Working Together for more Transportation Choices: Lessons Learned from the Non-motorized Transportation Pilot Program

Environmental Stewardship Conf.
May 7, 2013

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Transit for Livable Communities
Focus on Minneapolis

Non-motorized Transportation Pilot Program - Eligible Areas

*For more complete discussion of eligible jurisdictions, refer to the NTP description.
Bike Walk Twin Cities: comprehensive strategy

Optimize existing roadway
- Assessment of needs & barriers
- Complete Streets approach
- Make key network connections

Create regional legacy
- Planning
- Data collection
- Innovation

Collaborate for change
- Underserved populations
- Political leadership
- Transportation professionals
BWTC: comprehensive Investments

- capital infrastructure: 55%
- bike parking and access to bicycles: 17%
- federal obligation: 13%
- education/outreach: 9%
- evaluation/measurement: 1%
- program management: 1%
- planning: 4%
Infrastructure: network expansion

Doubling of bike lanes in Mpls.
13 Bicycle Boulevards
New sidewalks
Trail Extensions
Improved Crossings
Innovative Solutions!

• Bike-sharing
• Bike-library
• Bike Center
• Road Diets
• Bicycle Boulevards
• Colored bike lanes
• Bike boxes
• Use Full Lane signs
Capital/Outreach: access to bicycles

www.cyclesforchange.org/programs/bike-library
Education / Outreach: Public campaigns

“Some say African Americans don’t care about being healthy. Apparently, they’ve never met me.”

“Some say there are too many barriers to get northside residents to bike and walk more. I say, we’ve overcome barriers before.”
Education / Outreach: building capacity, institutional change

- Workshops/Training
- APBP webinars
- Leadership breakfasts
- Training of League cycling instructors (LCIs)
- Website & newsletter
Measurement: validating results

- Annual benchmarking
- Monthly counts
- Automated counts
- Intercept surveys
- Bike parking observations
- Collaboration with Universities
- FHWA experiments

MARSHALL AVENUE
Bicycling & Walking UP 37% 2007 - 2011
Bike Walk Twin Cities Fall Counts

Count Location:
Lake Street Bridge
over the Mississippi River

Percentage biking increased from 2007 to 2011*

Percentage walking increased from 2007 to 2011*
Outcomes to Date

Total Bike & Pedestrian Traffic Trends
2007-2012, Sept. 4-6pm counts

Based on 40 Benchmark locations in Minneapolis, St. Paul, St. Louis Park, and Falcon Heights
Outcomes to Date: infrastructure, safety, cultural change

Over 75 miles of new facilities through pilot funding

VMT replaced for Minneapolis in 2011 – 8,434,234 miles

“The concept of what is possible has expanded.”

WOMAN POWER

31% of cyclists in the Twin Cities are women

26% of U.S. cyclists are women

55% of cyclists in the Netherlands are women

Bicyclist-Motorist Estimated City-Wide Crash Rate
Minneapolis, MN 1993-2011


**As reported to Minneapolis Public Works, from the MPD and Minneapolis Park Police

City of Minneapolis Public Works Department 2012
Outcomes to Date:
capacity building
5. Reduce Delays at Crossings

The Good

The Bad

and the Ugly
5th Street NE at Broadway
Lessons learned

• Can’t assume goals of federal program match local goals; need buy-in, *Resolutions*?
• New designs and programs take time!
• Projects require planning, community support
• Know what you want and tailor RFP around it
• Need to have more transparent design exception process
• Mode shift happens!
• Equity matters
What we’re still working towards...

- Acceptance of 10’ travel lanes
- Road diets on streets with more than 15,000 ADT
- 20 mph speed limits
- Diverters and reverse stop signs
- A true Cycle Track?
Hwy 151 (Washington Street) in Madison, Wisconsin  10’ lanes, 6’ bike lane
10’ travel lane, 6’ bike lane, 7’ parking lane, 25 mph speed limit
From Mn/DOTs Bicycle Modal Plan, 2005

for “constrained ROWs”
• Subd. 4. Speed on street with bicycle lane

...the governing body of any political subdivision, by resolution or ordinance and without an engineering or traffic investigation, may designate a safe speed for any street or highway under its authority upon which it has established a bicycle lane; provided that such safe speed shall not be lower than 25 miles per hour.
Road Diet Crash Reduction: Iowa DOT study

25% reduction in total crashes/mile
19% reduction in crash rate

Based on 15 road diet projects with 15 control sites over 23 years

San Antonio TX
Nine study sites were selected, located throughout the state of Minnesota. Operational and crash data were analyzed before and after the conversion from a four-lane undivided roadway to a three-lane roadway with a TWLTL ..... The reductions in crash rates for total crashes and PDO crashes were found statistically significant and the percentage reductions were 46 percent and 45 percent, respectively. Additionally, the change in the mean speed and 85th percentile speed were found statistically significant, but in both cases the change was less than two miles per hour.
Bicycle Boulevards
Bicycle Boulevards

• All ages and abilities
• Low-volume streets
• Improve crossings
• Reverse stop signs
• Divert motorized travel
• Lower speeds
• Shortcuts for bikes and peds
Pedestrian Fatalities Increase with Vehicle Speed

Likelihood of pedestrian fatality at certain vehicle speeds:
- 20 mph: 0%
- 30 mph: 50%
- 40 mph: 100%

Likelihood of pedestrian fatality at certain vehicle speeds.
Other Strategies with Constrained ROWs
11. Design from the Outside In

14th St E. Mpls
Complete Streets within a built environment

• Narrow the existing lanes
• Reduce the number of lanes
• Eliminate on-street parking
• Sign roadway to encourage bicycle use of full lane
• Reduce motor vehicle speeds
Seattle’s Guidelines allow for 9’ travel lanes, 7’ parking lanes.....

4-3s with 22,999

<table>
<thead>
<tr>
<th>Lane Widths</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Travel Lanes</strong></td>
<td></td>
</tr>
<tr>
<td>On bus route</td>
<td>11’</td>
</tr>
<tr>
<td>With center left turn lane and bus route</td>
<td>10’</td>
</tr>
<tr>
<td>Not a bus route</td>
<td>10’</td>
</tr>
<tr>
<td>Truck route</td>
<td>12’</td>
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<tr>
<td><strong>Multiple Travel Lanes (2 lanes each direction)</strong></td>
<td></td>
</tr>
<tr>
<td>Curb lane or outside lane on bus route</td>
<td>11’</td>
</tr>
<tr>
<td>Curb lane or outside lane no bus route</td>
<td>10’</td>
</tr>
<tr>
<td>Curb lane or outside lane on truck route</td>
<td>12’</td>
</tr>
<tr>
<td>Inside lane</td>
<td>9’</td>
</tr>
<tr>
<td><strong>Center Left Turn Lane</strong></td>
<td></td>
</tr>
<tr>
<td>Preferred</td>
<td>10’</td>
</tr>
<tr>
<td>Neighborhood</td>
<td>9’</td>
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<tr>
<td>Commercial / Business District</td>
<td>10’</td>
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<tr>
<td><strong>Parking</strong></td>
<td></td>
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<tr>
<td>Minimum</td>
<td>7’</td>
</tr>
<tr>
<td>High parking turn-over</td>
<td>8’</td>
</tr>
<tr>
<td>Commercial vehicle parking and loading/unloading</td>
<td>8’</td>
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**Average Daily Traffic (ADT) Volumes**

SDOT uses the following traffic volumes as a guideline when considering a standard road diet (4 lanes to 3 lanes – 2 lanes each direction to 1 lane each direction with center left turn lane).

<table>
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<th>Average Daily Traffic (ADT)</th>
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<tr>
<td><strong>Urban: Traffic signal frequency &gt; 4 per mile</strong></td>
<td>&lt;23,000</td>
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<tr>
<td><strong>Suburban: Traffic signal frequency ≤ 4 per mile</strong></td>
<td>&lt;18,000</td>
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</table>
“There are often conflicts with MSA and CSA standard street widths, especially when new bike lanes are proposed. MSA and CSA standards need to take precedence over other guidance to enable regional continuity and mobility and to ensure that existing funding sources are protected.”

Minneapolis Bicycle Facility Manual, p. 30
August 2009 (DRAFT)
MSA Standards

✓ Minimum lane widths: 11’ plus 2’ “CRD”
✓ Minimum # of lanes: 4 with 15,000 ADT
✓ Minimum parking lane width: 8’-10’
✓ Minimum speed limit: 30 mph
✓ One way street must have two thru lanes
☐ MSA standards have power of law
☐ Variance can be requested
☐ No guarantee the request will be granted
☐ Engineers less vulnerable to law suits when operating within standards

even though....
Unlike previous papers, Noland's is not a localized study or one reflecting unusual roadway types. It is specific to collectors, and it applies to all roads of this category throughout the US.

“as more arterial and collector lane widths are increased up to 12 ft or more, traffic fatalities and injuries increase....”

The journal, Accident Analysis and Prevention (http://www.sciencedirect.com/science/journal/00014575) has this article 'In-Press.'
“A safety evaluation of lane widths for arterial roadway segments found no indication, except in limited cases, that the use of narrower lanes increases crash frequencies. The lane width effects in the analyses conducted were generally either not statistically significant or indicated that narrower lanes were associated with lower rather than higher crash frequencies.” Midwest Research Center
Relationship of Lane Width to Safety for Urban and Suburban Arterials –

2006 study by Potts, Harwood & Richard

21 sites in Minnesota 9’ lanes
185 sites in Minnesota 10’ lanes
These findings suggest that the AASHTO *Green Book* is correct in providing substantial flexibility for use of lane widths narrower than 3.6 m (12 ft) on urban and suburban arterials. Use of narrower lanes in appropriate locations can provide other benefits to users and the surrounding community including shorter pedestrian crossing distances and space for additional through lanes, auxiliary and turning lanes, bicycle lanes, buffer areas between travel lanes and sidewalks, and placement of roadside hardware. Interpretation of design policies as rigidly requiring the use of 3.6 m (12 ft) lanes on urban and suburban arterials may miss the opportunity for these other benefits without any documentable gain in safety.
Thank you

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www.tlcminnesota.org
www.bikewalktc.org
www.bikewalkmove.org

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