



# **Public Transportation and GHGs: *APTA Guidance and Tools***

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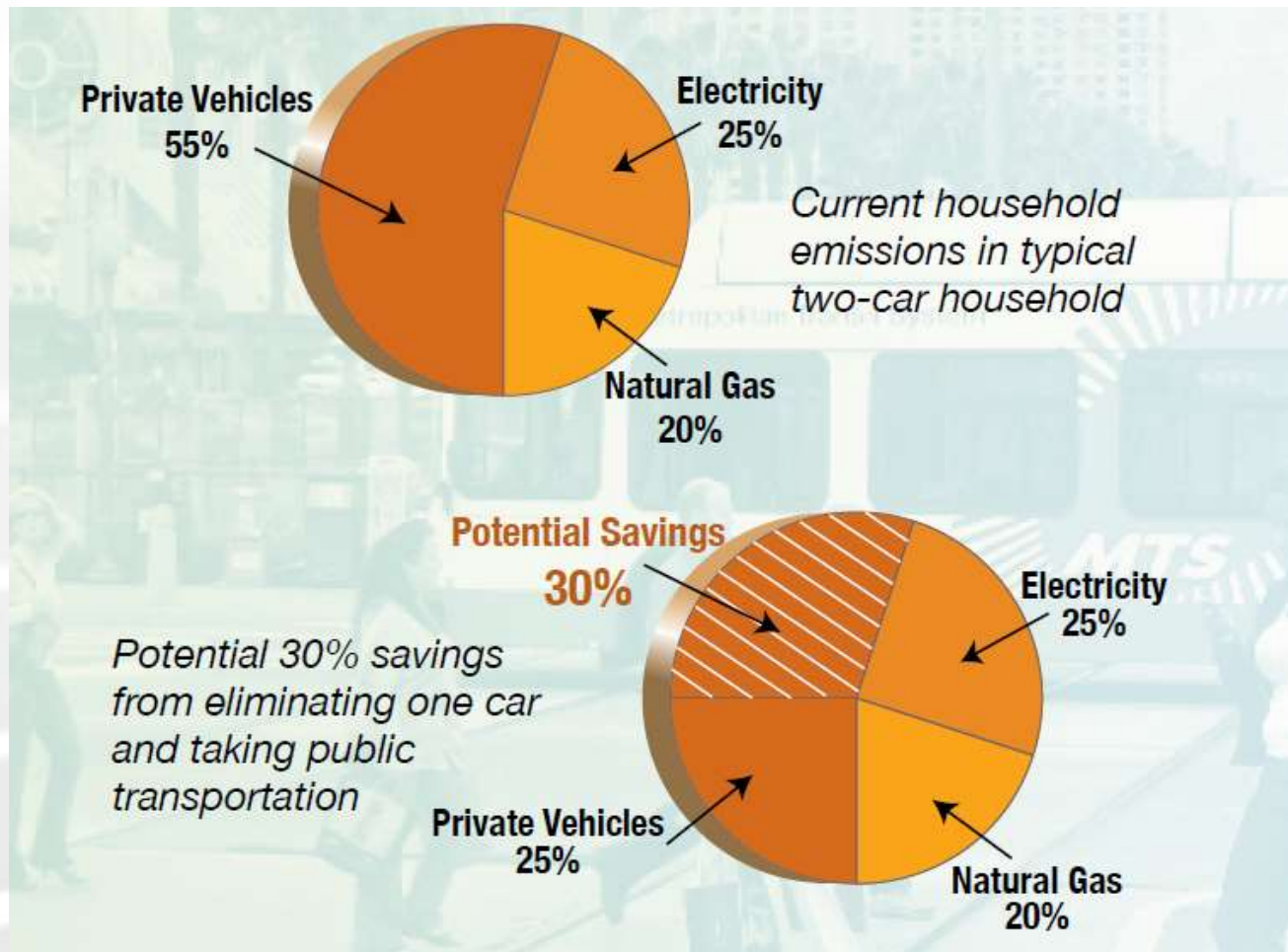
***Rail~Volution***

**Los Angeles, CA**

**October 16, 2012**



# Private vehicles are the largest contributor to a household's carbon footprint



Source: "Public Transportation's Contribution to U.S. Greenhouse Gas Reduction," Science Applications International Corporation, September 2007.



# Value of Public Transportation as a Climate Change Strategy

- Potential for immediate action
- Supports efficient land use patterns & general reduction in travel demand by individual cars
- Reduces congestion and improves fuel economy
- Preserves mobility in a climate of rising fuel prices



# A Smaller Carbon Footprint



Public transportation cuts carbon emissions by 37 million metric tons each year.



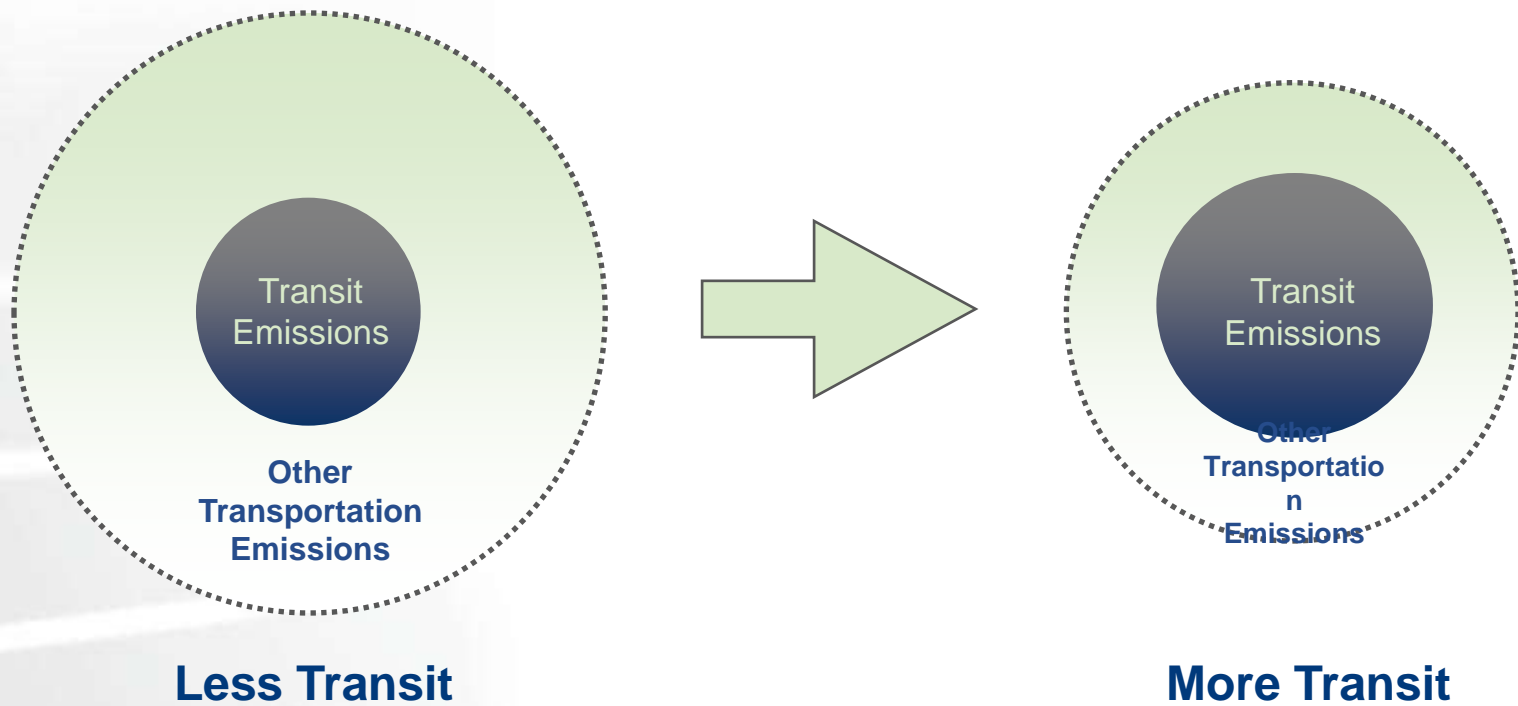
Equal to New York; Washington, DC; Atlanta; Denver; and Los Angeles households *combined* stopping use of electricity.





# Transit's GHG Paradox

## Regional Transportation GHG Emissions





# Public Transportation is reducing its own carbon footprint



# Guidance and Tools for Measuring and Managing Transit's GHG Emissions



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**RECOMMENDED PRACTICE**  
American Public Transportation Association  
1686 K Street NW  
Washington, DC 20006

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Climate Change Standards  
Working Group, SUDS Policy and  
Planning Committee

## Quantifying Greenhouse Gas Emissions from Transit

**Abstract:** This Recommended Practice provides guidance to transit agencies for quantifying their greenhouse gas emissions, including both emissions generated by transit and the potential reduction of emissions through efficiency and displacement by laying out a standard methodology for transit agencies to report their greenhouse gas emissions in a transparent, consistent and cost-effective manner.

**Keywords:** carbon footprinting, climate change, greenhouse gas emission inventory/reporting, mode shift, congestion reduction, land use multiplier

**Scope and purpose:** This Recommended Practice provides guidance to transit agencies for quantifying their greenhouse gas emissions, including both emissions generated by transit and the potential reduction of emissions through efficiency and displacement. It lays out a standard methodology for transit agencies to report their greenhouse gas emissions in a transparent, consistent and cost-effective manner. It ensures that agencies can provide an accurate public record of their emissions; may help them comply with future state and federal legal requirements; and may help them gain credit for their "early actions" to reduce emissions.

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Working Group

## Guidelines for Climate Action Planning

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**Keywords:** climate action plan (CAP), emissions, greenhouse gases (GHGs), sustainability

**Summary:** Climate action planning presents transit agencies with the opportunity to engage with jurisdictional partners to demonstrate and ensure consideration of the strong potential of transit to provide substantial reductions of GHGs at a local, regional and global scale. Transit has a unique role in climate action planning, as it provides more carbon-efficient transportation than personal automobiles. Additionally, transit facilitates greater use of non-motorized modes such as walking and bicycling and creates large "co-benefits," such as lower-energy homes and neighborhoods. Modeling of these combined benefits has shown that transit can reduce regional GHG emissions equal to many times those it emits. Transit, thus, emerges as a key GHG reduction tool and needs to increase rather than decrease its carbon footprint as long it does so due to system expansion and increased ridership, rather than due to reduced efficiency. Since they have focused on automobile-based strategies such as low-carbon fuels and battery and engine technologies while disregarding the direct and indirect emission reductions attributable to transit, statewide and regional CAP approaches to the transportation sector to date have undervalued the ability of transit to reduce regional GHG emissions. This guidance document is designed to help transit agencies reverse this trend.

**Scope and purpose:** This Recommended Practice is one of a series of Sustainability and Urban Design Standards documents designed to support APTA members as they work to advance their sustainability practices. The purpose of this document is to provide guidance on the methods and factors that should be considered in climate action planning.


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# APTA Recommended Practice Quantifying GHG Emissions from Transit



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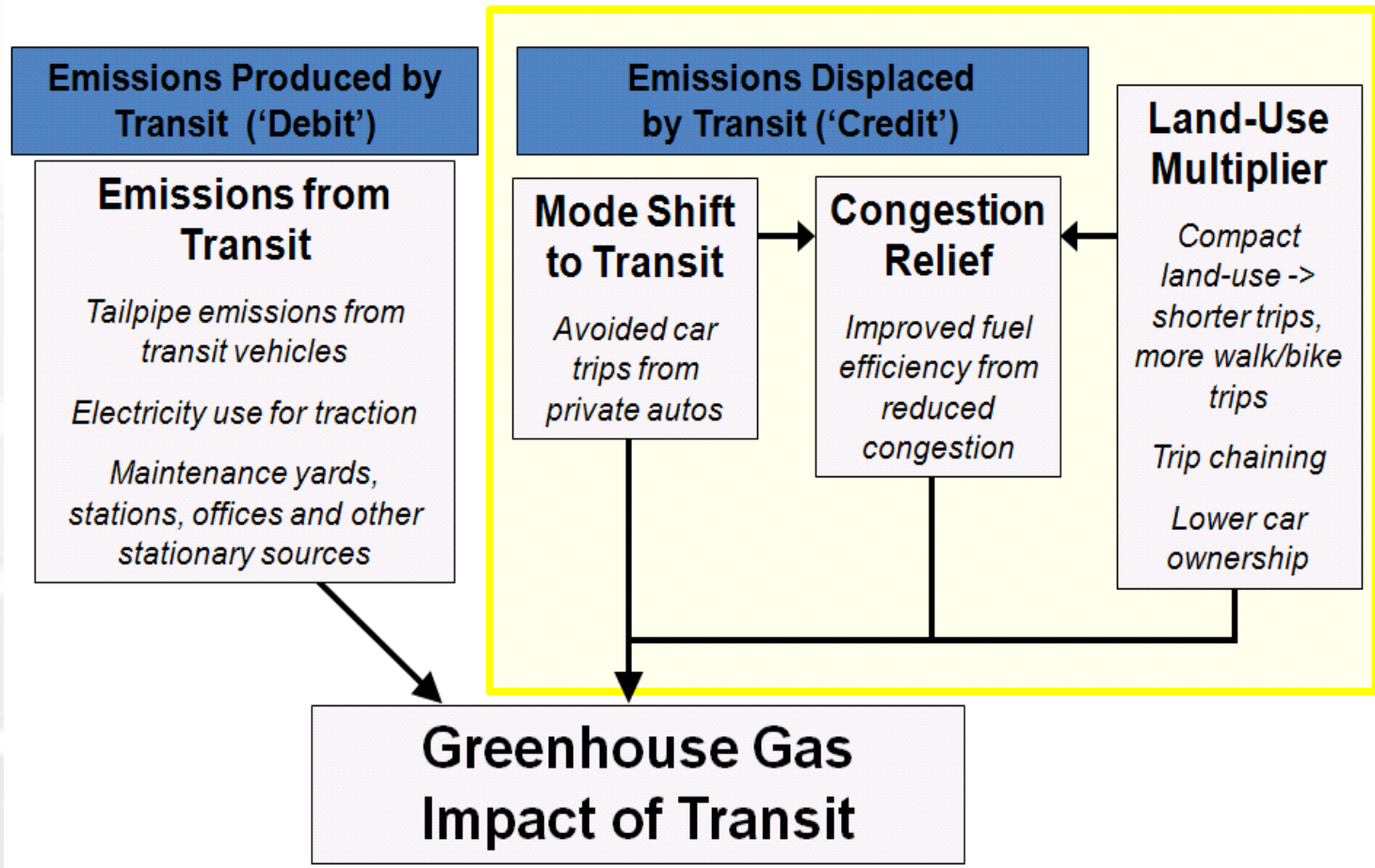
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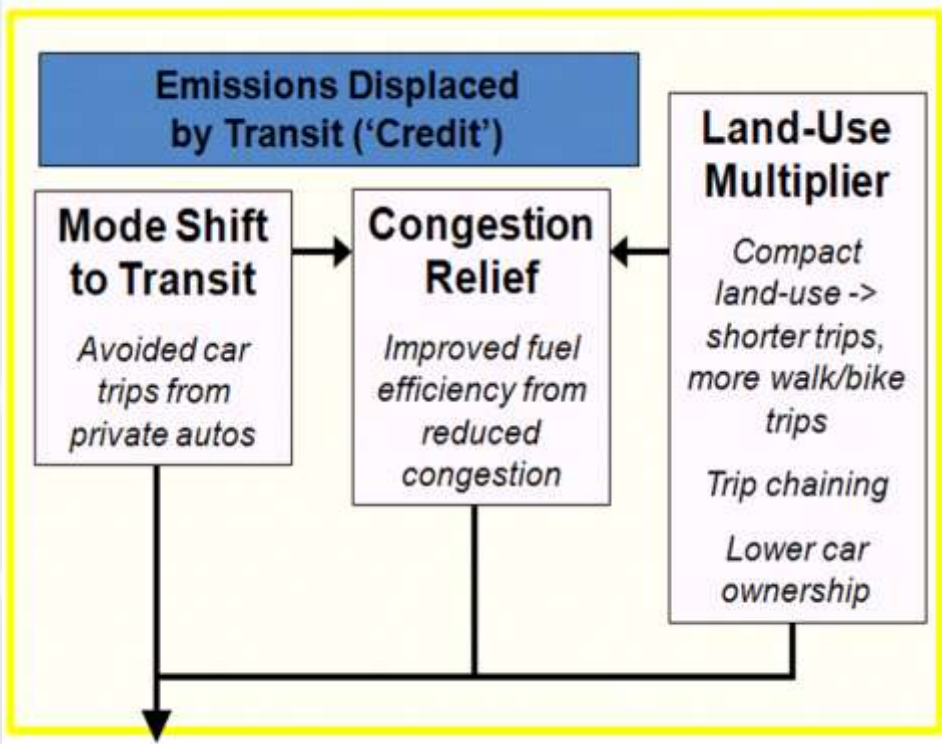


# APTA Recommended Practice Quantifying Net GHG Emissions from Transit





# Quantifying Transit's GHG "Credit" The Land-Use Multiplier



- Transit enables compact development patterns resulting in shorter and fewer motor vehicle trips
  - Facilitates bicycle and pedestrian travel
  - Trip chaining
  - Related impacts of reduced car ownership



# Quantifying Transit's GHG "Credit" The Land-Use Factor

- **APTA *Recommended Practice* offers guidance on two approaches:**
  1. Use of a default national factor
  2. Locally-specific analysis
- **More examples and data points create better understanding**
- **TCRP Project H-46 will result in refinement of analysis and tools**



# TCRP H-46: *Quantifying Transit's Impact on GHG Emissions and Energy Use: The Land Use Component*



- **Objective:** Understand the complex interrelationship between transit and land use patterns to better foster compact development as well as transit's contribution to, and the benefit they receive from, compact development
- **Method:** Statistical analysis of land use patterns in relation to transit systems complemented with a qualitative case study analysis
- **Anticipated Work Products:** calculator tool, guidebook, addendum to APTA's guidance on quantifying greenhouse gas (GHG) emissions, and webinars
- **Timeline:** October 2011 to October 2013.




# TCRP H-46 Work Benefits

- Provide a more robust evidence of the effect that transit has on land use
- Better tools to estimate the effect of transit on land use related to VMT/GHG impacts
- Clear guidance about how to plan for and promote compact development
- Specific Benefits to Transit, MPOs, Local Governments



# APTA Recommended Practice Document Guidelines for Climate Action Planning



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# APTA Recommended Practice Document Guidelines for Climate Action Planning

- Why do a CAP?
- Supporting internal sustainability efforts
- Improving cost-effectiveness, including new revenues
- Preparing for the effects of climate change
- Demonstrating the environmental benefits of transit
- Demonstrating leadership

The image shows the cover of the APTA Recommended Practice document titled "Guidelines for Climate Action Planning". The cover features the APTA logo at the top left, followed by the text "APTA STANDARDS DEVELOPMENT PROGRAM" and "RECOMMENDED PRACTICE". Below this is the American Public Transportation Association's address: "1888 K Street, NW, Washington, DC, 20006-1218". To the right, it lists the document ID "APTA SUDS-CC-RP-002-11", the approval date "Approved March 24, 2011", and the authoring group "APTA Climate Change Standards Working Group". The title "Guidelines for Climate Action Planning" is prominently displayed in the center. Below the title is an abstract, keywords, a summary, and a scope and purpose section. At the bottom, there is a disclaimer and a copyright notice for 2011.

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## Plan-Do-Check-Act Cycle



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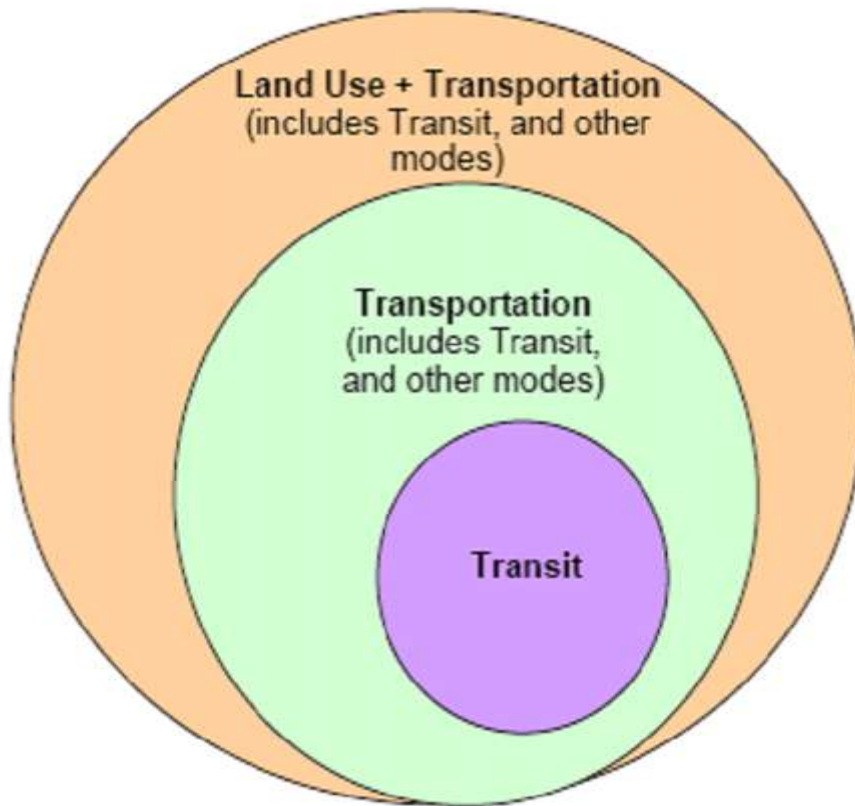
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# APTA Recommended Practice Document Guidelines for Climate Action Planning

What Authority Does the Agency Have?



- **Acknowledges industry differences with flexibility to consider:**
- **Scope:** Recognize agency authority in considering CAP objectives and actions
- **Scale:** Considering agency role in reducing it's own emissions output (debit), vs. how an agency can impact regional transportation and land use policies (credit)



# Industry Participation

- Barbara Thomson, First Environment
- Betsy Delaney, First Environment
- Brian Laverty, PB
- Craig Bilderback, Veolia Transportation
- Cris Liban, Los Angeles MTA
- Cynthia Hoyle, Champaign-Urbana MTD
- Dan Locke, Utah Transit Authority
- Dave Gillespie, New Jersey Transit
- David Erne, Booz Allen Hamilton
- Ed Buchanan, Utah Transit Authority
- Eric Hesse, TriMet
- Erik Johanson, SEPTA
- Gary Prince, King County Metro
- Joan LeLacheur, WMATA
- Joe Speaks, Booz Allen Hamilton
- Justin Antos, AECOM Transportation
- Karl Peet, Chicago Transit Authority
- Liz Zelasko, FTA
- Mark Minor, Regional Transportation Authority (Chicago)
- Marty Mellera, San Francisco MTA
- Monica Hale, SAIC
- Projjal Dutta, New York MTA
- Tim Papandreou, San Francisco MTA
- Tina Hodges, FTA
- Trish Webb, TransLink
- Val Menotti, BART