

Going Green: Insights from the Nonmotorized Transportation Pilot Program

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October 30, 2009

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SERVING THE NATION AS A LEADER IN GLOBAL
TRANSPORTATION INNOVATION SINCE 1970



Photos: Corel, Photodisc, Photodisc, Photodisc, Comstock, DOT

Nonmotorized Pilot Program

- Established under Section 1807, SAFETEA-LU
 - “...to demonstrate the extent...bicycling and walking can carry a significant portion of the transportation load and represent a major portion of the transportation solution.”



Nonmotorized Pilot Program

- Authorizes \$100 m. for 4 pilot communities
 - Marin County, CA
 - Sheboygan County, WI
 - Minneapolis, MN
 - Columbia, MO
- FHWA: interim and final reports to Congress
- 2005-2010...
- Collaborative program management
 - 4 Pilots
 - Federal: USDOT-- FHWA, Volpe Center; CDC
 - Rails to Trails Conservancy



Section 1807 Calls for Data on Changes

- Motor vehicle usage
- Nonmotorized transportation usage
- Public transportation usage
- Congestion
- Energy usage
- Frequency: bicycling & walking
- Connectivity to community activity centers
- Health, and
- Environment



Nonmotorized Pilot Program

- Presentation: insights into assessment of livability/sustainability benefits of nonmotorized investments
 - Making the case:
How livable? How sustainable?
From claiming to demonstrating...
- Methodologies are key:
 - Performance measures, data collection, forecast models, and evaluation



Program Goals and Critical Themes

- Mode shift
- Energy savings
- Improved environmental quality
- Increased physical activity and public health
- Improving safe access
- Working with land use policy and transportation planning processes
- Raising public awareness.
- Improving connections to other modes as part of overall system; (emphasis on transit)
- Leveraging resources



Performance Measures to Evaluate Sustainable Modes

Goals	Performance Measures
Use of sustainable modes	<ul style="list-style-type: none"> •Mode share -- % of trips or Vehicle Mile Travelled (VMT); •VMT per capita; Passenger Miles (PM)
Air Quality	<ul style="list-style-type: none"> •CO or Particulates per PM or VMT (avoided VMT)
Climate Change	<ul style="list-style-type: none"> •MM Tons CO₂: total, per PM or VMT (avoided VMT) •Access to transit for evacuation
Access to employment	<ul style="list-style-type: none"> •Walk/bike access to work or transit (minutes or distance)
Access to Work, School, Medical Care	<ul style="list-style-type: none"> •Walk/bike access to destinations or transit (minutes, distance) for low income groups, seniors, children; •Affordability of transportation (e.g., nonmotorized and/or transit), including combined with housing for low income groups
Health	<ul style="list-style-type: none"> •Physical activity (minutes per capita or trip); all trip purposes •Civic indicators
Energy	<ul style="list-style-type: none"> •Energy cost/VMT, PM (avoided VMT) • Energy use per VMT or PM
Overall Livability	<ul style="list-style-type: none"> •Civil society, quality of life indicators (“most livable community,” etc.)



Evaluation Activities

BASELINE ASSESSMENT

Establish baseline mode split at community level in 4 pilots and control. Late 2006/early 2007

PROJECT EVALUATIONS

Track use of nonmotorized facilities or participation in non-infrastructure activities at project level in each community. Describe all projects. Focus on planning/policy climate at community level. Data collected fall 2007 and 2010 (or annually).

BOOKEND ASSESSMENT

Collect mode split information in 4 pilots and control at community level. Data to be collected in 2010.

SYNTHESIS & ANALYSIS OF BASELINE/BOOKEND DATA

Function: Compare 2010 data to 2007 data for community level outcomes.

COMMUNITY COUNTS/SURVEYS

Gather community- and project-level data. Data collected in 2007 and 2010 (or annually starting in 2007).

COMPREHENSIVE SYNTHESIS AND ANALYSIS

Review and integrate NTPP evaluation data into interim and final reports to Congress on outcomes and lessons learned. Combine internal and external data sources.



NTPP
Results
Reported
in Final
Report



Evaluation Challenges (1)

- No program funds for evaluation
 - FHWA funds + Pilots' pooled resources
- Broad range of projects: Infrastructure and Non-infrastructure
- Short time horizon
- Projects dispersed over large study areas.
- Need for control communities (i.e., role of gas prices, recession, etc.)
- Difficulty establishing causality
- Sample size and confidence intervals
- How much effort to identify small changes of small mode share?



What's feasible for NTPP (and NM in general)?



Evaluation Challenges (2)

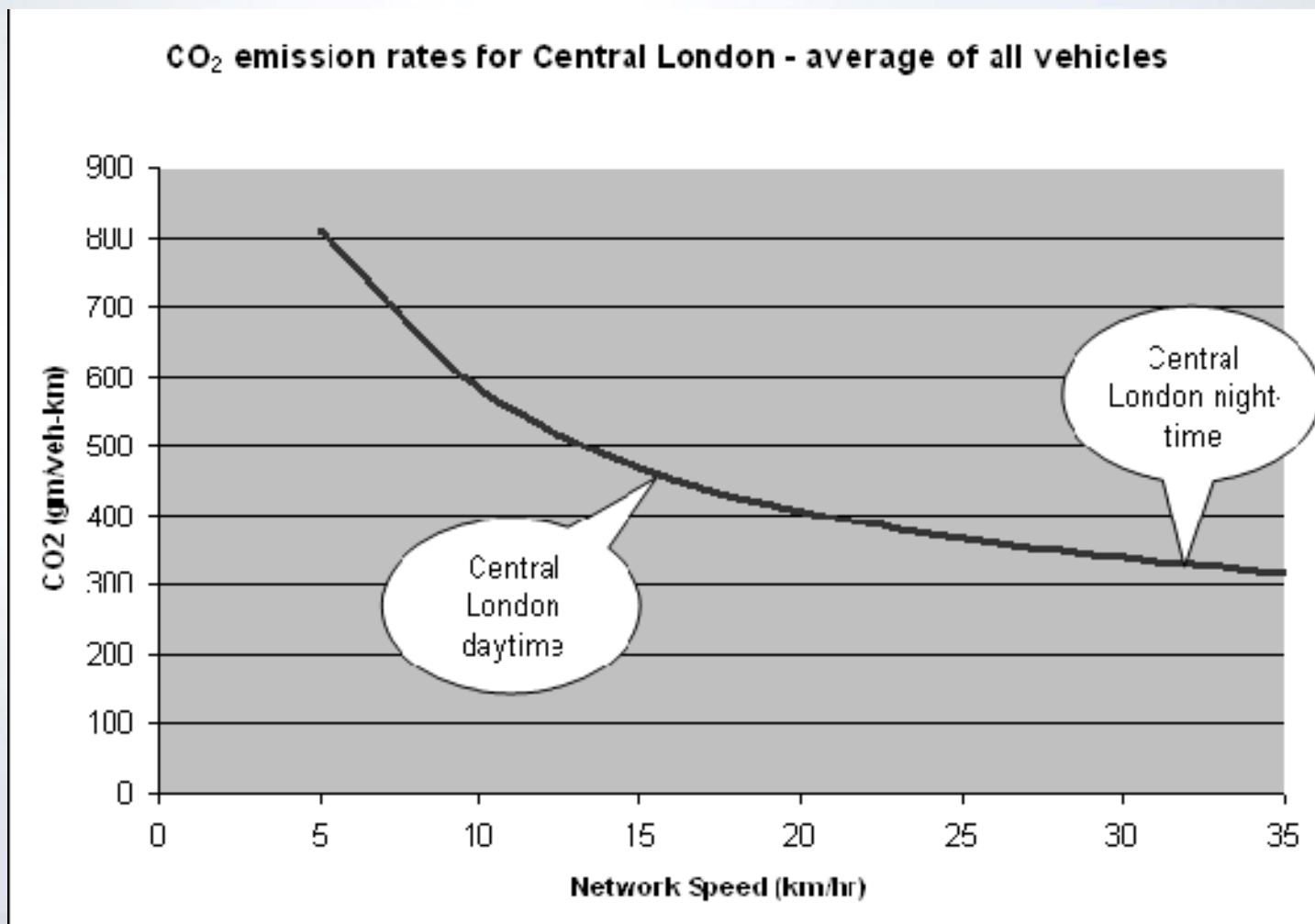
- Reliance on avoided VMT for community mode shift
 - Utilitarian vs. recreation
 - Issue of car ownership
 - Importance of linked trips
- Need to view NM within multimodal system
 - Gold standard trip:
 - Marin gap project => Golden Gate ferry trip to Muni light rail
 - 2 or 100 avoided VMT?
 - Need linked trips – NM and transit
- Need for tools to evolve:
 - Models, performance measures, external data, counters

What's feasible for NTPP (and NM in general)?



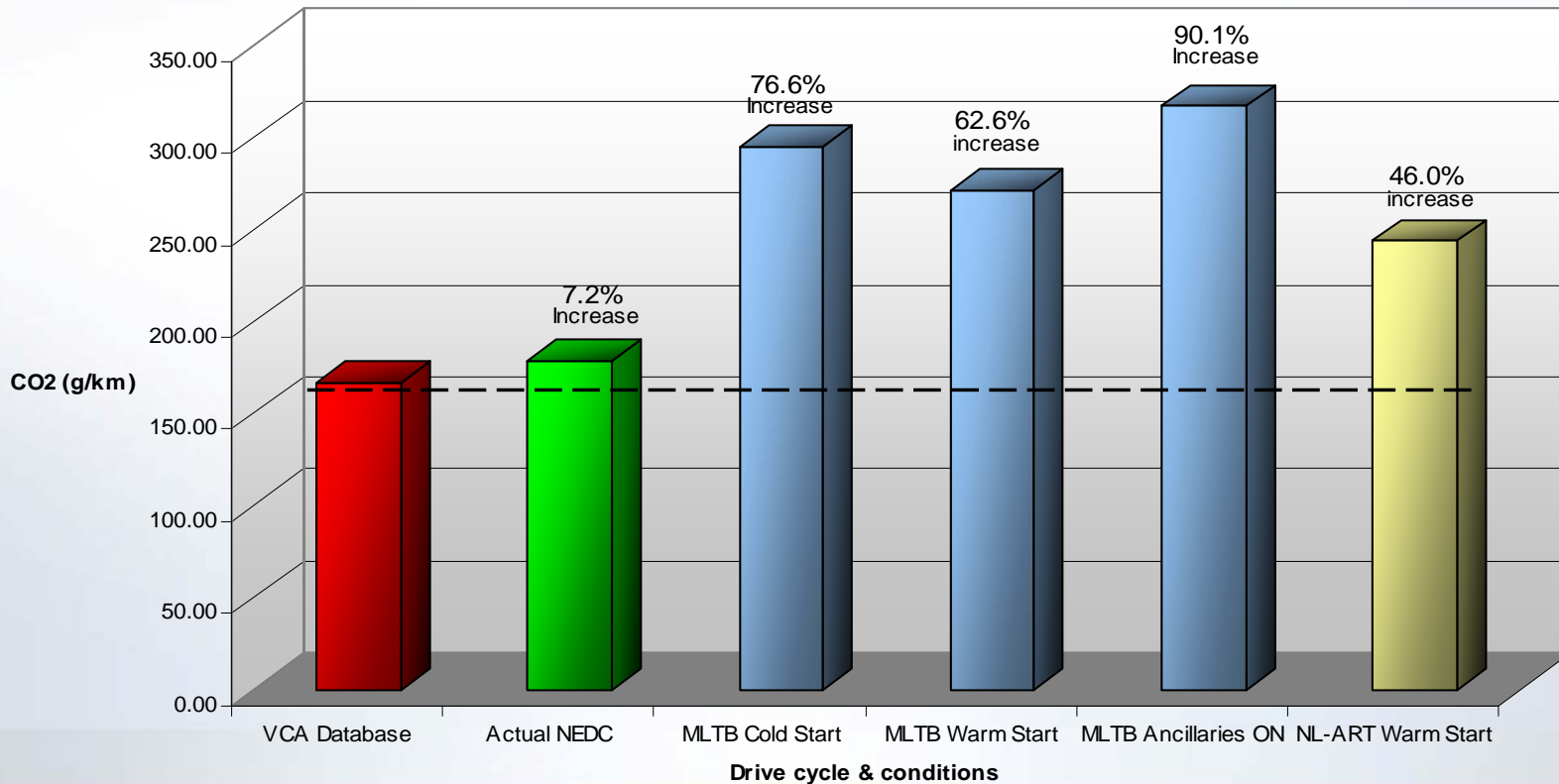
A VMT is not a VMT is not a VMT

From: Transport for London, D. Hawket



A VMT is not a VMT is not a VMT (emissions factors) (from Transport for London, D. Hawket)

CO2 Comparison of Ford Focus over different drive cycles & conditions



Policy challenges: NTPP and NM in general

- From positive...to how positive?
 - Quantify to compete
- Essential to quantify results, but:
 - Limits of avoided VMT
 - And what about cap/op costs?



Policy challenges: NTPP and NM in general

- Program structure and available methods limit policy conclusions of a pilot program
- Importance of big picture to assess benefits
 - Time horizon – think long term
 - Regional as well as project scale
 - NM as part of multimodal system
 - Criticality of trip purpose and issue of car ownership
 - Limits of avoided VMT
 - Difficulty of determining cost-effectiveness
 - Importance of institutional side
 - Sustaining new service
 - Mainstreaming in the planning process
 - Role of new partners for livability results



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FHWA Nonmotorized web-site:
<http://www.fhwa.dot.gov/environment/bikeped/nhttp.htm>

