Dynamic Ridesharing in Rural, Low-Income Communities

Caroline J. Rodier, Susan Pike, Autumn Bernstein
Institute of Transportation Studies, University of California, Davis - *May 2016*

Rural Mobility Challenges

The San Joaquin Valley is California's agricultural heartland, and shares many features with rural areas across the nation. Encompassing 10,000 square miles, it is home to four million residents spread across eight counties. Six of these are the poorest in California.

Residents of the rural San Joaquin Valley are beyond the reach of effective transit, and many cannot afford car ownership. Hindered by a basic lack of mobility, many are unable to access jobs, health care, education and basic services, or they are extremely burdened by transportation costs.

Local governments provide Dial-a-Ride and limited transit service to many rural communities, but these services are infrequent and expensive to provide.

Approach

- **Bilingual survey** of rural residents about mobility needs, challenges and constraints
- **Evaluate financial feasibility** of dynamic ridesharing for both riders and drivers and identify subsidy needed.
- Survey **best practices** in rural communities nationwide
- Design **financial plan** for pilot, including the provision of vouchers for low-income riders, potential incentives for drivers, and likely funding sources
- Identify **potential sites** for pilot
- **Evaluate pilot alternatives** against criteria including increased access to basic needs, social equity, economic development emissions reductions and cost-effectiveness.
- **Track implementation** of pilot and evaluate success

Piloting the use of dynamic ridesharing services in the rural San Joaquin Valley, with a focus on environmental justice communities.
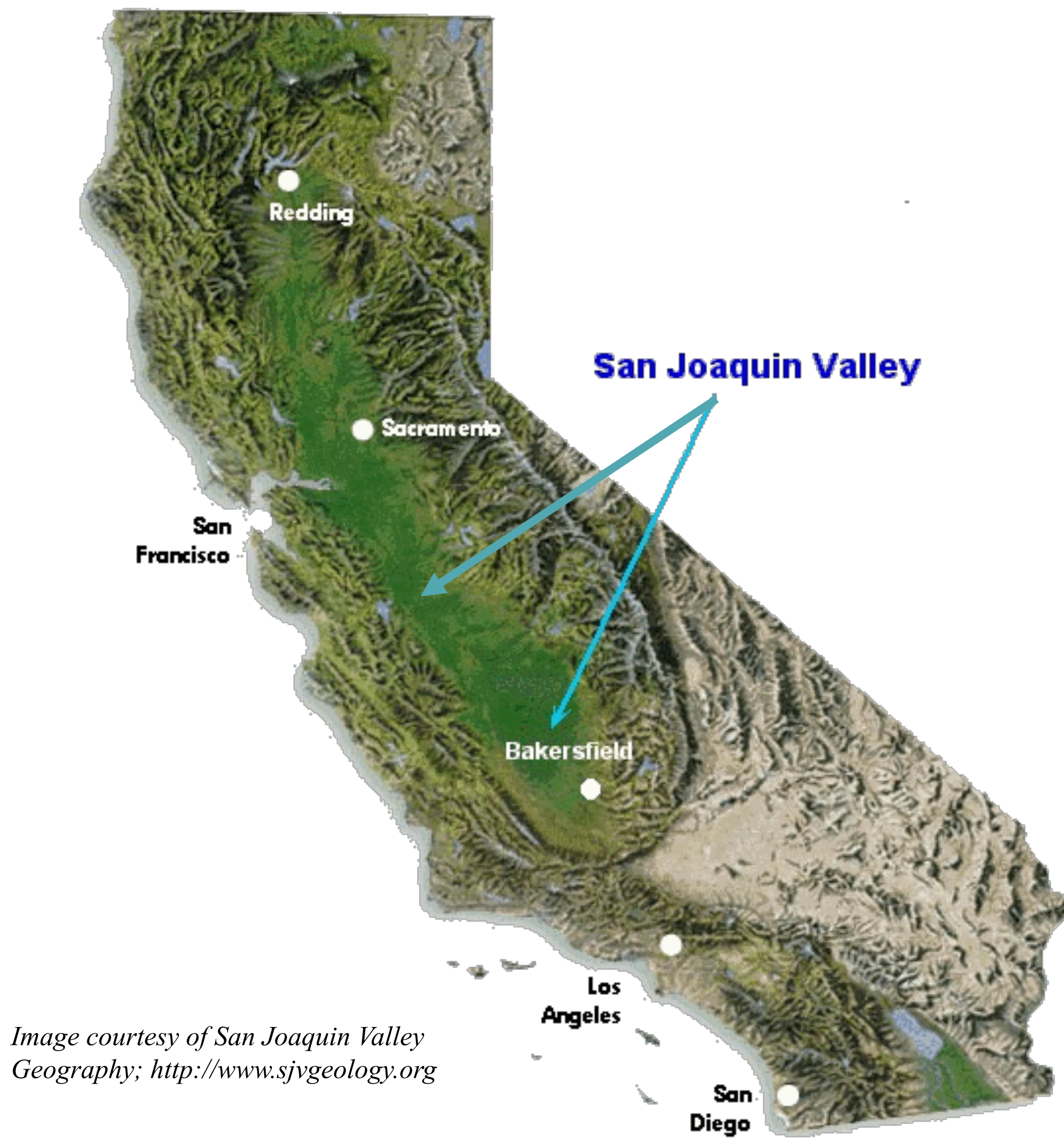

Image courtesy of San Joaquin Valley Geography; http://www.sjvgeology.org

Key Statistics

6.16% of households in rural environmental justice communities have no vehicles, compared to 3.32% of households in non-EJ communities.

165,000 jobs in the Valley are accessible via a 45-minute auto commute, while only 1,895 jobs are accessible via a 45-minute bus commute (Karner, London 2014).

The mode share of carpooling in the San Joaquin Valley (13.8%) is higher than the national average of 9.4%. Over half (53%) of carpoolers in the San Joaquin Valley are Hispanic, and 32% are white (ACS 2013).

A History of Ridesharing

Rural communities have adapted by creating their own solutions.
- *Latinos carpool* nearly twice as often as whites.
- *Raiteros* are individuals who provide informal carpooling/taxi services in rural communities for a fee. An informal survey of raiteros in Huron found that the majority of rides were for health care needs (Rey Leon, valleyleap.org).
- *Cal Vans,* a state program which provides safe, low-cost vanpools for rural farmworkers and commuters, began as a pilot in Kings County in 2001 and now operates in 12 counties, providing 400 vanpools. However, Cal Vans is limited because it can only be used for commute trips, by those who work 5-7 days per week.
- **Lyft and Uber** already operate in several Valley metro areas, including Fresno, Bakersfield, Stockton and Modesto.

Challenges and Questions

Smart phones: Barriers to smart phone use in rural communities include cost, network availability, and a lack of familiarity with new technology. Only 50% of those earning less than $30,000 a year owned a smartphone in 2015 *(Pew, 2015)*. While the penetration of smartphones is growing, older adults have been slow to adopt this technology.
- *What strategies can be used to address the smart phone barrier?*

Electronic payments: Lyft and Uber both require electronic payments, although Uber is experimenting with cash payments in India *(TRB 2015)*. The FDIC estimates that 17 million people (8 percent of U.S. households) do not have a bank account. This number has remained relatively stable *(TRB 2015)*.
- *What strategies can be used to address the electronic payment barrier?*

Financial viability: It is likely that some amount of subsidy will be needed to recruit drivers in rural areas.
- *What are possible sources of funding for subsidies?*

Reducing GHG emissions: A goal of this project is to reduce GHG emissions. But increasing mobility could increase VMT.
- *What strategies can be used to reduce emissions while improving mobility?*