



Hamilton Area Transportation Plan (2009 Update)

Non-Motorized Planning Overview

August 10, 2009



Facility Types - Definitions

- ◆ Bicycle Facilities
- ◆ Pedestrian Facilities
- ◆ Shared Use Paths

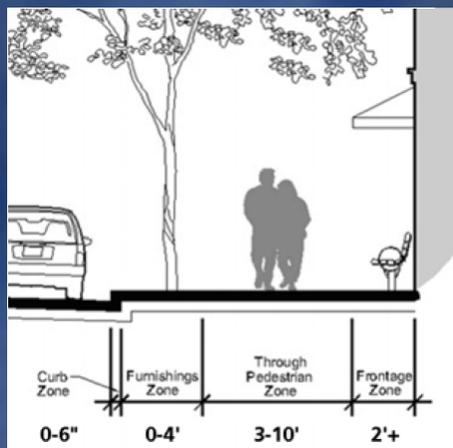


Pedestrian Facilities

- ◆ Sidewalks
- ◆ Intersections
- ◆ Shared Use Paths



Pedestrian Facilities - Sidewalks



Pedestrian Facilities – Sidewalk Design

- ◆ Minimum width: 3 feet
- ◆ Recommended width: 4-6 feet
- ◆ More where pedestrians are expected such as downtown or near schools
- ◆ Moderate cross-slope (no more than 2%)



Pedestrian Facilities – Sidewalk Installation

- ◆ Ideally, sidewalks should be provided on all streets
- ◆ Preferred surface is concrete (not asphalt)
- ◆ Preferred placement is raised, adjacent to the street (not sidepath)



Pedestrian Facilities – Sidewalk Maintenance

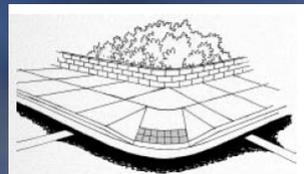
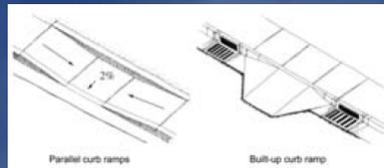


- ◆ Vegetation should be pruned
- ◆ Sidewalks should be maintained to a smooth surface
- ◆ Obstructions should be removed



Pedestrian Facilities – Curb Ramps at Intersections

- ◆ Perpendicular
- ◆ Diagonal
- ◆ Parallel
- ◆ Built up



Pedestrian Facilities - Crosswalks

- ◆ Width: 6' minimum
- ◆ Striping patterns vary



Pedestrian Facilities - Signalization

- ◆ Warrant analysis
- ◆ Ensure proper placement of call buttons



Pedestrian Facilities - Constraints

- ◆ Low visibility crosswalks
- ◆ Obstructions in sidewalks
- ◆ Narrow sidewalks
- ◆ Discontinuous sidewalks
- ◆ Broken pavement
- ◆ Encroaching vegetation
- ◆ Inaccessible sidewalks



Bicycle Facilities - Bicyclist

- ◆ Bicyclist operating space
 - ◆ 2' wide handle bars, plus 1' operating shoulder each side = minimum 4' width for many bicycle facilities
- ◆ Bicyclist types
 - ◆ Advanced, experienced
 - ◆ Basic or less confident adult
 - ◆ Children



Bicycle Facilities – Selecting Bike Facilities

- ◆ Numerous factors to consider
- ◆ FHWA's Selecting Roadway Design Treatments for Bicyclists
- ◆ Factors include:
 - ◆ Road type (arterial, local street, etc.)
 - ◆ Traffic volume
 - ◆ Speed
 - ◆ Traffic mix (e.g., truck %)
 - ◆ Expected users – skill, age, volume, destinations
 - ◆ Road conditions, space, intersections, parking demand

Bicycle Facilities – Bike Lanes

- ◆ Install with new roadway
- ◆ Pave shoulder/widen road
- ◆ Reduce travel lane or parking lane widths
- ◆ Remove travel lanes
- ◆ Remove parking

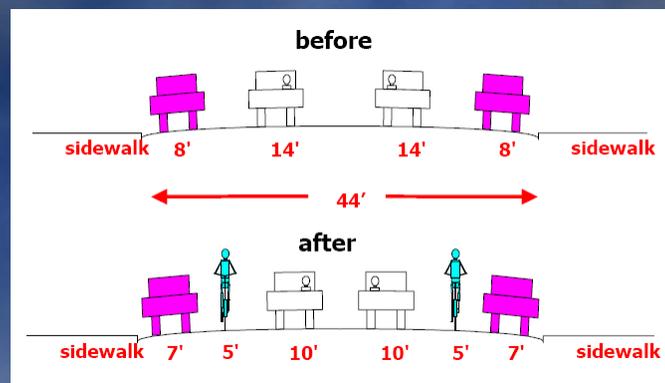


Bicycle Facilities – Bike Lanes (Retrofitting)



Bicycle Facilities – Bike Lanes (Retrofitting)

- ◆ Retrofitting urban “local” streets (44’ wide) – not on urban aid system



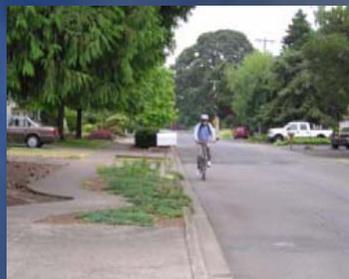
Bicycle Facilities – Bike Lanes (Constraints)

- ◆ Reasons why bike lanes won't fit:
 - ◆ Cannot further squeeze travel lanes
 - ◆ Travel lanes needed for auto capacity
 - ◆ On-street parking needed in commercial areas
 - ◆ Prohibitive costs of street widening



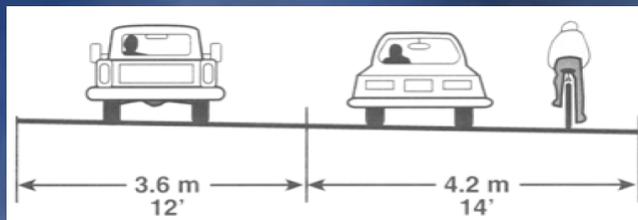
Bicycle Facilities - Shared Roadways

- ◆ Appropriate on 85% of streets in a city
- ◆ Great for getting around neighborhoods
- ◆ Not as practical for longer distances

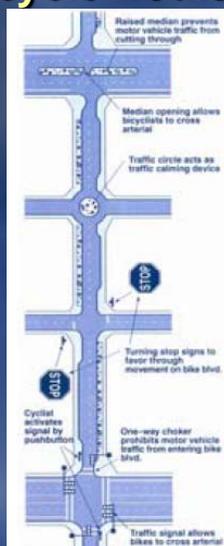


Bicycle Facilities – Shared Facilities (Wide Outside Lane)

- ◆ Used primarily on busy (arterial) streets with insufficient room for bike lanes
- ◆ 14' width desirable
- ◆ Any wider should be striped – wide lanes don't improve safety (*anti-traffic-calming?*)



Bicycle Facilities – Shared Facilities (Bicycle Boulevards)



- ◆ Local streets modified to act as through streets for bicyclists
- ◆ Traffic calming reduces speeds & through trips
- ◆ Traffic controls give priority to through bicycle movement
- ◆ Work best in a connected grid
- ◆ **INTENDED FOR EXTREME URBAN DENSITIES**

Bicycle Facilities – Bicycle Boulevards



Bicycle Facilities – Shared Lane Markings

- ◆ Used in numerous cities worldwide
- ◆ Adopted as an optional marking in California
- ◆ Recommended for FHWA adoption
- ◆ Studies: Florida, San Francisco
- ◆ Various applications
 - ◆ Denver: sub for bike lanes
 - ◆ SF, others: get cyclists out of door zone on streets with narrow lanes



Bicycle Facilities - Intersections

- ◆ Intersections
 - ◆ Direct, logical
 - ◆ Avoid unusual conflicts
 - ◆ Remove as many conflicts as possible
 - ◆ Time signals appropriately
 - ◆ Compact, avoid free-flowing vehicle movements
 - ◆ Simple right-angle intersections
 - ◆ Bicyclist should be visible, movements predictable
 - ◆ Bicyclists should rarely behave as pedestrian

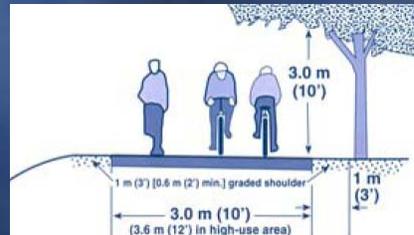
Bicycle Facilities - Constraints

- ◆ Lack of well-defined routes
- ◆ Major streets lacking bicycle facilities
- ◆ Accommodating cyclists on bridges
- ◆ System gaps
- ◆ Conflicts with motorists (e.g. at driveways, intersections)
- ◆ Glass, debris in bike lanes/shoulders
- ◆ Lack of bike parking



Shared Use Paths

- ◆ Intended for use by pedestrians, bicyclists, other non-motorized users
- ◆ Width: 10-14' paved
- ◆ Roadway separation: 5' minimum
- ◆ Overhead clearance: 8-10'
- ◆ Shy distance: 2-3'



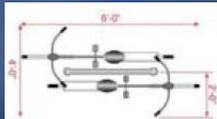
Shared Use Paths – Keys to Successful Paths



- ◆ Separate from vehicle traffic
- ◆ Scenic qualities
- ◆ Visibility
- ◆ Good design
- ◆ Connected to land uses
- ◆ Well-designed street crossings
- ◆ Shorter trip than road
- ◆ Separate different users when necessary
- ◆ Proper maintenance

Other Bicycle/Pedestrian Focus Areas

- ◆ Street crossing improvements
- ◆ Bike parking and support facilities (e.g. showers)
- ◆ Access to transit
- ◆ Safer routes to school
- ◆ Safety education (bicyclists, pedestrians, motorists)
- ◆ Encouragement programs
- ◆ Enforcement programs



How Does All This Get Wrapped Into a Plan ????

- ◆ Must Focus on the Four E's
 - ◆ Education
 - ◆ Enforcement
 - ◆ Encouragement
 - ◆ Engineering

Education Programs

- ◆ **Bike Buddy Campaign**
 - ◆ For new cyclists who are interested in using a bicycle for transportation
 - ◆ Less-experienced cyclists are paired with a trained cycling mentor who assists them in route selection, training rides, reading bike maps, and gear questions in order to lower the barriers to using a bicycle for transportation.

Education Programs

- ◆ **Bike Rodeos**
 - ◆ For children and youth
 - ◆ Drop-in event aimed at teaching kids basic skills and safety rules. Often organized by Police or Fire Bureaus. Can include free or low-cost helmet distribution.

Education Programs

- ◆ Police Education Courses
 - ◆ For law enforcement agencies
 - ◆ Pedestrian and Bicycle Law Enforcement Training Course includes a How Pedestrian and Bicycle Crashes Happen, Education on Pedestrian Laws and Bicycle Laws, and Crash Investigation and Reporting. The course can be open to all law enforcement entities for a fee, which covers instruction and materials.

Education Programs

- ◆ Women on Bikes Program
 - ◆ For women who ride bicycles
 - ◆ Women-only clinics, workshops, and rides, designed to be welcoming and supportive for participants at any stage of comfort. Topics may include maintenance basics, bike cleaning, riding in the rain and dark, shopping by bike, or commute tips. Rides are themed (e.g. historic houses, heritage trees, ice cream shops, rain gardens), and are low-mileage.

Education Programs

- ◆ Technical/Professional Training
 - ◆ Community planners and engineers
 - ◆ Community planners and engineers receive training on how to plan and build facilities to accommodate bicycles and pedestrians. Courses can be taught by experts brought in or electronically via webinars.

Education Programs

- ◆ Create Bike and Walking Maps
 - ◆ For current and potential cyclists and walkers
 - ◆ Clear symbology, designations and services attractive for cyclists and walkers, good selection of routes.

Education Programs

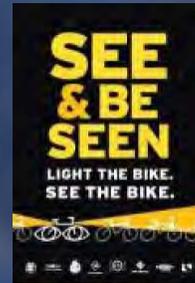
- ◆ **Diversion Class**
 - ◆ For motorists, cyclists and pedestrians
 - ◆ A Share the Road class is tailored to first-time offenders of certain bicycle and pedestrian-related traffic violations, including running a stop sign/light on a bike. In lieu of the citation, cyclists, motorists and pedestrians can take the class instead. Interested citizens can take the class even if they did not receive a ticket.

Education Programs

- ◆ **Hamilton Bicycle Website Link**
 - ◆ For current and potential cyclists
 - ◆ Resources, maps and map orders, safety, events, groups. This website becomes the starting point for any bicycling related query linking to other local cycling groups and activities. This website becomes the informational clearinghouse for any bicycle or pedestrian related program/activity and is essential for Bike Week activities in May.

Education Programs

- ◆ “Lights On” Campaign
 - ◆ For cyclists (especially students and low-income residents)
 - ◆ Media outreach, enforcement, bike light giveaways or subsidies



Education Programs

- ◆ “Drive Less, Live More” Campaign
 - ◆ For drive-alone commuters
 - ◆ Media marketing campaign and website around commute options

Enforcement Programs

- ◆ Speed Limit Enforcement
 - ◆ For speeding motorists
 - ◆ Work with police to do targeted enforcement of speed limits on designated bikeways, near schools, and in response to cyclist/pedestrian complaints



Enforcement Programs

- ◆ Radar Speed Sign Deployment
 - ◆ For speeding motorists
 - ◆ Schools and community organizations request a radar speed sign from the City of Hamilton. The sign is deployed to key locations (schools, community centers, etc) and reminds motorists to follow the designated speed limit.



Encouragement Programs

- ◆ Bike Orientation
 - ◆ For students and general population
 - ◆ Bicycle safety & promotion orientation for students and general population. Classes & clinics, materials, social events, rides.

Policy Programs

- ◆ Bicycle/Pedestrian Advisory Board
- ◆ Annual Bicycle and Pedestrian Counts
- ◆ Bicycle Parking Guidelines
- ◆ Request a Bike Rack Program
- ◆ Crash Reporting Methodology Standardization
- ◆ Staff a Ped/Bike Coordinator Position

Non-motorized Breakout (Issues, Constraints & Opportunities)

- ◆ Groups of 3-4
- ◆ Large maps provided
- ◆ Identify non-motorized routes within planning area
 - ◆ On-street
 - ◆ Separated
 - ◆ Signed routes
 - ◆ Connect destinations



Conclusion

- ◆ Thank you!



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