Close overtaking by motorists
- Turning conflicts

Pedestrian Experience – Fair

- Pleasant Sidewalks
- Wide Street
- Turning Vehicle Conflicts
- Long Crossing Distance (70')

Motorist Experience – Acceptable

- Congestion is Low
- Turning Vehicles Block Thru Lanes While Yielding



Why?

- Pedestrian Experience – Shortens crosswalks by 20' or more – Greener streetscape – Conflict-Free Crossings
- Cyclist Experience – Fully protected bicycle path – Bicycle signal phases
- Motorist Experience – New left turn lanes – Parking loss at left turn lanes

Shared Lane Markings: When/Where to Use, Mike Sallaberry, SFMTA

Discontinued Bike Lane due to Roadway Narrowing

- > No room for bike lane or for cyclists and motorists to share lane side by side
- > Guide cyclists to "take the lane"
- > Discontinuity of bike lane undesirable but generally for short distance, so use marking somewhat frequently, spaced 50' - 100'

Consider using BIRE MERGE AHEAD pavement message

Hill or Narrow Street

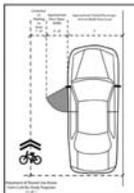
- > On hills, where downhill bike lanes are generally not desirable, or
- > Where street width has space for bike lane in only one direction
- > Place marking in middle of lane

*Undesirable to split road width and have two 12' to 13' lanes that are not wide enough to ride outside door zone and share lane with motorists, and not narrow enough to easily "take the lane"

Route Finding

- > Helpful for guiding cyclists - "Follow the bread crumbs"
- > Place first marking on each block fairly close to intersection (10' to 20' away) - easier to see from cross streets (avoid to have signs)

Plan View of Marking Placement



Marking placed 11' from curb face for study:

Doors open to - 9'6"

Bicyclist width: - 2'

Summation: 9'6" + 2' / 2 = 10'6"

Round up for some buffer to 11' for minimum



Why?

- Increase distance between cyclists and parked cars
- Increase distance between motorists and cyclists
- Reduce number of cyclists on sidewalk
- Reduce number of cyclists riding the wrong way on road

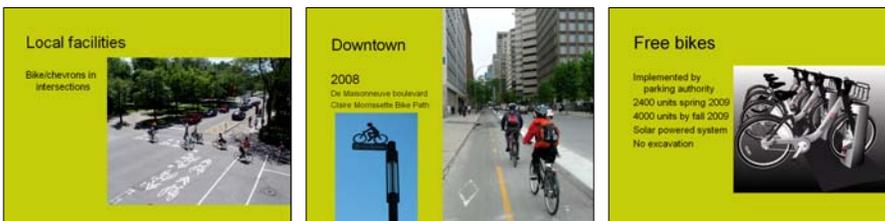
Chicago Bikeway Design Guide: A Resource for the Development of Urban On-Street Bikeways, David Gleason, Chicago DOT



Bike lanes, Marked shared lanes, Bike/bus lanes, Rush hour bikeways, Bikeways at intersections, Lane conversions & special treatments, Signed routes, Construction zones

A New Momentum in Montréal, Marc Jolicoeur, PE, Vélo Québec

Twice voted “best city for cycling in North America”



Montreal uses shared-lane markings “sharrows” to highlight bicycle movements through intersections. On a number of the busy bicycle paths, a separate traffic light phase is provided for bikes.

Cycle-path implemented along major urban arterial in downtown Montreal. Cost ~ \$3.5M; and a recurring annual loss of \$1.2M in lost parking revenue (approximately 500 on-street stalls were eliminated). Facility used by appx. 25,000/week.

Following the example set by European cities, the city launched BIXI, a public bicycle rental program. The concept is quite simple: you rent a bicycle, ride to your destination and then leave it at another station.

Designing Cities in Europe for Bicycles: An Engineering Perspective
 Tom Bertulis PE Institute for Transportation and Development Policy



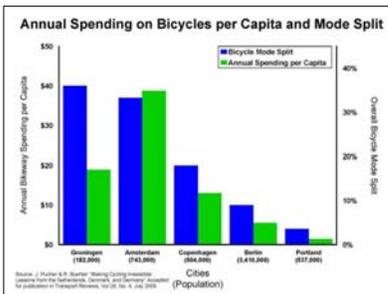
Amsterdam, Netherlands



Copenhagen, Denmark



Livingston, Scotland



Hierarchy of Solutions:

- Traffic Reduction
- Traffic Calming
- Intersection Treatment
- Roadway Redistribution
- Segregated Facilities

Evaluation

Evaluation is the process of measuring some aspect of transportation, and the analysis of that data. Types of data collection:

- Manual (i.e. person with clipboard)
- Automated (tube counts, infrared, etc.)
- Statistical (surveys)



Alameda County Pedestrian and Bicycle Counting Project, Bob Schneider, UC Berkeley Traffic Safety Center

Methodology Overview

- Manual pedestrian and bicycle counts at a sample of 50 intersections
 - Two 2-hour counts (one weekday and one Saturday)
- Automated counters
 - Capture daily, weekly, and seasonal variation in volumes



Automated Pedestrian Counter Installation

- Installation takes 15 minutes the first time; 5 minutes after that
- Advantage: mobile
- Counter is expected to last at least 5-10 years
- ~\$2,000-\$2,500 for equipment



Automated Bicycle Counter Locations

Bicycle Counters



- Armadillo Valley Blvd. & Stegmacher Rd.
- Telegraph Ave. & 66th St.



Count with a Purpose

- Alameda Countywide Strategic Pedestrian Plan
 - Funding Solution 13C: Develop Facility Performance Standards. "Pedestrian facility performance standards use measures, such as the level of pedestrian use or the number of pedestrian injuries, to allow pedestrian projects to be compared more directly to other projects competing for funds."
 - Strategy 5B: "Support the collection of data on pedestrian trips, facilities, and collisions by local, countywide, and transit agencies."



Why?

- Justify investments
- Rank sites by usage
- Plan maintenance priorities
- Identify safety concerns

The Role of Infrastructure In Determining Bicycling Behavior, Jennifer Dill, Center for Transportation Studies, Portland State University

Half of bike trips are 3 miles or less

	% of trips	Cumulative
1 mile or less	20%	20%
>1 to 2 miles	17%	37%
>2 to 3 miles	13%	50%
>3 to 4 miles	12%	62%
>4 to 5 miles	8%	70%
>5 to 6 miles	7%	77%
>6 to 7 miles	5%	82%
>7 to 8 miles	4%	86%
>8 to 9 miles	2%	88%
>9 to 10 miles	2%	91%
Over 10 miles	10%	100%
N	1,530	

Finding: "People are going out of their way to use bike infrastructure"

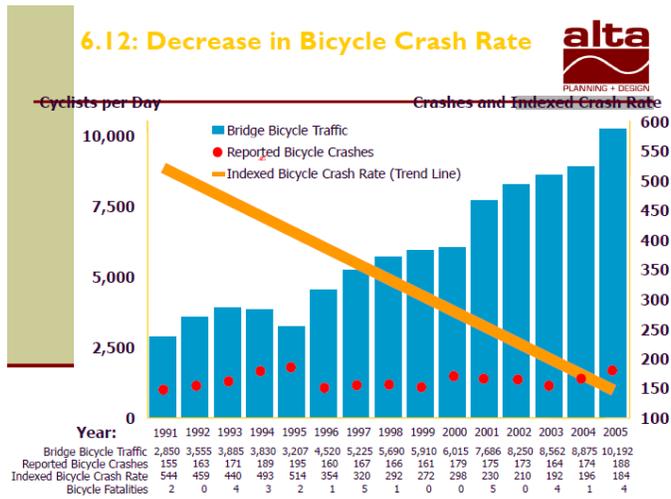
- 164 bicyclists carried GPS recorders on their bike trips for seven day. Altogether, they took 1,777 trips between April and November of 2007.
- Used GPS to track their trips and determine whether they were taking the shortest routes or intentionally choosing longer ones.
- Although only 8 percent of city streets are equipped with any kind of bike infrastructure, 49 percent of trips were taken on them.

Cyclists are using bike infrastructure

	% of bike travel (miles)		
	all travel	non-exercise travel	% of network
Roads without bike facilities	51%	48%	92%
Primary arterials/highways, no bike lanes	3%	3%	4%
Secondary arterials, no bike lanes	13%	10%	13%
Minor streets, no bike lanes	32%	34%	63%
Driveways, alleys, unimproved roads	1%	1%	1%
Bike infrastructure	49%	52%	8%
Primary arterials/highways, with bike lanes	0%	0%	0%
Secondary arterials, with bike lanes	10%	11%	2%
Minor streets, with bike lanes	6%	7%	1%
Bike paths	15%	15%	2%
Bike boulevards	6%	10%	<1%
Total miles of travel	6,683	5,822	

ETS Systems, May 16, 2008

Counts that Count: Bicycle and Pedestrian Data Collection, Mia Birk, Alta Planning + Design



Portland, OR graph illustrating “safety in numbers” effect ~ The more cyclists that take to the roads, the lower the relative crash rate.

Education and Encouragement



Why educate and encourage?

- Teach how to safely share the road
- Introduce newly-installed facilities
- Inform about modes that can save money, improve health
- Encourage modes or behaviors that benefit all



Active Seattle's Communications Toolkit, Rebecca Deehr, Feet First



- Estimates walking time
- Has bus, bike, and walk routes
- Highlights neighborhood destinations like parks, restrooms, art, grocery stores
- Discusses positive aspects of active living

Neighborhood Maps ~ Inspire people to walk to destinations they may not have known existed, or normally drove to.



- Map side
 - Scale includes walking time
 - Trends of walking distance and difficulty
 - Walking and biking routes
 - Activity symbols

feet first



- Encouraged people to walk to the grocery store by distributing personal shopping carts.
- Targeted three populations: low income elderly, low income family, and single family residences.
- Created a "shared cart" program at Westwood Heights

GoCart! ~ Increases short, non-automotive trips. Save money, reduce pollution, improve health.

Statewide Safe Routes to School Programs: Taking it to the next level and beyond, Jen Cole, Feet First

Why SR2S?

- 30 years ago over 66% of America's children walked or biked to school. Today, only 16% walk or bike to school. (US Centers for Disease Control and Prevention)
- Parents driving their children to school account for 20%-25% of morning rush hour traffic. (FHWA, 2003)
- More than two thirds of all trips made by 5-15 year olds are made by car as passengers (Haldeman, 2008)
- In the past 30 years, childhood obesity rates have increased by more than 300% (CDC)



- Contact families near you
- Create your own route
- Put icons on your map



- As you walk and bike more, you get to higher levels with your child
- Log your trips and routes and total distance

SchoolShare: helps people organize groups to walk or bike to school

SmartBike DC and How it Happened (for Free), George Branyan District Department of Transportation (DDOT), Washington, DC

What About Safety?

- Part of larger Bike / Ped Safety Program
 - Bike Lanes, Trails
 - Adult and child classes
 - Public Outreach
- Subscribers must read laws and sign agreement/waiver, and can take class



Challenges?

- Finding Locations
- Construction and Installation
- Electrifying Racks
- Still more to come



How Do I Sign Up?

- On-line, Phone or Mail
- Sign Member Agreement
- Pay (\$40/year)
- Card arrives in the mail
- www.SmartBikeDC.com



bike-sharing (\'bɪk-,sher-ɪŋ\) - 1: short-term bicycle rental available at unattended urban locations; 2: bicycle transit (www.bike-sharing.blogspot.com)

DC Pilot:

1st Phase – 10 Racks/120 Bikes ~ Evaluation after 6 months
2nd Phase in Spring of 2009 ~ Renegotiate contract

Bringing SmartTrips Home. Linda Ginenthal, City of Portland



SmartTrips: Individualized education and encouragement social marketing campaign

Features of program:

Residents get introductory letter, can send back a postcard requesting materials on walking, biking, and transit specific to their neighborhood. Also get free bus passes, coupons for bike/bus/walk-related items

Outcomes of SmartTrips program: shift to "environmentally friendly" modes in blue; reduction in drive-alone percent in red



SmartTrips reduced 19 million Vehicle Miles Traveled in 2006 and 2007

Air Emissions Reduced by SmartTrips NE Hub

Emission Type	Pounds Reduced
VOC	54,035
Nitrogen Oxide	45,307
Carbon Monoxide	672,207
Carbon Dioxide	93,755,124

City of Seattle contracted with Cascade Bicycle Club to produce program based on SmartTrips ("Bike Smart Seattle")



Thank you.

Questions?