

Analysis of Vehicle Miles Traveled (VMT) in San Bernardino County: A Data-Driven Approach for Sustainable and Equitable Transportation Planning

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Outline

- Background of the Study
- Objectives
- StreetLight Data
- Bidirectional Trips in San Bernardino County
- Trips Traveling from and to San Bernardino County and Other Regions
- Trip Distribution Types (Commute vs Non-Commute)
- San Bernardino County VMT
- Key Takeaways



Background of the Study

San Bernardino County

- Population Estimates (2021): 2,193,000
- Race (2021): 56% Hispanic, 24% white, 9% Black, 9% Asian, 2% Native American
- Housing Units (2021): 742,207
- Bachelor's degree or higher (2021): 22%
- Total Businesses (2021): 39,817
- Unemployment (2021): 5.5%
- Median household Income (2021): 70,287 USD
- Mean travel to work in min (2021): 32.4 min
- Number of Cities: 24



Objectives



This study aims to understand the directional flow of vehicular traffic within San Bernardino County, determining whether the movements are predominantly internal or extend to and from adjacent counties.



Investigating the distribution of trip types, specifically comparing commute and non-commute trips.



Examining VMT and understanding their impact on connectivity in the region.



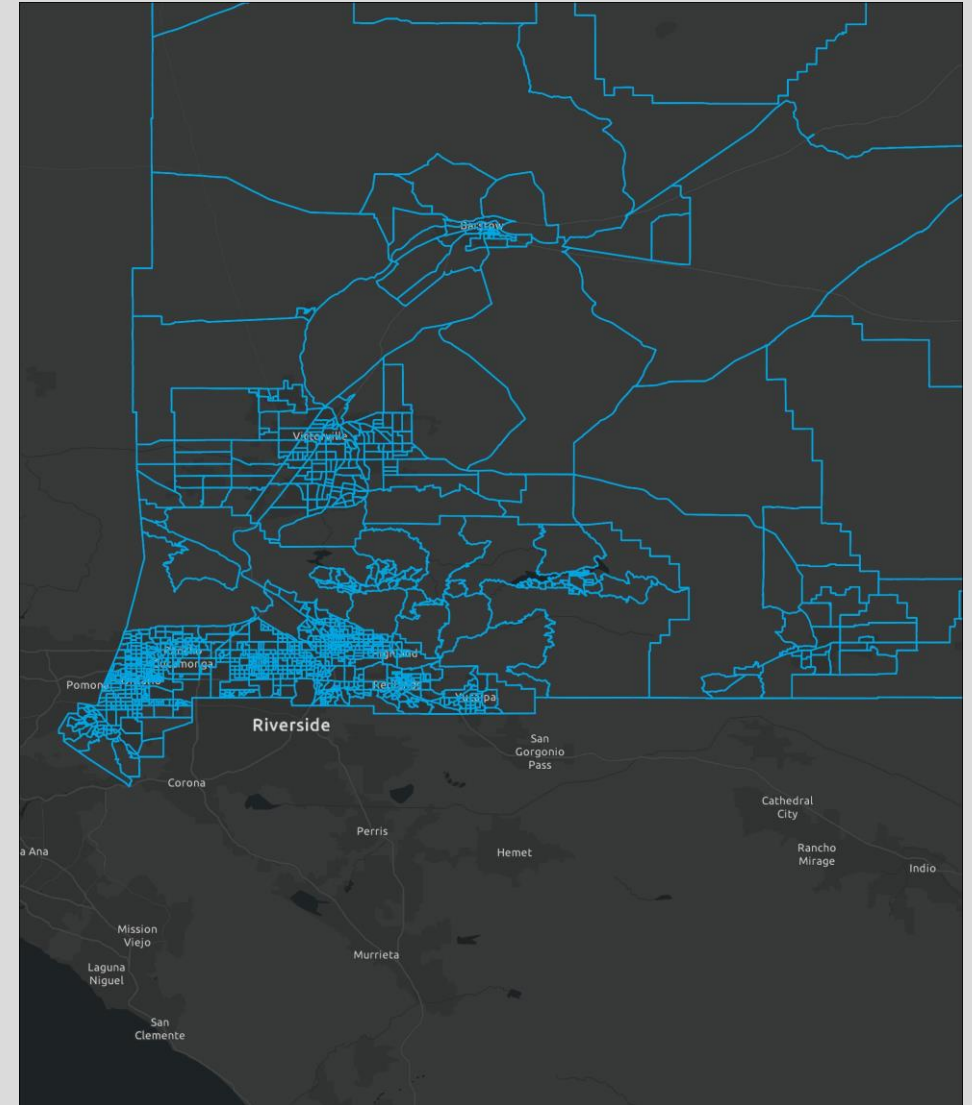
StreetLight Data

Challenge:

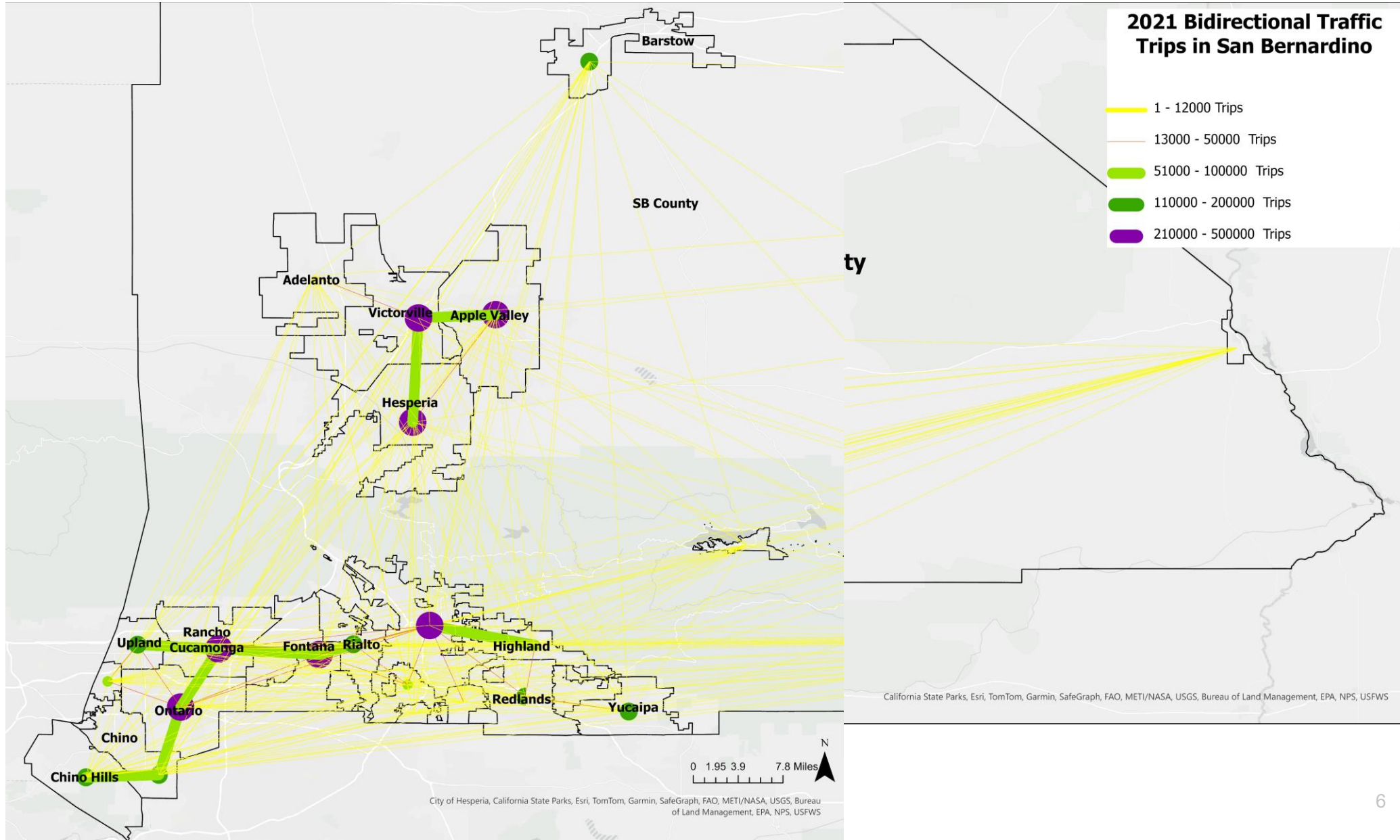
- Differentiating between internal and external flows of vehicular traffic patterns in San Bernardino County. And categorizing trip types into commute and non-commute segments, as well as in the assessment of Vehicle Miles Traveled (VMT).

StreetLight Solution:

- Data Granularity, Distinguishing Traffic Flows, Categorizing Trip Types, Vehicle Miles Traveled (VMT) Assessment through trip metrics.
- Sample Trip Count: 90,522,000 trips

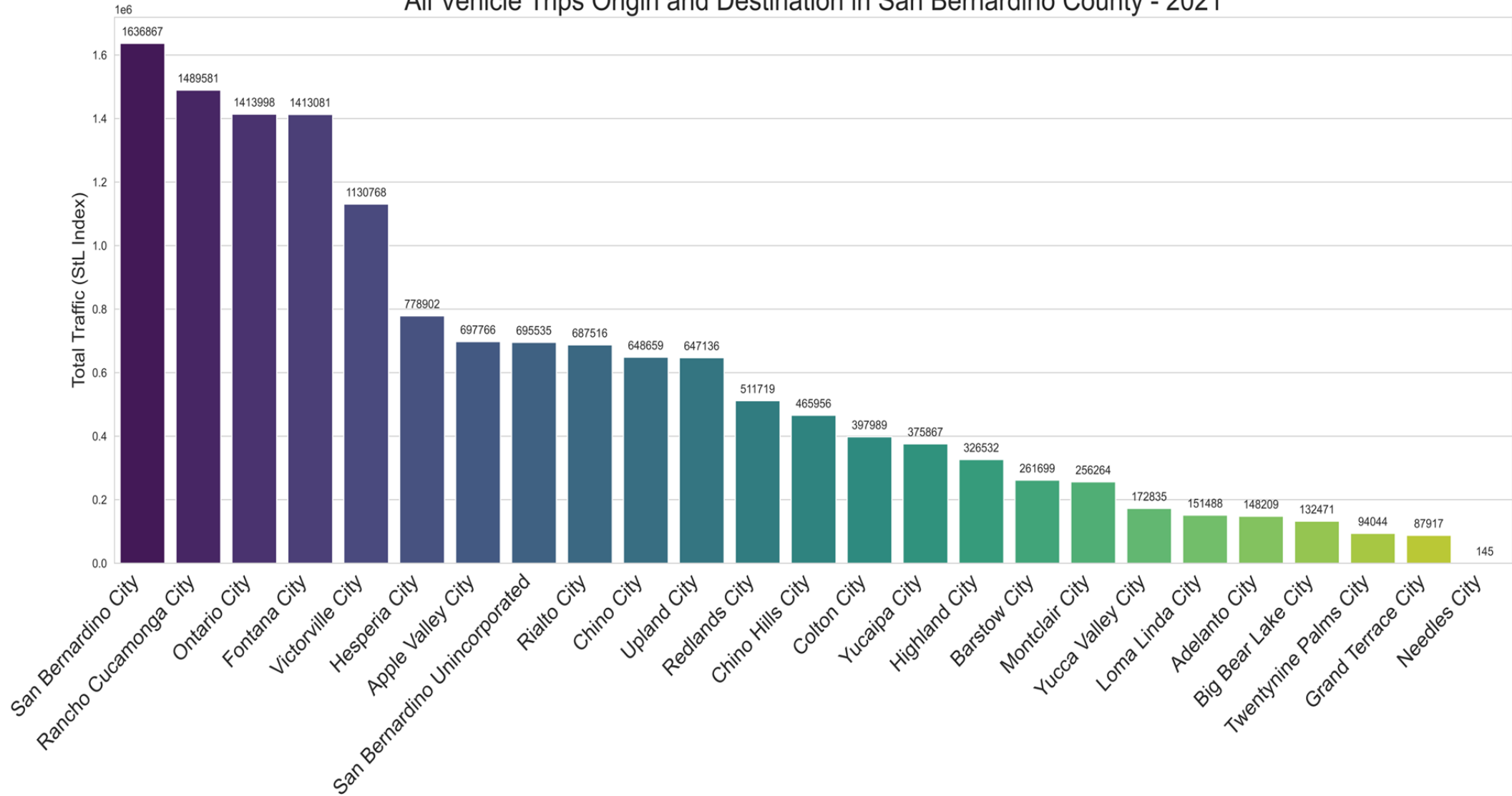


Bidirectional Trips in San Bernardino County



Bidirectional Trips in San Bernardino County

All Vehicle Trips Origin and Destination in San Bernardino County - 2021

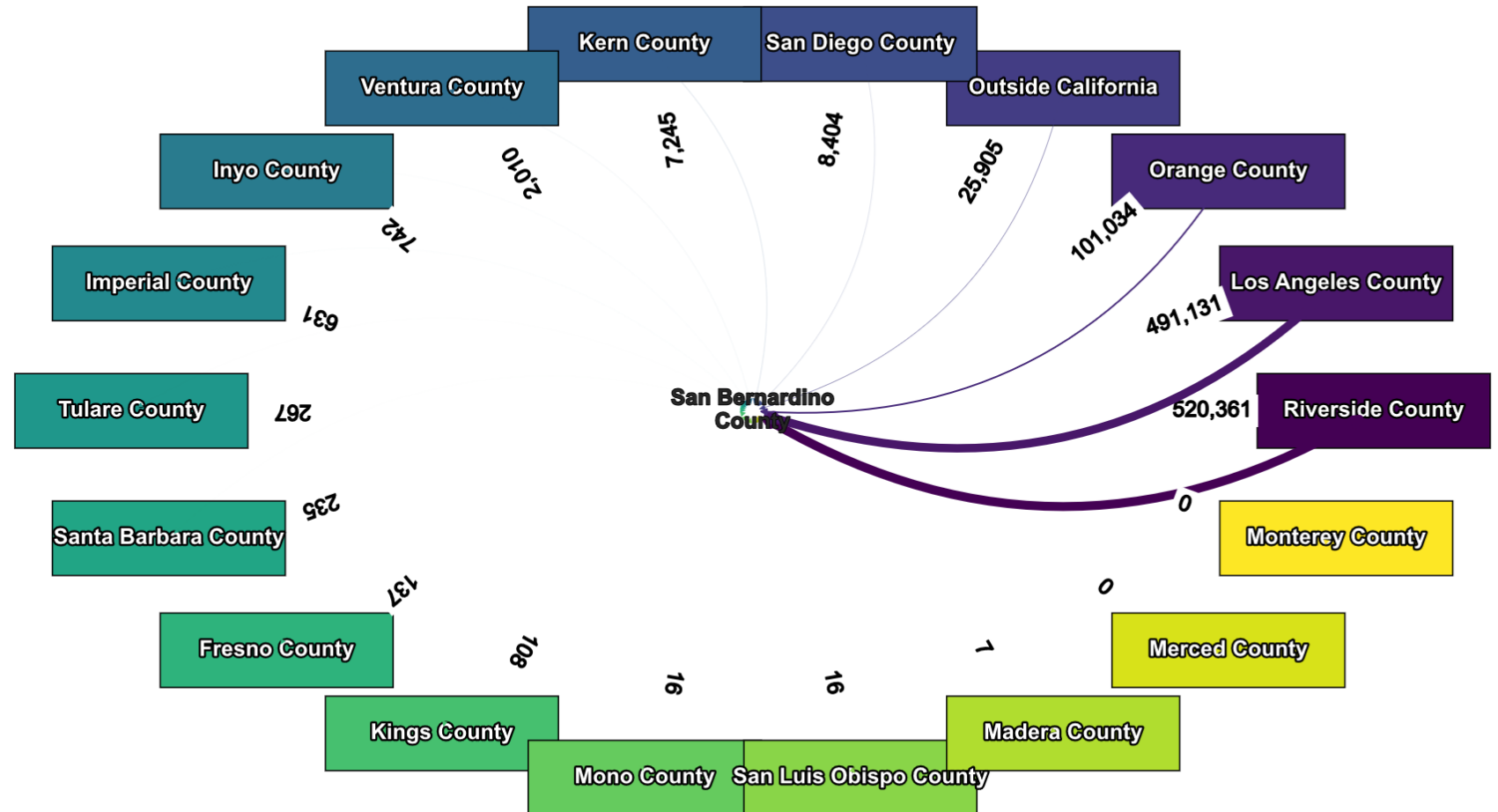


Cities and San Bernardino Unincorporated Areas



Trips Traveling from and to San Bernardino County and Other Regions

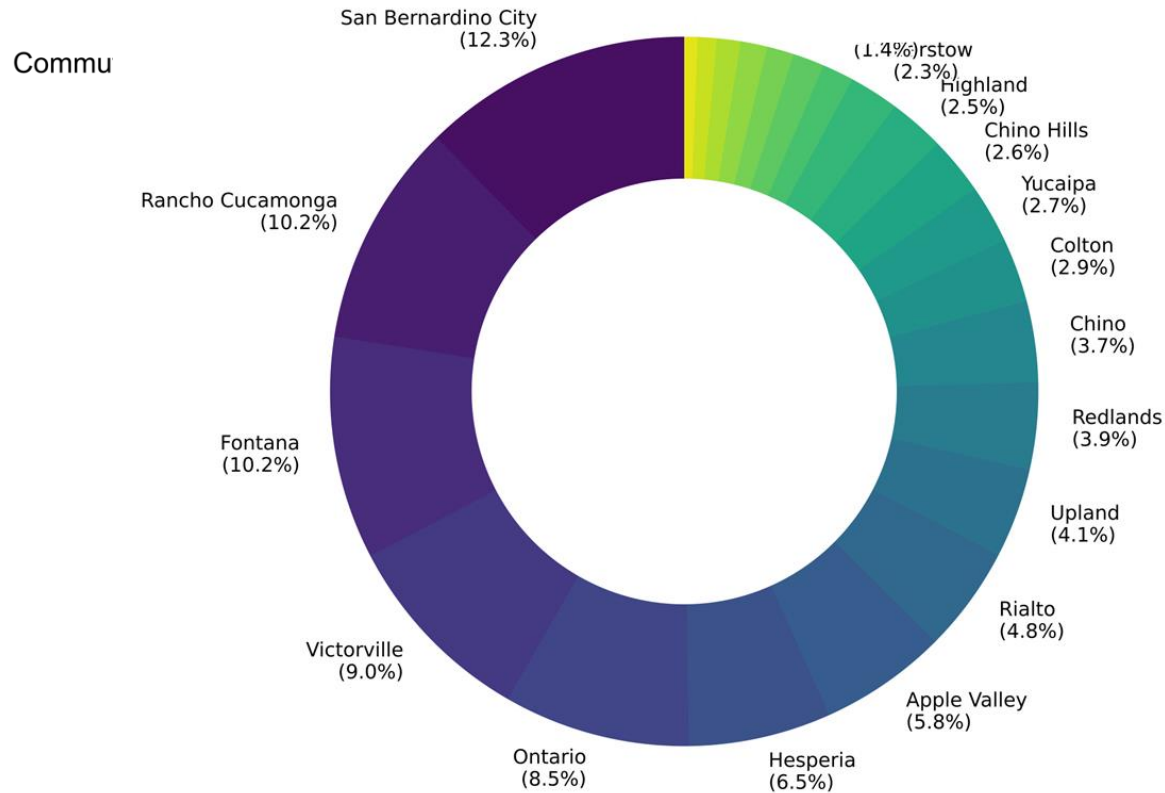
Bidirectional Traffic Flow between San Bernardino County and Other Counties - 2021



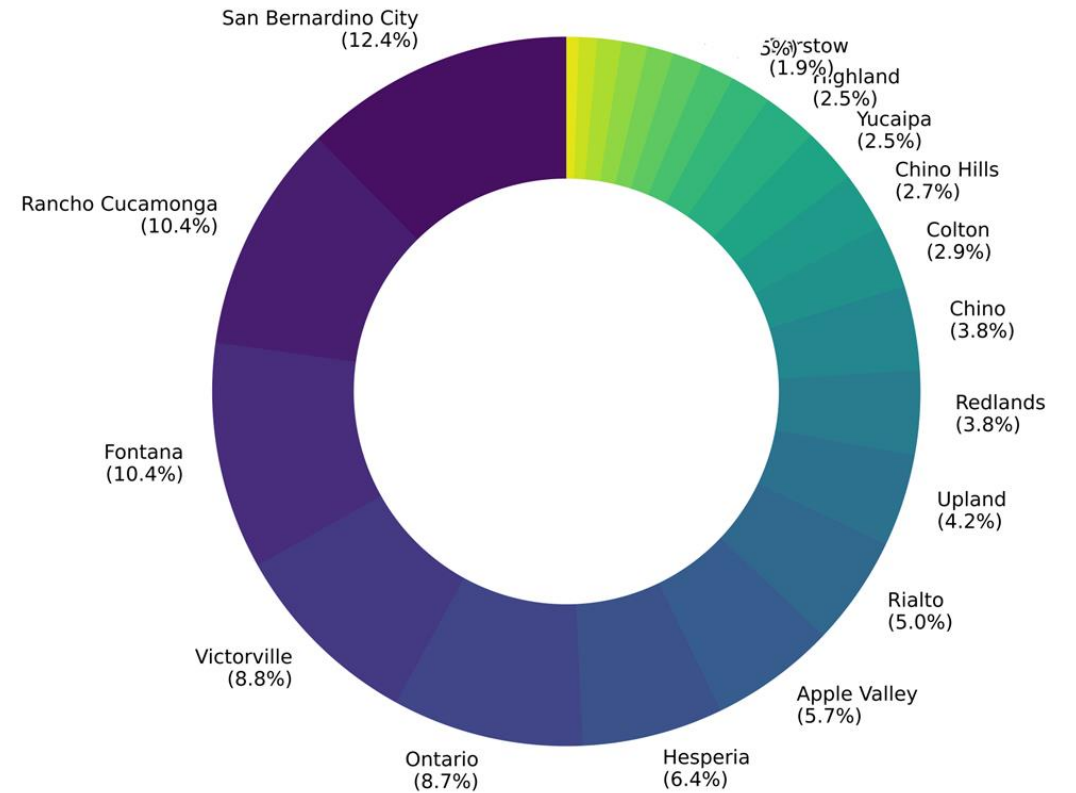
Trip Distribution Types Commute vs Non-Commute in San Bernardino County

Total Trip Distribu

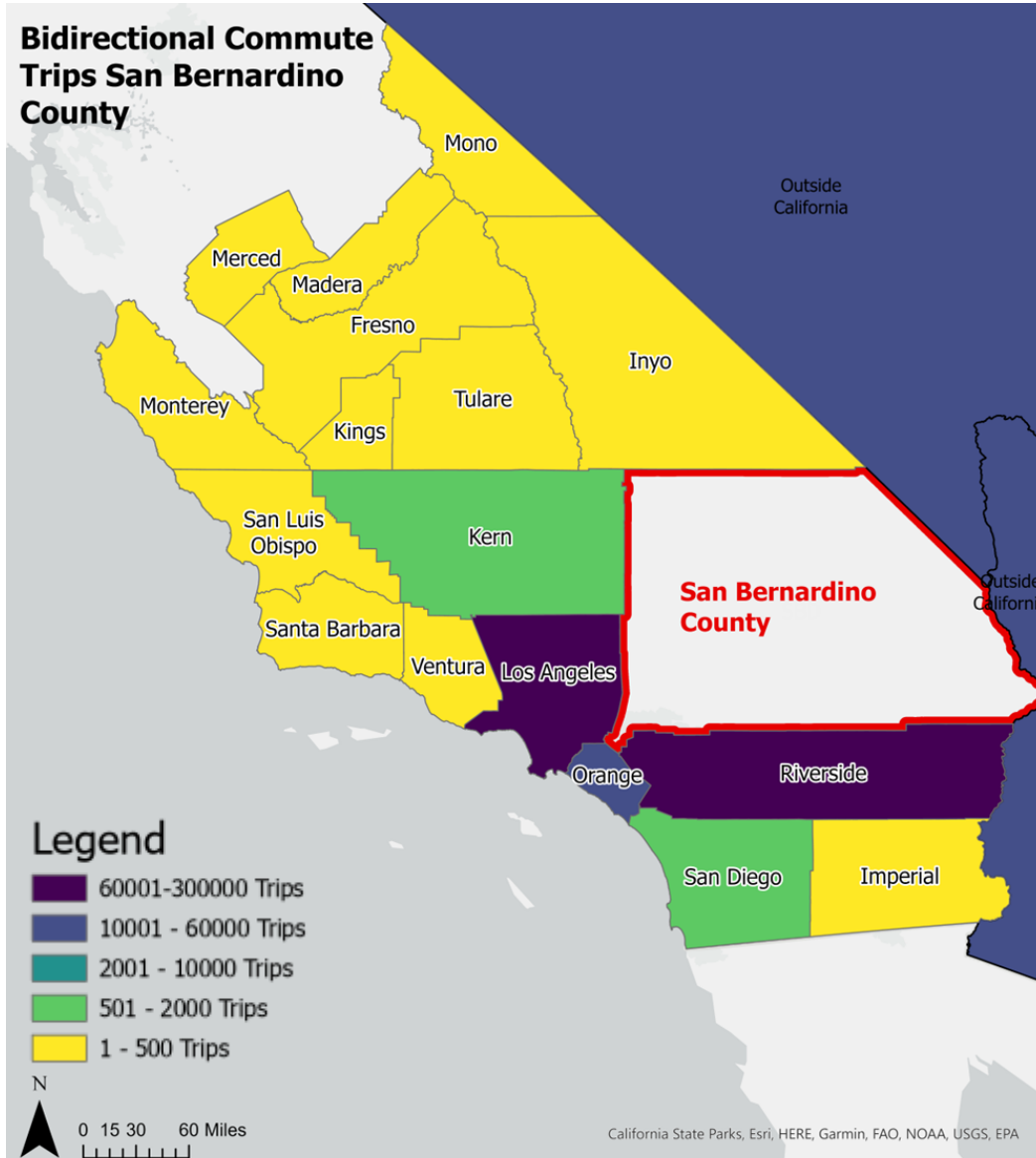
Composition of Home to Work trips Per City SB County



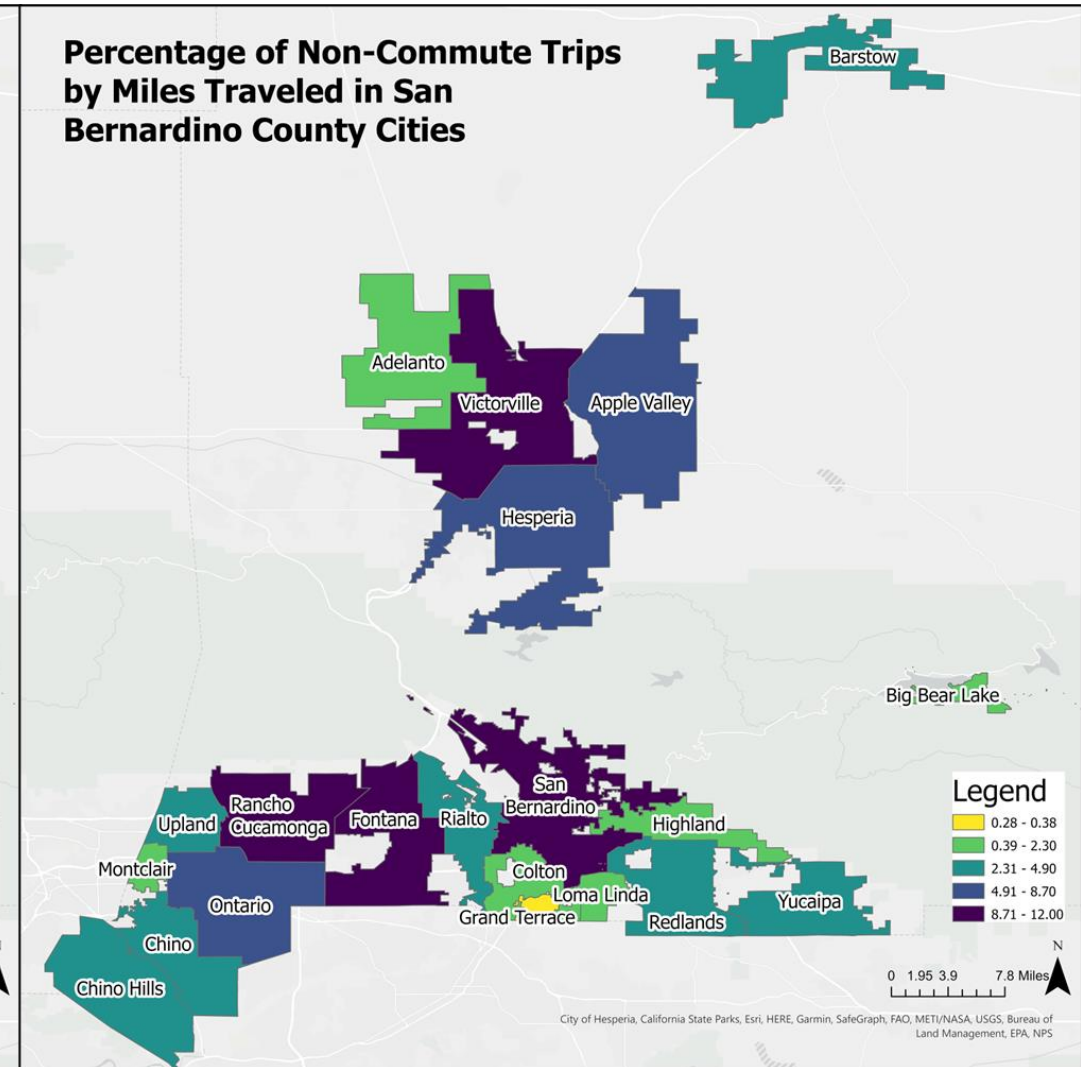
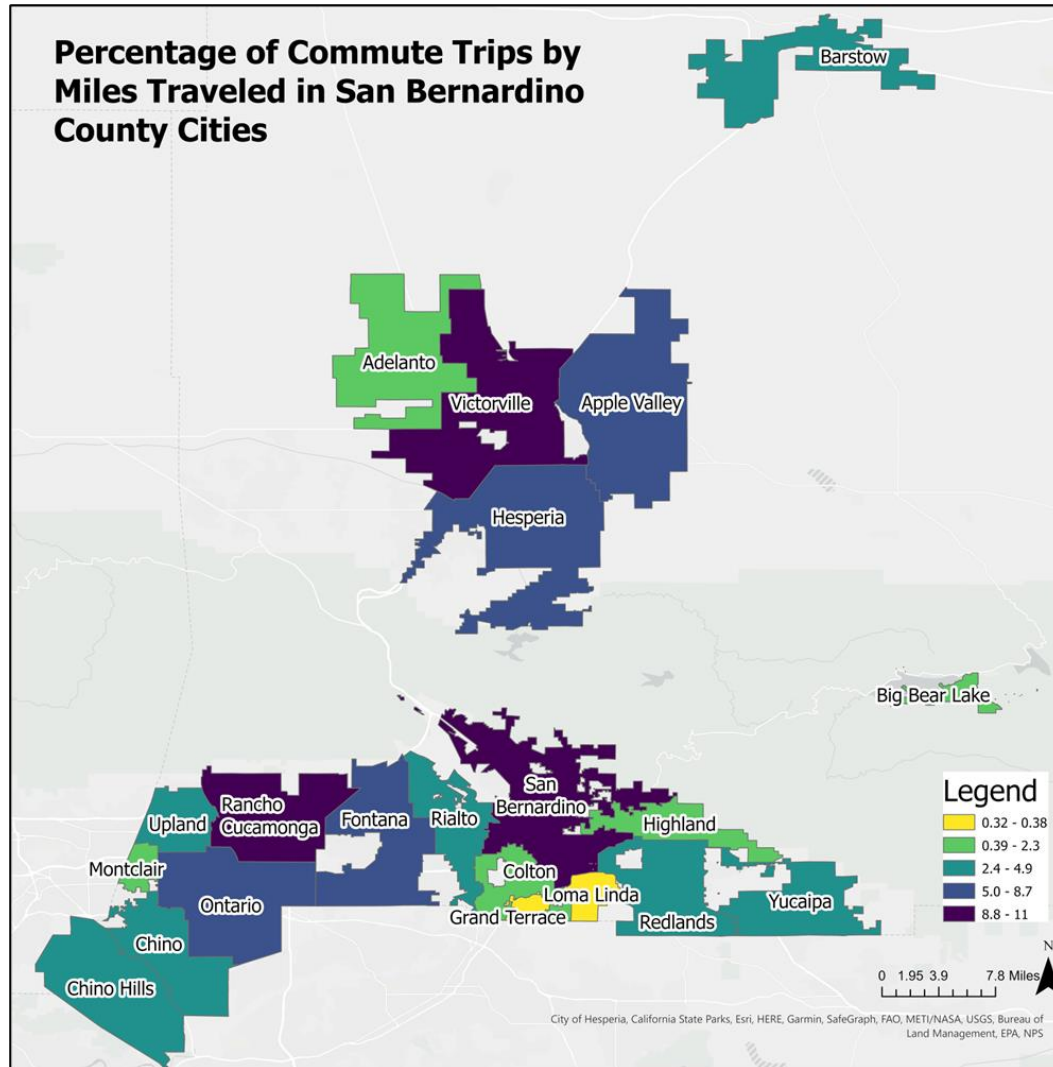
Composition of Home to Other and Non-Home Trip Per City SB County



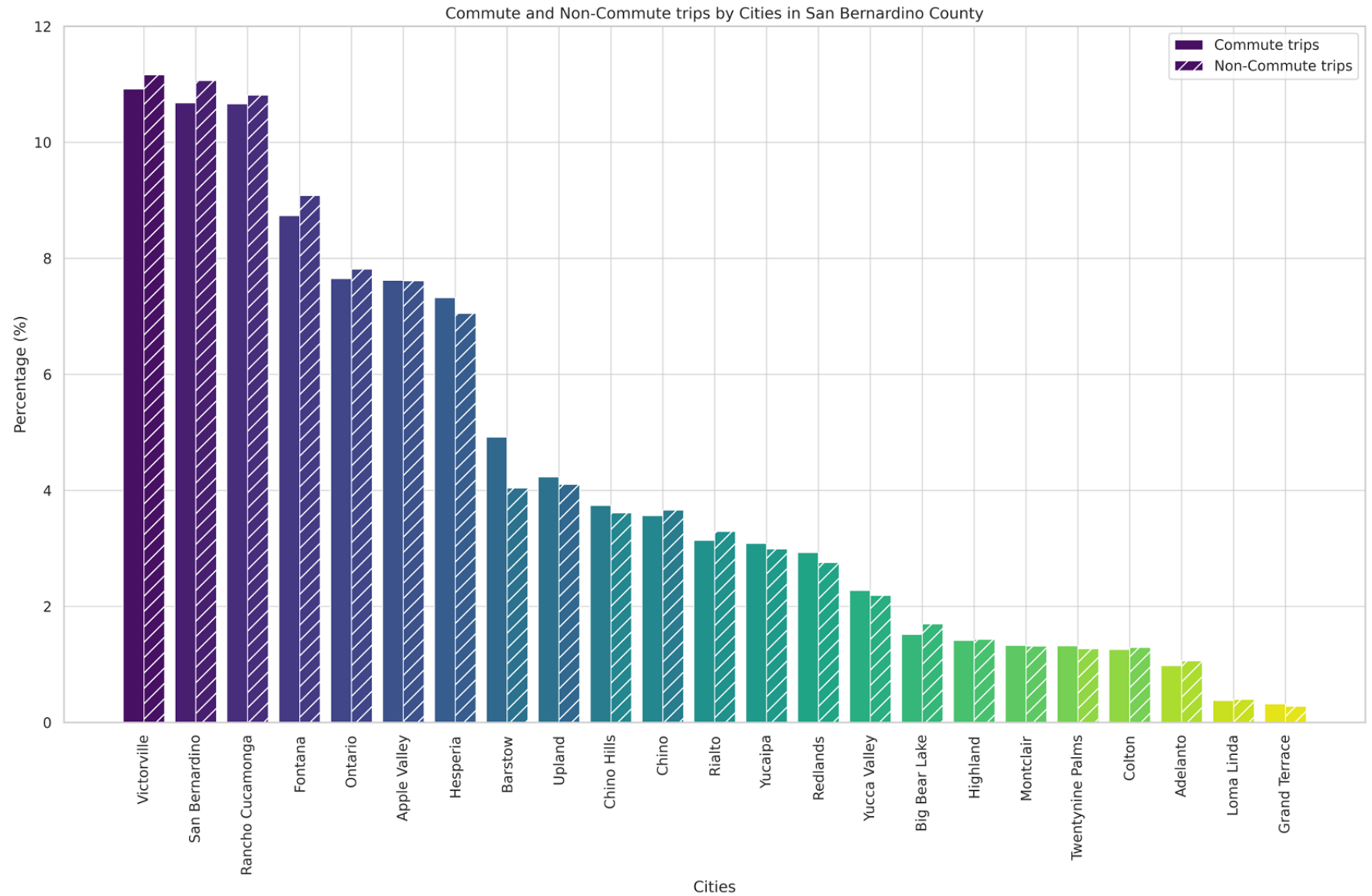
Trip Distribution Types Commute vs Non-Commute Bidirectional San Bernardino County and Other Counties



San Bernardino County VMT



San Bernardino County VMT



Title

- Approximately **92%** of all trips were made in San Bernardino County.
- Only **8%** of the trips had either an origin or a destination outside San Bernardino County.
- Non-work-related trips in San Bernardino County are **double** the number of work-related trips.
- Most trips outside of San Bernardino County went and came to **Riverside and Los Angeles County**
- The average bidirectional trip distance within the county is **much shorter** than trips outside the county.
- Need for strategic transportation planning and development for cities like **Victorville, San Bernardino, Fontana, Rancho Cucamonga and Ontario** cities to decrease miles traveled.
- Multi-model transportation infrastructure investments targeting connectivity of San Bernardino County to Riverside and Los Angeles Counties **will reduce miles traveled**.
- There's a **big opportunity to promote green transport solutions** like carpools, cycling, or public transport to reduce the environmental impact of daily trips.





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Thank you