



# Incorporating Cost-Effectiveness into Health Impact Calculations

Sonali Soneji, AICP  
Simple Solutions Planning & Design, LLC

September 24, 2013



Hi –

Today I'm here to talk about the Parking and Curb Space Management element of the Master Transportation Plan.

I have distributed copies of our 1<sup>st</sup> draft. It has an introductory section and then 3 sections, one about on-street parking, the next on off-street parking and the last to do parking for people with disabilities.

In this presentation, I am going to focus on the issues that I anticipate are the most controversial, most of them tend to relate to off-street parking and the development process. For those of you who have read the draft, if I don't mention something you think is worth discussing, please bring it up.

I have also distributed a memo related to changing the parking requirements for site plan office buildings. We will touch on this briefly, but today is not the time I would like to go into this in detail.





## Research Question

What is the  
**Return on Investment**  
of  
**Arlington County Commuter Services**  
programs?

Benefits in terms of:  
Transportation Efficiency – VMT reduced  
Environmental Impact – Emissions reduced  
Public Health and Safety – Medical costs saved



*Mobility Lab ROI Project: [mobilitylab.org/research/the-transportation-cost-savings-calculator](http://mobilitylab.org/research/the-transportation-cost-savings-calculator)*



The Return on Investment Project (ROI) aims to develop consistent measurement approaches to estimate the savings in terms of health costs due to customer support, outreach and education offered to the users of the multimodal transportation system.

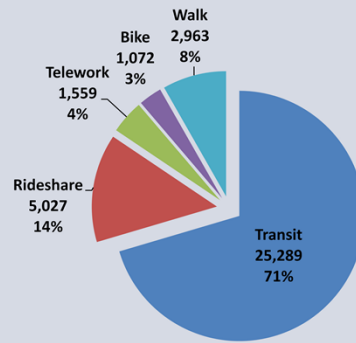


## TDM by Arlington County Commuter Services

### Arlington County Commuter Services Programs

- WalkArlington
- BikeArlington
- Capital Bikeshare
- Zipcar
- Car Free Diet
- Arlington Transportation Partners
- CommuterPage.com
- The Commuter Store

### Trips Converted from Single-occupant Vehicles by Arlington County Commuter Services Programs



Based on FY 2011 ACCS Data



Helps reduce 511,000 pounds of CO2 emissions every day.

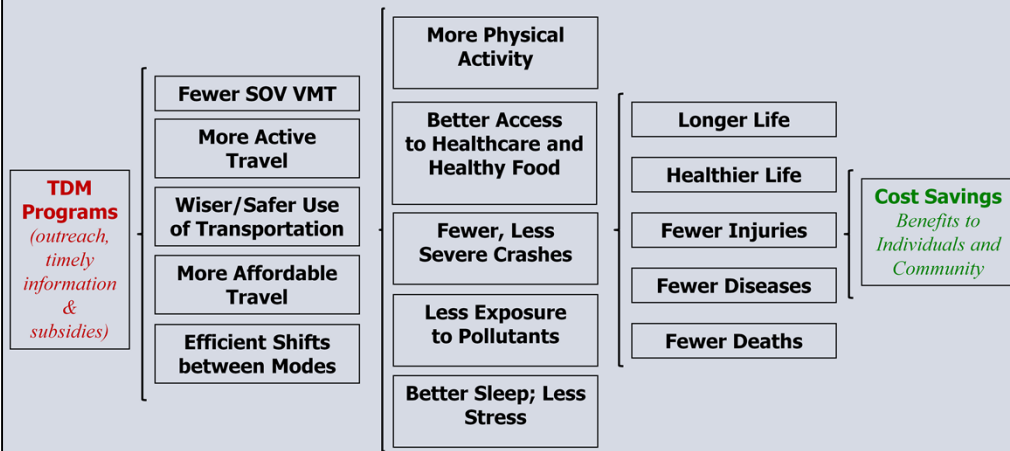


# Charting the Influence

## *Behavior Changes*

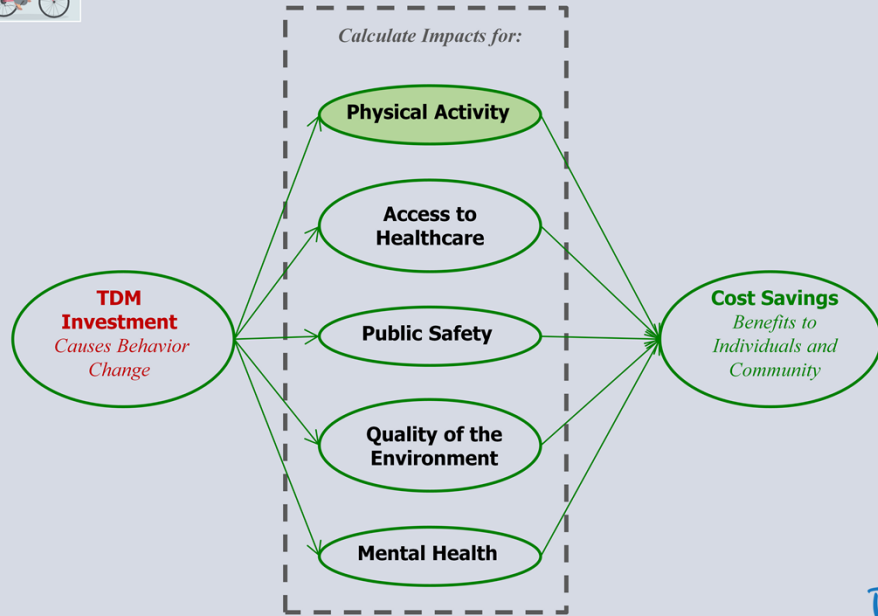
## *Determinants*

## *Health Impacts*





# Comprehensive Framework





## Role of TDM in Physical Activity

- TDM increases physical activity through:
  - Offering active transport infrastructure (makes choice more **convenient**)
  - Offering active transport subsidies (makes choice more **affordable**)
  - Offering information, training, and promotion of active transport options (makes choice more **obvious**)
  
- Results may be measured as:
  - Trips shifted from driving mode to active mode
  - New miles walked or biked
  - New minutes walked or biked



## Physical Activity Benefit Calculators

### Health Economic Assessment Tool (HEAT)

[www.heatwalkingcycling.org](http://www.heatwalkingcycling.org)

Calculates the savings of reduced mortality due to increased physical activity, specifically walking and bicycling.

#### Key Variables:

Study Population = 2,200 (1% of Arlington adults)

US Mortality Rate = 794 deaths per 100,000 people

Value of a Statistical Life = \$5.8 million



Welcome to the WHO/Europe Health  
Economic Assessment Tool (HEAT).





## Physical Activity Benefit Calculators

### Physical Inactivity Cost Calculator (PICC)

[www.ecu.edu/picostcalc](http://www.ecu.edu/picostcalc)

Estimates economic losses of reduced morbidity to calculate external benefits of increased physical activity

- medical costs for injuries
- workers' compensation
- lost productivity

Key Variables:

Median annual income = \$ 85,600

Prevalence on Inactivity = 17% (2009 County Health Rankings)

% of adults over age 65 = 11%







## Savings from Increased Physical Activity

If an additional 1% of Arlington adults started getting the CDC-recommended levels of physical activity by walking or biking for their daily commute, the annual cost savings would be:

- \$7.5 million in the first year due to reduced mortality
- \$12 million per year due to reductions in lost productivity, workers' compensation claims, and medical costs of injuries

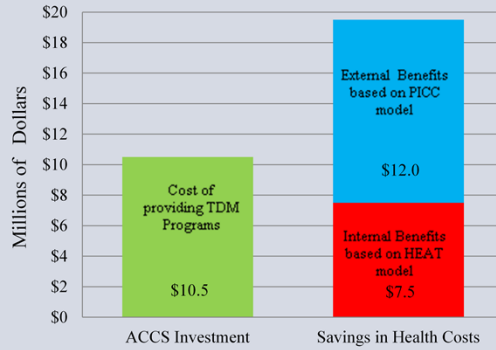


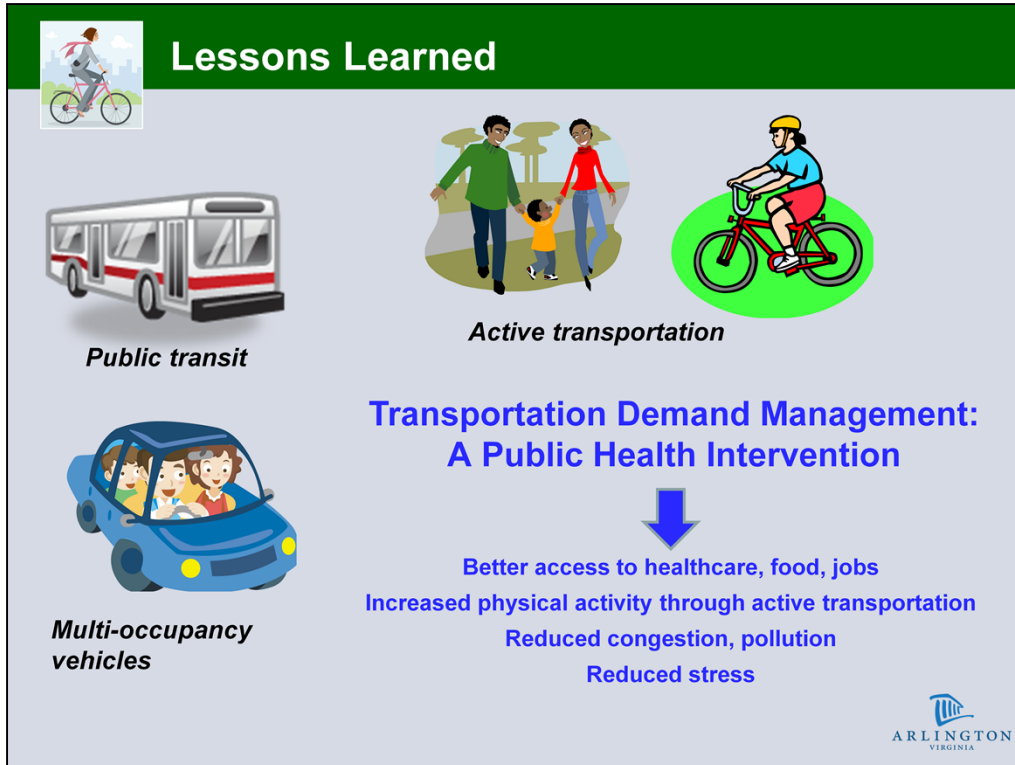
## Return on Investment

**The return on investment was almost 200%**

when the annual cost of providing TDM programs in Arlington was compared to the physical activity benefits calculated based on the HEAT and PICC models.

Return on investment of ACCS programs for public health due to increased physical activity.





Shifting the mode share from vehicle travel to public transit and active transportation influences public health in several ways. Adoption of more active modes of transportation can result in healthier lifestyles, higher life-expectancy, reduced stress-related illness, and reduced illness/death from obesity, heart and lung diseases, and diabetes. Education and awareness campaigns designed to enhance public safety can reduce accidents and fatality associated with all modes of travel. Affordable and convenient access to medical care, healthy food, jobs, and education can improve the ability of individuals to remain healthy. Increased use of green transportation modes can reduce pollutants that enter the air and water, which in turn results in less disease and more healthy communities.



## Lessons Learned

**Increased productivity and presenteeism accounted for almost half the cost savings.**

Arlington has a:

- High median income
- More physically active population (%)

**Insight:**

Arlington's employers play a major role by supporting healthy commuting and reducing physical inactivity at work.



## Lessons Learned

**Cost savings calculators can play a major role in promoting healthy policies.**

Criteria for selection of tools for this project:

- Easy to understand and use
- Easily available to download and customize
- Factors and assumptions transparent

**Insight:**

Cost effectiveness calculations clarified the pathways an initial investment in transportation services can result in public health benefits.



## Share your thoughts

Contact us at:

**Simple Solutions Planning & Design, LLC**

[www.simplesolutionsconsulting.us](http://www.simplesolutionsconsulting.us)



Sonali Soneji, AICP  
sonali@simplesolutionsconsulting.us  
(703) 867-6042



Aida Olkkonen, MA, MPH  
aida@simplesolutionsconsulting.us  
(571) 577-2432

