

# **Napa County Travel Behavior Study**

**Napa County Joint Board of Supervisors and  
Planning Committee Meeting Presentation**

**March 10, 2015**



# Overview

- **Objectives of the Study**
- **Community Advisory Committee**
- **Study Approach**
- **Data Analysis and Integration**
- **Conclusions**



# Objectives of the Study

- Gather information on the travel behavior of **visitors, employees, residents, and students** who make **work and non-work trips** in Napa County
  - Use the information to help answer questions, expand transit and paratransit services, and inform the Travel Demand Model
- An opportunity to integrate **innovative data collection methods** with **enhancements to traditional methods** to offer an unprecedented look into travel behavior in Napa County
  - A multi-firm team comprised of Fehr & Peers, StreetLight Data, and MioVision was created



# Community Advisory Committee

- Fehr & Peers worked with NCTPA staff to convene a Community Advisory Committee
  - Comprised of representatives from business and wine industry groups, major employers, and other community stakeholders
  - We understood the importance of effectively reaching out and engaging members of the community



# Study Approach

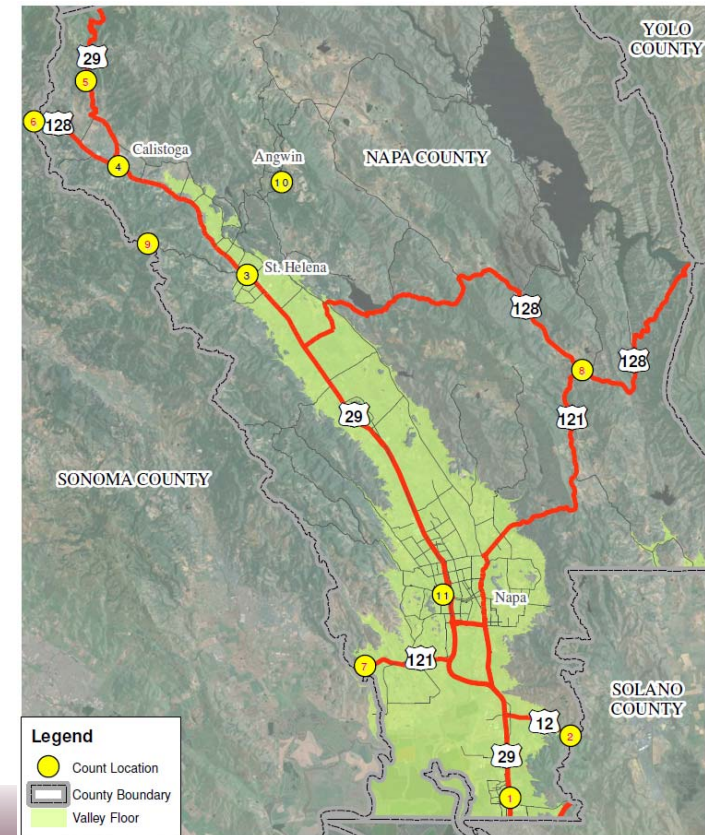
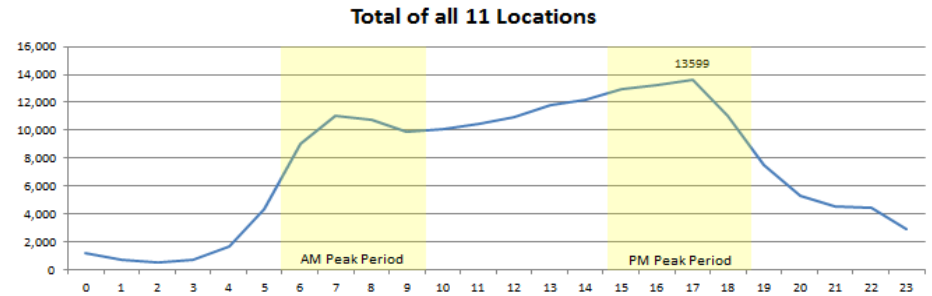
- Utilized and combined results of **five data collection methods**
  1. Vehicle Classification Counts
  2. Winery Regression Analysis
  3. License Plate Matching
  4. In-Person Winery, Mail, and Online Employer Surveys
  5. Mobile Device Data



# Study Approach

## 1. Vehicle Classification Counts

- **11 survey data locations** including all **7 external gateways**
- 126,736 total vehicles at the 7 external gateways (inter-county trips)
- 4-Hour AM peak period – 23% of daily
- 4-Hour PM peak period – 28% of daily
- AM peak hour – 6%, PM peak hour – 7%
- AM – 58% inbound, PM – 56% outbound



# Study Approach

1. SR 12 Jameson Canyon Road Widening Project
  - Collected counts on **Friday, October 24, 2014**  
(more than one full month after the completion of the project)
    - SR 29 North of American Canyon Road
    - SR 12 at the Napa/Solano County Line
  - Compared to traffic count data on **Friday, October 4, 2013**
    - SR 12 - 4,300 daily vehicles or 14% increase
    - SR 29 - 4,600 daily vehicles or 9% decrease
    - **Roughly 4,000 vehicles may have shifted their traffic pattern**



# Study Approach

## 2. Winery Regression Analysis

- Used **simple linear regression analysis** to estimate trip generation for 434 winery parcels
- Impractical and unable to collect driveway counts at all 434

Day of the Week	Total Daily Vehicle Trip Generation
Thursday	52,245
Friday	62,217
Saturday	54,713





# Study Approach

## 3. License Plate Matching

Trip Type	Daily	Early AM (12 AM to 6 AM)	AM 4-Hr (6 AM to 10 AM)	Mid-Day (10 AM to 3 PM)	PM 4-Hr (3 PM to 7 PM)	Late Night (7 PM to 12 AM)
Inbound Trips	45%	55%	51%	45%	40%	46%
Outbound Trips	45%	31%	39%	45%	52%	46%
Pass-Through Trips	9%	14%	10%	10%	8%	8%
Trip Type	Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Imported Work Trips	25%	37%	31%	17%	28%	22%
Imported Other Trips	16%	7%	12%	23%	14%	16%
Exported Work Trips	16%	20%	20%	12%	17%	18%
Exported Other Trips	11%	4%	8%	14%	10%	9%
One-Way Total	23%	18%	19%	24%	23%	28%
Pass-Through	9%	14%	10%	10%	8%	8%



# Study Approach

## 4. In-Person Winery, Mail, and Online Employer Surveys

- **21% of winery patrons were from the Bay Area, 10% from outside the United States**
- **35% of winery patrons started their day in Napa County, 23% in San Francisco**
- **32% of employer survey respondents live and work in the City of Napa**
- **61% of employer survey respondents use SR 29 to travel to work**
- **20% of employee survey respondents carpool (this includes taking kids to school)**
- **43% of employee survey respondents said they would use public transit if expanded**
- **97% of employee survey respondents use their personal automobile to commute**
- **37% of mail survey trips ended in Napa, 19% in St. Helena, and 7% in Calistoga**
- **21% of mail survey trips were said to be made “less than one time per month”**



# Study Approach

A	B	WkDy-Daily	WkDy-EAM	WkDy-AM	WkDy-MD	WkDy-PM	WkDy-LN
1	1	13	0	4	6	3	0
1	2	0	0	0	0	0	0
1	4	1	0	0	1	0	0
1	6	0	0	0	0	0	0
1	7	1	0	0	0	0	0
1	9	1	0	0	1	0	0
1	10	0	0	0	0	0	0

## 5. Mobile Device Data

- **206,152 data samples vs. 1,800 survey responses**
- 45% touched an external gateway  
(inter-county trip that we have a control total for)
- 9% were pass-through trips  
(matches license plate matching)
- 55% were internal trips  
(almost impossible to measure with traditional methods)



# Data Analysis and Integration

- **Started with Mobile Device Data** due to large sample size of origin-destination data
- Other data used to refine the origin-destination trip tables **to represent single days of absolute data**
- Resulting trip tables represent **a single meaningful dataset** of all data collected



TABLE 14  
PERSONAL AUTOMOBILE FINAL ORIGIN-DESTINATION TRIP TABLES SUMMARY

Trip Purpose	Average Monday to Thursday Trips	Friday Trips	Saturday Trips	Monday to Thursday Trip Percent	Friday Trip Percent	Saturday Trip Percent
Total	345,346	362,253	159,541	100%	100%	100%
Internalized	26,369	25,223	8,647	8%	7%	5%
Home-Based Work	60,393	62,932	10,618	17%	17%	7%
Home-Based Other	57,867	58,163	16,015	17%	16%	10%
Non Home-Based	49,803	53,261	6,399	14%	15%	4%
Winery	47,811	56,639	50,273	14%	16%	32%
Imported Trip	66,194	67,963	34,995	19%	19%	22%
Exported Trip	36,909	38,072	32,593	11%	11%	20%
Total Winery Trips (including work trips)	52,070	61,333	54,883	15%	17%	34%
Winery Trips from Winery Regression Analysis	52,245	62,217	54,713	--	--	--
Difference	-175	-883	170	--	--	--
External Trips (including pass-through)	125,490	128,431	88,046	36%	35%	55%
External Trips from Vehicle Classification Counts	--	126,736	--	--	--	--
Difference	--	1,695	--	--	--	--



- Origin-Destination trip data can be aggregated to any desired level to illustrate larger travel patterns such as flows to and from the five major cities in Napa County

**Table 17**  
**Daily Average Weekday Vehicle Trips to and from the Five Major Cities in Napa County**

Total: 356,424		Destination Location							
		Calistoga	St. Helena	Yountville	Napa	American Canyon	Unincorporated County	Winery	External Gateway
Origin Location	Calistoga	2,062	444	47	360	95	1,586	544	780
	St. Helena	655	6,450	98	1,896	125	3,948	1,616	801
	Yountville	7	246	870	905	54	1,332	475	303
	Napa	397	1,793	1,018	63,359	2,766	19,801	3,099	17,329
	American Canyon	14	256	118	3,320	6,316	3,814	333	11,367
	Unincorporated County	1,381	4,474	1,106	18,514	3,267	40,469	12,053	21,083
	Winery	665	2,111	497	3,376	962	11,041	3,646	3,993
	External Gateway	1,723	841	270	17,464	12,780	18,803	3,902	11,203



# Conclusions

- The Napa County Travel Behavior Study provides NCTPA with several data sets. Data highlights that may be useful for future planning efforts include:
  - From Winery Regression Analysis
    - **Napa County wineries generate an estimated 62,200 vehicle trips on a Friday in October**
  - From License Plate Matching
    - **9% of daily trips at Napa County external gateways are pass-through trips**
    - **52% of Napa County pass-through traffic travels from the Sonoma County line on SR 12 to the Solano County line on SR 12**
    - **41% of daily trips are imported trips and 27% are exported trips**
    - **23% of traffic was one-way (a portion of this is visitors)**
    - **21% of total daily trips into Napa County were “visitor” trips**



# Conclusions

- From Surveys
  - **21% of winery patrons were from the Bay Area, 10% were from outside the United States**
  - **35% of winery patrons started their day in Napa County, 23% in San Francisco**
  - **32% of employer survey respondents live and work in the City of Napa**
  - **61% of employer survey respondents use SR 29 to travel to work**
  - **20% of employee survey respondents carpool (this includes taking kids to school)**
  - **43% of employee survey respondents said they would use public transit if service expanded**
  - **21% of vehicle intercept survey trips were said to be made “less than one time per month”**
- From Mobile Device Data
  - **55% of daily trips were internal to Napa County**
  - **9% were passing through Napa County**





**Questions?**

