Performance measures for non-motorized transportation
Today’s Speakers

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Practical Solutions to Move America Forward

A network of reform-oriented state DOTs, founded in 2010 and housed at the University of Wisconsin.

- Executive-level Community of Practice
- Technical assistance
- Resource for the transportation community

May 2, 2014  Performance measures for non-motorized transportation
May 2013 Community of Practice

Program and notes:

Webinar, May 22, 2013:
http://www.ssti.us/Events/making-the-most-of-the-transportation-alternatives-program/

May 2, 2014
Performance measures for non-motorized transportation
Performance measures under MAP-21

<table>
<thead>
<tr>
<th>Goal area</th>
<th>National goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety</td>
<td>To achieve a significant reduction in traffic fatalities and serious injuries on all public roads</td>
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<tr>
<td>Infrastructure condition</td>
<td>To maintain the highway infrastructure asset system in a state of good repair</td>
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<td>Congestion reduction</td>
<td>To achieve a significant reduction in congestion on the National Highway System</td>
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<td>System reliability</td>
<td>To improve the efficiency of the surface transportation system</td>
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<tr>
<td>Freight movement and economic vitality</td>
<td>To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development</td>
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<td>Environmental sustainability</td>
<td>To enhance the performance of the transportation system while protecting and enhancing the natural environment</td>
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<tr>
<td>Reduced project delivery delays</td>
<td>To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies’ work practices</td>
</tr>
</tbody>
</table>
Traditional performance measures for DOTs

Metrics for driver-based personal transportation

- Safety
- Congestion
- Travel time
- Roadway Level of Service
- Pavement condition and other maintenance metrics
Outputs vs outcomes

Photo: Elvert Barnes

Photo: Dan Burden

Photo: Robbie Webber
What can we use for biking and walking?

Output-based measures

- Quantity of infrastructure
- Quality of infrastructure
- Accessibility

Photo: Laura Sandt

Photo: Michael King

Photo: Dan Burden
What can we use for biking and walking?

Outcome-based measures

- Congestion
- Air Quality
- Safety
- Modal Shift

Photo: The Alliance for Biking and Walking
What can we use for biking and walking?

More outcome-based measures

• Economic development
• Public health
• Quality of life
Quantity of Infrastructure

- Total miles of sidewalks, paths, or bike lanes

- Fraction of total roadway miles on arterial/major collector routes that include bike facilities or are within 1/4 mile of a mapped bike route

- Fraction of total roadway miles that include sidewalks
Quality of infrastructure

- Bicycle Level of Service
- Bicycle Compatibility Index
- Bicycle Level of Stress
- Pedestrian Environmental Quality Index
Walk Score/Bike Score

- Advantage: Low cost, easy to use.
- Benefit: Shows proximity to amenities, which is very important
- Disadvantage: Does not show the quality of the walking or biking experience. Does not distinguish between quality of amenities
- More of a land use metric than transportation
Modal shift

Data only trip to work is widely available

Data often not fine-grained

Possibility that people are moving from transit to biking and walking

• ACS

• Bike-ped counts

• Big Data – cell phone data
Widely-accepted transportation metric

How to measure?

• Bicyclist/pedestrian fatalities per million VMT

• Percentage of drivers exceeding posted speed limits by > 5 mph
Economic development

Important to business community, neighborhood, and city

May be difficult to tie to specific project or program

- Portion of sales to customers arriving by foot or bike
- Total retail sales
- Property values
- Occupancy rates
- Rental prices

Photo: Heather Bowden
Public health agencies might already be collecting data

Some measures are long-term or difficult to tie to a specific investment

- Obesity rates
- Asthma
- Diabetes
- Number of minutes of physical activity per day
Air quality and congestion

Pro: Transportation agencies are already measuring

Con:

- Hard to tie to bicycle and pedestrian programs.
- Induced demand
- Possibility that people are moving from transit to biking and walking
Performance Measures
Minnesota & Illinois State Bike Plans

Craig Williams, Alta Planning + Design
May 2, 2014
Minnesota DOT Performance Measures

- From Minnesota Statewide Bicycle Planning Study – 2013
MnDOT Performance Measures

“As bicycling has become a more popular mode of travel, and acknowledged as integral to a safer and more livable multimodal transportation network, the need to track ridership trends and the effectiveness of bicycle transportation systems has become clear. As MnDOT seeks to promote and increase bicycling, it is imperative that investments be based on data and research that shows which planning and implementation policies are the most successful. Establishing targets for bicycle travel, making steady progress in improvements, and monitoring key indicators such as usage, safety, and facilities also demonstrates to stakeholder groups, other agencies, and the public, that MnDOT takes bicycling as seriously as other modes of travel.”
Minnesota DOT Performance Measures

• Usage
  – Increase Bicycle Mode Share to X% by 20XX
• Safety
  – Reduce bicyclist crash rate to X percentage of bicycle trips by year 20xx
• Assets
  – Increase the miles of the statewide priority network that meets specified criteria for bicycle transportation to X percentage of the total network by 20XX.
Minnesota DOT
Performance Measures

• For each measure
  – Methodology
  – Data Needed
  – Data Collection and Evaluation
  – Potential Metric Variations
  – Further Applications
  – Potential Partners
  – Example Measures
Illinois DOT Performance Measures

• From Illinois Bike Transportation Plan – 2014
  – “The performance measures presented in this chapter provide a tool for tracking the progress of State bicycling and Complete Streets improvements and Plan implementation.”

• Categories:
  – Planning & Policies
  – Design & Maintenance
  – Funding
  – Education & Promotion
## Performance Measures Matrix

<table>
<thead>
<tr>
<th>No.</th>
<th>Performance Measure</th>
<th>Metric</th>
<th>Data Collection Need</th>
<th>Agency</th>
<th>Near-term Goal</th>
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<tr>
<td>1.1</td>
<td>Complete Street-specific projects included in the Multi-year Program (projects where Complete Streets issues are the main reason for improvement).</td>
<td>Number or percentage of Complete Streets projects.</td>
<td>Tracking of Complete Streets projects (not existing)</td>
<td>IDOT - OP&amp;P</td>
<td>10 projects per district, 20 projects for district one</td>
<td>Distribution of project types is in tandem with current bicycling/pedestrian levels and predicted demand/growth.</td>
</tr>
<tr>
<td>1.2</td>
<td>Quantity of Complete Streets projects added annually.</td>
<td>Bike lanes – miles added, annually, Sidewalks – miles added, annually, Paved shoulders (5' or more) – miles added, annually, Complete Streets Intersection Improvements (for example, pedestrian/bicycle signal timing, bicycle intersection markings, refuge islands, high-visibility crosswalks), Complete Streets Mid-block Crossing Improvements (includes improving existing or installation of new mid-block crossing), Bridges with Complete Streets Improvements.</td>
<td>Tracking of Complete Streets Improvements (not existing), Inventory of sidewalks (in progress by districts)</td>
<td>IDOT – OP&amp;P and districts</td>
<td>Analyze existing growth rates and determine a visionary, yet achievable, goal.</td>
<td>Re-evaluate goals on a regular basis, preferably semi-annually.</td>
</tr>
<tr>
<td>1.3</td>
<td>Roadway segments with sidewalks 1) within incorporated areas, or 2) where Complete Streets are warranted.</td>
<td>Percentage of roadway segments. Should be evaluated by district. Alternate: miles of sidewalk backlog (within incorporated boundaries) (not inventory of sidewalks (in progress by districts), mapping of areas likely warranted for Complete Streets (not existing))</td>
<td>IDOT - districts</td>
<td>Analyze existing growth rates and determine a visionary, yet achievable, goal.</td>
<td>All warranted areas will have sidewalks</td>
<td></td>
</tr>
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<tr>
<td>1.4</td>
<td>Cities, businesses, and universities designed as Bicycle Friendly by LAB and the Highway Safety Research Center.</td>
<td>Total number in each category.</td>
<td>Bicycle Friendly Program results from the League of American Bicyclists (existing)</td>
<td>League of American Bicyclists, IDOT</td>
<td>Get to communities or colleges/universities who have not applied before to the program to apply through encouragement.</td>
<td>All medium and large cities and colleges/universities in the State will be at least a bronze ranking.</td>
</tr>
<tr>
<td>1.5</td>
<td>Bicyclists and pedestrian serious injury and fatality rates.</td>
<td>Total number and crash rates compared with mode share split.</td>
<td>Statewide crash data (existing) and commute mode-share (existing)</td>
<td>IDOT -SE</td>
<td>Reduce rate of serious injuries and fatalities by 25%</td>
<td>Eliminate fatalities; reduce serious injuries by 50%</td>
</tr>
<tr>
<td>1.6</td>
<td>The number of jurisdictions with adopted bicycle, pedestrian or Complete Streets plans.</td>
<td>The number of jurisdictions that have submitted plans to the Bicycle Inventory System.</td>
<td>Bicycle Inventory System (in progress through this plan)</td>
<td>IDOT - OP&amp;P or Communications</td>
<td>10 new incorporated places statewide adopt bicycle, pedestrian and/or Complete Streets plans.</td>
<td>All incorporated places in the state will have local bicycle, pedestrian and/or Complete Streets plans.</td>
</tr>
<tr>
<td>1.7</td>
<td>Statewide bicycle mode-share</td>
<td>- Census data</td>
<td>Existing data</td>
<td>IDOT - OP&amp;P and partner agencies</td>
<td>Double walking and bicycling mode share rates from 2012 to 5% walking to 8%.</td>
<td>Increase bicycling mode share to 5%, walking to 8%.</td>
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<td></td>
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<td>- City of Chicago's counts (on-road, and Lakefront Trail)</td>
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<td></td>
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<td>- Bike-to-Metra counts (every 5 years)</td>
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<td></td>
<td></td>
<td>- Metra's on-train bike counts</td>
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<td>- Others including trail counts, independent studies, etc.</td>
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<td></td>
<td>This should include an evaluation of woman, minority, children and senior ridership as an indicator of overall system comfort.</td>
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</tbody>
</table>

### 3.6 Design & Maintenance

<p>| 2.1 | Bicycle Level of Service on State-Jurisdiction roads                                | Bicycle Level of Service ratings on State-Jurisdiction roadways (that warrant Complete Streets Improvements). Metric should note BLOS ratings (A through E) (or equivalent quality index). | IDOT – Highways, districts | 10% improvement annually | All roadways where bicycling is warranted should be Bicycle Level of Service rating of B or better (or equivalent quality index). |
| 2.2 | The number of State-Jurisdiction roadway projects with Complete Streets elements that are suitable for a wide range of bicycling ages and | Number of State-Jurisdiction roadway projects where Complete Streets improvements Improve Bicycle Level of Service to an A or B rating (or equivalent quality index). Should be evaluated by Tracking of Complete Streets projects (not existing), Bicycle Level of Service ratings (existing, but improvements to BLOS recommended). | IDOT – Highways, districts | Every roadway project that is along a corridor viewed as an integral piece of a local bicycling network should be improved to BLOS A or B (or reasonable alternate route). | Every roadway project that is along a corridor viewed as an integral piece of a local bicycling network should be improved to BLOS A or B (or reasonable alternate route). |</p>
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<tr>
<td>2.3</td>
<td>Number of State-jurisdiction roads where Complete Streets are warranted that comply with ADA and PROWAG guidelines.</td>
<td>% of roadways warranted for walking with sidewalks or sidepaths, % of roadways with compliant curb-ramps, % of roadways with compliant crossings and signals. Should be evaluated by district.</td>
<td>Inventory of sidewalks (in progress by districts), Inventory of compliant curb ramps</td>
<td>IDOT – Highways, districts</td>
<td>Address high-priority walking and ADA issues (areas with highest volumes of pedestrian demand or need for accessible facilities) and include walking infrastructure in all warranted projects.</td>
<td>Address ADA issues on all roadways and include walking infrastructure in all warranted projects.</td>
</tr>
<tr>
<td>2.4</td>
<td>Bicycle-friendly rumble strips on roads with 4’ or greater shoulders.</td>
<td>% of bicycle-friendly rumble strips on roads with 4’ or greater shoulders (providing 3’ of clear riding space outside of the rumble strip). This would include both IDOT roads, and local roads funded through HSIP. Should be evaluated by district.</td>
<td>Inventory of roads with bicycle friendly rumble strips (not existing)</td>
<td>IDOT - Highways, districts</td>
<td>Double the percentage of roads with bicycle-friendly rumble strips – focusing on significant bicycle routes identified in the B/S.</td>
<td>All roadways with 4’ or greater shoulders have bicycle-friendly rumble strips.</td>
</tr>
<tr>
<td>2.4</td>
<td>Maintenance/preservation/resurfacing projects that include bicycle improvements either within the project scope or as a scope add-on (Includes HSIP projects.)</td>
<td>Percentage of all Maintenance/preservation/resurfacing projects that include bicycle improvements either within the project scope or as a scope add-on. Should be evaluated by district.</td>
<td>Maintenance/preservation/resurfacing projects that include bicycle improvements (not existing)</td>
<td>IDOT – Highways, districts, SE</td>
<td>50% of projects include bikeway improvements where they are warranted and feasible.</td>
<td>100% of projects include bikeway improvements where they are warranted and feasible.</td>
</tr>
<tr>
<td>2.5</td>
<td>Bicycle-safe drainage groves on State-jurisdiction roadways.</td>
<td>Percentage of bicycle-safe drainage groves on State-jurisdiction roadways. Should be evaluated by district.</td>
<td>Inventory of drainage grate location and type (not existing)</td>
<td>IDOT – Highways, districts</td>
<td>All drainage groves in populated areas are bicycle-friendly</td>
<td>All drainage groves are bicycle-friendly</td>
</tr>
<tr>
<td>3.0</td>
<td>Funding</td>
<td></td>
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<tr>
<td>3.1</td>
<td>Multi-year Program funding dedicated to Complete Streets improvements.</td>
<td>Percent of Multi-year Program funding dedicated to Complete Streets improvements.</td>
<td>Tracking of Complete Streets projects and funding (not existing)</td>
<td>IDOT – OP&amp;P</td>
<td>Funding levels should be set to address the statewide anticipated need. Meet 35% of this overall need in the near-term.</td>
<td>The statewide anticipated Complete Streets infrastructure need should be met.</td>
</tr>
<tr>
<td>3.2</td>
<td>HSIP safety infrastructure dollars going to projects improving bicycling, annually.</td>
<td>Percent of HSIP safety infrastructure dollars going to projects improving bicycling, annually.</td>
<td>Tracking of HSIP funding (existing)</td>
<td>IDOT - SE</td>
<td>HSIP funding for pedestrians and bicyclists should be proportionate to the rate of bikedep serious injuries vs. all serious injuries.</td>
<td>HSIP funding for pedestrians and bicyclists should be proportionate to the rate of bikedep serious injuries vs. all serious injuries.</td>
</tr>
<tr>
<td>3.3</td>
<td>Section 402 safety infrastructure dollars going to bicycle safety programs,</td>
<td>Percent of Section 402 safety infrastructure dollars going to bicycle</td>
<td>Tracking of 402 funding (existing)</td>
<td>IDOT - DTS</td>
<td>Funding or in-kind funding for bicycle and pedestrian programs should increase to Funding or in-kind funding for bicycle and pedestrian programs should continue to</td>
<td></td>
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<tr>
<td>3.4</td>
<td>Transportation Alternatives Program funds for projects to improve bicycling (a separate measure could be established for pedestrian improvements)</td>
<td>Percent of Transportation Alternatives Program funds for projects to improve bicycling (a separate measure could be established for pedestrian improvements)</td>
<td>Tracking TA funds (existing)</td>
<td>IDOT – OP&amp;P</td>
<td>80% of funds for bicycling and pedestrian improvement projects</td>
<td>80% of funds for bicycling and pedestrian improvement projects</td>
</tr>
<tr>
<td>3.5</td>
<td>Obligation Rates for the ITEP program.</td>
<td>Rate of obligated funding</td>
<td>Tracking obligated funding (existing)</td>
<td>IDOT – OP&amp;P</td>
<td>Double obligation rates</td>
<td>100% of funds obligated</td>
</tr>
<tr>
<td>3.6</td>
<td>Obligation Rates for the SRTS program.</td>
<td>Rate of obligated funding</td>
<td>Tracking obligated funding (existing)</td>
<td>IDOT – SE</td>
<td>Double obligation rates</td>
<td>100% of funds obligated</td>
</tr>
<tr>
<td>3.7</td>
<td>IDNR bikeway/trail capital expenditures, annually.</td>
<td>Break out into local grants (State Bike Path Grants) and IDNR’s state and local trail work.</td>
<td>Tracking funding (existing)</td>
<td>IDNR, IDOT</td>
<td>Work with IDNR to determine goals</td>
<td>Work with IDNR to determine goals</td>
</tr>
<tr>
<td>4.0</td>
<td>Education &amp; Promotion</td>
<td></td>
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</tr>
<tr>
<td>4.1</td>
<td>Number of bicycling webpage visits.</td>
<td>Increase in bicycling webpage visits vs. current</td>
<td>Site data (existing)</td>
<td>IDOT - Communications</td>
<td>Increase visits to the bicycling webpage by 50%</td>
<td>Continue an increase in website visits</td>
</tr>
<tr>
<td>4.2</td>
<td>Number of safety material downloads and materials distributed (includes Secretary of State and State Police websites).</td>
<td>Increase in content downloads and materials distributed</td>
<td>Tracking of downloads and distribution (existing)</td>
<td>IDOT - Communications</td>
<td>Increase material downloads by 50%</td>
<td>Continue an increase in material downloads</td>
</tr>
<tr>
<td>4.3</td>
<td>Safety program PSA’s, social media updates, highway marquee messages, etc. about bicycle and/or pedestrian issues.</td>
<td>Percent of Safety program PSA’s, social media updates, highway marquee messages, etc. about bicycle and/or pedestrian issues.</td>
<td>Tracking of campaigns about bicycle and/or pedestrian issues (not existing)</td>
<td>IDOT – DTS, Communications</td>
<td>Work with LID to implement a radio PSA. 20% of all posts will have a bicycle or pedestrian focus</td>
<td>20% of all posts will have a bicycle or pedestrian focus</td>
</tr>
<tr>
<td>4.4</td>
<td>The number of engineers, planners and consultants who have attended IDOT-sponsored or endorsed training events for Complete Streets issues.</td>
<td>% of personnel who have completed programs or number of staff-hours spent in training programs in the last 12 months. Should be measured by district and division in addition to department-wide. Could include CEU credits.</td>
<td>Tracking personnel in bike/pedestrian training programs (not existing). Evaluation could be done in conjunction with staff performance evaluations.</td>
<td>IDOT – Highways, OP&amp;P, districts</td>
<td>30% of engineers, planners and consultants will have received regular training on Complete Streets issues.</td>
<td>All engineers, planners and consultants will have received regular training on Complete Streets issues.</td>
</tr>
<tr>
<td>4.5</td>
<td>The number and quality of SRTS programs statewide.</td>
<td>The number of Safe Routes to School programs statewide and their score.</td>
<td>Inventory of SRTS programs (existing) Evaluation of SRTS programs (not existing)</td>
<td>IDOT - SE</td>
<td>Encourage the establishment of 20 new SRTS programs statewide</td>
<td>All state schools serving incorporated communities should have SRTS programs.</td>
</tr>
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<tr>
<td>4-6</td>
<td>The number of bicycle/pedestrian programs and events.</td>
<td>The number of IDOT-led efforts, IDOT supported efforts, and bicycling programs and events statewide - measured separately</td>
<td>Inventory of active IDOT programs pertaining to bicycling (not existing). Inventory of all programs throughout the State (not existing, rely on bicycling organizations to provide this data).</td>
<td>IDOT – SE, DTS</td>
<td>Establish or facilitate the establishment of 5 new recommended high-priority programs or events</td>
<td>Establish or facilitate the establishment of all recommended high-priority programs or events and begin implementing medium priority project opportunities</td>
</tr>
</tbody>
</table>

1 [http://www.safecorridor.org/partnership/become-a-partner](http://www.safecorridor.org/partnership/become-a-partner)
The Illinois Department of Transportation (IDOT) is proud to release the Illinois Bike Transportation Plan (Plan), the first state-wide bicycle plan in Illinois history. The Plan serves as the transportation alternatives chapter of the 2012 Illinois State Long Range Transportation Plan and follows the long range plan’s theme of Transforming Transportation for Tomorrow. It provides the Department with policies, best practices and strategic direction for implementing a sustainable, multimodal transportation system in Illinois.

The Illinois Bike Transportation Plan documents can be downloaded here:

Executive Summary
http://www.dot.state.il.us/Bicycling/BikePlanSummaryFinal.pdf

Technical Documents
http://www.dot.state.il.us/Bicycling/TechnicalMemorandums.pdf

Appendices
http://www.dot.state.il.us/Bicycling/Appendices.pdf

The mission of the Illinois Department of Transportation (IDOT) is to provide safe, cost-effective transportation for Illinois’ residents and visitors in ways that enhance quality of life, promote economic prosperity and demonstrate respect for the environment. To that effect, IDOT commissioned the preparation of a Long Range Transportation Plan. In addition to the highway element, the plan also included a rail plan, freight mobility plan (both of which were completed in Dec 2012) and a
Performance Measures
Minnesota & Illinois State Bike Plans

Craig Williams, Alta Planning + Design

[Contact information]
Measuring Biking and Walking – A State Perspective

Paula Reeves, AICP CTP
WSDOT Local Programs Division

SSTI Webinar
May 2, 2014
WSDOT’s Local Programs Division

We provide educational, technical, and financial support with federal oversight to local customers to help them achieve their transportation goals…

- We are stewards of federal transportation funding
- We provide technical expertise and services related to federal and state requirements.
- We promote cooperative planning and partnerships.
Community Design
to better balance the regional need for moving automobile traffic with the community need for a vibrant, connected and safe pedestrian environment.
Overview

• Our general requirements for measuring biking and walking

• What data are we tracking?

• Recent research – Main Street Highways and Complete Streets
Why does the state measure bicyclists and pedestrians?

• Required by Governor’s Performance Measurement Programs since 2008

• Necessary to track progress toward meeting Washington State’s long range goal:
  “Reduce fatal and serious crashes involving bicyclists and pedestrians, while doubling biking and walking.”

• Critical for the State Highway Safety Plan – Target Zero
Tracking important trends

- Rising/fluctuating fuel prices
- Health & environmental concerns
- Technology
- Aging population
- Rising maintenance needs and costs + declining transportation revenue (gas tax).
- Increased urbanization
Trends we are watching...

Millennials are driving less – from 2001 to 2009 down 23 percent

K-8 children walking to school increasing – from 2007 to 2012 up 27 percent increase

Commute trips make up less than 20% of all vehicle trips during peak hour - from 1969 to 2009, down from 45%
Are we meeting our goals?

In 2012 there were 560 fatal and serious injury pedestrian or bicyclist collisions, accounting for 20% of all fatal and serious injury traffic collisions that year.

![Graph showing number of traffic fatalities involving bicyclists and pedestrians from 2007 to 2012, Washington only.](image-url)
The young & aging - “At Risk” groups

- 769 bicycle and pedestrian traffic crashes involving children in 2012.
- Adults 65+ are 13% of the population, but 25% of pedestrian fatalities.

Number of pedestrian collisions and fatalities compared to population by age group
2001-2012, Washington only
Pedestrian and Bicyclist Mobility Trends

• In Washington approximately
  – 13% of all trips,
  – 5% of commute trips, and
  – 10% of all miles traveled were on foot or by bicycle.

• 10% increase in biking and walking statewide over the past 5 years.

Source: NHTS, ACS, Regional Surveys, and WSDOT Bicycle and Pedestrian Documentation Project
Counting Biking and Walking in WA

42 cities & 250 count sites in 2013
# Site Background Data Collection

## Background Data Sheet

| Count Location: |  |
| City: | 1 2 3 4 5 |
| Type of Facility: | 1 2 3 4 5 |
| Type of Setting: | 1 2 3 |
| Scenic Quality: | 1 2 3 |
| Surrounding land uses (within 1 to 2 miles): | 1 2 3 4 5 |
| Schools, parks, visitor destinations adjacent or close to facility: | 1 2 3 4 |
| Quality of connecting facilities (paths, bike lanes, routes): | 1 2 3 4 |
| Length of facility: | 1 2 3 4 5 6 |
| Access: | 1 2 3 4 |
| Quality of overall network: | 1 2 3 |
| Traffic volumes (ADT) of adjacent road: | 1 2 3 4 |
| Traffic speeds (posted) of adjacent roads: | 1 2 3 4 5 |
| Crossings and intersections (average number per linear feet): | 1 2 3 4 5 |
| Crossing and intersection traffic: | 1 2 3 4 |
| Crossing and intersection protection: | 1 2 3 |
| Condition: | 1 2 |
| Topography: | 1 2 3 |

**Type of facility:**
- 1 = paved multi use path at least 8 feet wide
- 2 = unpaved trail
- 3 = bike lane with standard signing and striping
- 4 = signed bike route
- 5 = street or road with marked shoulders (min. 2 feet wide)
- 6 = street or road with no shoulders or less than 2 feet wide
- 7 = sidewalk (at least 4 feet wide)
- 8 = unimproved (dirt, gravel) shoulder
Reasons we count bicyclists and pedestrians statewide:

Beyond the main reason – *We track all users of the transportation system*…

- Current national & state travel behavior surveys are inadequate
- Regional household surveys vary greatly
- Biking and walking is rapidly increasing in urban areas

American Community Survey Question:
How did this person *usually* get to work LAST WEEK?

*If this person usually used more than one method of transportation during the trip, mark the box of the one usually used.*

*(most of the distance or most of the time)*
What have we learned so far?

In addition to capturing large amounts of data from across WA in a short period of time at very low cost...

- Improving local, regional and state planning
- Strengthening partnerships
- Raising awareness about the need for more and better bicycle and pedestrian data

Highlights from the 2012 Washington State Bicycle and Pedestrian Counts

- Walking and biking is up 10% since the inaugural counts in 2008
- 38 cities participated in the 2012 counts
- Bicycling increased by 10% between 2011 and 2012
- Walking increased by 5.4% between 2011 and 2012
- 85% of bicyclists wore helmets
- 24% of bicyclists and 50% of pedestrians were female
Where are people biking and walking?

### REGIONAL CENTERS

<table>
<thead>
<tr>
<th>Household Location: Work Location:</th>
<th>INSIDE INSIDE</th>
<th>OUTSIDE INSIDE</th>
<th>INSIDE OUTSIDE</th>
<th>OUTSIDE OUTSIDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive Alone</td>
<td>38.3%</td>
<td>70.8%</td>
<td>81.0%</td>
<td>84.9%</td>
</tr>
<tr>
<td>Carpool</td>
<td>7.9%</td>
<td>7.9%</td>
<td>7.4%</td>
<td>9.3%</td>
</tr>
<tr>
<td>BUS</td>
<td>25.2%</td>
<td>16.1%</td>
<td>8.8%</td>
<td>2.0%</td>
</tr>
<tr>
<td>BICYCLE</td>
<td><strong>3.0%</strong></td>
<td><strong>2.1%</strong></td>
<td><strong>1.9%</strong></td>
<td><strong>1.4%</strong></td>
</tr>
<tr>
<td>WALK</td>
<td>25.5%</td>
<td>2.4%</td>
<td>0.4%</td>
<td>1.8%</td>
</tr>
<tr>
<td>OTHER</td>
<td>0.0%</td>
<td>0.7%</td>
<td>0.0%</td>
<td>0.6%</td>
</tr>
<tr>
<td>TOTAL</td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Puget Sound Regional Council Travel Demand Model
Walkability = Community Economic Development

- Rents in walkable shopping areas can be 27 to 54 percent higher than mainly automobile dependent or drive-to shopping.

- Each point increase in your community WalkScore correlated to a $500 to $3000 increase in rent - home values.

- Over 80 percent of residents regularly walk to run errands when retail and services are one-fifth of a mile or less from most homes.

- BUT - when that average distance between homes, retail and services increases to half of a mile, the share of even periodic foot travelers drops significantly – 30% or less.

Source:
Transportation and Public Health Trends

Automobile dependency is costly, discourages physical activity, and adversely affects air quality.

- Recent studies link increasing rates of obesity to time spent in cars and community design - wide roads without crossings, and no safe areas to walk or bike.
- 1 in 3 people and 17 percent of young people in Washington are obese in 2012 (Washington Department of Health)
- The transportation sector is responsible for over half of EPA’s six regulated air pollutants and the largest contributor of greenhouse gas emissions in Washington (Washington Department of Ecology)
Washington’s 2014 Student Travel Survey

• WSDOT, Dept. of Health, Office of Public Instruction Partnership
  – It is a random representative telephone survey of parents who have children in grades K-8.
  – It asks how students travel to and from school and about barriers to walking, biking and taking the school bus.
Main Street Highways

Research identified approximately 500 miles of “Main Street” highways bisecting 180+ cities based on criteria applied consistently across the state.
# What is a Main Street Highway?

## Step 1: Screening

<table>
<thead>
<tr>
<th>Variables</th>
<th>Units of Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Route within City Limits</td>
<td>Y, N</td>
</tr>
<tr>
<td>Highway of Statewide Significance</td>
<td>Y, N</td>
</tr>
<tr>
<td>National Highway System</td>
<td>Y, N</td>
</tr>
<tr>
<td>State Access Control Classification</td>
<td>Y, N</td>
</tr>
<tr>
<td>Federal Functional Classification</td>
<td>Principal arterials, Minor arterial streets, Collector streets, Local streets</td>
</tr>
<tr>
<td>Design Speed</td>
<td>MPH</td>
</tr>
<tr>
<td>Posted Speed</td>
<td>MPH</td>
</tr>
<tr>
<td>Year of Incorporation</td>
<td>Year</td>
</tr>
<tr>
<td>Freight Classification</td>
<td>T-1 more than 10 million tons per year; T-2 4 million to 10 million tons per year; T-3 300,000 to 4 million tons per year; T-4 100,000 to 300,000 tons per year; T-5 at least 20,000 tons in 60 days</td>
</tr>
<tr>
<td>Collision History</td>
<td>Number of collisions involving bicyclists and pedestrians</td>
</tr>
<tr>
<td>Variables</td>
<td>Units of Measure</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td>Land Use – Locally Adopted Zoning</td>
<td>CBD, Mixed Use, Commercial Center</td>
</tr>
<tr>
<td>Proportion of visible buildings that are commercial</td>
<td>Percentage (25%, 50%, 75%, 100%)</td>
</tr>
<tr>
<td>Proportion of street frontage with dead space</td>
<td>Percentage (25%, 50%, 75%, 100%)</td>
</tr>
<tr>
<td>Proportion of street frontage with parked cars</td>
<td>Percentage (25%, 50%, 75%, 100%)</td>
</tr>
<tr>
<td>Number of travel lanes</td>
<td>Number both directions</td>
</tr>
<tr>
<td>Average travel lane width</td>
<td>Feet</td>
</tr>
<tr>
<td>Average shoulder width</td>
<td>Feet</td>
</tr>
<tr>
<td>Average median width</td>
<td>Feet</td>
</tr>
<tr>
<td>Average sidewalk width</td>
<td>Feet</td>
</tr>
<tr>
<td>Total curb to curb width</td>
<td>Feet</td>
</tr>
<tr>
<td>Total back of sidewalk to back of sidewalk width</td>
<td>Feet</td>
</tr>
<tr>
<td>Posted speed limit</td>
<td>MPH</td>
</tr>
<tr>
<td>Crosswalk spacing</td>
<td>Feet</td>
</tr>
<tr>
<td>Visible curb extensions (y, n)</td>
<td>Y, N</td>
</tr>
<tr>
<td>Average building setback</td>
<td>Feet</td>
</tr>
<tr>
<td>Average building height (stories)</td>
<td>Stories</td>
</tr>
<tr>
<td>Uniform building height (y, n))</td>
<td>Y, N</td>
</tr>
<tr>
<td>Number of pedestrians visible</td>
<td>Count</td>
</tr>
<tr>
<td>Average daily traffic</td>
<td>Volume</td>
</tr>
<tr>
<td>Visible bicycle lane</td>
<td>Y, N</td>
</tr>
<tr>
<td>Visible buildings that are historic</td>
<td>Y, N</td>
</tr>
</tbody>
</table>
Why Define Main Street Highways?

• Ensure a measurable link between goals and transportation investments
  --Outcomes vs. throughput or volume to capacity ratio

• Develop the most cost effective transportation projects
  --Ensure fewer scope and schedule changes

• Identify partnerships, opportunities, and resources.
  --Transportation, historic preservation, environmental, economic development, utilities, etc..
Research Findings

• **Scope changes:**
  -- More common on Main Street Highways
  -- 48% of all projects on Main Street Highways vs. 38% on other parts of the state system

• **Retrospective review:**
  -- 40 projects or 20% of WSDOT’s scope, schedule and budget changes could have directly benefited from additional community design before projects were scoped

• **Average possible cost avoidance per project:**
  -- Estimated at over $9 million dollars or 30% of project cost
State Highways that also serve as City Streets in core commercial areas or “Main Street Highways” – serve as both thoroughfares and community access routes.
Moving Forward – More Measures to Consider

- Complete Streets Act – Consultation Requirement
- Practical Design Reform
- WSDOT Community Engagement Goal
- Bike Share in Puget Sound - 2014

State Route 14 – Bingen
State Route 12 – Morton
Resources...

WSDOT’s Websites

http://www.wsdot.wa.gov/Bike/count.htm
http://www.wsdot.wa.gov/Walk
http://www.wsdot.wa.gov/LocalPrograms/Planning

WSDOT Contacts...

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Thank you!

We are very interested in your feedback:

• What metrics is your transportation agency using?

• What are the most important metrics for your state or community?

• What data is important to your performance measures?

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