

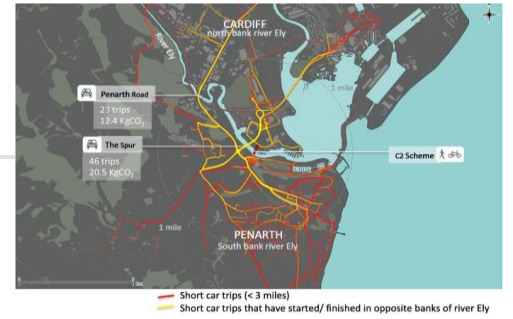
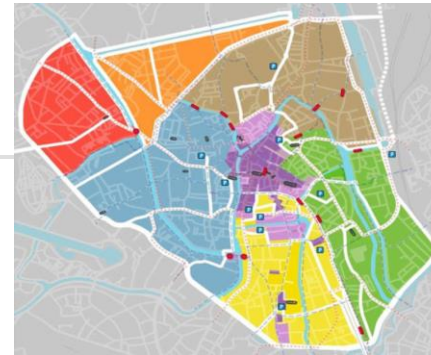
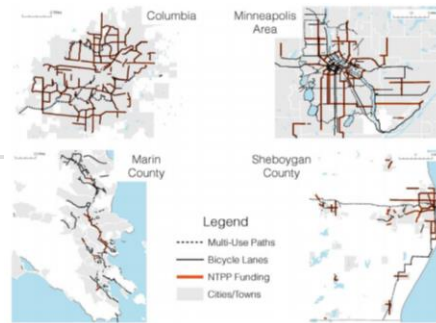
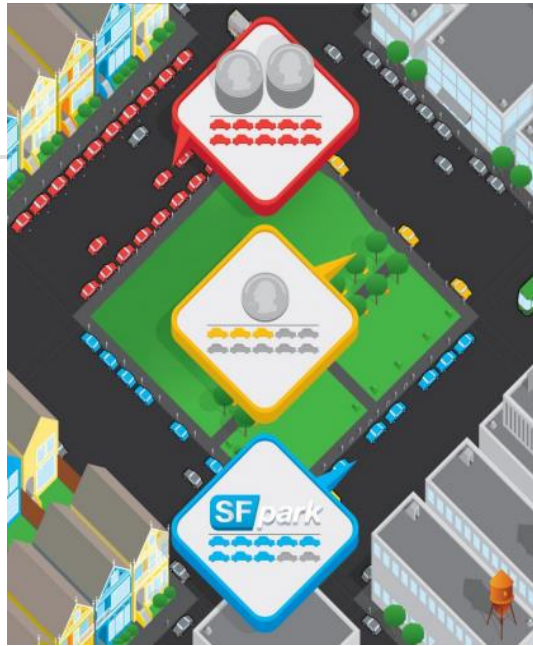
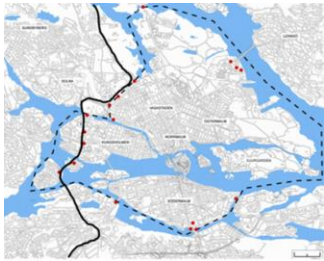
Measuring GHG emissions reduction from land transport – Transit Oriented Development

Fiona Thomas - MRCagney



Wider work

- Waka Kotahi commission
- Two part research stream:
 - Part one: identification of projects/review of literature
 - Part two: reporting of particular projects



16 Case Studies

California TOD Study

- Household Travel Survey of 40,000 households across various income groups.
 - **Extremely Low-Income (ELI)** - Households earning 30% or less of MFI
 - **Very Low-Income (VLI)** - Households earning 50% or less of MFI
 - **Low-Income (LI)** - Households earning 80% or less of MFI
 - **Moderate Income** - Households earning between 80% and 120% of MFI
 - **Higher Income** - Households earning more than 120% of MFI

Public Transport accessibility

- **California Department of Housing and Community Development TOD Areas:** Within $\frac{1}{4}$ of a mile of a qualifying rail or ferry station or bus stop with 10-minute headways during the peak period (7am to 10pm weekdays, 3pm-7pm weekends).
- **High Quality Transit Areas (HQTAs):** An area within $\frac{1}{2}$ a mile of a rail or ferry station, regardless of service frequency, or within $\frac{1}{2}$ a mile of a bus stop with at least 15-minute headways during the peak period.

Measurement methodology

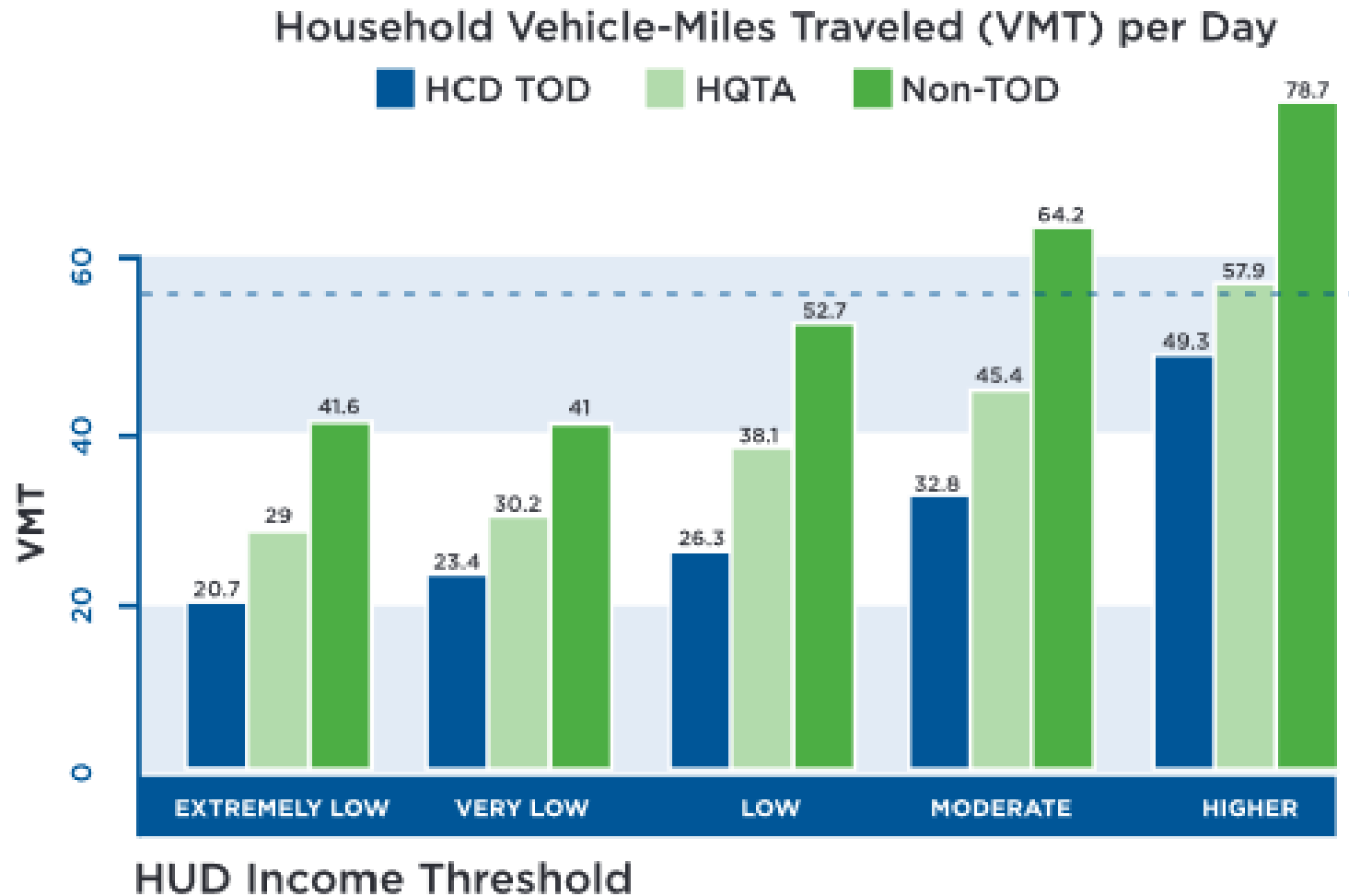


RATES OF VMT COLLECTED FROM
ONE-DAY TRAVEL SURVEYS



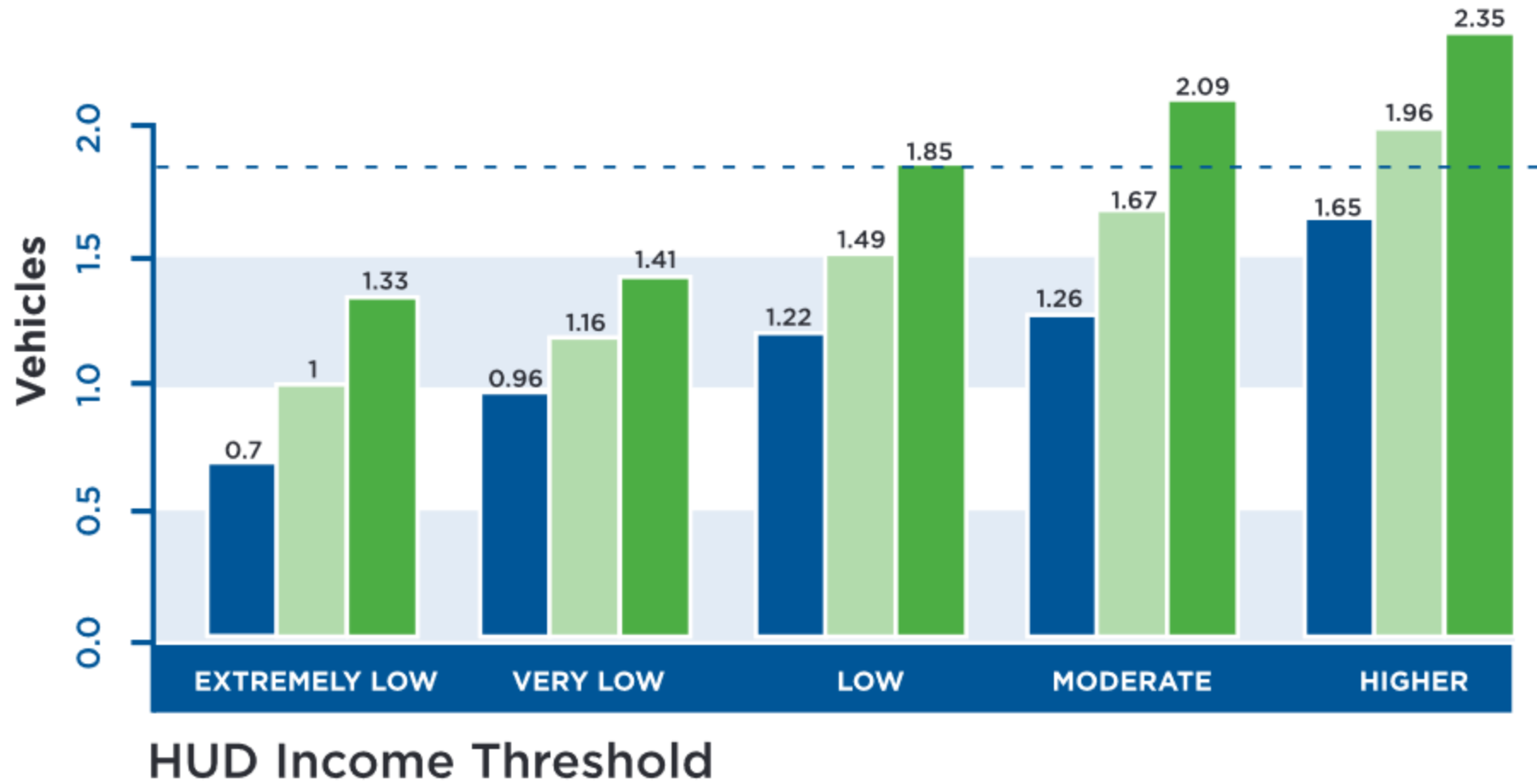
SURVEYS UNDERTAKEN BETWEEN
FEBRUARY 2012 AND JANUARY 2013

Outcomes



Household Vehicle Ownership

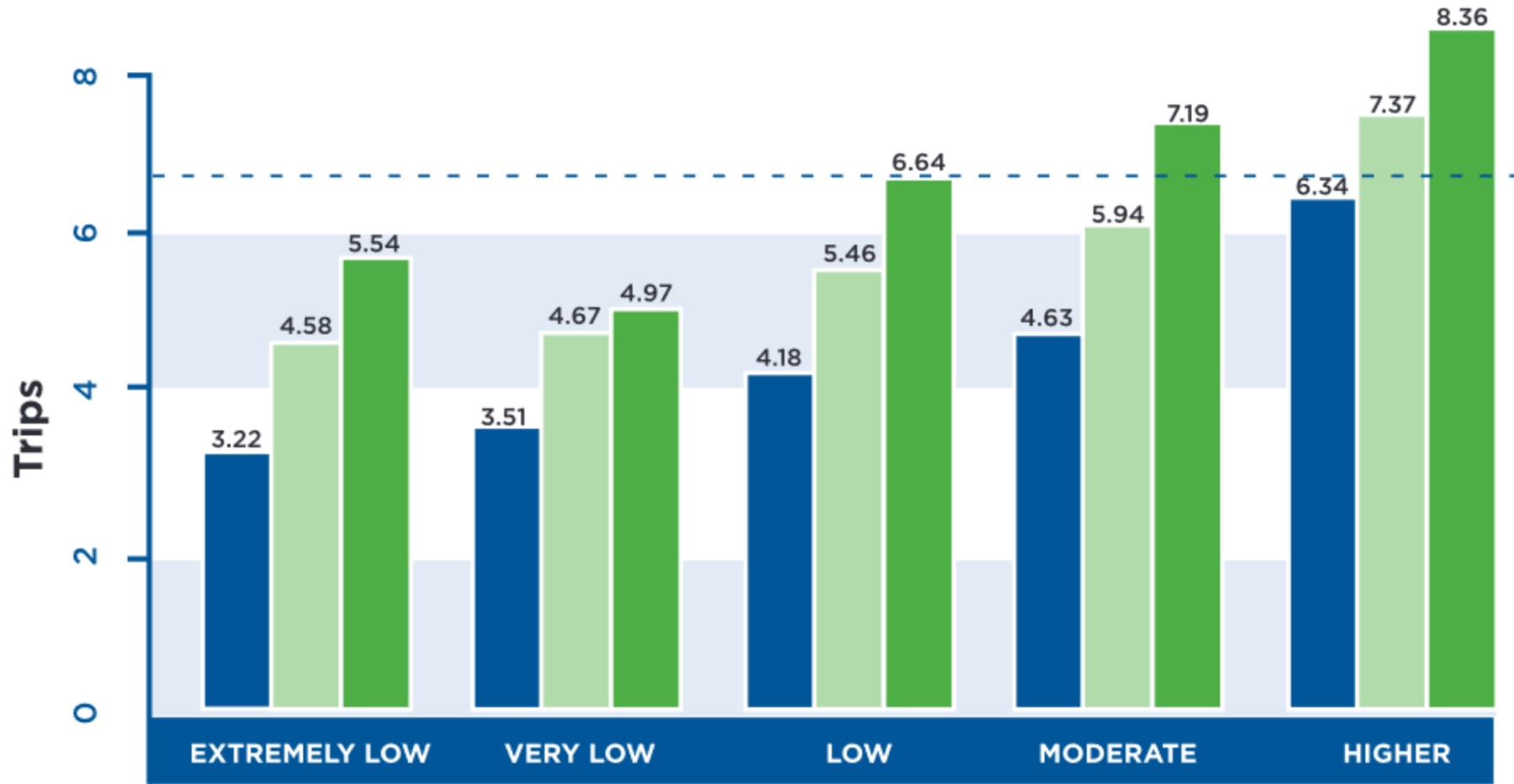
HCD TOD HQTAs Non-TOD



Source: <https://www.cnt.org/projects/california-tod-and-ghg-analysis>

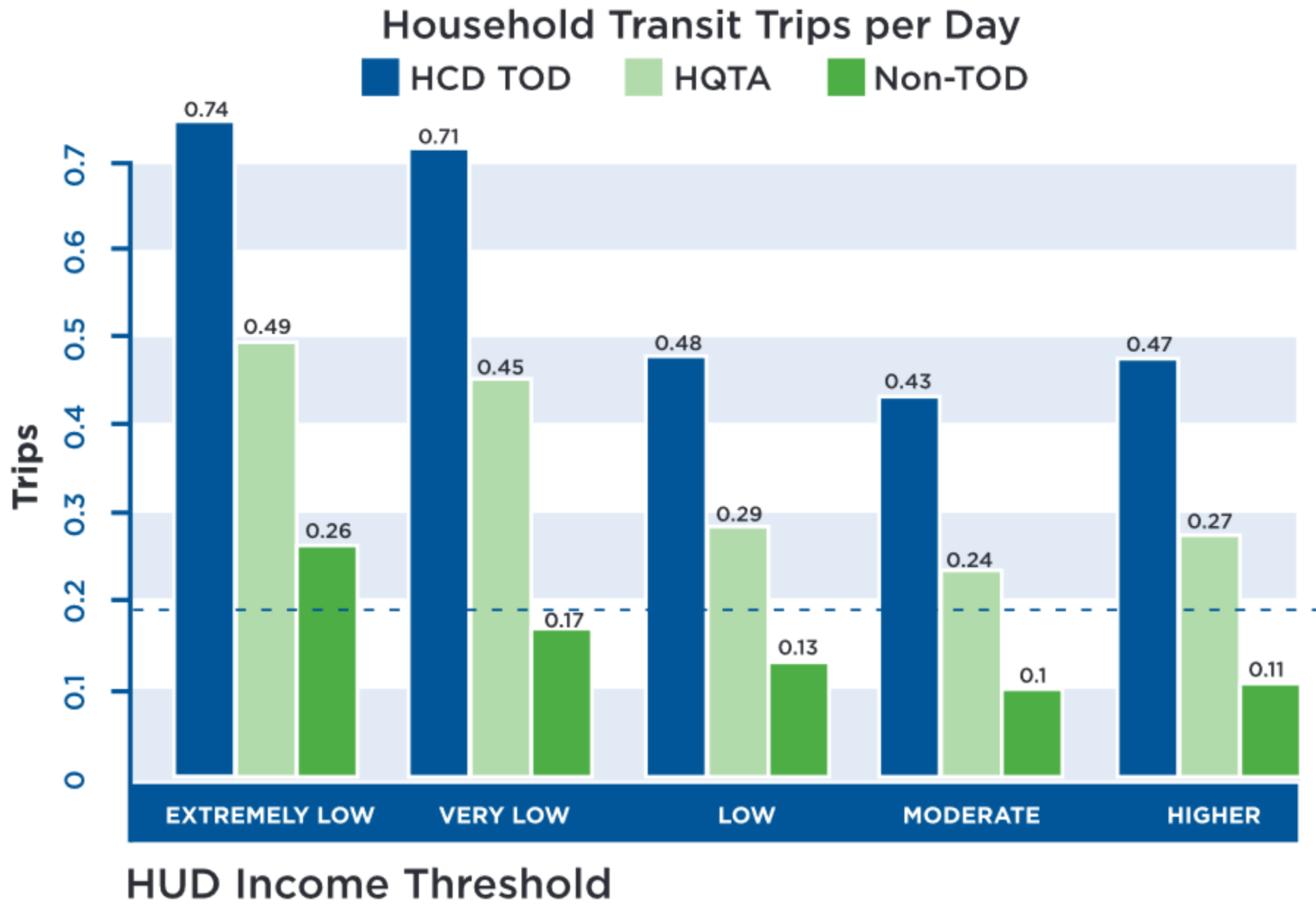
Household Vehicle Trips per Day

HCD TOD HQTAs Non-TOD



HUD Income Threshold

Source: <https://www.cnt.org/projects/california-tod-and-ghg-analysis>



Limitations

- Point in time analysis
- Selection bias



How this relates to GHG emissions



- VMT/VKT reduction
- Estimated future effects

Relevance to New Zealand

