Final to Board 9/16/15

Vision 2040
Moving Napa Forward

VISION 2040
Moving Napa Forward

NC TPA

ACKNOWLEDGEMENTS

NCTPA Board

City of American Canyon
Mayor Leon Garcia
Joan Bennett, Council Member

City of Calistoga
Mayor Chris Canning
James Barnes, Council Member

City of Napa
Mayor Jill Techel
Mary Luros, Council Member

County of Napa
Keith Caldwell, County Supervisor
Mark Luce, County Supervisor

City of St. Helena
Mayor Alan Galbraith
Peter White, Vice Mayor, NCTPA Vice Chair

Town of Yountville
Mayor John F. Dunbar, Chair
Richard Hall, Vice Mayor

Paratransit Coordinating Council
Beth Kahiga, Napa Valley Support Services, Executive Director

NCTPA Technical Advisory Committee

Mike Kirn, TAC Chair, City of Calistoga
Derek Rayner, City of Calistoga
Jason Holley, City of American Canyon
Brent Cooper, City of American Canyon
Eric Whan, City of Napa
Rick Tooker, City of Napa
Rick Marshall, TAC Vice Chair, County of Napa
John McDowell, County of Napa
Steve Palmer, City of St. Helena
Joe Tagliaboschi, Town of Yountville
Steven Rogers, Town of Yountville
Doug Weir, Paratransit Coordinating Council

NCTPA Vine Commuter Advisory Committee

Genji Schmeder
Anna Ernst
Margaret Schlenke
Jean Vincent Deale
Jack Wall
George Blackstock
Zachary Schunk
Doug Weir

NCTPA Paratransit Coordinating Council

Doug Weir
Beth Kahiga
JoAnn Busenbark
Fran Rosenberg
Celine Regalia
Randy Kitch
Julie Spencer

NCTPA Active Transportation Advisory Committee

Paul Wagner
Mike Costanzo
Barry Christian
Anne Darrow
Dieter Deiss
James Eales
Eric Hagyard
Donna Hinds
Joel King

Citizens Advisory Committee (CAC)

Michael Baldini, City of Napa
Joice Beatty, St. Helena
Leisa Bush, City of Napa
Dieter Deiss, Calistoga
Sandy Elles, City of Napa
Jim Feczko, City of Napa
Jeri Gill, County of Napa
Catherine Heywood, County of Napa
Elzbieta Hyde, County of Napa
Jerod Kansanback, American Canyon
Joel King, City of Napa
Chuck McMinn, St. Helena
Joseph Meck, American Canyon
Mike Miller, County of Napa
Robert Muh, County of Napa
Melissa Redezno Patrino, City of Napa
Louis Penning, City of Napa
Kathy Robinson, American Canyon
Bria Schlottman, City of Napa
Julie Seiger, City of Napa
Russell Sweeden, City of Napa
Nancy Tamarisk, County of Napa
Gary Woodruff, City of Napa
Genji Schmeder, City of Napa

Jurisdictional Staff:

City of American Canyon

Cheryl Braulik, Senior Civil Engineer
Jason Holley, Public Works Director
Dana Shigley, City Manager

City of Napa

Lorien Clark, Transportation Planner
Julie Lucido, Senior Civil Engineer – Special Projects
Jack LaRochelle, Public Works Director
Rick Tooker, Community Development Director
Eric Whan, Deputy Public Works Director

County of Napa

Steve Lederer, Public Works Director
Rick Marshall, Deputy Public Works Director
John McDowell, Deputy Director, Planning Building and Environmental Services
Dave Morrison, Director, Planning Building and Environmental Services

Town of Yountville

Debra Hight, Deputy Public Works Director
Steve Rogers, City Manager
Nathan Steele, Management Analyst
Joe Tagliaboschi, Public Works Director

City of St. Helena

Steve Palmer, Public Works Director

City of Calistoga

Lynn Goldberg, Planning and Building Director
Mike Kirn, Public Works Director
Erik Lundquist, Senior Planner

NCTPA Staff

Kate Miller, Executive Director
Danielle Schmitz, Planning Manager
Alberto Esqueda, Associate Planner
Diana Meehan, Associate Planner
Tony Onorato, Finance Manager
Justin Paniagua, Senior Financial/ Policy Analyst
Fio Silva, Assistant Planner
Eliot Hurwitz, Planning/Special Projects

Consultants

Arup
Eisen | Letunic
NWC Partners
Cambridge Systematics

Contents

State Route 29 through American Canyon during evening rush hour

Executive Summary

Overview

The Napa Countywide Transportation Plan – Vision 2040: Moving Napa Forward is a long-range transportation plan that includes a list of transportation investments for the next 25 years. The Napa Countywide Transportation Plan identifies goals and objectives that apply to all modes of transportation and identifies issues and challenges while setting the stage for a long range vision for the county.

Goals and Objectives

A series of goals and objectives were adopted by the NCTPA Board and served as the springboard for the plan. Icons associated with each goal were established as a guide to visually represent these goals and objectives throughout the document.

The core of Vision 2040: Moving Napa Forward is composed of white papers that highlight transportation issues, concerns and opportunities in Napa County. At the end of each paper a project consideration summary has been added to identify proposed projects in the plan that address issues and concerns raised in the white paper.

Public Outreach

Development of the countywide plan involved a comprehensive public outreach effort and included public meetings and workshops held in English and Spanish, interactive website applications and surveys, radio public service announcements, stakeholder meetings, citizen meetings, and technical meetings. Outreach was also directed toward communities of concern –areas with concentration of low-income and/or non-English speakers and/or elderly and/or disabled communities. NCTPA also held meetings with active transportation and transit advocates.

Key Themes of transportation improvement from public outreach

- Maintenance and repair of sidewalks, roads, and bikeways
- More reliable, more frequent bus service, with extended hours
- More sidewalks and pedestrian amenities near schools, bus stops, and senior centers
- Increase traffic safety for all users
- Improved congestion relief

Transportation and Land Use and Development

Transportation and land use are intrinsically connected, and this connection strongly influences trip generation which varies by mode. To ensure a successful plan, projects included in the plan should, in part, encourage alternative modes of transportation to meet the goals of the Plan. Establishing a broader vision and thinking beyond the delivery of transportation projects in related areas such as the planning and zoning for housing and land use is also important in meeting the goals of the Plan. More mixed use and transit oriented development that promotes alternative mode choice is needed to help reduce congestion and vehicle miles traveled. Strategies that promote affordable housing outlined in the Affordable Housing Action Plan should also be followed which could help alleviate the 25% of traffic on the road which is attributed to work trips that are largely a result of workers living outside of Napa County and commuting in to work. Priority Development Areas (PDAs) and Priority Conservation Areas (PCAs) have proven to aide in consolidating growth within the city limits which also fosters reduced vehicle miles traveled (VMT).

Transportation and the Napa Economy: Part 1 Jobs, Housing and Community

Napa County's economy is largely dependent on the wine and tourism industry which accounts for 40% of the local labor force. The top five fastest growing job sectors in Napa County, which will account for 63% of the projected job growth, are low wage earning job sectors. This is particularly significant because housing in Napa is expensive and projected housing production will not keep pace with job production. This will force the growing Napa County workforce to look for more affordable housing elsewhere. Conversely, residents that wish to live in Napa County are likely to seek higher paying jobs elsewhere. The housing/income mismatch will result in more vehicle miles traveled and the inevitable associated congestion on Napa's roads. If projections are accurate, this could result in 30,000 workers commuting into Napa each day by 2040 – a 45% increase, and an additional 2,000 outbound-commuters or a total of 16,000 daily trips leaving the county for work over this same time period.

Transportation and the Napa Economy: Part 2, Goods Movement

Of the freight movement in Napa County, 55% is outbound, 44% inbound and 1% is intra-county. The majority of freight movement is done by truck (61%). Congestion in Napa County has a profound impact on freight movement. NCTPA has identified freight movement as a key topic for future study in collaboration with stakeholders. Given limited resources for infrastructure expansion, employing travel demand strategies and improving corridor management are reasonable solutions. Other considerations include: additional highway capacity on SR 29, improved corridor management, travel demand management (which could include dedicated off peak operating times for freight movement), and build out of class 1 bike and pedestrian facilities to reduce bike, vehicle and truck conflicts.

Transportation Funding and New Revenue Sources

This paper provides an overview of current federal, state, regional and local funding sources available to NCTPA. Over the past decade transportation funding sources have been diminishing and transportation need continues to increase resulting in a significant funding shortfall for Napa County. More importantly, discretionary funding (revenues that are competitive based on the inherent merit of a project) are largely a thing of the past. This is important because Napa has a small population and fewer users which limits revenue generations in favor of larger counties in the Bay Area and around the country. Potential transportation revenue generators are discussed in the Investment Plan section, but focused advocacy over

the next 25 years will be key to draw attention to the County's urgent needs.

Mode Shift and Travel Demand Management

Population growth and development places strain on existing transportation infrastructure. The rural nature of Napa and scarce funding limit the ability to build large infrastructure projects that would help alleviate congestion. Travel demand and mode shift are two strategies that can alter how, where and when people travel. These concepts are inexpensive and effective for reducing traffic congestion. NCTPA, its member jurisdiction and community partners, need to collaborate to implement policies that will foster mode shift.

Transportation and Environmental Concerns

SB 375 mandates that regional planning agencies establish protocols to meet greenhouse gas reduction requirements as part of the transportation planning process. These requirements are passed down to local agencies through regional programs and guidelines. Increased concerns about climate change and sea level rise place a real threat on regional infrastructure such a SR 37, imposing increased strain on SR 121, SR 29 and SR 12. NCTPA is working with regional partners to address these issues. The plan proposes project considerations for reducing greenhouse gas emissions.

Transportation and Health

How we travel has a profound influence on our physical and mental health. Transportation and health officials are partnering to encouraged members of the community to use active commute modes. Since World War II, the build out of the national highway system has encouraged urban sprawl – new developments have separated workers from jobs, central shopping districts from housing, and communities from public transit. Transportation planners and public health officials have forged new alliances to investigate how strategic transportation planning can contribute to public health goals. NCTPA encourages concentrating development in the County's two priority development areas and has prioritized projects in this plan that will help support health and safety initiatives.

Travel Behavior Study

In 2013 NCTPA launched the Napa County travel behavior study in an effort to better understand the travel patterns of visitors, workers and residents of Napa County. Through a variety of data gathering methods, results from the study concluded that 55% of trips in Napa County are generated internally and 45% touch an external gateway. This was the first study of its kind in Napa County, and NCTPA has plans to update the study before the next iteration of the countywide plan.

Communities of Concern

MTC defines a community of concern as having distinct demographic and socioeconomic characteristics compared to the rest of the region. A fundamental concern of this effort is to identify mobility challenges in communities of concern. Access to "lifeline" services can create a particular hardship for low-income persons, Limited English Proficiency, and zero-vehicle households. NCTPA is working with regional entities such as the Metropolitan Transportation Commission to evaluate local communities of concern.

Traffic Operations and Corridor Management

Traffic congestion is projected to grow over the next 25 years due to increased population and the growing economy. Due to limited funding transportation planners recognize that it would be challenging to build enough new capacity to keep up with demand.

As a result transportation professionals are looking into alternative methods of managing traffic volumes through road design and intelligent transportation systems. In this section NCTPA discusses ways to alleviate traffic congestion through a myriad of new corridor management strategies on Napa's major arterials.

Emerging Technologies

New development in transportation technology has shown promise in alleviating traffic congestion, and reducing greenhouse gas emissions. The prospect of autonomous vehicles is a prime example of how technology can increase efficiency of the road, without having to increase roadway capacity. There are also exciting new technologies that make public transit more attractive to users. There are a number of proven technologies already being employed in the County, such as corridor management systems. Investments in traffic management operations will remain a key and cost effective way for addressing congestion in the near term. Technology that improves transit operations such as computer aided dispatch systems will also be invested and upgraded over the next 25 years.

The Prospects for Rail Transportation in Napa County

Transportation demand to move people and freight in Napa County will increase over the next 25 years, while the primary roadway capacity will remain comparatively constant. Creating capacity by developing passenger and freight rail in Napa is a potential solution to reduce the dependency on the roadway network. Rail in Napa County could be used to move people as well as freight from east to west. NCTPA will work with adjacent counties to evaluate rail expansion in Napa.

The Investment Plan

The investment plan brings together the general concepts of the plan and discusses projects in context of federal, state, and regional interests. It further discusses project need in light of revenues available. The investment plan also identifies potential discretionary funding sources to pursue to address the projected funding shortfall. Even with alternative funding sources public officials will need to decide where to draw the line between balancing the maintenance needs of the current system and capacity building projects.

Please note citations are endnotes, they can be found on page 132.

Napa Valley Vineyard and Mustards along State Route 29

State Route 29 through Napa Valley

1. Introduction to the Countywide Plan

Introduction

Napa County Transportation and Planning Agency (NCTPA) is responsible for developing long-range countywide transportation priorities through an integrated planning process. This Countywide Transportation Plan, Vision 2040 – Moving Napa Forward includes a list of visionary transportation investments that will serve residents, workers and visitors alike for years to come. In a time where resources are limited, it is important to look critically at the investments that will be included in the Bay Area Regional Transportation Plan (RTP). The countywide transportation plan is what informs the Metropolitan Transportation Commission's (MTC) Regional Transportation Plan and the Sustainable Communities Strategy (RTP/SCS) which is updated every four years. NCTPA last updated the countywide transportation plan in 2009.

The Regional Transportation Plan (RTP) is a 25-year plan that serves as a framework for the regional planning process to establish consistent and sustainable planning goals throughout the nine-county Bay Area region. This long-range transportation and land use plan aims to link transportation and housing in future regional growth. The plan specifically addresses the requirements of SB 375 (the 2008 California Sustainable Communities and Climate Protection Act), to reduce greenhouse gas emissions implementing a Sustainable Community Strategy and advancing compact and mixed-use development. Integrating transportation linkages with new development will foster walkable communities and provide more access to schools, local jobs and retail encouraging the use of alternative transportation modes.

To meet regional requirements and to be consistent with the regional process, a new countywide transportation plan should be completed every four years. Vision 2040: Moving Napa Forward has been completed in time to inform the next regional plan which is scheduled for adoption in 2017.

Vision 2040 Goals and Objectives adopted by the Board (goals are considered of equal importance):

Goal 1: Serve the transportation needs of the entire community regardless of age, income or ability.

Goal 2: Improve system safety in order to support all modes and serve all users.

Goal 3: Use taxpayer dollars efficiently.

Goal 4: Support Napa County's economic vitality.

Goal 5: Minimize the energy and other resources required to move people and goods.

Goal 6: Prioritize the maintenance and rehabilitation of the existing system.

The goals and objectives of the Napa 2040 plan are founded on the following key assumptions.

– Napa County has a number of constraints that prevent and/or limit expanding the highway and road system as a means to eliminate congestion.

– Peak travel in Napa County is compounded by visitors and commuters traveling through Napa to/from adjacent counties, but is largely attributable to Napa's employees traveling into the county from other locations or Napa's residents traveling to jobs outside the county.

– The County's senior population is expected to double over the next 30 years.

– In 2010, approximately 1% of Napa County commuters biked to work, and approximately 4% walked to work, while 76% drove alone.[1]

– Napa's job production will outpace its housing production.

– Housing costs in Napa make it a challenge to provide sufficient housing stock for its growing work force.

– The issues and challenges are many and the solutions must be balanced; therefore the established goals are considered of equal importance.

As part of Napa 2040, a 25-year Investment Plan was created containing projects and programs submitted by jurisdictions based on needs of the community. In addition to identifying local projects and programs, the Investment Plan determines the delivery order of identified projects. These projects and programs were collected through a Call for Projects conducted by NCTPA in the fall of 2014.

Vision 2040: Moving Napa Forward is broken into different chapters that focus on transportation issues. Under the Goals and Objectives in Chapter 3, there is an icon key that shows visual representation of the goals. Throughout the plan these icons appear where the transportation issue being discussed, identifies with a particular goal or objective.

Please note citations are endnotes, they can be found on page 132.

State Route 121 Maxwell Bridge over the Napa River

The Napa County Transportation Planning Agency presents a Countywide Transportation Plan to the public Wednesday, April 22, 2015

2. Public Outreach

Development of this Plan involved the active participation of the Napa County community. Staff conducted presentations, surveys and met directly with residents and stakeholder groups throughout the county and held open public meetings, including meetings in Spanish. The NCTPA website has made project documents available as they have been drafted, including documents in Spanish. Public involvement is a core value for transportation planning, with specific recommendations included in the regional, state and federal agreements.

NCTPA Board Meetings

The entire process of the development of this Plan has been overseen by the NCTPA Board of Directors, which meets regularly on the third Wednesday of every month. At each of those meetings, the public has been invited to comment on any aspect of countywide transportation and planning, including items not on the monthly Board agenda. During the course of the development of this Plan the Board has also received periodic updates from Staff, during which public comment has been specifically solicited. These public presentations were made to the Board on:

January 15, 2014
A Board Retreat was held devoted to clarifying the vision and setting the overall goals and objectives of the Plan

March 19, 2014
NCTPA staff and its consulting team drafted revised goals and objectives based upon the NCTPA Board feedback at its January kickoff retreat.

May 21, 2014
Staff reported to the Board on the final adopted goals and objectives, the establishment of a Citizens Advisory Committee, website information and the first set of public meetings.

November 19, 2014
Staff provided an update to the Board on development of the Plan including stakeholder group meetings.

May 20, 2015
Staff provided an update to the Board on development of the Plan including public workshops.

July 15, 2015
The Board acted to open the draft Plan for public review and comment.

Citizens Advisory Committee

A 24–member Citizens Committee convened at the beginning of the project to elicit the expertise and interest of local stakeholders. The Committee met five times on:

– March 24, 2014,
– September 23, 2014,
– December 9, 2014,
– March 24, 2015
– June 4, 2015 and a joint meeting with NCTPA's Technical Advisory Committee

Committee membership included residents from all six of Napa's jurisdictions. Key stakeholder groups were represented, including the business community (agriculture and wine industry, hospitality), environmental interests, active transportation advocates, public transportation advocates and the Hispanic community.

The Committee has reviewed drafts of each of the project documents as they have developed, including the Project and Program lists and have provided their commentary and input.

Public Workshops in American Canyon, Napa and St. Helena

NCTPA held two series of public meetings, one in April 2014 at the launch of the project and one in April 2015 to review the draft plan. Each series consisted of three separate gatherings, in the Cities of American Canyon, Napa and St. Helena. Each meeting consisted of an introductory presentation, a question and answer period and an open house at which public participants were able to interact directly with staff at a series of map stations. The workshops were designed to receive broad public feedback on the goals and objectives of the plan as well as on specific priorities and projects of interest to the public. In the first set of meetings, project staff provided an overview of the Vision 2040 process including the project timeline, project goals, a review of existing transportation conditions in Napa County and some examples of the kinds of projects and programs the Plan will consider. The next part of the meeting was a facilitated discussion to receive input on what attendees thought should be included in the planning process. This was followed by a more informal opportunity for attendees to speak with staff and make further comments and recommendations. At the second series of meetings, the public had the opportunity to view and comment on the full set of projects and programs that were recommend in the Plan. Public comments have been taken into account in the development of these final project and program lists.

Input at these meetings included comments on investments, revenue, land use, the current transportation system as well as general comments summarized below:

Investments

Participants highlighted concerns about investments in public transit and streets, highways, bike and pedestrian conditions. In a theme that was repeated at most public gatherings, participants sought expanded bus service, especially longer hours of operation and weekend service. Additional investments were requested in bus amenities (including better bus stops and tourist-serving features) and continued investigation of rail service between Vallejo and St. Helena. On the roadway side, there was support for roundabouts, for better electric vehicle infrastructure and concern about freight (how to minimize conflicts between freight and general purpose traffic). Investments to make bike and pedestrian modes safer was also suggested.

Revenue

Participants at these initial meetings asked about a broad range of potential revenue generating mechanisms including a local vehicle registration fee, congestion pricing and a parcel tax. Revenue ideas raised at the meetings that were more feasible included developers' fees, and becoming a charter county

allow in order to levy transfer taxes. There was also discussion of increasing the gas tax and implementing user fees for electric vehicles.

Land use

Responding to presentation materials that highlighted the strategic significance of workforce housing for employee commute challenges, meeting participants spoke about making public investments workforce housing to address transportation needs. NCTPA was also encouraged to monitor General Plan updates of Napa's jurisdictions to monitor proposed developments and zoning changes that could contribute to traffic congestion.

Citizens Advisory Committee Meeting, December 9, 2014

Surveys

During the Spring and Summer of 2014, NCTPA conducted two sets of surveys. The first Vision 2040 general issue survey focused on topics related to transportation in Napa County. The survey was available online and in paper forms. The survey was publicized via radio Public Service Announcement on local radio, an advertising bookmark shown in Figure 2.3 and advertisements on the VINE system buses. The second survey focused on topics of particular interest to disadvantaged communities and was designed to elicit input on the Community-Based Transportation Plan (CBTP) (see Appendix C). This survey was also available online as well as in paper format. It was distributed widely to workers in the hospitality industry in partnership with Visit Napa Valley as well as through other channels. Results from these surveys are summarized below:

Vision 2040 general issue survey: Summary of results

There were a total of 54 responses to the general issue survey, mostly from older, more affluent (annual household incomes over $75,000), with fewer children than the median population household size. Most respondents noted that traffic was worse (or much worse) than even five years ago underscoring that congestion was the most challenging aspect of local transportation. Pavement conditions on local highways got much better marks although local streets were not given high marks. Most respondents noted that Napa County jurisdictions have not changed much in terms of walkability or in terms of safety and ease of biking. This group strongly supported safer bikeways, improving local streets and improving the walkability of the central business districts. Top suggestions were to repave roads, widen congested roads, maintain/repair existing bike lanes and sidewalks and build additional active transportation infrastructure. Also high on the list of recommendations was expanding transit service (frequency, reliability, longer hours). Some respondents mentioned passenger rail and winery shuttles.

Community-Based Transportation Plan (CBTP) survey Summary of results

This survey received 292 responses (244 from English version, 48 from Spanish version). Significant assistance in distribution of these surveys was provided by lodging employers and the Napa Self Sufficiency Coalition (an organization serving Napa's homeless community). Respondents were well distributed across age groups and about a third came from households with children.

15% of respondents reported having some kind of disability and 14% had no access to an automobile.

April 26, 2014 Public Outreach Meeting on the Countywide Plan

Although 75% did drive, this figure fell to 45% among Spanish speaking respondents. Respondents to the CBTP survey were also lower income than the general issue survey: 38% of English respondents and nearly half of the Spanish speaking respondents reported an income of $20,000 per year or less.

Respondents also commented on transit needs. A number of respondents commented that the system "takes too long", "doesn't go where I need to go" and "doesn't run late enough." Some respondents also noted concerns about wait times when using VINE-Go paratransit service. When queried on issues related to driving, the top concerns were traffic congestion. Other respondents commented on the lack of sidewalks, or that existing sidewalks are in poor condition. Others commented that that there were insufficient bike lanes or safe options to bike. Another concern is the difficulty ("unsafe or intimidating") in crossing the road as a pedestrian.

Overall, respondents commented that the most important issues are the need for more bike lanes (63% rate this issues as "very important") , followed closely by faster and more frequent bus service (59%) and safer crosswalks around schools (57%). Other topics that scored high (over 50%) are the need for better bus connections, safer crosswalks around bus stops and late night bus service.

When asked how to improve conditions, the main themes cited were

– Maintenance and repair of sidewalks, roads, bikeways

– More reliable, more frequent Bus service, with earlier and later hours

– More sidewalks and more extensive bikeway network

– Traffic safety

– Congestion relief

Online Map

During the summer and fall of 2014 NCTPA published an online County map that allowed interested individuals to place a marker at locations and post comments on transportation issues and/or suggest improvements that could take place at that location.

Bicycling

59 comments were received.

Comments received:
Bike sensors needed at key intersections, identification of key bike routes needing lanes, specific locations where shoulders need paving, the need for additional bike racks on buses, the need for maintenance (cleaning) of debris-strewn bike lanes, and comments on the need for better cyclist awareness among motorists, especially along narrow winding roads.

Roadways

37 comments were received.

Roadway comments indentified significant potholes and degraded road surfaces, as well as the desire for expanded roadways. Some comments called for roundabouts at various locations, for traffic calming solutions, stop light locations, traffic light timing improvements, and difficult left turn locations.

Pedestrian

13 comments were received.

The majority of comments addressed the need for sidewalks in specific locations in the more urbanized areas of the County. Many comments pointed out the desire for safer pedestrian crossings.

Transit

10 comments were received.

Most comments revolved around service expansion,and identified desired connections and routes.

Specific locations for needed shelter improvements were also identified.

All comments received were shared with City, Town, and County partners.

Figure 2.1 Age of Survey Participants

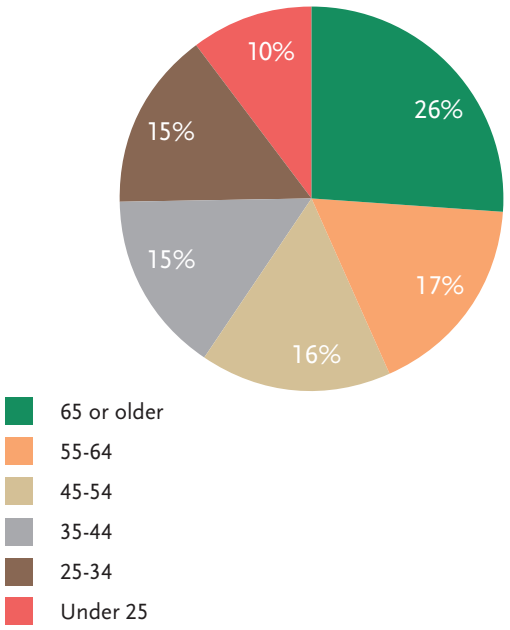


Figure 2.2 School-Age Children in Household

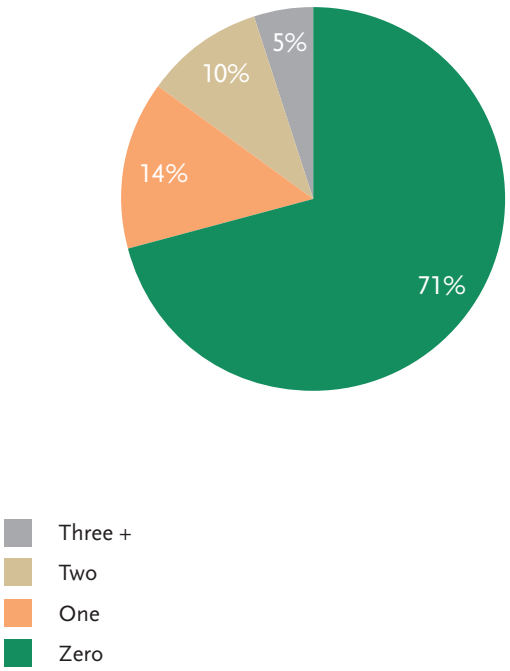


Figure 2.3 Outreach Materials: Bookmarks distributed throughout Napa County

Targeted Stakeholder Meetings

1. July 9 2014 | Visit Napa Valley – Lodging Committee

Staff met with a dozen lodging representatives and discussed the transportation challenges faced by their employees.

2. July 10 2014 | Paratransit Coordinating Council (PCC)

The PCC serves as an advisory committee to NCTPA on transportation issues of people with special needs, disabled, elderly and low income. Staff gave a comprehensive presentation on the Vision 2040 Plan, including outreach activities. PCC members offered several suggestions on both outreach and programmatic matters. There was particular interest in the concurrent development of the Countywide Pedestrian Plan.

3. July 16 2014 | Napa Valley Coalition of Nonprofit Agencies

The Coalition influences local public policy and works to strengthen quantity and quality of services in Napa County. Project Staff gave an extended presentation to the monthly gathering of the Coalition and signed up several additional presentation opportunities. Additional information about online opportunities to comment on the Community Based Transportation Plan were distributed to Coalition members via their newsletter and online information systems.

4. July 17 2014 | Napa Senior Center

The Center provides a wide range of programs and activities including a daily meal program. Project staff participated in an "Ice Cream Social". A presentation was given followed by one-on-one interviews and transportation questionnaire collection. Issues raised by participants included gaps in transit service and safe pedestrian crossings.

5. July 27 2014 and August 12, 2014 | Puertas Abiertas (Open Doors)

Community Resource Center works with local Latino

residents in Napa to achieve healthy living, self-sufficiency, and opportunities for leadership and community engagement. Puertas Abiertas held a Transportation Open House to build on the existing Puertas Abiertas activities at a nearby Catholic church.The community was invited to learn more about transportation in Napa, Vision 2040 and the Community Based Transportation Plan (CBTP). A subsequent outreach event was held and NCTPA staff provided a short presentation to the Puertas Abiertas Latino Senior Citizen Group regarding the CBTP.

6. August 7, 2014 | Continuum of Care

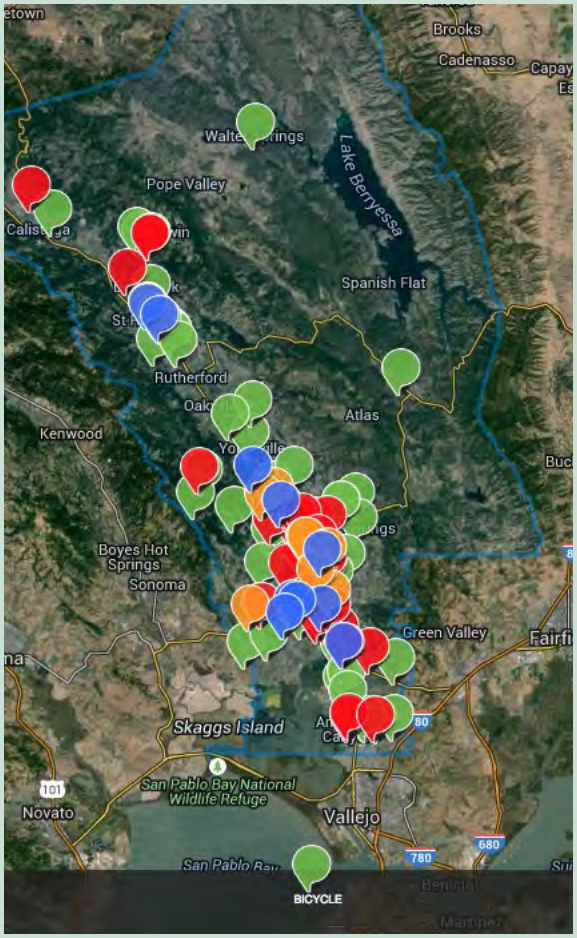
Continuum of Care is a consortium of non-profit, faith-based and government agencies that supply homeless services in Napa County. Project Staff gave a CBTP presentation to the steering committee and encouraged committee members and their clients to participate in the transportation questionnaire and online mapping tool. Additional follow up meetings and presentations were also scheduled with Continuum of Care member organizations.

7. August 8, 2014 | Rianda House –

Rianda House connects local seniors to programs, services and resources needed to support independence and successful aging. NCTPA Staff held a lunch meeting with members of the Rianda House Senior Activity Center in St. Helena to discuss transportation concerns. Project Staff made a lunch time presentation and received numerous suggestions and comments on transit services to key destinations. Participants also spoke about need for later evening bus service.

8. August 13, 2014 | Napa Healthy Aging Population Initiative (HAPI)

HAPI is a broad-based, community collaboration of more than 25 organizations and individuals that provide support services for Napa's aging population. Project Staff gave a presentation to a monthly HAPI meeting and conducted a lively discussion on transportation



Online Mapping Tool for Public Comments

English PSA on KVON/KVYN

"Do you take the Vine Bus?
Would you like to?
Do you ride your bike around town?
Can your kids walk to school safely?
Traffic congestion got you down?

If these issues matter to you, you can help design the future of Napa's transportation system.

– Come to a public meeting
– Take a Survey
– Go online and Show us on the map where you'd like things to change

Find out how online at www.nctpa.net or send an email to PLAN@NCTPA.NET"

Spanish Language PSA on KBBF Radio (Calistoga)

¿Usas la línea de autobús Vine?
¿Te gustaría hacerlo?
¿Usas bicicleta para ir de un lado al otro de la ciudad?
¿Pueden tus hijos ir hasta su escuela con seguridad?
¿Te cansan los embotellamientos del tráfico?

Si estos asuntos te interesan, entonces puedes ayudar a diseñar el futuro sistema de transporte de Napa.

– Ven a las reuniones públicas
– Llena una encuesta
– Ingresa por Internet e indícanos en el mapa los sitios dónde quieres que haya cambios

Entérate en www.nctpa.net O Por correo electrónico a PLAN@NCTPA.NET

Radio Public Service Announcements in English and Spanish

Napa Senior Center Meeting and Ice Cream Social

issues with attendees. Additional information was sent by request to participants and additional presentations were scheduled with committee member organizations. Special attention was drawn to the Redwood/Trancas corridor which is frequently used by seniors because of the high concentration of senior housing and shopping in that area. Meeting participants suggested that NCTPA proactively market the Transit Ambassador Program to seniors. They recommended that there be a much shorter application process for Americans with Disabilities Act (ADA) eligibility.

9. August 22 2014 | Calistoga Family Center Back to School Night (English and Spanish)

At this major community event (over 700 families attending) NCTPA hosted a booth, discussed transportation issues with attendees, handed out copies of the CBTP survey, and provided information about the Countywide Transportation Plan.

10. September 11, 2014 | Rohlffs Manor

Rohlffs Manor Senior Apartments is an independent living community of 355 units in the City of Napa.

Public Meeting Notices

Principal concerns voiced by attendees included the need for covered shelters at all bus stops with enough room to sit down. Several participants talked about their experiences using the bus system, praising transit staff for helping to get motorized wheelchairs onto the buses and expressing appreciation for drivers. There was concern that, getting onto buses is still quite difficult for some, even with "kneeling" buses. Participants also wanted longer service hours and extended weekend service.

Meeting at Rianda House in St. Helena

11. December 2, 2014 | Napa Park Homes

Napa Park Homes is a community of 140 rental units operated by Napa Valley Community Housing of which 116 are designated for persons eligible for Section 8 housing. The remainder of the units are for moderate income residents. A lively group met in the community room and discussed both transit and general transportation issues. Top concerns focused on safety at bus stops and the need for lighting at bus stops. Suggestions for expanded hours of service and improved on time performance were received. A number of comments were received indicating that sidewalks are essential near/at bus stops. Participants

Meeting at Napa Park Homes

also mentioned other pedestrian needs including better crosswalks, lighting, sidewalks, and way finding signs in numerous locations throughout the City of Napa. Specific lane configurations (left turn lanes) were suggested as well as the need for bike lanes in downtown locations.

12. December 4, 2014 | American Canyon Senior Center

The American Canyon Senior Multi-Use Center is open every weekday for various activities, including classes. NCTPA held an open house meeting at which participants made several suggestions to improve transit service including identifying bus stop locations and recommending service expansion. Participants also identified locations for safe crossing access to the Senior Center and recommended a pedestrian safety education program.

13. December 9, 2014 | Napa Senior Center

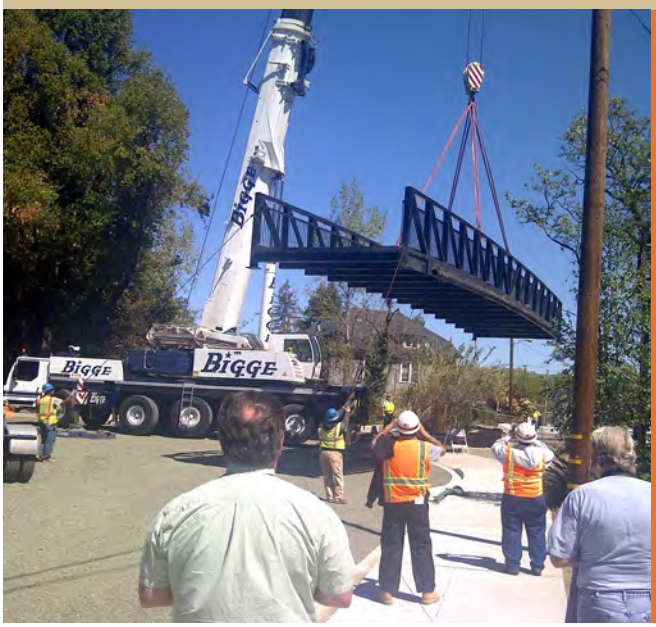
A second meeting at the Napa Senior Center identified additional suggested specific transit system changes including improvements to bus shelters, service expansions and amenities. Additional comments were made about road conditions at specific locations as well as sidewalk and pedestrian crossings concerns. Participants also voiced concerns that NCTPA needed more effective outreach to schools, particularly to low income students.

14. January 15, 2015 | Stonebridge Apartments, St. Helena

The Stonebridge apartments are 80 units of regulated affordable housing serving low- and very-low-income households. At a meeting with NCTPA staff, the main concerns raised by participants included pedestrian challenges because of poor lighting at corners, limited sidewalks, poor pavement marking and parking on sidewalks. Members of the community also asked for transit schedules and hours to be posted at bus stops as well as offering options for paying fares. Participants also suggested hiring additional Spanish speaking drivers and dispatch staff. Employer shuttles were also suggested. Issues with lighting and pavement conditions were noted as hindrances to bicyclists. Several specific roadway and bridge improvements were also suggested.

Public Meeting at NCTPA

State Route 12/ Jameson Canyon During Rush Hour



3. Goals and Objectives

On January 15, 2014 the NCTPA Board held a retreat, where the Board reaffirmed goals and objectives for the Napa Countywide Transportation Plan: Vision 2040 Moving Napa Forward. An icon has been created to provide a visual representation for each goal and related objectives. The icon is carried through to other elements of the plan to link ideas and projects to the goals.

In Chapter 4, a series of white papers discuss transportation challenges and opportunities faced by Napa County in the next 25 years. The white papers explain the role of transportation in a variety of issues ranging from the county's economic vitality to health concerns. Icons are used within the text of the white papers to identify when a particular goal and/or objective is being addressed.

Preamble

The goals and objectives for the 2015 Napa Countywide Transportation Plan are based on the following key assumptions.

- Napa County has a number of constraints that prevent and/or limit expanding the highway and road system as a means to eliminate congestion.
- Peak travel in Napa County is often compounded by visitors and commuters traveling through Napa to/from adjacent counties, but is largely attributable to Napa's employees traveling into the county from other locations or Napa's residents traveling to jobs outside the county.
- The County's senior population is expected to double over the next 30 years.
- In 2010, approximately 1% of Napa County commuters biked to work, and approximately 4% walked to work, while 76% drove alone.[1]
- Housing costs in Napa make it a challenge to provide sufficient housing stock for its growing work force.

– The issues and challenges are many and the solutions must be balanced; therefore the established goals are considered of equal importance.

Vision 2040 Goals and Objectives Adopted by the Board

Goal 1: Serve the transportation needs of the entire community regardless of age, income or ability.

Objectives:

1. Provide safe access to jobs, schools, recreation and other daily needs for Napa's residents and visitors.
2. Endeavor to serve the special transportation needs of seniors, children and the disabled.
3. Coordinate transportation services for disabled persons, seniors, children and other groups so each serves as many people as possible.
4. Provide affordable transportation solutions to ensure access to jobs, education, goods, and services for all members of the community.

Goal 2: Improve system safety in order to support all modes and serve all users.

Objectives:

1. Design roadways and other transportation facilities to enhance coexistence of users of all modes.
2. Educate all roadway users so they may safely coexist.
3. Work with Napa jurisdictions to adopt complete streets policies to meet the Metropolitan Transportation Commission's funding eligibility requirements.[2]
4. Ensure Measure T roadway funds are maximized to improve infrastructure, as allowed under the Ordinance, to benefit all transportation modes.
5. Prioritize projects that expand travel options for cyclists and pedestrians as well as those projects that improve operation and safety for vehicles, pedestrians, and cyclists

Goal 3: Use taxpayer dollars efficiently.

Objectives:

1. Continue to prioritize local streets and road maintenance, consistent with Measure T.
2. Invest in fast and reliable bus service and infrastructure, so public transit is an attractive alternative to driving alone.
3. Identify alternative solutions that minimize costs and maximize system performance.
4. Provide real-time traffic and transportation information via MTC's 511 or similar system by 2017.
5. Explore new transportation funding sources, including fees associated with new development.
6. Develop partnerships with Caltrans, California Transportation Commission (CTC), Metropolitan Transportation Commission (MTC) and Napa's state legislators to support expanded transportation funding for local mobility needs and to accommodate demand from regional traffic that travels through Napa County.

Goal 4: Support Napa County's economic vitality.

Objectives:

1. Identify and improve key goods movement routes.
2. Work with employers to improve access to employment centers, as well as dispersed agricultural employment sites.
3. Improve transportation services aimed at visitors, including alternatives to driving.
4. Use transportation demand management techniques to shift travel from peak to non-peak times.

Goal 5: Minimize the energy and other resources required to move people and goods.

Objectives:

1. Prioritize projects that reduce greenhouse gases.
2. Increase mode share for transit, walking, and bicycling to 10% by 2035.[3]
3. Reduce the growth of automobile vehicle miles traveled (VMT) by shifting trips to other modes.
4. Encourage the provision of alternative fuel infrastructure.
5. Invest in improvements to the transportation network that serve land use, consistent with SB 375.[4]
6. Identify revenues that support investments in Priority Development Areas (PDAs).

Goal 6: Prioritize the maintenance and rehabilitation of the existing system

Objectives:

1. Deliver Measure T projects effectively.
2. Focus funding on maintenance priorities.

Conclusion

As part of the countywide plan, a 25-year Investment Plan was created which is comprised of projects and programs submitted by jurisdictions based on needs of the community. In addition to identifying local projects and programs the Investment Plan determines the delivery order of identified projects. These projects and programs were collected through a Call for Projects conducted by NCTPA in the fall of 2014.

Vision 2040: Moving Napa Forward is divided into chapters that focus on distinct transportation issues. The above icon key shows visual representation of the goals. Throughout the plan these icons appear to link the transportation issue being discussed with a particular goal or objective.

Hot Air Balloon Over the Napa Valley Floor

4. Understanding Transportation in Napa County

This section describes key issues related to transportation in Napa County now and in the future.

4a. Transportation, Land Use and Development in Napa County

Introduction

Transportation and land use are intricately connected. The location of jobs, housing, services and recreation in relationship to each other affects the number and length of trips people take and the transportation mode used for those trips. There are actions that governments and planning agencies can undertake to influence land use and site design to improve transportation and increase alternative mode use, including establish policies, implement regulations, and offer incentives. A jurisdiction's General Plan is the principal policy document that guides land use decisions and includes specific land use zoning categories and boundaries adopted.

Land use decisions are made locally in conformity with a jurisdiction's General Plan. Land use patterns in General Plans influence the character of the local transportation network. For example, Napa County has chosen to restrict development in the existing agricultural areas and concentrate new growth within the urban boundaries which has contributed to the need for a transportation system that can move workers from their jobs in agricultural areas (including wineries and vineyards) to affordable housing in the cities and other counties.

Existing Conditions

Napa County is the least populous and most rural county in the San Francisco Bay Area. With a population of roughly 140,000, it is home to a multibillion dollar grape growing, wine production and associated tourism industry, and is a leader in agricultural preservation. Napa County encompasses five incorporated areas: The Cities of Napa, St. Helena, Calistoga, American Canyon, and the Town of Yountville. The City of Napa with a population of 79,000, is the largest city in the county, with over half of its population.

Napa County is comprised of approximately 500,000 acres of which 450,000 acres, or 90% of the total land mass, is designated as various types of open space. Approximately 115,000 acres are dedicated open space in public ownership, and approximately 20,000 acres are either owned by a private land trust or protected through a conservation easement. The balance of open space lands are in private ownership and have been protected from urban development through a series of actions taken by elected officials and the electorate resulting in the adoption of a Rural Urban Limit Line (RUL).

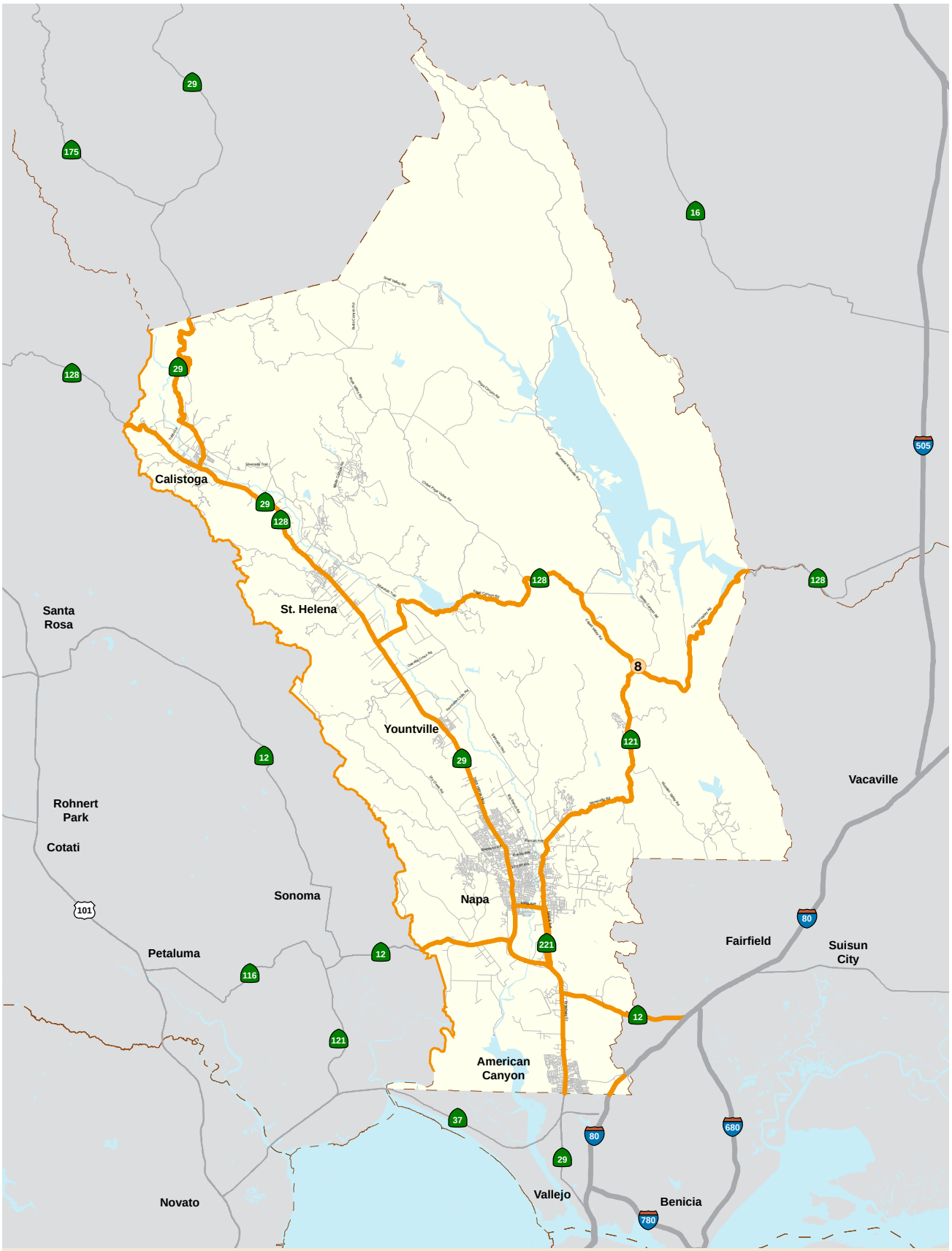


Figure 4.1 Napa County

Table 4.1 Population Growth in Napa County, 1910-2015

	Population											
City/Town (Date incorporated)	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	2015
American Canyon (1992)								5,712	7,706	9,774	19,454	19,656
Calistoga (1886)	751	850	1,000	1,124	1,418	1,514	1,882	3,879	4,468	5,190	5,155	5,204
Napa (1872)	5,791	6,757	6,437	7,740	13,579	22,170	35,978	50,879	61,842	72,585	76,915	77,698
Saint Helena (1876)	1,603	1,346	1,701	1,758	2,297	2,722	3,173	4,898	4,990	5,950	5,814	5,862
Yountville (1965)							2,332	2,893	3,259	2,916	2,933	5,968
Unincorporated area	11,655	11,725	13,759	17,881	29,309	39,484	35,775	30,938	28,500	27,864	26,200	28,356
Total	**19,800**	**20,678**	**22,897**	**28,503**	**46,603**	**65,890**	**79,140**	**99,199**	**110,765**	**124,279**	**136,471**	**142,744**

Agricultural Lands Protection

Napa County has long been a leader in agricultural preservation starting with the establishment of the landmark Agricultural Preserve in 1968. The Preserve originally protected 26,000 acres of prime valley floor vineyard land and has since grown to 38,000 acres. The Preserve also designated over 90% of the County unincorporated area as Agricultural Watershed and Open Space with strong development controls. The Land Trust of Napa County was established in 1976 to create a means for land owners to place their properties in perpetual trust as agricultural and open space resources. The passage of Measure J in 1990 set the minimum parcel size for agricultural land at 40-160 acres and required voter approval before agricultural property can be converted to other uses. Measure J was extended with the passage of Measure P in 2008, which continues the policies of Measure J until the year 2058.[1]

Urban Growth Boundaries

The City of Napa adopted a rural/urban limit line (RUL) in 1975. American Canyon established an urban limit line (ULL) by initiative in 2008. St. Helena's ULL was established by its 1993 General Plan. Calistoga and Yountville do not have formal growth boundaries but both jurisdictions' city limit lines are coterminous with their formal spheres of influence (a formal boundary established by the Napa Local Agency Formation Commission, or LAFCO, that identifies the probable future extent of the city limits).

As a result of all of these measures Napa County has established a land use regimen in which housing and business development (apart from wineries and other agriculture-serving uses) are confined within the existing urban footprint.

Shift of Population to Urban Areas

In 1970, 50% of the county's population lived in unincorporated areas. Since then, growth in the incorporated jurisdictions has resulted in a dramatic shift in the city/county split; by 2005, nearly 80% of the County's residents lived in incorporated jurisdictions.[2] Much of this trend is influenced by the strict growth policies described above that the County and cities have enacted to protect agricultural land and open space.

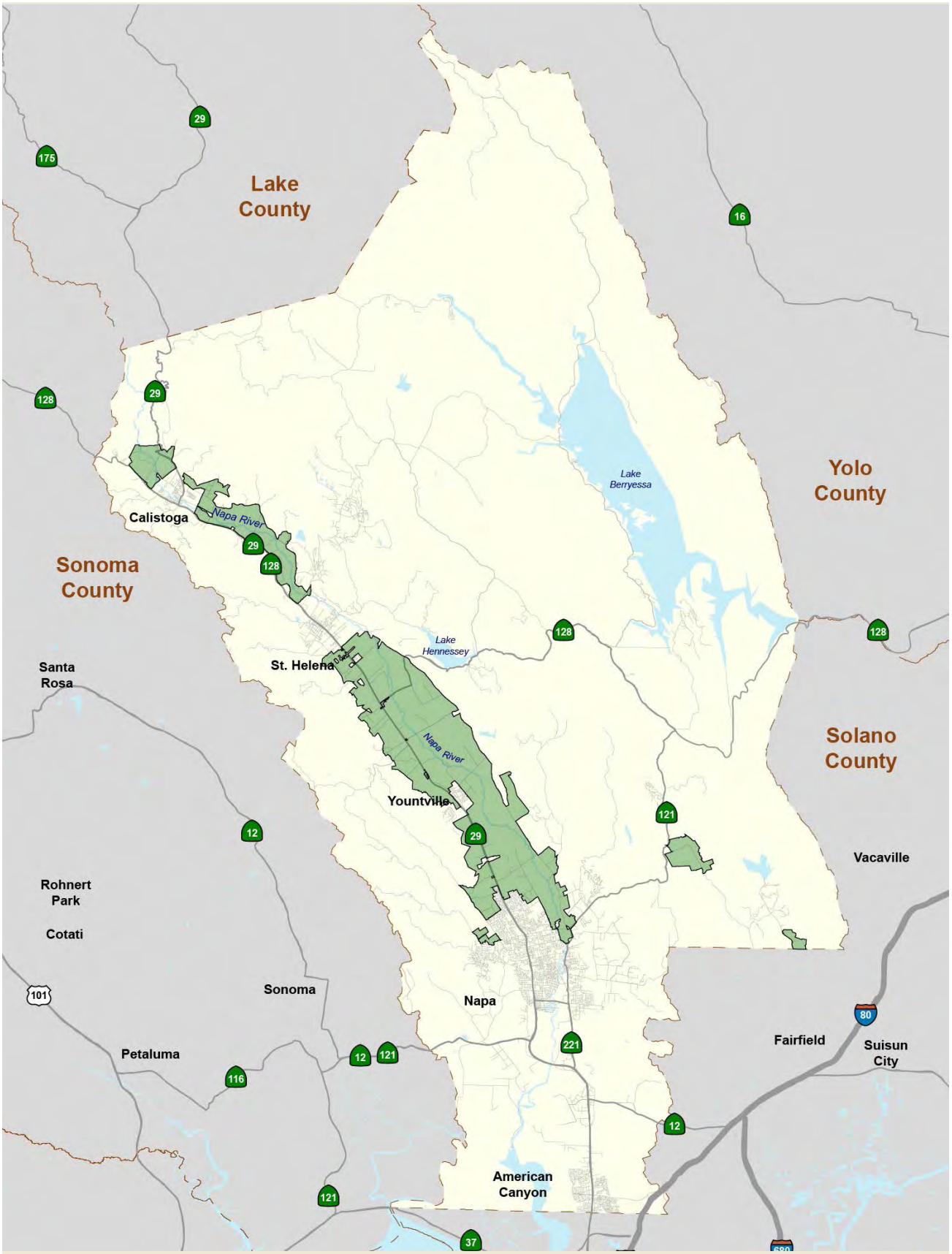
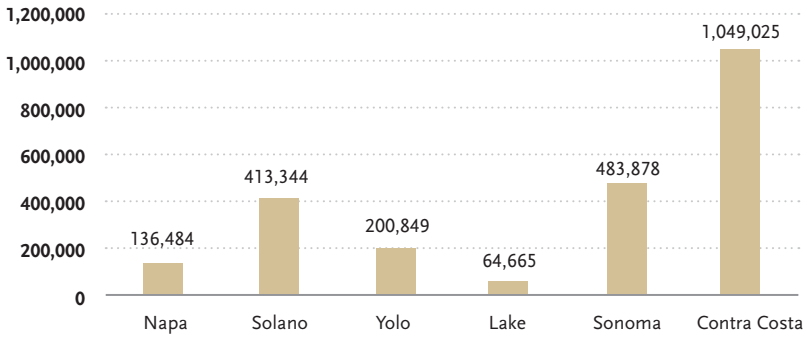


Figure 4.2 Agriculture Preserve

Figure 4.3 Population of Napa and Surrounding Counties



Aging Population

By the year 2040 Napa County's over-64 population is projected to grow from 24,500 to 34,000 (a 39% increase) As significant as this is, much of the rest of the Bay Area and California will see even greater percentage increases in elderly populations.[3] This trend towards an aging population will involve further shifts in land use patterns, bringing new transportation challenges to the County and its jurisdictions. Elderly populations tend to live closer to support services in the incorporated areas because they make greater use of such services. As people age, they also tend to drive less and require more public services such as transit.

Housing

Jobs / Housing Balance

There are approximately 70,660 jobs in Napa County and 54,760 housing units. The cost of housing (relatively high) and the nature of employment (relatively low wage) in the County contribute to Napa workers living in more affordable housing elsewhere. Based on the 2014 Travel Behavior Study, most in-bound county work commute trips originate in Solano and Contra Costa Counties. This results in commute patterns that contribute significantly to the congestion along the County's major corridors. The median home price in Napa County is $460,000; the median rent is $1,297, with 44% of people who rent paying 35% or more of their gross income on their rent.[4] The fastest-growing job sectors in Napa are in the hospitality and retail industries which generally pay lower wages. This galvanizes workers needing to find housing outside the county, adding further to commute pressure.

Additional discussion of the relationship between employment, wages, housing costs and commuting is found in the section 4b.

The American Communities Survey (2008-2012) indicates that 76% of Napa County's workers commute alone to work (including both local residents who drive to work and out-of-county in-commuters). This is significantly higher than the overall Bay Area percentage of drive-alone commuters of 67%. Addressing this challenge will in part require that the jurisdictions plan for local housing to meet the needs of its workforce. The cost of housing is a particularly salient issue for lower-income workers. The relationship between worker wages and housing costs is a critical factor in driving up the countywide Vehicle Miles Traveled (VMT) as housing costs discourage people who work in Napa County from living in Napa County. MTC reports Napa County daily VMT as 3,131,200, or 21.5 per capita. Of the nine Bay Area Counties, only San Francisco, Sonoma and Contra Costa have lower per capita VMT figures.[5] The 2014 Napa County Travel Behavior Study concluded that 25% of overall traffic in Napa is caused

Figure 4.4 Percent of work trips into Napa from neighboring counties onto Hwy 29

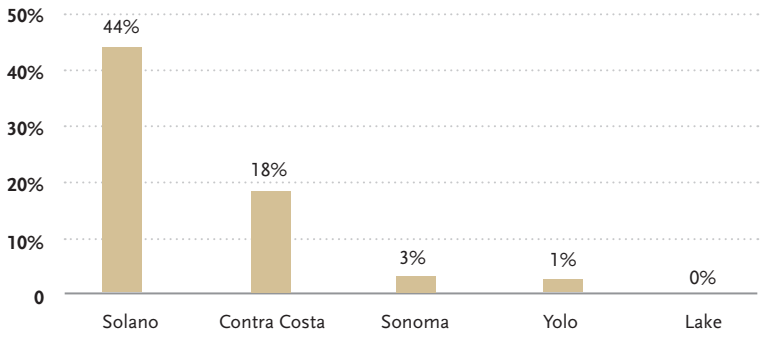


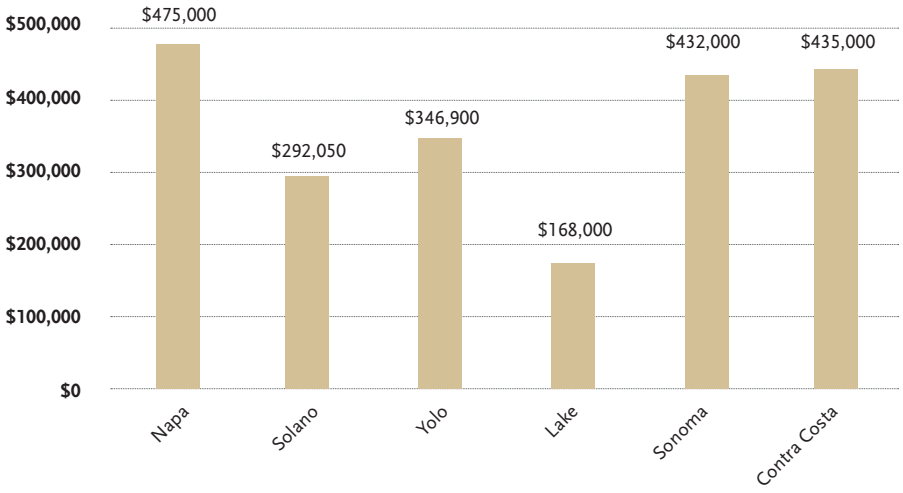
Table 4.2 Population of Napa by Ethnicity

	2010	2020	2030	2040
Total Population				
County Population	136,484	142,892	152,938	163,609
Population by Ethnicity				
White, not Hispanic or Latino	56.1%	50.6%	45.6%	40.9%
Black	1.9%	1.9%	1.7%	1.5%
Hispanic or Latino	32.6%	36.7%	40.6%	44.2%
Asian	6.6%	7.7%	8.6%	9.6%
American Indian	0.4%	0.4%	0.4%	0.4%
Native Hawaiian or other Pacific Islander	0.2%	0.3%	0.3%	0.3%
Two or more races	2.1%	2.4%	2.8%	3.2%

Table 4.3 Napa County Population by Age

	2010	2020	2030	2040
Total Population				
County Population	136,111	142,892	152,938	163,609
Population by Age				
< 5 years	6%	6%	6%	6%
5 – 17 years	17%	15%	16%	16%
18 – 24 years	9%	9%	8%	9%
25 – 64 years	53%	51%	48%	47%
65 – 74 years	8%	11%	11%	10%
75 – 84 years	5%	6%	8%	8%
> 85 years	3%	2%	3%	5%

Figure 4.5 Median Housing Prices for Napa and Surrounding Countries



by people working in Napa County who commute from outside the county to get to work.[6] This accounts for approximately 20,000 imported work trips per day.[7] In addition, the Travel Behavior Study showed that an additional 16% of vehicle trips are outbound commuters — Napa County workers commuting to jobs outside the county.

To address these forces, creative work is needed on several fronts with additional efforts to diversify the County's employment base in industries that create better-paying jobs, to build more affordable workforce housing, and to develop alternative transportation options for local workers who commute because housing costs are too high. Even with the new Priority Development Area (PDA) designations and strong associated planning efforts, actual on-the-ground development will depend on a robust economy and adequate revenues for the critical infrastructure improvements necessary to support new affordable housing and improved public transit.

Napa County's economy, like much of the Bay Area, is slowly recovering from the Great Recession that began in 2008. Although the Consumer Price Index remains relatively stable, keeping some costs down, certain key costs such as fuel and housing continue to rise.

Housing costs in Napa County increased by almost 15% in 2012, contributing to the County's omnipresent challenge of providing affordable housing to some of its lower income residents and workers. In some places additional transportation infrastructure may be able to make a positive contribution by making commuting easier.

Affordable Housing

Housing affordability affects the transportation system in many ways. The distribution and types of land uses affect travel patterns and transportation facilities. A dispersed pattern of low-density development relies almost exclusively on cars as the primary mode for transportation. A more mixed-use development pattern can combine different land uses such as commercial and residential in closer proximity to one another and encourage alternative modes of transportation such as walking, biking or transit. Napa County, being more rural in nature, tends to rely heavily on automobile travel, which puts great strain and congestion on the existing roadway infrastructure. This is exacerbated by the high number of workers who live in neighboring Solano and Sonoma Counties but commute to Napa County for work. As an alternative to capacity enhancements, if more Napa County workers could afford to live locally

Figure 4.6 Median Household Income of Napa and Surrounding Counties

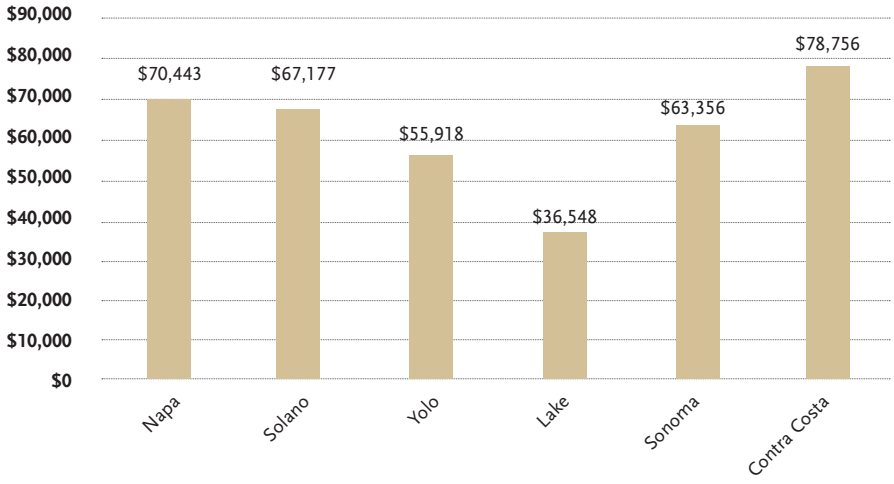


Table 4.4 Additional Housing Development Underway or Recently Completed

City of Napa: Anton Napa 190 Silverado Trail	134 multi-family apartment units – including 27 units affordable to lower income households. Construction on this project has recently been completed and the project is now open for tenants.
County of Napa: The Tulocay Village 467 Soscol Avenue	483 multi-family apartment units. The application was submitted for required land use entitlements but no Planning Commission hearing date has been set. The City of Napa is seeking commitment from the developer to provide 10% of the units as affordable, approximately 48 units.
City of Napa: Black Elk Mixed-Use project 728 First Street	Three story mixed-use building with 5,500 square feet of retail on ground floor, 4,500 square feet of office on second floor, and 3 residential condominiums on third floor. The project includes a proposed sub-grade "tuck-under" structured parking below the ground floor.
American Canyon	Within the PDA, the City has approved 140 apartments at the north-east corner of Napa Junction Road and SR 29, 164 townhome apartments at the north-west corner of Silver Oak and American Canyon Road, and 70 affordable senior housing apartments on Theresa Avenue.
Calistoga	The construction of 48 apartments affordable to very low-income farmworker and winery employee households has just been completed.

Figure 4.7 Percentage of Population in Each Jurisdiction

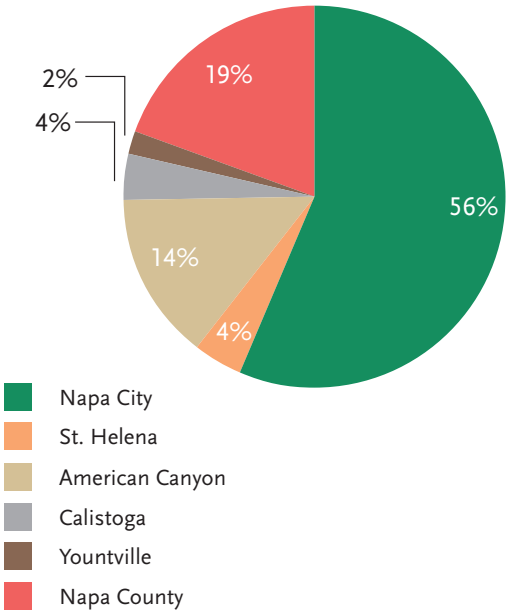
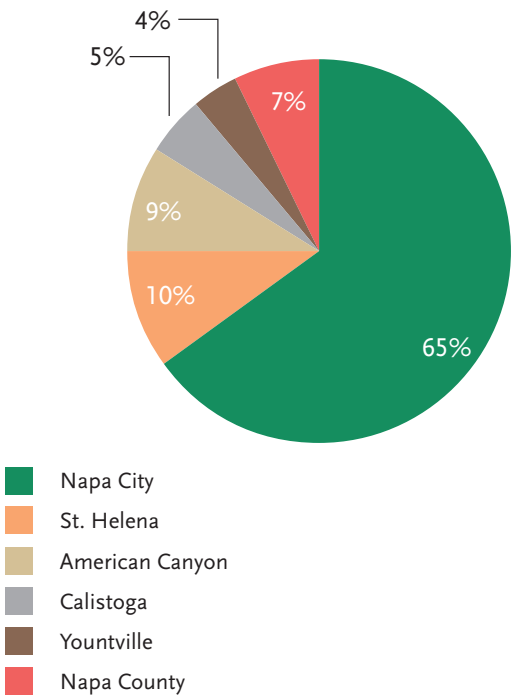


Figure 4.8 Affordable Housing Stock by Jurisdiction, and Housing Stock in 2010



it would help alleviate congestion on the main arterials such as Highway 29 and Silverado Trail. Building housing in close proximity to jobs and providing alternative transportation options near the housing is what is known as smart growth or sustainable community development. Further, providing higher-density housing in close proximity to transit is known as Transit Oriented Development (TOD). All of these higher density development models have become a focus of Bay Area regional planning, with financial incentives to encourage such development. However, even with these incentives, which tend to be modest, it can be very challenging to finance the construction of affordable housing.

Napa County is in need of affordable housing for not only workers but for the rapidly aging population. In 2012 the City of Napa, City of American Canyon, and Napa County created a joint affordable housing task force that resulted in a Multi-year Affordable Housing Action Plan adopted in May 2013.

As stated previously the most rapidly-growing job sectors are agriculture, hospitality and retail sectors which all pay at the lower end of the pay scale. Over the next ten years, more than 60% of the fastest-growing job sectors will pay below $14.50/hour, a minimum living wage for two adults and two young children.[8]

Affordable housing has largely been paid for by impact fees on residential and commercial developers, as well as state and federal programs. The loss of the redevelopment agencies in 2012, coupled with a downward trending economy during the Great Recession, reduced development fees and support for affordable housing throughout Napa County and the State. For example, the City of Napa lost $800,000 per year in affordable housing funds with the loss of its redevelopment agency.[9]

Table 4.5 The six key strategies to promote affordable housing outlined in the Action Plan

Promote Cost Efficiencies	This includes lowering obstacles and costs to building affordable units, legalizing second units, allowing parking requirement variances, etc.
Determine Optimal Mix of Housing Types	This includes encouraging development near transit and employment centers, encouraging development of rental housing units, and targeting a mix of housing needed for seniors, workforce, and special needs.
Maximize Financing Resources	This includes reviewing developer impact fees, investigating ways to increase funding including increasing the local sales tax, establishing a luxury tax, employee tax, real estate transfer tax and/or financing districts, etc.; working with wine and hospitality industry to provide additional funding for affordable housing; establishing a regional revenue pool for affordable housing, etc.
Implement Non-Monetary Production Opportunities	This includes pursuing greater density, prioritizing methods to fast-track the development process, promoting employee housing, generating housing proximity incentives and policies, etc.
Provide Adequate Oversight and Collect Data to Inform Practice and Measure Success	This includes providing oversight and reviewing progress on the Affordable Housing Action Plan.

The Affordable Housing Multi-Year Action Plan both took stock of the affordable housing counts but also laid out five steps that need to be taken to meet Napa's growing demand for affordable housing.[12] Over half of the affordable housing stock in Napa County is specifically slated to serve particular populations like farmworkers and seniors.

Snapshot of Current Housing Affordability:[10]
As of 2010 there were 54,760 total housing units countywide in Napa County. Affordable housing comprises 2,480 units in the county with 91% of these being rental units. This accounts for just 5% of all the housing in the county. The City of Napa contains the most affordable housing units at 1,613 units which is 65% of the county total, followed by St. Helena at 10%, American Canyon at 9%, unincorporated Napa County at 7%, Calistoga at 5%, and Yountville at 4%.

Priority Development Areas (PDA's)

In 2008 the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) created a Priority Development Area (PDA) designation. Priority Development Areas (PDAs) were created as part of MTC's strategy to meet the environmental goals set by SB 375. Under this program MTC has distributed transportation funding based on how much housing (including affordable housing) a jurisdiction has has planned for and provided. PDAs are locally-designated areas within existing communities that have been identified and approved by local cities or counties for future growth. These areas are typically accessible to transit, jobs, shopping and other services. Over 70 local governments have voluntarily designated some 170 PDAs, which are proposed to absorb about 80% of new housing and over 60% of new jobs on less than 5% of the Bay Area's land. In Napa County, both American Canyon and City of Napa have formed PDAs. The overall objective for concentrating growth within a PDA is to improve the link between transportation and land use to reduce vehicle miles traveled (VMT). To achieve these goals, regional planners and academics alike believe that development needs to bring jobs and housing closer together and offer adequate transit, pedestrian, and bicycle alternatives where deploying transit and investing in bicycle/pedestrian infrastructure makes sense.

As the two Napa County PDAs evolve, it is expected that these kinds of benefits will help to mitigate the effects that continued growth will have on the local transportation system. For example, the County's new PDAs may accommodate higher-density, more affordable housing closer to transit service that may allow employees in the faster growing lower wage sectors to travel to work without a car.

Table 4.6 Priority Development Areas

Name	Description	Designation
Downtown Napa – Soscol Gateway Corridor	Approximately 585 acres located in downtown Napa boarded by Polk, Clinton, and Caymus Streets to the north, Jefferson Street to the west, Division Street to the south and then extends east across the Napa River to Silverado Trail and south to Imola Avenue.	Transit Neighborhood
American Canyon Hwy 29 Corridor	Approximately 225 acres located on the Hwy 29 corridor; geographic boundaries are generally Green Island Road on the north, James Road on the west, the railroad tracks on the east, and the City of Vallejo on the south.	Mixed Use Corridor

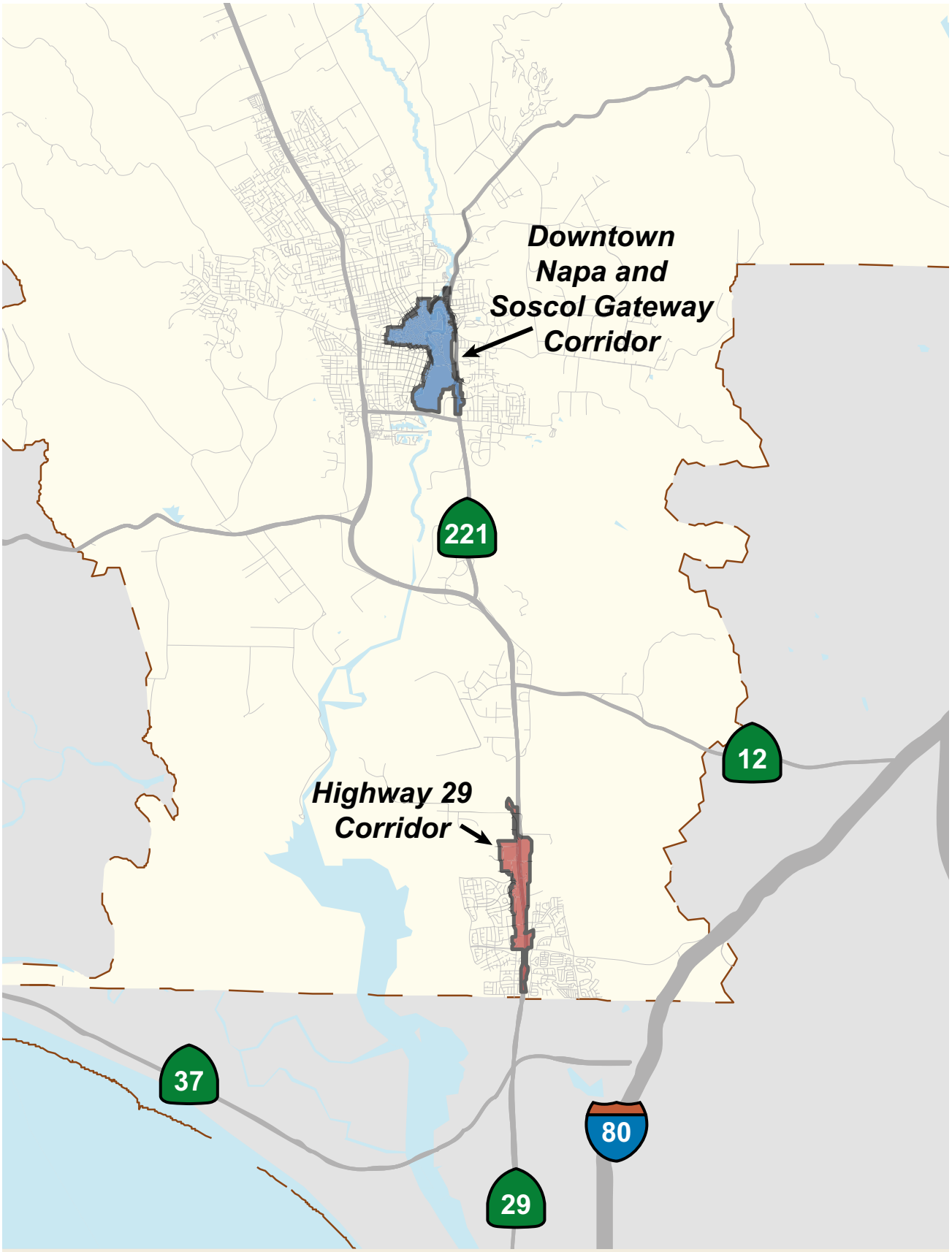


Figure 4.9 Priority Development Areas

Priority Conservation Areas (PCA's)

In addition to the PDA designation, in 2007 ABAG created a Priority Conservation Area (PCA) designation program. PCAs are areas of regional significance that have broad community support and an urgent need for protection. These areas provide important agricultural, natural resource, historical, scenic, cultural, recreational, and ecological values and ecosystem functions. The purpose of designating Priority Conservation Areas is to accelerate protection of key natural lands in the San Francisco Bay Area through purchase or conservation easements within the next few years. Bay Area jurisdictions nominated areas for PCA consideration and the ABAG Executive Board adopted a set of Priority Conservation Areas on July 17, 2008. Napa County has ten PCAs.

Table 4.7 Priority Conservation Areas

1. Bay and Ridge Trails	Bay Trail hugs the shoreline of Bay and the Ridge Trail runs along the ridgelines overlooking the Bay
2. Blue Oak Woodlands of the Lake District	Located in northeastern Napa County near Lake Berryessa
3. Bothe – Napa State Park to Sugarloaf Ridge State Park	Encompasses thickly forested hills of the western side of Napa Valley where the Mayacamas Mountain Range terminates
4. Interior Mountains – Moore Creek Milliken Creek	Includes the lands in central Napa County, west of the county's urban centers.
5. Lake Curry – Suisun Creek Watershed	Located east of the City of Napa towards the Napa county border with Solano County; containing oak woodlands and grassland
6. Napa Valley – Napa River Corridor	Follows the lands along Napa River, which runs from northwestern Napa County, northeast of Calistoga, to the San Pablo Bay
7. Palisades Mt. St. Helena – Angwin	Located in northwestern Napa County, the Palisades form the range of mountains between Mt. St. Helena and Angwin
8. Redwood and Dry Creek Watersheds	Watersheds located on the western sloped of Napa Valley and drain into the Napa River; the area contains redwood forests
9. Southern Mountains – Skyline to Newell Preserve	Southern Mountains located in Skyline Park to Newell Preserve area is located east of and between the City of Napa and the City of American Canyon
10. Napa County Agricultural Lands and Watershed	Encompasses the unincorporated agricultural and watershed lands of Napa County (All of county, not mapped)

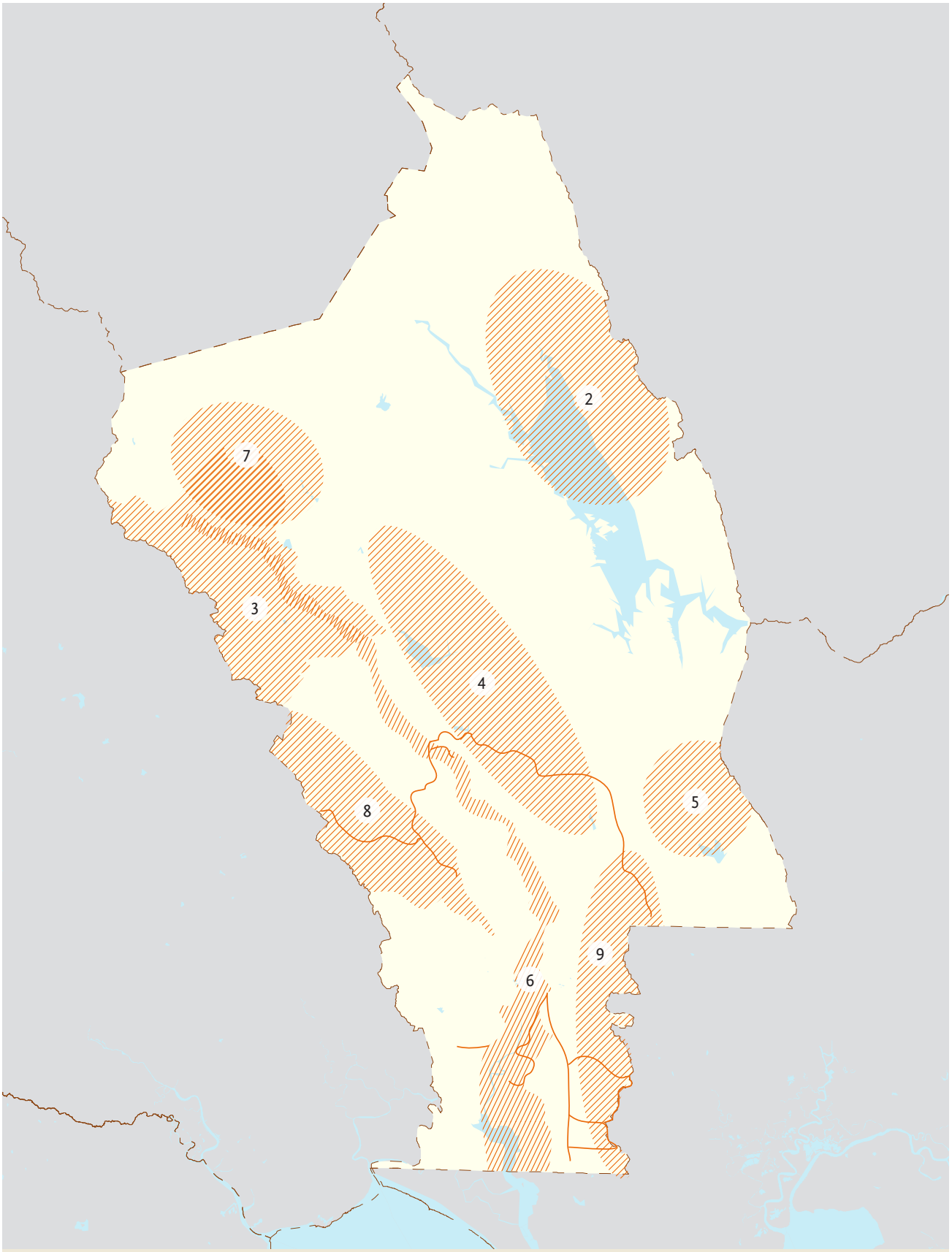


Figure 4.10 Priority Conservation Areas, see Table 4.6 for Descriptions

Santa Barbara

Sustainable Transportation for a Tourism-Based Economy

The City of Santa Barbara, with a population of 90,000 and an economy with strong tourism elements, has many of the same kinds of development and transportation challenges facing Napa, although Santa Barbara County is quite a bit bigger than Napa County. Santa Barbara also differs from Napa in that it serves as a shopping and recreational area for a major university in Goleta, UCSB, just a few miles west of the downtown area. In 2014 Santa Barbara was recognized by Smart Growth America (SGA) — a national coalition of two dozen national organizations working to promote smart growth — as a national leader in land use planning. Santa Barbara received a high overall rating for connectivity and compactness linked to improved health outcomes, greater economic mobility, and lower combined spending on housing and transportation and greater transportation options. SGA particularly noted how Santa Barbara has built an extensive sidewalk network and has developed significant housing close to public transportation. Several local policies contributed to this, stemming mostly from a public planning process that sought to create more affordable housing. The process resulted in amendments to the General Plan and Zoning Ordinance that encouraged mixed-use development in certain areas. Now, the city's zoning codes allow residential uses in most commercial zones, enabling the mixing of different land uses within neighborhoods. The city's General Plan update outlines three principles of development, one of which is to "encourage a mix of land uses to include strong retail and workplace centers, residential living in commercial centers with easy access to grocery stores and recreation, connectivity and civic engagement and public space for pedestrians."[13] The City also has an electric shuttle system that connects the downtown area to the larger regional transit system. The shuttle serves the downtown area and waterfront.

Source: smartgrowthamerica.org

Planned Developments

Transportation is a key element of a thriving economy and is tightly tied to ongoing land use development. As new projects come online, how streets are designed can act as a barrier to connectivity, inhibiting walking and biking. Alternatively, new developments can be designed to encourage walking, biking and transit use. As the following list of pending projects illustrates, development pressures on Napa's infrastructure, including the existing transportation infrastructure, will persist.

Future development projects that could impact the transportation network include those in Table 4.8.

Vision 2040 policies used to align transportation, land use and development, include:

– Growth Boundaries or Regulatory Controls such as the Urban Limit Lines and the Agricultural Preserve described above.

– Planning and Zoning: An area's comprehensive land use plan and zoning, usually documented in a jurisdiction's General Plan, designates the location, mix, and intensity of uses that are desired for development in the community. At a smaller scale, specific plans may be developed for smaller areas within a jurisdiction to establish intended uses in terms of intensities, location and supporting transportation facilities. Sometimes addressed in these plans is the jobs-housing ratio, a measure of the balance among land uses, particularly in relation to work travel. A major planning consideration is highway, street, and pedestrian facility layout, typically enforced at the local level through design standards and land subdivision controls. See Santa Barbara case study above.

Table 4.8 Future development projects that may influence the transportation network

County of Napa: Napa Pipe Project	Approximately 3 miles south of downtown Napa and on the east side of the Napa River 63 acres are zoned for up to 945 residential units. Development will include a mix of low-rise and mid-rise buildings consisting of townhomes, row houses and condominiums of which 190 will be low income units. Also included in the development plans are commercial retail uses including a Costco (big box retail), a senior retirement center, a hotel, stores, parks, trails and other features. This development will have an effect on traffic in south Napa along Highway 221, Highway 29, Soscol Avenue and Kaiser Road. This project has been approved by the County and is working through implementation of development agreements.
City of Napa: Stanly Lane Report	In 2010 the Napa City Council approved a five-star Resort on the 93 acres located at the south end of the County in the Carneros area. Due to the economic downturn there downturn, the project development was delayed, but has recently started moving forward. The proposal is for 245 hotel guest rooms and residential units.
City of Napa: Archer Hotel First Street in downtown Napa	This development will be a five story 183-room hotel and retail center in the heart of downtown. This development will be in the center of Napa's PDA, surrounded by retail and restaurants. Because of its location, guests and patrons will have a multitude of transportation options including biking, walking, and transit.
Four Seasons Resort	This project will include 84 guest rooms, a spa, a 9 acre vineyard, and 21 new homes on a 22 acre footprint on the outskirts of Calistoga. The site adjoins the Silverado Trail.
Calistoga Hills Resort	This project has been approved for 110 hotel rooms and 33 luxury homes. It is adjacent to SR29 just south of downtown Calistoga, and is currently in the planning and financing stages.
City of Napa: First Street Hotel complex	Approved 351 rooms in 2008. Located at the intersection of First Street and the Silverado Trail, this project is still entitled but on hold.
City of Napa: Copia redevelopment	A major piece of the downtown Napa development puzzle will be the fate of this 13,000 square foot facility, vacant for the past several years. Successful redevelopment of Copia could reignite development momentum in the eastern part of the city.
American Canyon: Watson Ranch	May bring a mix of up to 1,250 homes, including single-family homes, townhomes and apartments, to a 300+ acre area east of the existing Walmart. The specific plan application also includes an elementary school; 36 acres of public parks and open space; commercial uses and a 100 room hotel.
St Helena: The Grandview Hotel	Project in St. Helena will be a major new 70 guestroom facility on SR 29 at the north end of town.

– Building Codes and Site-Level Zoning Requirements: Building codes and site-level requirements of zoning may have provisions that can have important effects on transportation options and travel behavior. Examples of these requirements include parking maximums on spaces per 1,000 square feet or offering density incentives for building less parking. Other strategies include reduced building setbacks to improve access for walk, bike and transit users, and suburban office park requirements for supply of a mix of pedestrian-accessible services on site.

– Growth Management and Traffic Ordinances: A strategy used to limit development that might cause traffic congestion on public facilities.

– Incentives and fees: These could include traffic mitigation fees or development site fees that benefit the transportation system in a certain area. Some jurisdictions offer incentives such as permit streamlining or density bonuses to encourage transportation friendly projects.

– SB-743 was signed into law in September 2013 which changes the way transportation impacts are evaluated under CEQA. Transportation impacts had previously been measured by vehicle delay on roadways and intersections, but under SB 743 the analysis will shift from vehicle delay to the reduction of greenhouse gas emissions. However, local jurisdictions can continue to use Level of Service (LOS) when evaluating traffic impacts for a specific project.

4b. Transportation and the Napa Economy: Part 1 Jobs, Housing and Community

Introduction

Transportation and the economy are intricately intertwined. The economy is a complex, multi-layered and often unpredictable system in which our local circumstance is vitally dependent on trends at the regional, state, national and global scales. One thing is certain: reliable transportation infrastructure is necessary for a healthy economy. This section looks at Napa's current and future business and employment profile, wages and housing costs, how these factors influence where the Napa workforce lives and the implications for commuting. 4C looks specifically at goods movement.

An Introduction to the Napa Economy: Business Sectors, Jobs and Wages and Housing

The Napa Economy is built around the production of wine and the global Napa Valley wine brand and its unique agricultural assets of Napa's vineyards. Napa is the sole remaining county in the Bay Area in which agriculture is the top industry. The industry depends on a broad network of related activities such as the extensive tourist industry, including lodging, restaurant and spa/wellness sectors. As described below, the wine and tourism industries together directly account for nearly 40% of the local labor force. Government, health care, construction and retail businesses are necessary to support the industry and the people who live and work in Napa.

The Napa Valley Wine Industry

The Napa wine industry includes both Napa Valley-branded wines as well as other wines produced here from grapes shipped into the County from various sources. The total retail value of all the wine produced in Napa County, nearly 50 million cases, including wholesale, direct-to-consumer and export sales, has been estimated at $10.1 billion annually representing 17.5% of the volume and 31% of the value of all the wine sold in the US.[1]

Current analysis of the Napa employment profile shows that over 15,600 of Napa's 79,900 person labor force, or nearly 20% of the labor force, is directly employed in the agricultural and wine production industry.[2] Figure 4.11 shows the most recent employment breakdown. In addition to the 9,400 jobs in *Beverage and Tobacco Product Manufacturing* (i.e., wine) Napa also has an additional 2,500 manufacturing jobs and 2,000 transportation and warehousing jobs. Most of these are likely in industries that support the wine sector, including, bottles, corks, equipment, wine shipping and storage.

Counting the industries that support this workforce, the Napa Valley wine industry has a major impact on local employment, resulting in 46,000 jobs countywide and a total annual local economic impact of more than $13 billion.[3]

Tourism and Hospitality[4]

Napa Valley's wine industry attracts nearly 3 million visitors annually (almost 5 million visitor days). Most of these visitors come for a one-day visit, and most come from California. Over 850,000 visitors stay overnight. In 2012 visitors generated $1.4 billion in direct spending into the local economy. The largest component of visitor spending was retail sales, which includes both wine and food. This is followed by lodging expenditures.[5] To support this activity, in 2014 it is estimated that 12,100 employees worked in the leisure and hospitality sector, with a payroll of $300 million and local tax revenue of $51.7 million, mostly from the hotel tax.[6]

Note that many of the jobs in the agriculture and hospitality sector are relatively low paying. This becomes a significant factor for the Napa economy, causing heavy impacts on its transportation network because the high cost of housing forces lower income workers to commute from more affordable locations both inside and outside the county.

Local Government

This sector, accounting for 14% of the local labor force, includes significant employment at the Napa State Hospital (over 2,000 people counted as State Government employees), and the several local school districts (4,100 people). Napa County employs 1,500 people and Napa County's cities, town and special districts employ 900 people.

Health Care

The health care sector in Napa County, including major care providers (Queen of the Valley Hospital, St. Helena Hospital, Kaiser Permanente and Clinic Ole) employs 8,500 people, including many high wage occupations.

Retail Trade

A critical support for the community, the retail sector employs 6,700 people. This is also a relatively low wage job sector.

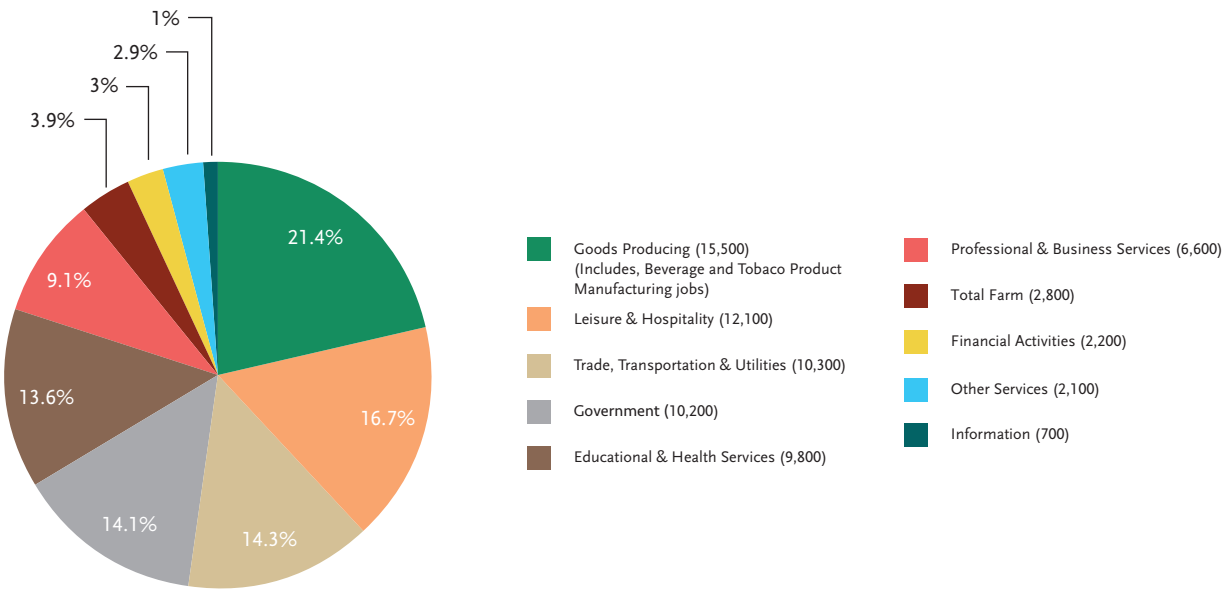
General Economic Trends and Indicators

Context of Napa's Economy within Bay Area, State, National and Global Economies

Perhaps the best single description of the Napa County economy can be found in the County General Plan's Economic Development element which states: "Napa County's economy is based on agriculture, and in particular a highly specialized form of agriculture: grape-growing and wine-making. In addition, the county's wineries draw visitors from California and beyond, creating a strong secondary economy in the form of tourism and hospitality."[7] In fact, the agriculture/wine/tourism cluster accounts for nearly half of all employment in the County and directly affects the County's economic health. Because the local economy is based so strongly in a non-essential product (wine and tourism) it is highly sensitive to the the volatility of the global, national and regional economy, primarily because it is dependent on discretionary spending.

Economists are cautiously optimistic about the current world economy. The US National Intelligence Council reports[8] that the world of 2030 will be radically transformed from our world today but predicts continued strength of the U.S. economy for the foreseeable future. Trends that will support growth in the local Napa economy include a global expansion of wealth and the middle class, and the continued development of China and similarly situated countries where there are growing markets for Napa wines. Negative global trends such as growing income inequality and resource scarcity, coupled with environmental degradation, while affecting the overall world stability, do not present near term challenges to Napa's economy.

Figure 4.11 Napa Metropolitan Statistical Area Industry Employment & Labor Force



Source: State of California Employment Development Department, Napa Metropolitan Statistical Area Data, December 2014

The U.S. Congressional Budget Office (CBO) projects that the budget deficit will shrink and the economy will grow at a solid pace through 2017. Beyond 2017 the CBO anticipates generally low inflation with an overall growth rate lower than in the past half century. These trends will have a positive impact on the Napa economy.[9]

Given these macro-economic trends, local forecasts for the North Bay economy from the Sonoma State Center for Regional Economic Analysis (CREA) projects continued regional growth. CREA[9] also notes that job growth since 2012 has been mainly in (relatively lower wage) services. An analysis of the North Bay counties shows Napa as having the highest year-over-year percentage employment growth in the sub-region. Napa has also displayed one of the strongest housing markets in the state. When evaluating leading economic indicators,[10] Napa sits slightly above the national index but slightly below other North Bay counties.

Napa County Cost of Living

Low wage workers and low income families have insufficient income to live in Napa because of the local cost of living. This is exacerbated by Napa's high housing costs and corresponding low supply. The Californian Center for Community Economic Development (CCED) published a detailed cost of living calculator for California Counties[11] which calculates a self-sufficiency standard (SSS) in Napa as follows:

These figures account for local housing, transportation, food, childcare and healthcare costs, and factors in available tax credits. According to the CCED, over 27% of Napa County's population is currently living below the SSS, and over 43% of families with children are below the SSS. It should be noted that these calculations assume a monthly housing cost of between $1,000 and $1,400 (depending on household characteristics) which is significantly below the actual current housing costs in Napa County.

Table 4.9 Napa Metropolitan Statistical Area Industry Employment & Labor Force

Industry	Jobs	Percentage of Total
Goods Producing (Includes, Beverage and Tobaco Product Manufacturing jobs)	15,500	21.4
Leisure & Hospitality	12,100	16.7
Trade, Transportation & Utilities	10,300	14.3
Government	10,200	14.1
Educational & Health Services	9,800	13.6
Professional & Business Services	6,600	9.1
Total Farm	2,800	3.9
Financial Activities	2,200	3.0
Other Services	2,100	2.9
Information	700	1.0
Total All Industry	**72,300**	**100%**

Source: State of California Employment Development Department, Napa Metropolitan Statistical Area Data, December 2014

Napa Job and Employment Profile and Forecasts

The October 2014 monthly employment report from the California Employment Development Division reported that there are 82,100 jobs in Napa (See Figure 4.11). Not surprisingly, almost a third of these jobs are in leisure and hospitality and manufacturing. Wine-making is classified as manufacturing by the Bureau of Labor Statistics. Agriculture makes up for over 7% of the total jobs, which is more than twice the national average. Almost 16% of the jobs in Napa are in leisure and hospitality. Nationally, leisure and hospitality accounts for just over 10%.

In the Industry and Occupational Employment Projections report published in 2014[12] forecasts the top five fastest growing job sectors for Napa, described below. These top five sectors will account for 63% of all projected job growth. The significance of these figures has to do with how wages compare with the self-sufficiency standard (SSS).

Table 4.10 Napa County Self-Sufficiency Standard

Single, no children	$27, 841
Two adults, no children	$39,242
Two adults, two children (elementary school age)	$64,453
Two adults, two children (one infant, one elementary school age)	$78,631

Accommodations and Food Service

This category includes nearly 60 specific job descriptions, including waiters, cooks and food preparation workers (including fast food workers, bakers and bartenders), maids, housekeeping cleaners and janitors, hosts/hostesses, counter attendants, and cashiers. This category also includes massage therapists, recreation workers, and dry cleaners employed in the hospitality industry. The current employment in Napa County for this sector

is 11,100 and median earnings begin at $19,140 for food prep and serving workers (the job category with the largest growth in the next 5 years). The 10 top occupations in this category account for 77% of this category's growth. The average of the median wage for these 10 jobs ($22,000) is still below the SSS for a single person in Napa.

Manufacturing

This sector, with nearly 200 distinct job descriptions, currently has the single largest number of employees in Napa County and will account for the second fastest growing sector. The top 10 occupations, accounting for 30% of the total, include packaging machine operators (in Napa County mostly wineries), sales representatives, general managers, demonstrators and promoters (tasting rooms), laborers and material movers (wineries), and production workers. Napa County's current employment for this sector is 12,900. The sector is expected to grow by 10% over the next five years. Factoring out the highest paid job in this group (General and Operations Managers), results in a median wage of $16.87/hour or $35,100/year. This amount is sufficient to meet the minimum income for a single person but is insufficient to support a family.

Health Care and Social Assistance

With over 8,600 jobs in Napa County this category is another major employment sector, accounting for nearly 150 job descriptions including medical personnel of all kinds, clerks and receptionists and also preschool teachers, social service workers. This is a relatively high paying sector, with the average median wage for the top 20 occupations (including nurses, general managers and dental technicians) at $24.13/hour or $50,200/year. The most recent growth in this sector is a 3.6% increase from the previous year.

Retail Trade

There are currently 6,200 retail trade jobs in Napa County, a category that encompasses over 100 job descriptions, mainly retail salespersons, cashiers, stock and order fillers, managers and laborers. Although this sector has been stable in the past year, expected overall growth in population will continue to stimulate growth in this area, which is expected at 9% over the next 5 years. The top 10 occupations (excluding managers) earn an average median salary of $13.18/hour or $27,420/year.

Administrative and Support and Waste Management

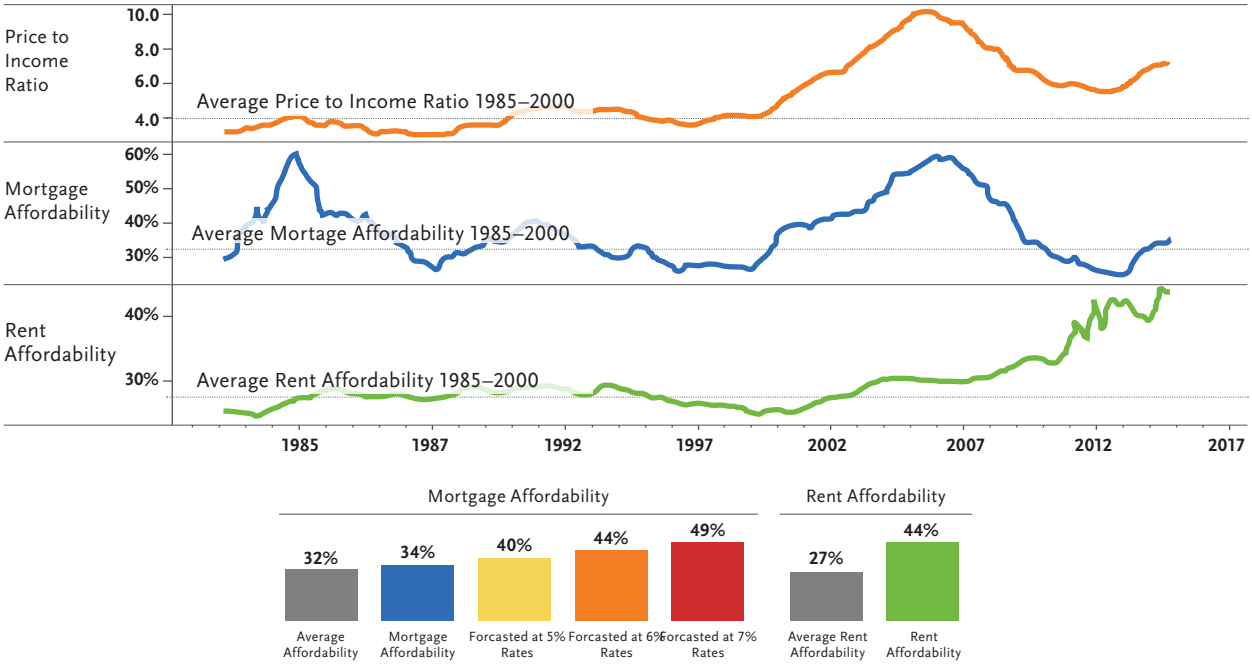
This sector, with 4,800 workers in Napa County, includes over 100 job descriptions, including janitors, landscapers and groundskeepers, security guards, laborers, general clerks, secretaries, bookkeepers and accountants, and numerous other miscellaneous jobs. The sector completes the list of the five fastest growing job sectors. The top 15 occupations (not including managers), which account for over half the regional employment in this sector, earn an average median wage of $12.73/hour or $26,480/year, still at the very low end of self-sufficiency wages for Napa County.

To put these details in the larger perspective, 2013 employment projections by the Association of Bay Area Governments (ABAG)[13] expected Napa County employment to grow to 75,500 by 2015. The most recent reports from the State of California Employment Development Division indicate that we have far outpaced that rate of job growth and now have an employment base of 82,100, a level not previously expected to be reached for several more years. If another 15,000 jobs over the next 25 years are added as projected by ABAG, then Napa County may see employment levels as high as 97,000 jobs.

Napa Housing Profile and Forecasts

As one of the nation's premier destination communities, it is not surprising that Napa County has much higher housing costs than state and national averages. The Agriculture Preserve and the consequence of limiting growth have placed a premium on desirable home locations and have made it challenging to build housing to accommodate lower income workers. Reflecting this basic setting, median

Figure 4.12 Napa Price to Income Ratio and Affordability Index (1985 – 2014)



house prices in Napa County as of October 2014 are just under $600,000[14] reflecting an increase in the past year of over 20%, the largest year-over-year gain in the Bay Area.

Affordability

The California Association of Realtors has established a Housing Affordability Index that measures the percent of households that can afford a median priced home. For California as a whole, the index currently stands at 30% for single family homes and 39% for condominiums and townhomes. In the San Francisco Bay Area, this drops to 21% and for Napa County the figure is also 21%. On the rental front, the picture is just as bleak, reflecting a national trend. A recent Harvard study observes that "significant erosion in renter incomes over the past decade has pushed the number of households paying excessive shares of income for housing to record levels. . .[a]ssistance efforts have failed to keep pace with this escalating need, undermining the nation's longstanding goal of ensuring decent and affordable housing for all."[15]

Figure 4.12[16] takes a slightly different approach, measuring what percent of household income is required to pay for housing. The upper part of the chart shows a time series of the price-to-income ratio and mortgage and rent affordability, with a line denoting the average for each of the series in the pre-housing bubble period from 1985-1999. The bar chart shows a comparison of rent affordability, historic, current and forecasted mortgage affordability at different interest rates. As these charts indicate, currently Napa residents must expect to pay 44% of their income on rent, compared to 27% historically, one of the largest jumps in the nation. As a result, Napa County now has one of the least affordable rental markets in the country.

Transportation Implications — More Commute Traffic

One of the principal implications of the aforementioned jobs and housing profiles is that the growing Napa County workforce will need to look for housing in more affordable areas. Conversely, residents that wish to live in Napa County are likely to seek higher paying jobs elsewhere. This will force low-income workers to commute in from neighboring, more affordable communities, such as Solano County, Contra Costa, and Lake Counties. The American Community Survey (ACS) "Journey to Work" data (2006-2010),[17] using a base employment level for Napa County of 69,000, counts 20,000 in-commuters a day including 11,000 workers commuting to Napa County from Solano County (16%) and 4,000 from Sonoma County (6%). Lake County and Contra Costa County each accounted for about 1,500 in-commuters, or about 2% each. Table 4.11 shows where 99% of workers in Napa County live.

Looking at the Napa County residents who commute out of the county for work, similar US Census data indicates that over 14,000 local residents leave the county daily. 99% of Napa residents work in the following places as shown in the Table 4.12.[18]

This information is corroborated by the Napa Travel Behavior Study (see Appendix E) which indicates 45% of all trips in Napa are external trips — i.e., either beginning or ending outside the County.

If current patterns persist, and 30% of Napa County's workers continue to commute in from outside the County, and if employment levels reach anticipated numbers then close to 30,000 workers could commute into Napa County each day by 2040 — a 45% increase in inbound commute trips. Similarly, if the ABAG projections of employed residents grows as expected by 9,100 and a similar percentage (23%) work outside the county, then an additional 2,000 outbound-commuters or a total of 16,000 daily trips

Table 4.11 Where Napa's Workers Live

Location	Total # of Workers	% of Total Workers
Napa County	48,424	70.1%
Solano County	10,825	15.7%
Sonoma County	3,941	5.7%
Contra Costa County	1,328	1.9%
Lake County	1,240	1.8%
Alameda County	552	0.8%
Marin County	419	0.6%
San Francisco County	380	0.6%
Sacramento County	373	0.5%
El Dorado County	208	0.3%
San Joaquin County	177	0.3%
Yolo County	171	0.2%
Placer County	126	0.2%
Santa Clara County	85	0.1%
Santa Cruz County	79	0.1%
San Bernardino County	75	0.1%

Table 4.12 Where Napa's Residents Work

Location	Total # of Workers	% of Total Workers
Napa County	48,424	77.4%
Solano County	4,441	7.1%
Sonoma County	2,177	3.5%
San Francisco County	1,864	3.0%
Contra Costa County	1,576	2.5%
Alameda County	1,271	2.0%
Marin County	932	1.5%
San Mateo County	321	0.5%
Sacramento County	298	0.5%
Santa Clara County	278	0.4%
Lake County	248	0.4%
Yolo County	161	0.3%
Los Angeles County	102	0.2%

leaving the county for work over this same time period. This constitutes a growth rate of over 14%.

Sometimes the best solutions are not the easiest to implement. The ideal solution would be to accommodate the lower income labor force with affordable housing and diversify Napa's economic base in employment areas that offer higher paying jobs. The former can be incentivized through government grants but building new housing is otherwise outside the purview of NCTPA. Further, given the Ag Preserve which significantly constrains urban growth boundaries in Napa County, new housing starts are not likely to keep pace with either the growing labor force or the demand for lower cost housing. Moreover, a new and different economic base is likewise limited by other constraints such as Napa's remoteness in relationship to adjacent counties and its roadway constraints which can significantly hinder freight movement. That said, Napa has two colleges that can foster entrepreneurial opportunities which might create new demand and revenue opportunities to build new transportation infrastructure.

Vision 2040 Project Considerations that Respond to Economic Demands Associated with Jobs, Housing, and Community include:

– Expand and add technical upgrades to the existing bus transit system.

– Increase van/car pools.

– Improve corridor management.

– Expand bike and pedestrian networks.

– Upgrade signals and associated systems.

– Build additional capacity on SR 29.

– Study the feasibility of passenger rail.

These Project Considerations Meet the Following Vision 2040 Goals

– Serve the transportation needs of the entire community regardless of age, income, or physical ability.

– Use taxpayer dollars efficiently.

– Support Napa County's economic vitality.

– Minimize the energy and other resources required to move people and goods.

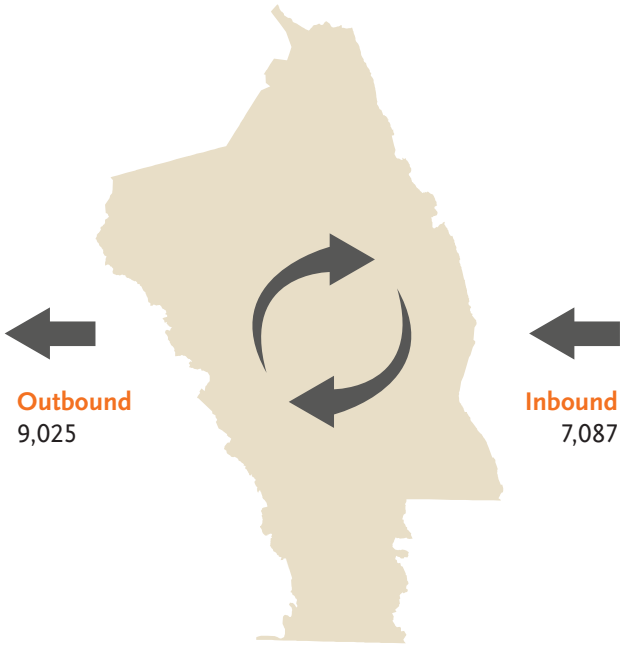
4c. Transportation and the Napa Economy: Part 2 Goods Movement

Introduction

The Napa Economy, Part I provided an overview of Napa's economy and underscored that the dominant economic activity in Napa County is the production of wine and associated tourism. Part I examined the movement of the labor force involved in its primary industries. The production of wine also involves the movement of raw materials and inputs necessary to bottle and package wines and outputs, the final product. This paper will summarize freight movement in Napa, how freight moves in, out, and around Napa Valley, and the cost of congestion on trade, and consider concepts for improving throughput.

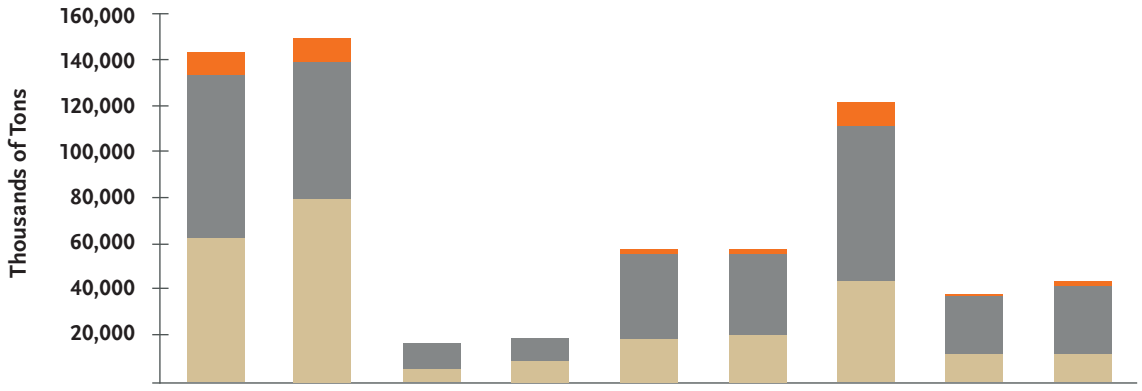
In addition to the wine and tourism industry, Napa County's residents rely on the daily importation of a broad spectrum of consumer goods. The vast majority of food, clothing, shelter, household and other daily goods consumed by local residents must be imported into the county, mostly by trucks along its highway and road infrastructure. Further, the goods necessary to support Napa County's 3 million visitors each year, including supplies for lodging and restaurants, must also arrive by truck. In addition, all of the waste materials from these enterprises have

Figure 4.13 Freight Flow Map 2012 (Thousands of Tons)



Source: Freight Analysis Framework Data; Analysis by Cambridge Systematics, Inc.

Figure 4.14 Bay Area Counties Freight Flows by Direction, 2012 (Thousands of Tons)



	Alameda	Contra Costa	Marin	Napa	Contra Costa	San Mateo	Santa Clara	Solano	Sonoma
Intra	10,059	9,308	169	163	1,316	1,614	9,845	505	1,094
Inbound	71,895	60,088	10,626	7,087	37,083	35,741	67,479	25,698	11,414
Outbound	61,909	79,505	5,806	9,025	28,547	20,045	44,099	12,138	20,581

Source: Freight Analysis Framework Data; Analysis by Cambridge Systematics, Inc.

to be transported to recycling facilities, composting yards or landfills.

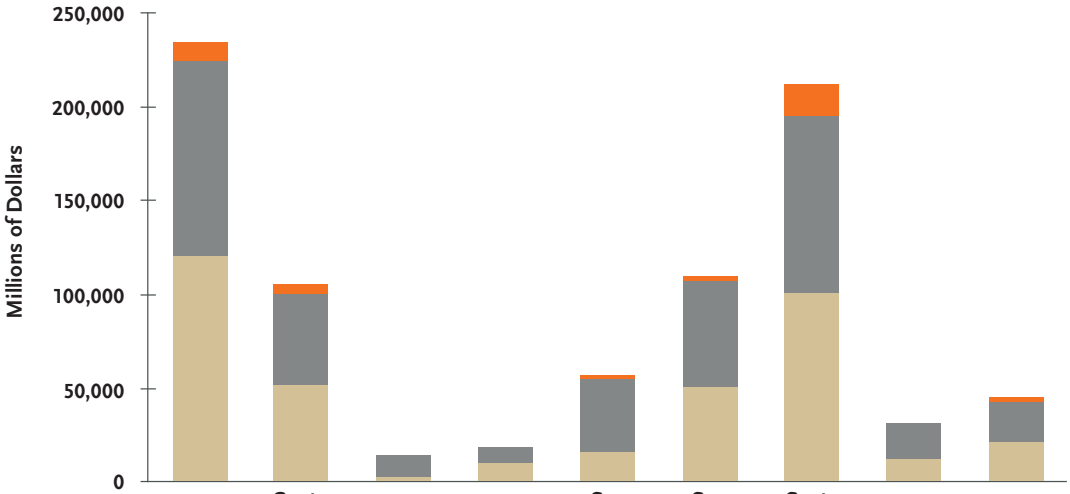
Congestion associated with freight movement is likely to grow exponentially in the future due to consumer behavior. According to transportation experts, "while per capita vehicle-miles of passenger travel have stabilized or declined over the past few years, freight miles per capita continue to climb. . .trends in consumption, internet purchasing, supply chains and the distances over which goods travel, mean that ton-miles will continue to grow at twice the rate of US population growth . . .increases in trucking, freight rail operations and port activity will impact communities, strain the capacity of our highways, and increase energy use and emissions." [1]

Nationally and regionally, the study of goods movement as a significant transportation issue has begun to receive considerable attention in recent years. In 2014, Caltrans released the "San Francisco Bay Area Freight Mobility Study" with follow-up studies by the Metropolitan Transportation Commission (MTC). In 2014, MTC convened a Goods Movement Roundtable which resulted in the Regional Goods Movement Plan.[2] Summary analysis in the plan indicates that Napa County generates $7.4 billion in "goods-movement-dependent" industries, accounting for 54% of the total countywide economic output. These industries also account for 41% of the total countywide employment.

Freight Flows

Freight flows can be considered in several ways. Looking at flows by the direction of movement reveals three primary categories: "intra county" short haul shipments (including movements among manufacturers, local warehouse and distribution facilities and retailers and wholesalers), "inbound flows" including both domestic and foreign inbound materials, and "outbound flows" comprised of goods produced by local manufacturers. MTC analysis shows that region-wide, the flow is fairly consistent among most other counties. The total for the Bay Area overall is 45% internal, 21% outbound, and 34% inbound. In

Figure 4.15 Bay Area Counties Freight Flows by Direction, 2012 (Millions of Dollars)



	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano	Sonoma
Intra	9,475	4,967	47	158	674	1,310	16,355	187	719
Inbound	103,022	48,016	9,918	7,088	40,441	57,264	94,405	18,543	20,830
Outbound	122,169	52,323	3,488	10,601	15,387	50,915	101,195	12,361	22,208

Source: Freight Analysis Framework Data; Analysis by Cambridge Systematics, Inc.

comparison, Napa County freight is moving out of the County at much higher proportions. Of the 16,275 tons of materials moving annually, 55% is outbound, 44% inbound and only 1% internal to the county.

Figure 4.13 Bay Area Counties Freight Flows by Direction, 2012

Looking at the same flows by value, the picture is even clearer, with outbound freight accounting for 59% of the value, inbound for 40% and interior flows less than 1%. This reflects the relatively high value of products shipped from Napa, which is a characteristic shared by the entire Bay (as shown in Figure 4.15).

Figure 4.14 Bay Area Counties Freight Flows by Direction, 2012

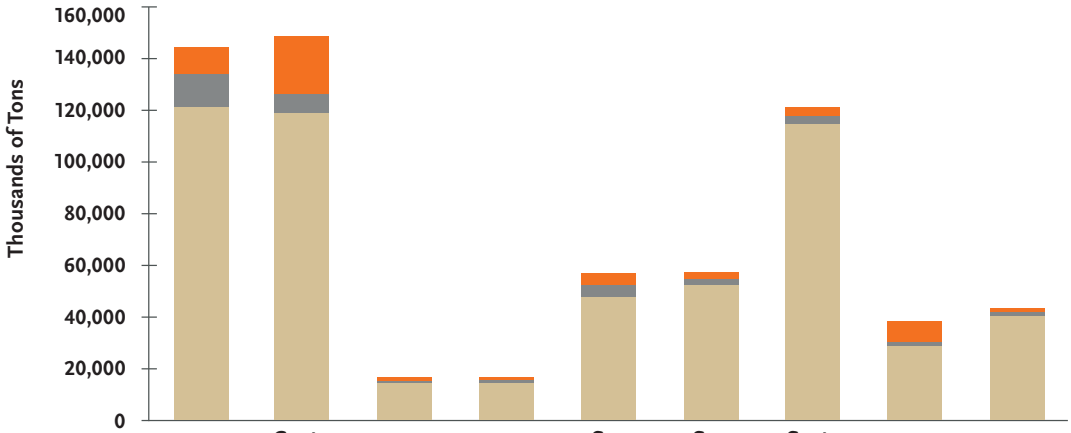
Regionally, freight traffic by volume is overwhelmingly domestic (85%) with exports and imports splitting the rest. In Napa County, the split leans even more towards domestic goods (94%). Looking at the same categories by values yields similar results.

Figure 4.16 Bay Area Counties Freight Flows by Trade Type, 2012 (Thousands of Tons)

Finally, MTC also looked at how freight transport is distributed among various modes: truck, rail, water, air, pipeline and multiple. Predictably the large majority (72% by value and 61% by volume) of regional freight moves by truck. Because Napa County lacks any significant rail, air or water transportation systems, freight moves almost entirely by truck. Nonetheless, California Northern Railway maintains infrastructure for rail shipments to and from Napa County while the concentration of wine industry warehousing continues to grow along the rail alignments in the southern portion of the County and in the City of American Canyon. The limited highway throughput east and west between Solano, Napa, and Sonoma Counties, where the rail freight alignment operates, provides opportunities for warehousing expansion adjacent to the rail line in American Canyon.

Traffic congestion in Napa adds significant cost to moving goods. Taking advantage of existing rail and staggering freight movement peak times that differ from commute traffic are two possibilities to improve

Figure 4.16 Bay Area Counties Freight Flows by Trade Type, 2012 (Thousands of Tons)



	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano	Sonoma
Imports	10,082	22,821	391	312	4,216	2,500	3,401	7,850	817
Exports	12,611	6,600	212	657	4,735	1,807	3,251	1,137	1,617
Domestic	122,169	119,480	15,999	15,307	47,995	53,092	114,771	29,354	40,655

Source: Freight Analysis Framework Data; Analysis by Cambridge Systematics, Inc.

freight throughput in Napa. NCTPA has identified freight movement as a key topic for future study in collaboration with stakeholders. Such a plan will be a critical next step before any recommendations to improve freight movement can move forward.

Congestion in Napa County has a profound impact on its ability to move freight efficiently and effectively. Furthermore, with its limited arterials, Napa's ability to increase significant freight movement is severely hampered. Discussions at the national level have included policies that limit freight movement during off-peak periods in order to improve throughput. Given limited resources for infrastructure expansion, employing travel demand strategies and improving existing corridor management can go a long way towards significantly improving the prospects for moving freight in Napa.

Vision 2040 Project Considerations Supporting Goods and Movement Include:

– Build additional capacity on SR 29.

– Improve corridor management.

– Expand Class 1 networks to reduce bike/ped/truck conflict.

– Upgrade signals and associated systems.

– Study rail freight.

– Travel Demand Management.

Vision 2040 Goals Supporting Those Considerations

– Support Napa County's economic vitality.

– Use taxpayer dollars efficiently.

4d. Transportation Funding and New Revenue Sources

Introduction

NCTPA anticipates that there will be roughly $750 million in unfunded transportation infrastructure needs in Napa County over the 25-year period of the Vision 2040 Plan. Napa is not alone in this circumstance. Astronomical funding shortfalls are becoming common throughout the country, beginning with the Federal Highway Trust Fund, which as of this writing, has been only tentatively patched together until the fall of 2015. This paper explains why some of this is happening and discusses what other agencies around the region and the nation are doing to address the transportation funding crisis. It also introduces policy discussions and preliminary steps that are being considered to raise revenues for transportation in California.

Transportation Funding 101

Transportation infrastructure and operations in Napa County are funded by a complex mix of local, regional, state and federal monies. These funds come from numerous sources, each with their own set of regulations and limitations. Certain revenues can only be spent at the discretion of local jurisdictions and most funding is limited to very specific purposes and time frames. Some of the funds come to Napa based on complex formulas, taking into account Napa County's population, transportation infrastructure (such as road miles or transit system size) and other factors. Other funds are competitive and involve detailed grant applications.

NCTPA has little control over how the large majority of the funds are allocated, but does play a role in facilitating agreement about funding allocations among its local jurisdictions and between Napa County and the rest of the Bay Area region. The Metropolitan Transportation Commission (MTC) serves as the designated recipient of the region's federal and state funds and has administrative oversight over other locally generated funds, such as Transportation Development Act (TDA) funds.

Note that the funding categories defined below (federal, state, regional, local) may reflect either the source or the allocation method of funding. For example state funds under the Transportation Development Act (TDA) that come from the Local Transportation Fund (LTF), which is derived from the locally-generated ¼ cent portion of the general sales tax collected statewide, are listed in the local section because the source of the funds are local sales tax generations.

Federal

NCTPA receives several categories of federal transportation funding, for capital infrastructure improvements, planning, and transit operations that, combined, total roughly $7-10 million annually. Most of the revenues are for transit capital and operations.

Transit

"Formula funds" from the Federal Transit Administration (FTA), based mostly on our local population and on the level of revenue from the transit system, are passed through to NCTPA by the Metropolitan Transportation Commission (MTC). These funds include

– FTA §5307 Urbanized Area Formula Funds
– FTA §5311 Non-Urbanized Area Formula Funds
– FTA §5339 Bus and Bus Facilities
– FTA §5337 State of Good Repair

NCTPA uses 5307 funds to pay for bus operations, 5311 funds for rural bus route services, and 5339 funds for capital bus purchases.

NCTPA also receives FTA§5303 funds to complete its 10-year Short Range Transit Plan every four years. NCTPA also seeks federal discretionary funds from time to time when FTA makes them available, such as the §5309 Ladders of Opportunity program introduced by the Obama Administration in 2014.

Federal Aid Highway System

Napa County receives revenues from the Federal Highway Administration (FHWA) which is programmed by MTC and administered by the California Department of Transportation (Caltrans). MTC generally programs these revenues every 4 years in conjunction with the development of the Regional Transportation Plan (RTP). In the last iteration of the plan, NCTPA received just over $6.6 million, of which $2.6 million was retained to comply with planning requirements for the four-year period. In 2013 Federal Highway Funds were programmed to the City of Napa's California Roundabouts and the class II bike lane on California Boulevard between Pueblo and Permanente Way and to paving on Silverado Trail. NCTPA also pursues FHWA discretionary program funds such as Transportation Investments Generation Economic Recovery (TIGER) for certain projects.

Subsequent to NCTPA's last countywide transportation plan, the Obama Administration introduced a bill intended to stimulate economic growth. Commonly referred to as the "Stimulus Bill", the American Recovery and Reinvestment Act of 2009 (ARRA) was signed into law in February 2009 by President Obama. Its primary objective was to create jobs and provide temporary relief programs by investing in infrastructure, in addition to health, education, and energy investments. The approximate cost of the economic stimulus package was $831 billion between 2009 and 2019 of which $48.[1] billion was allocated to transportation infrastructure projects nationally. California received nearly $2.6 billion in ARRA revenues — more than any other State.[1] The Act required that all transportation funds be expended very quickly, requiring that projects be under contract by the end of 2011. Most of these projects are now complete or nearing completion.

ARRA funds were used to fund various street and road rehabilitation projects in American Canyon and City of Napa as well as Silverado Trail and Hardman Avenue road rehabilitation in the County of Napa. ARRA funds were also used to construct NCTPA's Redwood Park and Ride Lot in the City of Napa.

In combination with the ending of State Proposition 1B funds, described below, and because new funding sources have not been identified to replace them, a significant and precipitous drop in funding resulted which has been dubbed by California's transportation officials as the "fiscal cliff". See Figure 4.18

State

NCTPA receives state operating revenues for transit and to support Caltrans and MTC planning efforts to identify projects eligible to receive state highway funds. Other fund sources such as some "Cap and Trade" programs and the "Active Transportation Program" are discretionary and NCTPA and local jurisdictions compete for these revenues.

State Transit Assistance (STA)

STA is part of the Transportation Development Act (TDA), which is a statewide program distributed to public transportation providers. The revenues are generated from a sales tax on diesel fuel. These funds come to the Bay Area according to two formulas — 50% based on population, which goes directly to MTC and 50% based on revenue factors, which goes directly to the public transportation providers. MTC uses the population-based formula for various operating programs, including a modest redistribution to eligible small transit providers. Napa receives roughly $1.2 million per year in STA funds from the combined population and revenue formulas.

State Transportation Improvement Program (STIP)

The STIP is comprised of two basic programs, the Interregional Transportation Improvement Program (ITIP) and Regional Transportation Improvement Program (RTIP) which are funded with revenues from the Transportation Investment Fund and other funding sources. The STIP program is funded with State and Federal Highway funds (including Federal Aid highway system funds). Both the RTIP and ITIP are administered by the California Transportation Commission (CTC). The ITIP is intended to improve links between regions, both highway and transit (rail) and is utilized primarily by Caltrans. The RTIP is distributed to regions by formula. The revenues are redistributed to Bay Area counties by MTC. NCTPA administers RTIP funds for Napa County. NCTPA also receives RTIP revenues for planning purposes. Over the last several STIP cycles, NCTPA committed over $30 million of STIP funding for the environmental, engineering, and construction phases of the Jameson Canyon Widening Project.

In 2014 RTIP funds were programmed to various projects throughout the County including the five-way intersection (SR 121, Third St., East Ave., and Coombsville Rd.) in City of Napa, the Devlin Road and Vine Trail extension in the City of American Canyon and intersection improvements at SR 128 and Petrified Forest Road in Calistoga.

Proposition 1B Infrastructure Funds

Proposition 1B, the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, was approved by the voters on November 7, 2006. The Proposition authorized close to $20 billion for transportation infrastructure projects. By the time Vision 2040: Moving Napa Forward is adopted by the NCTPA Board, most of the revenues will have been appropriated and spent. NCTPA received revenues to improve its transit capital program from the Public Transportation Modernization, Improvement, and Service Enhancement Account and the Transit System Safety, Security & Disaster Response Account. The Jameson Canyon Widening Project was funded through the Corridor Mobility Improvement Account.

Active Transportation Program (ATP)

In September 2013, Governor Brown signed Senate Bill 99 (Chapter 359, Statutes 2013) and Assembly Bill 101 (Chapter 254, Statutes 2013) into law, creating the Active Transportation Program (ATP). The ATP consolidated federal and state funding sources, including the Bicycle Transportation Account, Regional Trails Program and Transportation Alternatives Program, into one program. It is anticipated that $125 million will be available annually for projects that promote active transportation. 60% of the revenues will be managed by the state (including the 10% for small urban and rural area competitive program) and 40% is administered by the Metropolitan Planning Organizations (MPOs), such as MTC. This presents unique challenges due to the mix of state, and federal funds, which may present different requirements. In 2014, NCTPA received a $3.6 million grant to fund the Oak Knoll Section of the Vine Trail.

In 2014 NCTPA was awarded $3.6 million in ATP funds through the state ATP program for construction of the Oak Knoll segment of Vine Trail between Yountville and the City of Napa. Construction on this 6 mile segment began in summer 2015 and is scheduled to be complete by summer of 2016.

Cap & Trade Revenues

Revenue is anticipated to be generated from fees associated with Assembly Bill 32 which, among

Table 4.13 Average Additional Cost of Vehicle Maintenance to Motorists Due to Sub-par Road Conditions by Metropolitan Area

Rank	Urban Area	Additional Annual Cost
1	Los Angeles-Long Beach-Santa Ana, CA	$ 832
2	Tulsa, OK	$ 784
3	San Francisco-Oakland, CA	$ 782
4	Oklahoma City, OK	$ 782
5	San Diego, CA	$ 758
6	San Jose, CA	$ 737
7	Tucson, AZ	$ 723
8	Milwaukee, WI	$ 700
9	New Orleans, LA	$ 687
10	New York City-Newark, NY/NJ	$ 673
11	Bridgeport-Stamford, CT	$ 669
12	Sacramento, CA	$ 658
13	Riverside-San Bernardino, CA	$ 638
14	Seattle, WA	$ 625
15	Concord, CA	$ 623
16	Denver-Aurora, CO	$ 615
17	Dallas-Fort Worth-Arlington, TX	$ 615
18	Birmingham, AL	$ 601
19	Honolulu, HI	$ 598
20	Colorado Springs, CO	$ 589

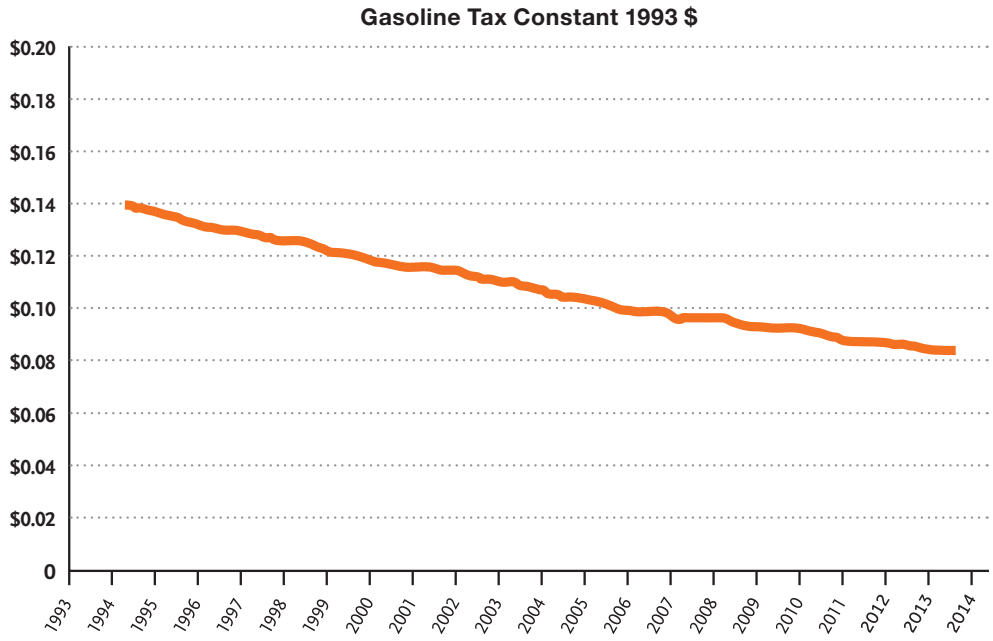
Source: TRIP (2013) Bumpy Roads Ahead: America's Roughest Rides and Strategies to Make our Roads Smoother

other things, establishes a Cap and Trade Program where major emitters of greenhouse gases (GHGs) (over 25,000 metric tons annually) are given an initial allowance. Any emission beyond the initial allowance requires that the emitting company purchase additional allowances. Over time, the California Air Resources Board (CARB) anticipates that the cap and trade program will result in emissions declining from 409 million metric tons of CO_2 emissions in 2012 to 341 million metric tons of CO_2 emissions in 2020. The revenues generated from the cap and trade program are estimated to be over $500 million annually.

The rules for allocation of these revenues stipulate that there must be a nexus between the fee on carbon and the use of the fee. That is to say the fee must be used for projects that reduce carbon emissions. Since transportation generates more than 40% of California's greenhouse gasses, reducing transportation emissions has a large impact, depending on successful, well-designed projects.

As part of the FY 2014-15 state budget negotiations (SB 852), one-time budget year expenditures were established for transit, sustainable communities, and low carbon transportation programs that reduce GHGs. The budget also set aside $250 million for high speed rail which is likely to be a priority for the current State administration. In total, the budget appropriated $872 million in cap and trade revenues. The legislature also passed SB 862, which established long-term funding programs. The programs specific to transportation include the Low Carbon Transit Operations, Transit and Intercity Rail Capital Programs, Zero/Near Zero Emission Transit Bus Deployment Program, and Affordable Housing & Sustainable Communities (transit and active transportation are eligible projects within this latter category). NCTPA anticipates to receive roughly $850,000 from the Low Carbon Transit

Figure 4.17 The Value of the Gas Tax has Eroded by Almost Half Since its 1993 Inception



Source: Bureau of Labor Statistics

Operation Program over the life of the program based on commitments under MTC resolutions 4123/4130. In addition there may be some nominal funding available to Napa jurisdictions from the Transit Capital and Inner City Rail portion of the Cap and Trade program.

A significance portion of these funds has not yet been committed for any particular purpose by the State and NCTPA will continue to work with its statewide and regional transportation partners to advocate that these funds be committed to transportation purposes.

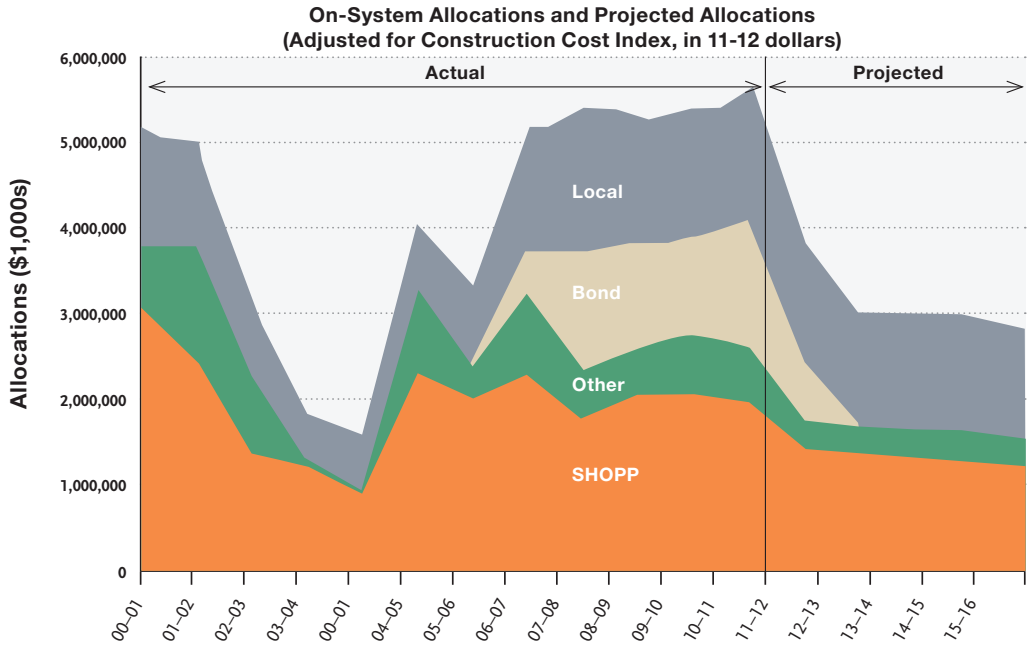
Another significant State funding source is the State Highway Operation and Protection Program (SHOPP) which funds basic maintenance of the State Highway system, including restoring damaged roadways, bridge preservation and roadside preservation. Although the State highway segments in Napa County constitute critical backbone elements of Napa County's roadway system, these roads are owned and managed by Caltrans. Neither NCTPA nor local jurisdictions have responsibility for these funds which are allocated by Caltrans according to statewide system maintenance priorities.

Regional

NCTPA also receives revenues that are generated and administered at the regional level.

Regional Measure 2 (RM2) - On March 2, 2004, voters passed RM2, raising the toll on the seven State-owned toll bridges in the San Francisco Bay Area by $1.00. This extra dollar is to fund various transportation projects within the region that have been determined to reduce congestion or to make improvements to travel in the toll bridge corridors, as identified in SB 916 (Chapter 715, Statutes of 2004). Specifically, RM2 establishes the Regional Traffic Relief Plan and identifies specific transit operating assistance and capital projects and programs eligible to receive RM2 funding. NCTPA has received some funding ($390,000 per year) under RM2 to the degree that the VINE Route 29 service reduces congestion on regional bridges. There is some additional capital funding under RM2 that NCTPA has used in the past for the Soscol Gateway Transit Center and Park and Ride structures along the SR 29 corridor.

Figure 4.18 Fiscal Cliff Illustrating the Precipitous Drop in Transportation Investments



Source: US Energy Information Administration

TFCA-60% Regional Program

The Transportation Fund for Clean Air (TFCA) is a grant program operated by the Bay Area Air Quality Management District (BAAQMD) funded by a $4 surcharge on motor vehicles registered in the Bay Area. This generates approximately $22 million per year in revenues. TFCA provides grants that decrease motor vehicle emissions, and thereby improve air quality. Projects must be consistent with the 1988 California Clean Air Act and the Bay Area Ozone Strategy. The regional funds receive 60% of the revenues. The remaining 40% are distributed to each county for local projects that meet the TFCA guidelines.

Active Transportation Program

The State administers 60% of the ATP funds (see page 53) and the MPOs administer 40% of the revenues. Projects not funded by the state program compete at the regional level.

Local

Measure T

On November 6, 2012, the voters in Napa County approved Measure T, the Napa Countywide Road Maintenance Act. Measure T is a ½ cent sales tax expected to generate roughly $300 million over a 25-year period beginning July 1, 2018, when the Measure A Flood Tax expires. These funds are strictly limited for use in the maintenance, reconstruction or rehabilitation of local streets, roads, and infrastructure within the public right-of-way. In order to receive the funds, each jurisdiction must also demonstrate that 6.67% of the value of their yearly allocation has been committed to new Class I multi-modal facilities.

Transportation Development Act (TDA)

This program, funded by a ¼ cent statewide sales tax, includes the Local Transportation Fund (LTF) and the State Transit Assistance Fund (STA) described above. These funds are available for a wide variety of transportation programs, including planning and program activities, pedestrian and bicycle facilities (Article 3), community transit services, public transportation, and bus and rail projects. The majority

of these funds (Article 4 and Article 4.5) are used by NCTPA for transit operations, capital improvements, and planning. In 2015 Napa jurisdictions expect to receive $3.8 million in TDA funds.

In 2014 TDA 3 funds were programmed to the Theresa Avenue Pedestrian Project in American Canyon, Mitchell Drive Sidewalk Project in St. Helena, the Calistoga Riverside Pedestrian Project, and the Washington St. Sidewalk Project in Yountville.

Transportation Fund for Clean Air (TFCA)

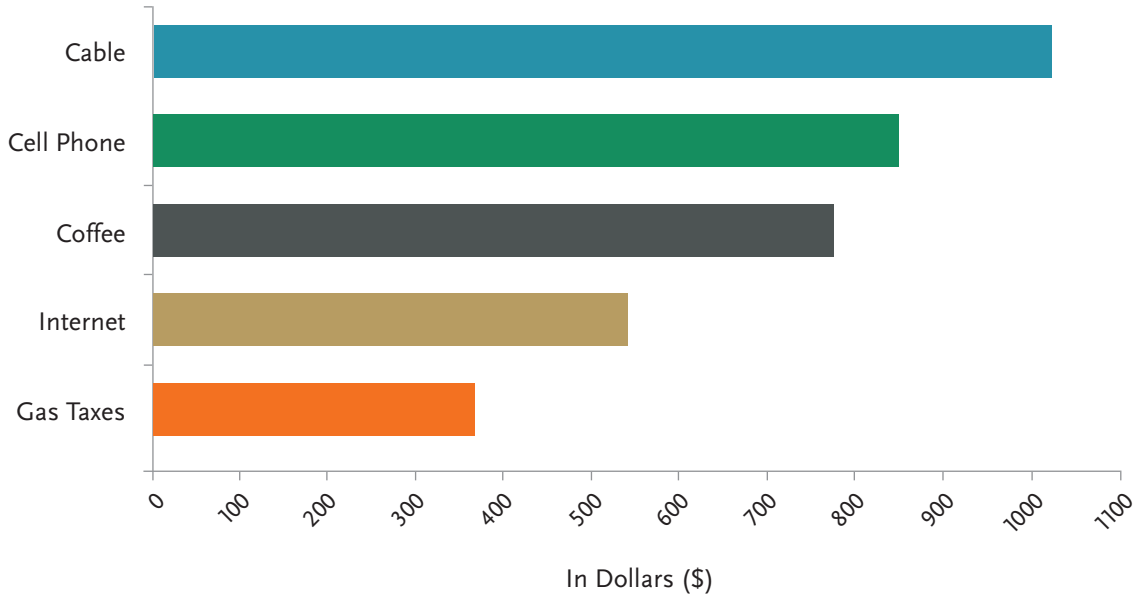
40% County Program - TFCA provides grants to the most cost-effective projects in the Bay Area that will decrease motor vehicle emissions, and thereby improve air quality. Projects must be consistent with the 1988 California Clean Air Act and the Bay Area Ozone Strategy. NCTPA is the designated agency to administer the portion of the 40% program that comes to Napa. As described above, TFCA is funded by a $4 surcharge on motor vehicles registered in the Bay Area and generates approximately $22 million per year. The remaining 60% is administered by the Bay Area Air Quality Management District (as described in the Napa County receives approximately $190, 000 per year in TFCA funds).

Examples of local projects funded with TFCA dollars include: the Pope St. sidewalk bikeway and Wappo Class I multipurpose trail in St. Helena, the Las Amigas Class II bike lane in the County of Napa, the American Canyon park and ride facility at Crawford Way and James Road, and traffic signal synchronization along State Route 29 in American Canyon.

The State Gas Tax

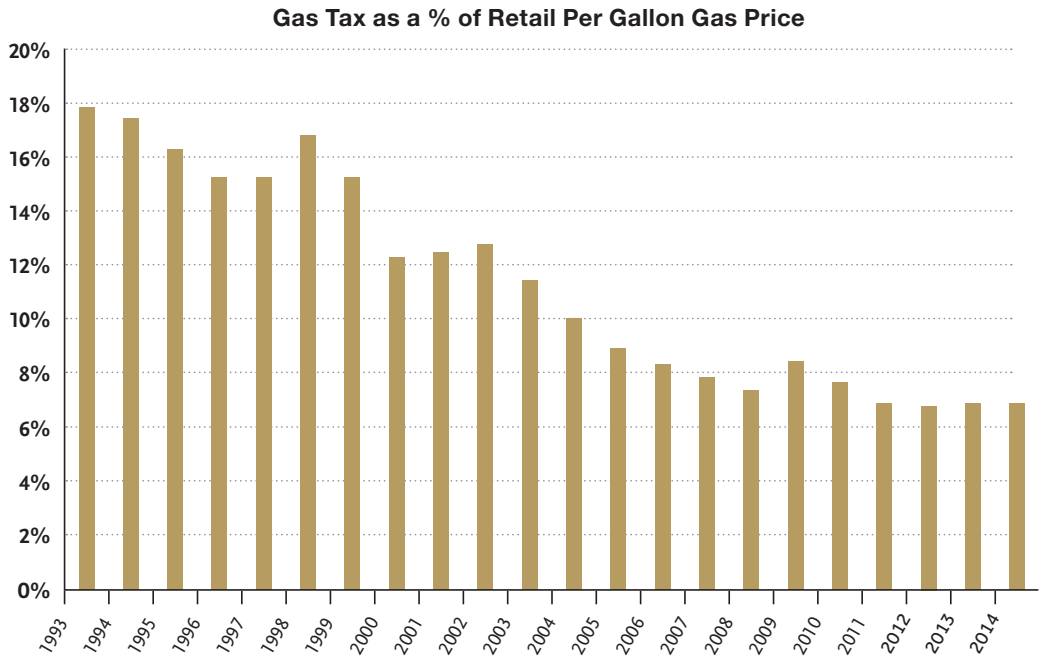
Cities and counties receive roughly 40% of the combined 36¢/gallon tax on gasoline (36% of the 18¢ excise tax and 44% of the 18¢ annually-adjusted-price-based tax) and 11¢/gallon on diesel fuel. The allocation of State fuel excise taxes has been further complicated in recent years by the passage of the "Fuel Tax Swap" in 2010 which combined a lowering of the sales tax on

Figure 4.19 Average Annual Cost of Select Items



Illustrated by Figure 4.19, Californians spend less than half the amount on gas taxes than on coffee. Source: CalSTA

Figure 4.20 Gas Tax as a % of Retail Gas Price Declines as Gas Prices Rise



Source: US Energy Information Administration

motor vehicle fuel while simultaneously raising the state motor vehicle fuel excise tax and established complex allocation rules for each portion of these revenues.

Additional Local Funding

Most jurisdictions also make contributions from their general funds to augment gas tax revenues to maintain streets and roads. Jurisdictions also raise revenues for transportation through development impact fees and parking fees.

Transportation Funding: Policy Considerations

The United States is considered the world's super power, yet in a ranking of 144 countries, the U.S. is 143rd on infrastructure spending by gross domestic product (GDP), just 13% of GDP as compared to a majority of countries spending between 18-22%.[2] The 2014-2015 World Economic Forum Global Competitiveness Report shows that the United States ranks 16th out of 144 countries on overall infrastructure quality. According to the World Economic Forum Rankings, the US has dropped from 7th to 16th in road quality.[3] While there is an argument to spend more on infrastructure based on infrastructure need, overall spending has been declining in the last decade.

The hard truth is that in the United States and in California, funding sources for transportation have dropped considerably both in real dollars and as a percentage of GDP, resulting in severe limitations on both new projects and on simply maintaining existing infrastructure. The continuing trends, as discussed in this Plan (especially higher mileage vehicles and electric vehicles, since much of transportation funding is tied to gasoline sales and prices) point to even less money in the future. The bottom line is that without new sources of revenue, new projects cannot be built, and existing streets and roads cannot be maintained to desired standards. Some jurisdictions (for example, Sonoma County) have even had to abandon existing rural roads in order to prioritize use of resources to maintain core infrastructure. Accommodating alternative modes and new system requirements have also put greater pressure on the existing revenues available.

Gas Tax

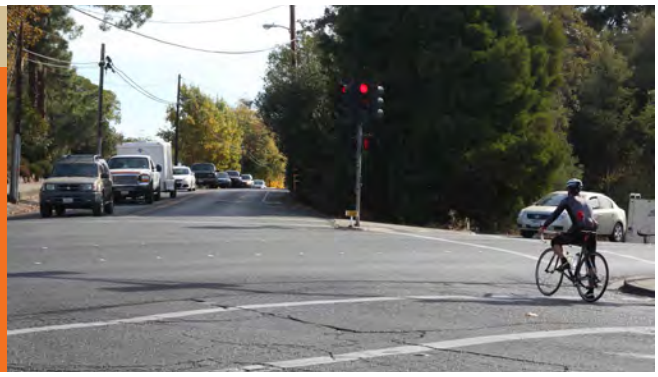
The federal gas tax is deposited into the Highway Trust Fund and the Mass Transit Account. From the 1960s through the 1990s, the federal government played a prominent role in funding transportation infrastructure. Federal contributions are derived from a per-gallon gas tax that has not been adjusted since 1993. The value of the gas tax, 18.4 cents per gallon on gasoline and 24.4 cents per gallon diesel, has been eroded by a number of factors. First, the gas tax is not indexed to the price of fuel or adjusted by inflation. As a result, the buying power of the revenue generated since 1990 has decreased by 44%. Figure 4.20 presents the value of the gas tax since its inception in 1993, declining from the original 18.4 cents per gallon to today's value of under 11.2 cents today. Figure 4.20 shows the parallel decline of the gas tax as a percentage of gas price altogether (since gas prices have continued to rise steadily).

Second, there are more fuel-efficient vehicles on the road as well as alternative fuel vehicles, which decreases the gross amount of gas consumed. Third, there are indications that we are driving less, particularly the millennial generation, which is showing a preference for urban living and is using mass transit, biking, and walking as their primary means of transportation.

In August 2014, Department of Transportation Secretary Anthony Foxx announced that the cash balance in the Highway Trust Fund would drop below projected spending levels, which could curtail reimbursements on critical transportation projects nationwide. To allow work to continue unimpeded, Congress passed legislation that would divert $8 billion from general revenues to sustain the Highway Trust Fund. Ideally, Congress will need to identify a means to generate new revenues to meet the growing demand or there will be greater and greater pressures on state, regional and local governments to backfill the need.

Additionally, as mentioned above, the federal Stimulus Bill provided a temporary infusion of $2.6 billion into California transportation projects, which for the most part have now been completed. The combined impact of these declines is illustrated in Figure 4.18 which shows the so-called transportation funding Fiscal Cliff, in which transportation funding fell to half its former level between FY 11-12 and FY 13-14. This shows the combined effect of reduced tax revenues, completion of special one-time spending (including the Bond portion of the chart), and the completion of special federal stimulus funding of capital projects.

4e. Mode Shift and Travel Demand Management



Introduction

Population growth and development places strain on existing transportation infrastructure, engenders expansion, and because funding is not available to implement all the projects needed to mitigate growth, the result is often congestion and inadequate services. Pressure to identify new ways to manage transportation operations more effectively and efficiently has fostered new alternatives to address transportation challenges. Travel Demand Management and Mode Shift are two strategies that can alter how, where and when people travel. These concepts are inexpensive and effective for reducing traffic congestion and harmful emissions caused by autos.

Mode Shift refers to changing reliance on one form of travel to another, mainly from a single occupancy vehicle (SOV) to public transit, van or carpooling, biking or walking.

Travel Demand Management (TDM) encompasses policies, strategies and methods that discourage driving alone, especially during peak travel times.

TDM also increases the overall efficiency of the entire transportation system using various methods.

Following is a list of TDM policies and strategies commonly employed:

– Planning for housing closer to jobs and services.

– Encouraging trip chaining (planning multiple-purpose trips to minimize travel).

– Encouraging employer policies that allow for staggered work times or telecommuting options.

– Implementing pricing strategies (tolls and High Occupancy Toll, or “HOT” lanes, reduced or subsidizing transit fares, increasing the cost of parking).

– Encouraging thoughtful development such as transit oriented development which encourages the production of housing and/or employment close to public transit.

TDM can also include disincentives for driving such as charging for transportation services (i.e. charging fees through registration, fuel, parking, and tolls — or more recently policy discussions that would charge a mileage-based user fee).

Soscol Gateway Transit Center

Many TDM strategies are simple and achievable at relatively moderate costs, such as:

– Encouraging staggered work and school schedules: this concept allows the peak traffic times to be attained over a longer period thereby reducing the overall peak. The idea is to encourage some road users to adopt alternative schedules that are either outside or towards the beginning/end of traditional peak times. Likewise, school start times are generally aligned with commute times. Starting schools earlier or later would not only reduce congestion but would potentially create incentives for students to use alternative modes to school — especially those not old enough to drive — because parents may not be available to drive them. However, this must be balanced with considerations about a household's ability to combine parent and child trips.

– Incentivizing Alternate Modes — Promoting active transportation (biking/walking/scooters/skateboards) through school and work programs is an effective means to encourage non-auto use. The Bay Area Commuter Benefits Program (SB 1339) is a demonstration program that requires employers with more than 50 employees to provide alternative commute options to employees.

– Providing safe places to park bicycles and creating safe networks also encourages alternative modes. Car and bike sharing and guaranteed ride home programs provide options for commuters to accomplish errands during the day making leaving the car at home more practical.

National adoption of these strategies has increased as the demand for new and expanded roadways persists and revenues to pay for them diminish.

Mode Shift Options for Napa Valley

Public Transit: the VINE Bus System

The VINE bus system is the core of public transportation in Napa County. It consists of an integrated network of public transit services serving communities within the Napa Valley and linking the Valley along major commute corridors to Solano and

A Multi-modal rider loads a bike onto the bus at Soscol Gateway Transit Center

Sonoma counties, the Vallejo Ferry, Capital Corridor rail, and BART in the East Bay.

In two separate NCTPA-sponsored studies, Napa commuters indicated an interest in using public transit for some or all of their trips if service was more frequent and direct to reduce travel times. In 2012, NCTPA implemented a new service structure that created more frequent service and improved system connectivity. In Napa County's smaller jurisdictions, NCTPA introduced door-to-door service. The changes resulted in an increase of VINE ridership by almost 40% in two years.

Expanded and more frequent service would likely continue to encourage new ridership. NCTPA is investigating additional strategies that will improve ridership. Bus Rapid Transit (BRT) is defined by the Federal Transit Administration as dedicated bus lanes over a certain percent of a route. As part of the NCTPA SR 29 Gateway Study, a BRT system was considered to improve congestion along the SR 29 corridor but modeling showed that near term projected ridership would not support a dedicated lane. "Rapid Bus" is similar to BRT but generally shares a lane with autos but employs a number of BRT-like concepts. These include:

Signal Pre-emption

Buses are equipped with sensors that will extend a green light if a bus is in close proximity to the signal and it is behind schedule.

Queue Jumps

Bypass lanes (generally 125') that allow buses to maneuver around congested traffic at intersections.

Buses

Larger buses (e.g. 60' articulated buses) Increase capacity with minimal increases to operating expenses.

Less Frequent Stops

Stops are located at greater distances than standard fixed routes to improve trip times.

VINE buses at Soscol Gateway Transit Center

Level Boarding

Create boarding areas and/or sidewalks that are level with buses in order to more easily load/alight passengers. This is particularly efficient for wheel chairs, grocery carts, and strollers.

This modified "Rapid Bus" approach is less expensive and does not require significant additional right of way or significant capital investment to implement.

Other transit enhancements can also encourage greater ridership and require nominal capital investments. A critical element is addressing the "last mile" of a transit journey. Reducing transfers entices new riders to the system. Possible enhancements in Napa include:

Park & Ride Lot Network

Providing additional parking for commuters at convenient locations minimizes transfers, because these locations function as hubs, which can entice additional riders and carpools. In Napa County there are currently three park and ride lots including: Yountville at the corner of California Drive and Solano Avenue, City of Napa at Redwood Road and Solano Avenue, and in American Canyon at James Road and Crawford Way. The Soscol Gateway Transit Center also serves as a transit hub and includes parking for transit riders. NCTPA has plans to build out the park and ride network throughout the county.

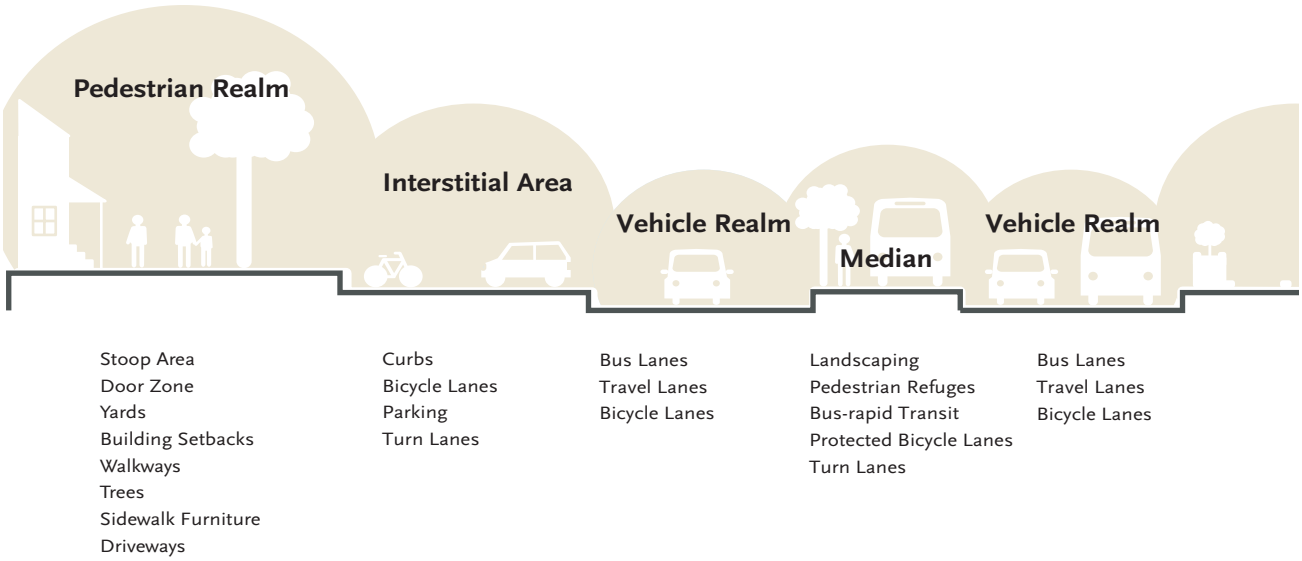
Non-Traditional Connections

Building secure bike lockers, providing adequate bike racks on buses, offering car-sharing and bike-sharing, ensuring that electric charging stations are available at key locations all encourage people to use non-traditional mode connections to transit.

Private Transit Shuttles

A number of private companies are providing shuttle services to ferry employees to and from work and home. In the Bay Area tech companies are providing shuttle services from areas with abundant, affordable or more desirable locations in the central part of the Bay Area to locations in Silicon Valley. A number of local employers have reached out to NCTPA to identify programs to move employees from home — generally from counties with lower housing costs such

Figure 4.21 Complete Streets Map



Source: Complete Streets Chicago, 2013.

as Solano, Contra Costa, and Lake Counties — to up valley resorts. This model presents a challenge for public sector transit systems because public transit systems, because of their funding sources, are prohibited from providing services that are not available to all members of the community, are further subject to public charter rules, and must meet minimum fare revenues. Less restrictive federal and state policies could foster improved transportation services for a number of low income workers.

Another transportation model is emerging in the urban areas of Bay Area where private transit service providers parallel public transit routes but charge more and provide amenities. This has enticed higher paid "choice" riders onto transit that have the resources to drive but choose not to.

Active Transportation

Active transportation consists of any form of non-motorized travel, principally biking and walking. In addition to congestion-mitigating benefits, concerns about greenhouse gas emissions and the general health of our communities are stimulating a new wave of interest among transportation professionals. Policies and models for active transportation infrastructure are already popular and are likely to play a greater role as the public becomes more interested in walking and biking, and because building and maintaining active transportation infrastructure can be significantly less costly than highways and roads.

Policies and Concepts

Complete Streets

Complete Streets is a transportation policy and design approach that requires jurisdictions consider alternative transportation modes. The Complete Streets framework has been adopted by Caltrans and the Metropolitan Transportation Commission, and all Bay Area jurisdictions that receive federal funds are required to adopt a Complete Streets policy and/or incorporate Complete Streets in its general plans.

Bicycle and Pedestrian Solutions

Creating Networks: Most jurisdictions designate bike boulevards and safe routes to designate ways to bicyclists and pedestrians to safely navigate between

Vanpools have been available as a commuting option in Napa and Solano County since 1979

key locations (central business districts, schools, etc.). Maps and minor improvements such as signage and cross walks can be accomplished at nominal costs. Creating safer networks that support children commuting and walking to school would significantly reduce congestion (and harmful emissions) around schools.

Other Innovations

Some jurisdictions have employed innovative solutions that are comparatively inexpensive and effective at improving the interaction between bicycles and automobiles. These include Cycle Tracks which can be a raised area in an existing car lane or a painted "track". Sharrows are another way to make drivers aware of bicyclists – through pavement signage, arrows, and hash marks that point out "conflict zones."

Carpools and Vanpools

The Solano Napa Commuter Information (SNCI) program provides information on Carpools and Vanpools to employers and citizens interested in using these commute options. This service has been available to Napa and Solano County commuters since 1979.

Car Share and Bike Share

Constrained spaces, limited parking, and the high cost of car ownership fostered car sharing in urban areas. Bike sharing was established as a means for traveling the last mile between transit hubs and final destinations. The concept no longer seems radical and consequently, these modes are now spreading to suburban locations. The City of Napa has two car sharing pods located along the Soscol Corridor in Napa. Demonstration projects in the Bay Area are underway to understand whether one way trips are feasible with car sharing.

Car sharing reduces the number of vehicles owned and subsequently the vehicle miles traveled because it requires that we think twice before getting in the car (renting versus having a vehicle sitting outside your front door). One barrier to using public transit to work is that many people use their lunch hours for completing errands or need to go to a doctor appointment in the middle of the day. Car sharing provides a convenient and affordable substitution to driving your own car. Bicycle sharing can offer the same convenience.

TDM Options for Napa County

Building New and Affordable Housing and Locating Housing Close to Jobs

The travel behavior study published by NCTPA in 2014 showed that much of the traffic congestion is generated by Napa County work trips and in-bound work trips from residents residing in other counties (primarily Solano and Contra Costa). Traffic congestion caused by inter-county commuters is likely to get worse over the next 25 years as housing prices in Napa are expected to remain high and much of the job growth projected for Napa County is expected to be at the lower salary range, especially in the faster growing agricultural, hospitality and retail segments. Development of additional housing affordable to

Transit Oriented Development greatly reduces vehicle miles traveled by encouraging using alternate modes (walking, biking, and taking transit)

Napa's workforce could have a significant impact on traffic congestion.

Mixed Use Developments/Locating Services Closer to Jobs and Housing

Developing smarter by locating basic services, such as health care and essential retail shopping close to jobs and housing centers will make it easier for Napa residents and workers to access these facilities greatly reducing vehicle miles traveled by encouraging using alternative modes (walking, biking, and taking transit). Proper planning and encouraging more sustainable development further promotes trip chaining — the practice of combining as many errands or purposes as possible into a single outing. Trip chaining also significantly reduces auto trips.

Transit Oriented Development

Transit Oriented Developments (TOD) are neighborhoods where housing and jobs are located close to public transit. As the public transit system in Napa continues to develop and grow, opportunities for TODs will also become more real. The establishment of the new Soscol Gateway Transit Center, within the Priority Development Area in the City of Napa, is one potential site where new higher density housing could fulfill the conditions for TOD. The future development of higher density housing and a transit center in the City of American Canyon may also provide a similar opportunity in coming years.

Telecommuting and Staggered Start Times

Employer policies that encourage full or part time work from home or offered staggered work times can greatly improve congestion during peak period and reduce overall vehicle miles traveled. While much of the Napa County workforce occupies positions where physical presence is essential (agriculture, retail, hospitality), large employers especially in local government, may be able to cut the commute footprint of their employees by instituting telecommute policies, and reduce congestion by staggering start times.
In a similar vein, a significant contributor to traffic congestion, especially during the a.m. peak hours, is traffic generated by parents bringing children to school. If school hours are adjusted to begin earlier or later in the morning, this would help attenuate peak period road travel.

Pricing

Effective pricing is an important principle in a market economy that can lead to more efficient resource use. Inefficient pricing contributes to many current transportation problems. Drivers do not pay the full cost of using the road infrastructure. Construction and maintenance of automobile infrastructure is heavily subsidized by sales and other taxes that are not related to fuel and other driving-related consumables. As a result there is little disincentive to limit auto use.

At the state level, implementing charges, such as a pay as you go fee, would greatly reduce auto use. The State legislature is currently engaged in implementing policies that would expand tolling authority to local governments. Tolling can apply to all lanes of a facility or just one lane (express lanes). Express lanes are high occupancy lanes but single occupancy auto users can pay for the privilege of using these lanes. Implementing roadway tolling is feasible on freeways that have multiple lanes and where there are alternative routes for local residents. Napa has limited local options for implementing pricing. Nevertheless, charging for parking and subsidizing transit fares are two policies that are within Napa's jurisdictional powers.

Vision 2040 Project Considerations Related to Mode Shift and TDM Include:

– Expanding transit through extended and more frequent service.

– Enhance transit by making it quicker (e.g. implement an extended express bus system and rapid bus improvements along major corridors).

– Sidewalk projects and programs.

– Bicycle projects and programs.

– Safe routes to schools programs.

– Intelligent Transportation System upgrades.

– Supporting Van and Carpooling.

These Project Considerations Relate to the Following Vision 2040 Goals

– Serve the transportation needs of the entire community regardless of age, income or physical ability.

– Use taxpayer dollars efficiently.

– Support Napa County's economic vitality.

– Minimize the energy and other resources required to move people and goods.

4f. Transportation and Environmental Concerns

Introduction

The source of nearly 97% of transportation GHG emissions is the combustion of fossil fuels. Transportation is the largest end-use sector emitting CO_2, the most prevalent greenhouse gas (GHG). These figures do not factor in "lifecycle" emissions related to transportation, such as the extraction and refining of fuel and the manufacture of vehicles, which are also a significant source of domestic and international GHG emissions, and their transportation likely contributes to higher levels of GHGs then reported.[1] According to the US Department of Transportation, the transportation sector directly accounts for about 28% of total U.S. GHG emissions, making it the second largest source of GHG emissions, behind only electricity generation (34%). In the San Francisco Bay Area, the transportation sector accounts 36.4% of GHG emissions.[2]

Our reliance on fossil fuels for transportation results in releasing other harmful pollutants into the air, causing overall reduced air quality. Harmful emissions can lead to various health issues and other negative environmental impacts. Although vehicles have become much cleaner in recent decades, the sheer volume of cars and trucks still significantly contribute to degraded air quality. This is significant in the Napa Valley portion of the county as the natural topography can trap emissions. Napa has the second highest rate of asthma in adults (20%) of the 58 California Counties (5 of the top 15 are in the Bay Area).[3]

Federal EPA and California Environmental Protection Agency (CalEPA) establish air quality standards to protect the environment and public health. California air quality standards are generally more stringent than federal standards. Continuous air monitoring by the EPA, CalEPA and the Bay Area Air Quality Management District (BAAQMD) determines whether local air quality standards are being met. The Bay Area is in formal "non-attainment" status of California standards for ozone, large particulate matter and fine particulate matter. Even by less stringent federal standards, Napa County is in nonattainment for ozone and fine particulate matter (PM 2.5), a primary contributor to asthma in children.[4]

Particulate matter from burning fossil fuels also increases acidity in lands and streams, it reduces the nutrients in the soil and causes damage to forests and crops and further undermines the diversity in our ecosystems.[5]

Many times, constructing transportation projects can result in harmful emissions and potentially disturb

habitats for threatened and endangered species. Napa County (along with the rest of the Bay Area) is located in the coastal environmental zone, which brings particular challenges and requires additional permitting requirements. Wetlands, creeks and the Napa River (which has significant tidal dynamics as far north as Trancas Street in Napa) all have characteristic sensitivities that must be accommodated. Other sensitive habitats affected by construction include hillsides and local creeks. Transportation infrastructure can influence patterns of runoff, which in turn affect creek health. This is important as Napa struggles to restore local waterways to a condition that will support the return of migratory fish species. These factors increase the cost of transportation projects as sophisticated environmental protection measures are often required during construction.

Statutes and Regulations

Transportation infrastructure projects are subject to California Environmental Quality Act (CEQA). CEQA, does not directly regulate transportation projects or associated land use changes, but instead requires state and local agencies to follow a protocol of analysis and public disclosure of the environmental impacts of proposed projects and plans and to adopt all feasible measures to mitigate those impacts. CEQA makes environmental protection a mandatory part of every California state and local agency's decision making process. Every transportation project in Napa must make a determination as to what level of CEQA analysis will be required for the project.

AB32 — The California Global Warming Solutions Act of 2006

AB 32 requires the California Air Resources Board (CARB) to develop regulations and market mechanisms to reduce California's greenhouse gas emissions to 1990 levels by the year of 2020, representing a 25% reduction statewide, with mandatory caps beginning in 2012 for significant emissions sources. AB 32 includes several specific goals for CARB, the most significant of which for transportation was the adoption of "Pavley Standards" for fuel efficiency. The Pavley Standards (AB 1493), named for the bill's author Fran Pavley, established new regulations to limit GHG emissions from cars and light trucks. AB 32 also requires mandatory reporting of these emission measures. Other components within AB 32 instituted a statewide "cap-and-trade" program, mandated increased fuel efficiency in vehicles and decreased the carbon content in fuel. Napa's transportation projects all must fit within the regional and state framework outlined in AB32.

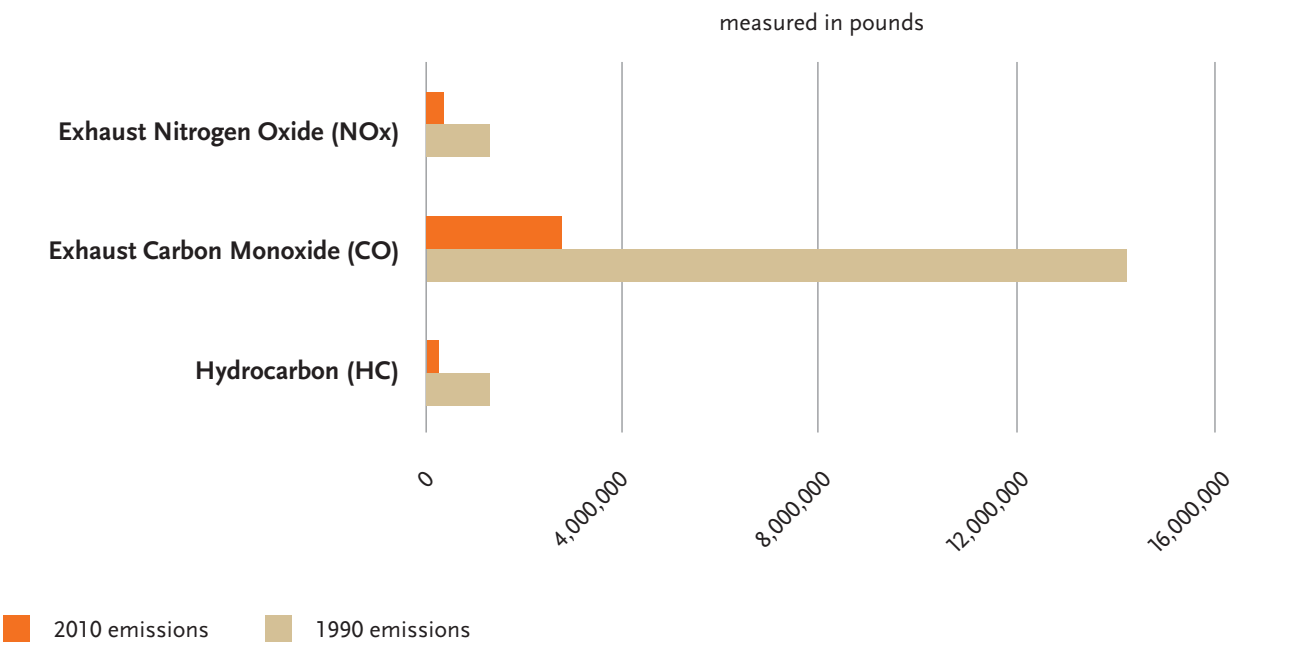
SB 375 — The Sustainable Communities and Climate Protection Act of 2008

SB 375 is the planning companion statute to AB 32. It requires regions to establish protocols to meet AB 32 GHG reduction requirements as part of the transportation planning process. SB 375 is the first law in the United States to link GHG limits to land use planning and transportation, and required that CARB establish targets for each region. Regions are required to develop Sustainable Communities Strategy to meet the target established by CARB. The Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments initially complied with SB 375 as part of the "Plan Bay Area" adopted in 2013, which aims to reduce GHG emissions in the region by 15% by 2015. To be consistent with AB 32, Napa's transportation projects all must fit within the regional and state framework outlined in SB 375.

Plan Bay Area – MTC's Regional Transportation Plan (RTP)

Pursuant to AB 32 and SB 375, MTC molded key portions of Plan Bay Area to meet the GHG reduction challenges outlined in these laws. MTC looked at many factors related to GHG emissions and determined that the one that yielded the most significant results to tie highway funding to housing in order to reduce auto trips and vehicle miles traveled (VMT). To accomplish this, Plan Bay Area shifted federal and state funds that have historically been used for system maintenance to provide incentives for local jurisdictions to alter land uses to reduce VMT. Specifically, 70% of the highway funds in large Bay Area counties and 50% of the

Figure 4.22 Emissions Decreases in Napa County with Cleaner Vehicles



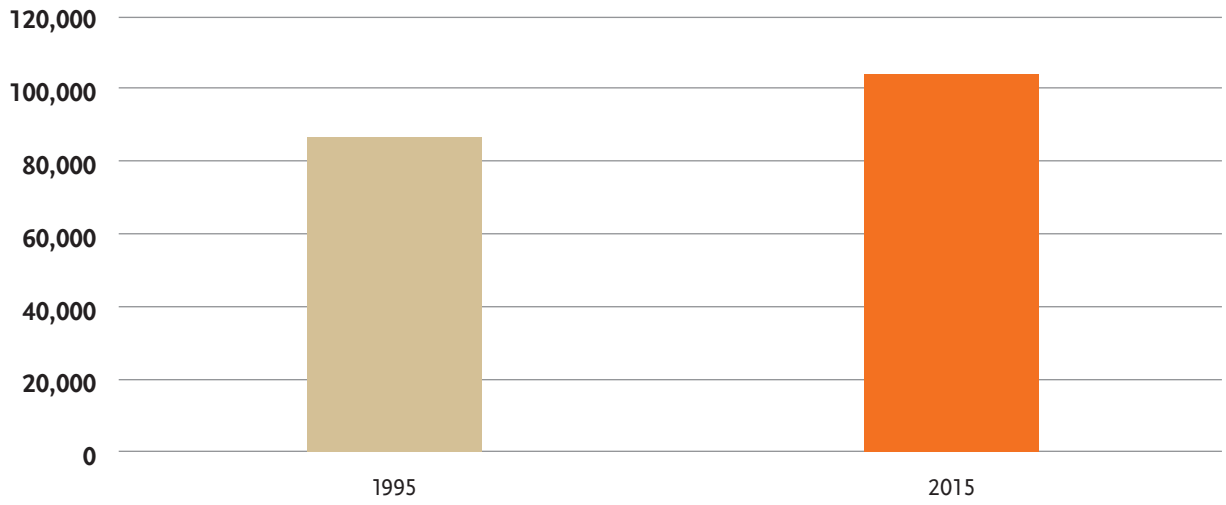
highway funds in small Bay Area counties must be used for projects in Priority Development Areas (PDAs) and by promoting alternative transportation modes (see Section 4a on Transportation, Land Use and Development).

Climate Change Adaptation and SR-37

State Route 37 (SR 37) is a principal thoroughfare between Interstate 80 in Solano County and US Route 101 in Marin County, passing through Sonoma and just touching the southwestern most tip of Napa County as the roadway crosses Sonoma Creek. Anticipated sea-level rise will likely put significant segments of SR 37 under water — near term during heavy storms — and longer term during high tides. Impacts to the highway as a result of climate change will have a certain effect on SR 29 and SR 121 through Napa. Current projections of local sea level rise are 10-17 inches by mid-century and 31-69 inches at the end of the century[6] which will render the highway unusable and necessitate transforming the facility. Even today, when the roadway is closed, traffic seeking alternative routes between Marin/Sonoma and Solano press north into Napa County, using State Route 121, which was not intended to carry regional traffic. Preservation of the rural quality of SR 121 is a critical objective for Napa County. Moreover, sea-level rise aside, the highway is not adequate for current traffic volumes which causes drivers to use alternative routes. This results in increased VMTs because alternate routes are often more circuitous and cause traffic congestion on a number rural county roads in both Napa, Solano, Sonoma, and Marin. Studies and multi-stakeholder consultations are currently underway led by Caltrans to study sea-level rise on SR 37, evaluate concepts to elevate the facility, and increase capacity including alternative mode capacity.

Clean Fuels and Clean Fuel Vehicles in

Figure 4.23 Total Household Vehicles in Napa County



Source: MTC's Households by Vehicles in Households Forecasts by Bay Area County

Napa County

Greening the VINE Bus Fleet

NCTPA is committed to transitioning its fleet to cleaner fuels. The agency currently has a number of alternative fuel vehicles, including compressed natural gas and gasoline-electric hybrid buses, but clean fuel technologies are slow to emerge, are costly to procure and often even more so to maintain.

Several new, promising technologies are appearing on the market and include electric- and hydrogen-fueled vehicles. These technologies are significantly more costly than standard diesel and gasoline technologies. Diverting scarce operating and capital funds to fund these technologies could compromise transit system performance which may not be the most effective means to reduce harmful emissions in Napa County. NCTPA will continue to investigate and invest in alternative fuel technologies, however, NCTPA is also committed to growing and sustaining an effective and efficient transit system and to develop policies and incentives to encourage its constituents and visitors to use transit.

Alternative Fuel Vehicles Infrastructure

Most auto manufacturers today produce some form of fuel efficient vehicle. Many produce gasoline-electric hybrids. Electric vehicle (EV) technology has been around for a while, but many major auto manufacturers have been slow to embrace this technology. The California Air Resources Board (CARB) and the Environment Protection Agency (EPA) have both adopted standards and regulations that improve auto emissions and CARB has incentivized the production and acquisition of public and private fleet conversions. As a result, five all electric zero emission vehicle models are now available in the open market, and appeal to every spectrum of the market — from luxury to standard.

Researchers estimate there are 170,000 electric vehicles (EV) amid the roughly 242 million vehicles in America.[7] The number of electric vehicles is likely to grow steadily with incentives to build out the EV infrastructure through government incentives and grants in addition to private sector investments. As of

Table 4.14 Cost Comparison for Different Types of Alternative Fuel Buses

Technology	Purchase Price	Esimated FTA Section 5307 Funding	Transit Agency Cost Share	Incremental Cost to Transit Agencies above Diesel
Diesel	$485,000	$398,000	$87,300	---
Natural Gas	$525,000	$431,000	$95,000	$7,000
Diesel Hybrid	$758,000	$622,000	$136,000	$49,000
Battery Electric	$800,000	$656,000	$144,000	$57,000
Fuel Cell Electric*	$1,300,000	$1,066,000	$234,000	$147,000

Source: California Air Resources Board, Advanced Clean Transit, May 2015.

Fall 2014 there are over 35 public electric car charging stations in Napa County (16 in the City of Napa), including those at public facilities and at several tourist destinations (hotels and wineries).

Toyota has announced its new Mirai hydrogen fueled car to be available in late 2015, with a range of 300 miles and 5-minute re-fueling cycle. The estimated cost of the car is $58,000, which can be cost prohibitive for many consumers. This is a step in the right direction — until recently, most fuel cell vehicles could be leased but not purchased. In the San Francisco Bay Area, the five large transit operators in the Bay Area, led by AC Transit, completed an advanced zero emission bus (ZEB) demonstration that has proven to be very successful. Still, for most public transit systems, the cost to procure, build infrastructure for and maintain these vehicles presents challenges.

Encouraging Alternative Transportation

NCTPA has adopted a bicycle plan and is now working on a pedestrian plan to focus on Napa County's active transportation program. This effort will help focus and prioritize investments to accelerate bicycle and pedestrian facility build out.

Napa has twice the number of commuters that walk to work than the nation's average (4%). In fact, Angwin has the highest percentage of walk commuters in the Bay Area at 27.3% of its total workforce. The next highest is Stanford at 19.9%. Colleges at the center of these communities and are the impetus for why walking rates are so high. College students tend to be lower income and consequently have a lower rate of auto ownership. Our challenge in the transportation sector is to identify means to incentivize and encourage everyone in the community to use alternative modes of transportation or zero emission vehicles to ensure an environmentally sustainable future.

These Vision 2040 Project Considerations

Pedestrians Walking Over the Third Street Bridge in the City of Napa

Relate to Transportation and the Environment:

– Expanding transit (Rapid Improvements on SR 29, Extended Service and Expanded Hours).

– Building a new fueling facility to include compressed natural gas and potentially other alternative fuels.

– Expanding the electric car charging network.

– Expanding shared vehicle and bicycle programs.

– Building out the active transportation network.

– Supporting Van and Carpooling.

– Investigating new technologies that reduce auto emissions and congestion.

– Investigating zero emission bus technologies.

Considerations

– Use taxpayer dollars efficiently.

– Support Napa County's economic vitality.

– Minimize the energy and other resources required to move people and goods.

These Vision 2040 Goals Respond to the Project

4g. Transportation and Health

Introduction

How we travel not only influences the quality of our life but our safety and the state of our health. Certain modes of transportation promote good health. These include walking, biking, and taking transit. Other modes tend to degrade physical health, including over-reliance on auto use. Recognizing that physical health and transportation are intrinsically connected, transportation and health officials are partnering to encourage individuals to use more active-based commute modes.

It was not until well into the 20th century that most American households had cars. While cars have undoubtedly provided greater mobility and individual travel independence, enhancing personal freedom and facilitating expanded access to work and recreation options, it has come with a significant price to our health and environmental wellbeing.

Land use patterns have also changed. New developments have separated workers from jobs, central shopping districts from housing, and communities from public transit. Origins and destinations have become further apart because of the automobile. To connect these more distant locations we have built roadways, many of which cannot accommodate bicycle and pedestrian traffic, facilitating greater auto use and diminishing the quality of our environment.

The advancement of the automobile has come at a cost to society and to our individual health. According to the National Research Council of the National Academies of Science, a partial accounting of the costs of health outcomes wholly or partly associated with transportation indicates that the costs could be as great as $400 billion annually.[1]

New initiatives are emerging to address adverse health and safety impacts. Transportation planners and public health officials have forged new alliances to discover how strategic transportation planning can contribute to public health goals. Part of this trend is visible in the new Napa County “Community Health Improvement Plan” (CHIP) developed by the Napa County Public Health Department over three years using an in-depth collaborative process in which NCTPA has played a role. The CHIP has identified four priority action areas for the health of the community:

1. Improve Wellness and Healthy Lifestyles

2. Address the Social Determinants of Health

Table 4.15 Fatal and Injury Collisions by County and City, 2012

County	City	Total Fatal	Total Injury	Alcohol Involved	Pedestrian Involved	Bicycle Involved	Motorcycle Involved
	American Canyon		60	3	3	2	2
	Calistoga		4			1	
	Napa	2	277	34	20	27	19
	Saint Helena		17	1	3	3	1
	Yountville		4	1	1		
	Unincorporated	5	317	40	3	16	38
Napa		7	679	79	30	49	60
Statewide Total		2,758	159,696	17,681	19,576	14,103	11,617

Source: California Highway Patrol Statewide Integrated Traffic Records System (SWITRS)

3. Create and Strengthen Sustainable Partnerships for Collective Impact

4. Ensure Access to High Quality Health Services and Social Supports Across the Life Course

Each of these areas has an in-depth agenda of Goals, Objectives, Strategies and Actions, several of which have specific transportation actions involved with them, outlined below.

Safety

Overall, injuries and deaths from traffic collisions in the US have been falling steadily for the past decade reflecting improvements in auto design and the implementation of seat belt and car seat laws. Cars now have as many as 10 air bags, and new cars are designed with "crumple zones" to protect occupants in a crash, electronic stability control to avoid crashes in the first place, run-flat tires and antilock brakes.

According to the Institute of Insurance Highway Safety, in 2013, there were 30,057 fatal motor vehicle crashes in the United States. Of those, 32,719 deaths occurred. This resulted in national motor vehicle crash death rates of 10.3 deaths per 100,000 people and 1.11 deaths per 100 million vehicle miles traveled. Comparatively in 2005, there were 39,189 fatal motor vehicle crashes in the United States and 43,443 deaths occurred. This resulted in a national motor vehicle death rate of 15 deaths per 100,000 people.

Napa County has also experienced a reduction in auto collisions. Fatalities have dropped by more than half in the past decade. Nonetheless, traffic collisions still account for over a quarter of a million injuries and nearly 3,000 deaths statewide annually.[2] Nationally, collisions remain the leading cause of death for children 2-14. California ranks 30th among the states for traffic fatalities[3] and within California, Napa County is 19th among 58 counties for fatalities per capita.[4] (The figure rises to 17th when alcohol is a factor). The California Highway Patrol maintains the Statewide Integrated Traffic Records System (SWITRS) which reports all traffic-related safety incidents in the state.[5]

Bicyclists and pedestrians have particular challenges when sharing the road with cars and trucks. Accidents involving cyclists and pedestrians tend to be under-reported since most do not require emergency room visits or cause significant vehicle damage. Nonetheless, as can be seen from the collision data

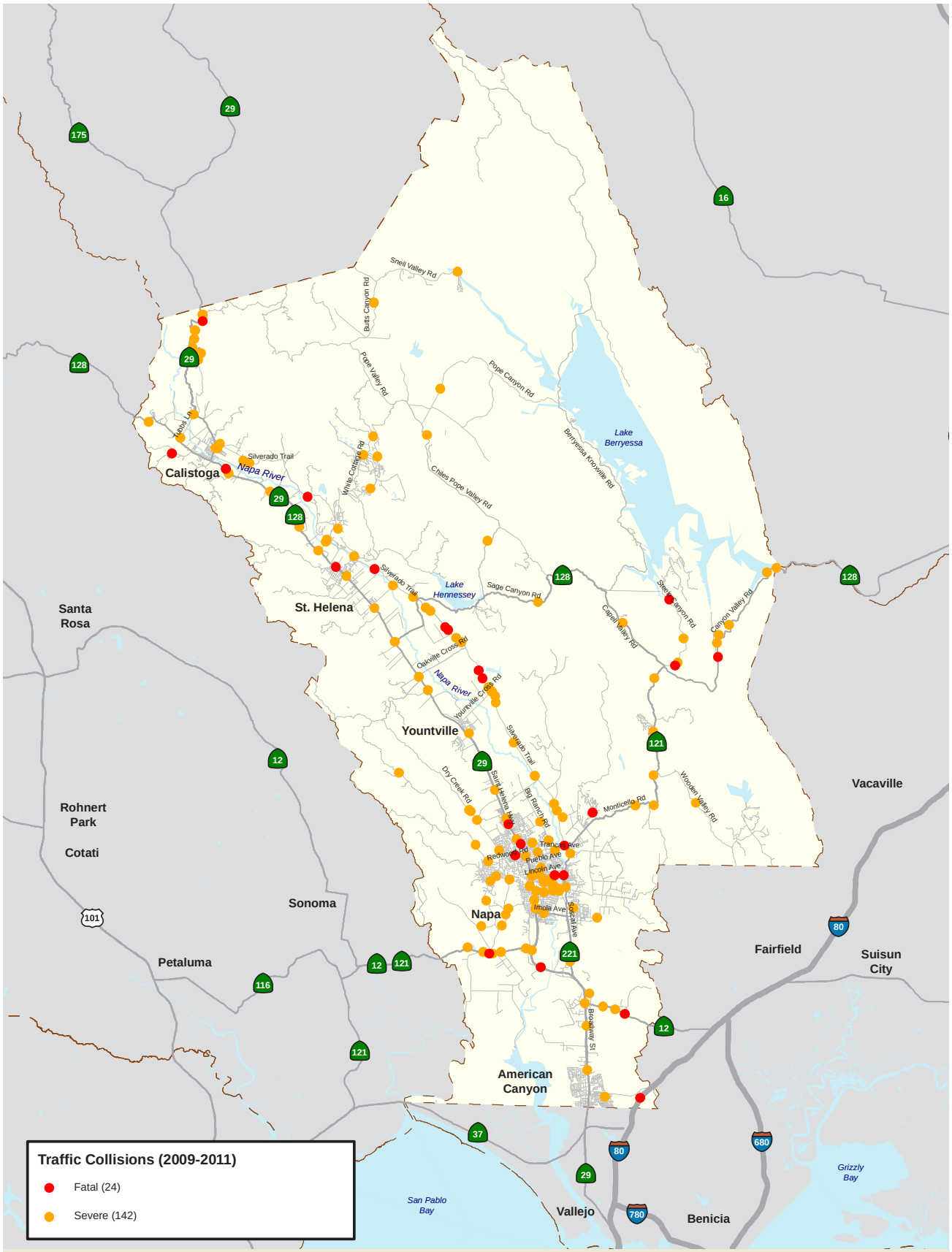


Figure 4.24 Traffic Collisions in Napa County (2009–2011)

Source: California Highway Patrol Statewide Integrated Traffic Records System (SWITRS)

Cyclists Enjoying Class 1 Facilities

on Table 4.15 there were nearly 50 reported bicycle injury accidents and 30 pedestrian injury accidents in Napa County in 2012.

Caltrans adopted a Complete streets directive in 2010 which requires that it design and implement facilities that support all modes of transportation, including biking, walking, and using transit. The implementation of Complete Streets as part of the One Bay Area Grant program requires, among other things, that jurisdictions adopt a complete streets policy as part of their circulation elements. Efforts to build out Napa's bicycle and pedestrian facility have been very successful in recent years. The County has received over $5 million for Class 1 facilities. Napa County's jurisdictions have also made significant progress identifying gaps in their pedestrian networks. In addition, NCTPA embarked on a countywide pedestrian plan which will be combined with the countywide bike plan to create Napa County's Active Transportation Plan.

Health

Obesity

The health effects associated with obesity are now among the leading causes of death and disability. Obesity is a fundamental cause of diabetes, heart disease, hypertension, and some cancers. Napa County has the highest obesity rate (28.6%) when compared to other Bay Area Counties.[6] The County Department of Health and Human Services has identified obesity as one of the County's high-priority health issues. Although diet plays a major role in this phenomenon, our sedentary lifestyle is also major factor — one that is closely tied to our auto-dependent transportation system.

As reported in the 2013 Napa County Community Health Assessment,[7] more than half of Napa County adults reported engaging in little or no physical activity each week. Overweight and obesity rates are a concern among all age groups, but it is particularly concerning that nearly 40% of 5th, 7th and 9th graders in Napa County are overweight or obese.

Based on this 2013 Assessment, the new 2014 Napa County "Community Health Implementation Plan" (CHIP)[8,9] outlines key objectives — one of which is to increase the proportion of persons who are physically active.

A key strategy in the CHIP includes:

– building capacity for people to be more physically active

To implement this strategy the CHIP calls for activities that:

– Provide opportunities for the community to learn how to safely ride bicycles for increased exercise and active transportation, and
– Increase the proportion of individuals who use active transportation for trips of 2 miles or less

Respiratory Illness

Vehicle emissions contribute to respiratory diseases such as asthma and Chronic Obstructive Pulmonary Disease (COPD) as well as other health-related effects, including cancer. While automobiles are much cleaner today than earlier generations, the steady increase in vehicle miles traveled (VMT) means that local air quality continues to be negatively affected. In fact, Napa County has the second highest rate of asthma in adults (20%) of any county in California.[10]

The Bay Area as a whole has a non-attainment status for California air quality standards for ozone and particulate matter (PM), including PM 2.5 which has been shown to be a leading contributor to respiratory disease in children. Even by less stringent federal standards, Napa County is in a nonattainment status for ozone and fine particulate matter.[11] NCTPA's efforts to reduce overall VMT in the county is an important local contribution to the regional (and even global) efforts to reduce air pollution.

Stress and Mental Health issues

Studies have linked stress levels to the frequency of traffic congestion, the satisfaction with, and the duration of, the commute. Individuals who endure traffic congestion report significantly higher levels of stress than those subject to infrequent traffic congestion. Similarly, individuals with longer commutes report higher levels of stress than those with shorter commutes. More importantly, those who are satisfied with their commutes are the least likely to be stressed.[12]

The average commute to work time for Napa County residents (2006-2010) was 24.1 minutes, a few minutes less than the statewide average of 26.9 minutes. This puts Napa County in 26th place among the 58 California counties.[13]

Stress, especially chronic stress, has been clearly linked to a wide range of negative health effects. The biochemistry of stress lowers immunity and disrupts the normal functioning of digestion, excretory and reproductive systems. Over extended periods, routine chronic stress can promote more frequent and severe viral infections, such as the flu or common cold and render certain vaccines, such as the flu shot, less effective. According to the National Institute of Mental Health, over time, routine stress may lead to serious health problems, such as heart disease, high blood pressure, diabetes, depression, anxiety disorder, and other illnesses.[14]

Strategies to reduce traffic congestion and commute times will result in healthier communities. This can be achieved by rethinking how we commute and rethinking how we plan our communities so that walking, cycling, and taking public transit are more enjoyable, safe, and practical way to commute and shop.

Segways Along the Napa River Trail

These Vision 2040 Project Considerations Relate to Community Health:

– Supporting complete street efforts.

– Expanding transit (Rapid Improvements on SR 29, Extended Service and Expanded Hours).

– Building a new fueling facility to include compressed natural gas and potentially other alternative fuels.

– Expanding the electric car charging network.

– Expanding shared vehicle and bicycle programs.

– Building out the active transportation network.

– Supporting Van and Carpooling.

– Investigating new technologies that reduce auto emissions and congestion.

These Vision 2040 Goals Support Healthy Outcomes:

– Serve the transportation needs of the entire community regardless of age, income or physical ability.

– Improve system safety in order to support all modes and serve all users.

– Minimize the energy and other resources required to move people and goods.

4h. Napa County Travel Behavior

A summary of the 2014 Napa Travel Behavior Study completed by Fehr & Peers

In an effort to better understand who is using the roads in Napa County, where these users are going, and the purpose for their trip, the Napa County Transportation and Planning Agency (NCTPA) conducted the "Napa County Travel Behavior Study". This study gathered vital information that will assist transportation planning efforts by informing planners about the commute patterns of travelers throughout Napa County.

Planners and engineers can use this information to make informed decisions about capital investments, and travel demand management strategies. This information can also be used by policy makers to implement policies that reduce and alter congestion patterns. The study gathered information on the travel behavior of visitors, employees, residents, and students who make work and non-work trips in Napa County.

A single data source presents limitations for capturing information like trip purpose, and traveler demographics, the study used several innovative data collection techniques as well as enhancements to traditional methods:

License Plate Recognition

11 survey data locations were staged in strategic locations where vehicle classification counts were collected over a 24-hour period. A Friday in October 2013 was selected in order to capture weekday commute trips along with winery and other visitor trips during the "crush" or peak winery visitation season. The locations included the seven major Napa County gateways to capture all inter-regional travel as well as four locations within Napa County to capture a sample of local trips. The specific data collection locations were selected based on proximity to the region's boundary, safety, and logistics.

Infrared video cameras provided classification of the vehicles into passenger vehicle, medium truck, heavy truck, and bus. From the infrared cameras, 181,330 vehicles were observed passing through the 11 vehicle classification count locations. From the total of vehicles observed, project software was able to capture 154,389 license plate numbers and was able to draw the following conclusions:

– 9% of daily trips at Napa County external gateways are pass-through trips — the majority of pass-through traffic travels between SR 121 at the Napa/

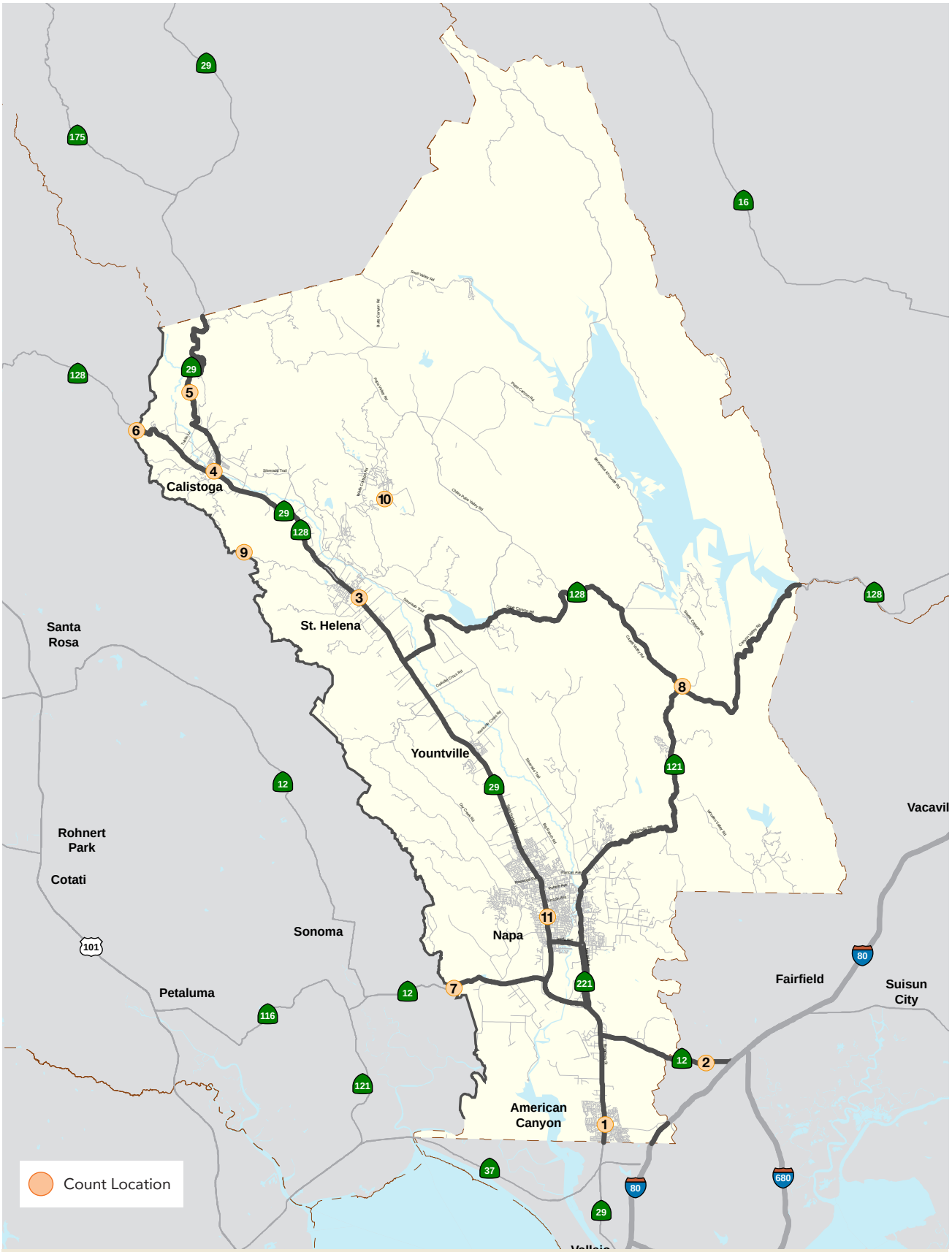


Figure 4.25 Napa County Travel Behavior Study Count Locations

Table 4.16 Passenger Vehicle License Plate Matching Data

Trip Type	Daily	Early AM (12AM to 6AM)	AM 4-HR (6AM to 10 AM)	Mid-Day (10AM to 3PM)	PM 4-HR (3PM to 7PM)	Late Night (7PM to 12AM)
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%

Sonoma county line and SR 12 at the Napa/Solano county line.

– 25% are imported work trips i.e. from a license plate observed entering and exiting Napa County at same location in an approximately 8 hour window.

– 16% are exported work trips observed exiting and entering Napa County at the same location in an approximately 8 hour window.

– The largest number of imported work trips from neighboring counties are from Solano County (35%), Sonoma County (22%), Contra Costa County (10%), and Alameda County (7%).

– 23% of total daily trips into Napa County were one-way of which a portion can be attributed to visitors.

As shown in Table 4.16, approximately 9% of daily trips at Napa County external gateways are pass-through trips. The 9% pass through percentage was found to be consistent with the approximately 9% observed daily pass-through percentage from the mobile device data collection method. Additionally, approximately 41% of daily trips are imported trips and 27% are exported trips.

Traffic Counts

Traffic counts were conducted at 22 wineries over a 7-day period in October 2014 to perform a linear regression analysis. Wineries were selected to be an accurate representation of the 434 wineries in the county. Simple linear regression analysis was used to determine separate average Thursday, Friday, Saturday, and Sunday regression formulas for the dependent variable (daily total vehicle trip generation) based on the independent variables (square footage, annual gallons produced, approved visitation, number of parking spots, number of employees, whether the winery is located on the valley floor, and whether the winery requires advanced appointments). A summary

Table 4.17 Estimated Total Daily Winery Vehicle Trip Generation

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

of the estimated total daily vehicle trip generation of all wineries in Napa County is presented in Table 4.17. Surveys: To supplement data previously collected through surveys such as the Visit Napa Valley Survey and the California Household Travel Survey (CHTS), three additional surveys were conducted:

Vehicle Intercept Mail Survey

Using the license plate data collected from the 11 vehicle count locations, a vehicle intercept mail survey was conducted. This involved matching the collected license plate numbers to a Department of Motor Vehicles database of addresses (individual names were not provided). This process yielded 85,531 unique vehicles observed over the 24-hour period. The screened list of addresses, sorted by inferred trip type and survey data location, were used to draw a random sample of 8,500 addresses, to which postcard surveys were mailed. Of these, 183 surveys were returned (response rate of approximately 2%) with the following results:

– 52% of respondents are full-time residents of Napa County, 26% are non-residents but employed in Napa County
– 60% of respondents started their trip in Napa County
– 26% of respondents who started their trips outside Napa County started their trip in Sonoma County, followed by Solano County with 24%, and Lake County with 15%
– 66% of external trips were imported, consistent with license plate matching data which estimated 61%, and mobile device data which estimated 65%
– 34% of trips were home-based work trips, 40% were home-based other trips, and 26% were non-home-based trips, consistent with mobile device data (36%, 33%, 31%) and national averages (25%, 50%, 25%)
– 21% of trips were said to be made “less than one time per month”, likely indicating visitor trips
– Average auto occupancy was 1.37 and 72% of vehicles were single occupant
– 53% of respondents said they would not be willing to use public transit to make their trip
– 85% of respondents said they rarely or never use public transit
– 67% were aware Napa County has a transit system that connects to the Ferry, BART, and Sonoma and Solano counties but only 23% had used it
– Some respondents felt “safer bicycle infrastructure/ conditions” would entice them to make their trip by bicycle

In-person Winery Survey

On the same Friday in October when the license plate numbers were collected, project staff conducted an in-person winery survey at 12 wineries around Napa County to gather more detailed information on the travel behavior and demographics of winery patrons. Some surveys were administered to individual patrons and some to groups. A total of 172 surveys were completed with the following results

– 92% of groups were visitors to Napa County,
– 35% of patrons started their day in Napa County, 23% of patrons started their day in San Francisco County

Winery Patrons

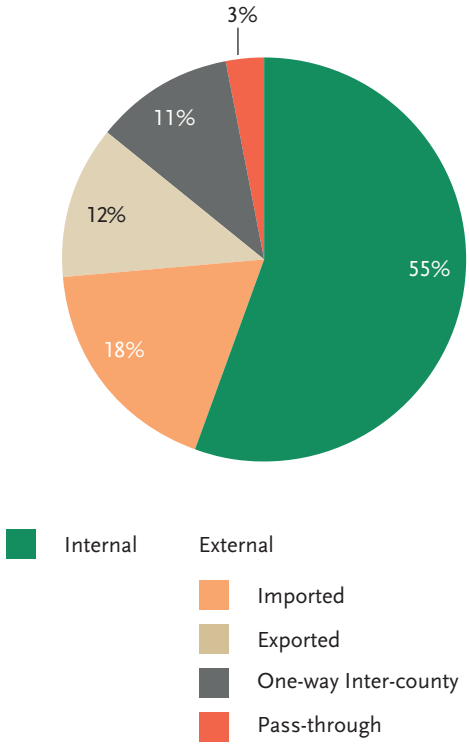
– 64% of patrons started their day from a hotel.
– 61% of groups visit Napa County wineries less than once a year.
– 52% of groups traveled by rental car, 36% of groups by personal auto.
– 58% said they would use transit for their trip if it was an option.

Online Major Employers Survey: 100 of Napa County's major employers totaling approximately 20,000 employees in Napa County helped gather travel behavior and commute data for local employees. The survey had 1,444 responses from over 400 different departments and companies. This survey reported:
– 71% live in Napa County.
– 51% live in City of Napa.
– 32% live and work in the City of Napa.
– 34% make at least 1 intermediate stop on the way to work.
– The most common stop on the way to work was school, followed by coffee.
– 30% make at least 1 intermediate stop on the way home.
– The most common stop on the way home was shopping, followed by school.
– 97% commute using their personal automobile more than half the time.
– 79% commute 5 days a week.
– 88% do not primarily work from home.
– 43% said they would use public transit if service was expanded and it became a reasonable option.

These three surveys provided detailed information on the trip making and travel characteristics of a sample of residents, visitors, winery patrons, students, and employees who live, work and visit Napa County. However, it is important to keep in mind that all user-input surveys are prone to human error during the data collection process as well as from the survey responders who may misinterpret the questions.

The 2012 Visitor Profile conducted by Visit Napa Valley indicate that Napa County visitors are individuals who visit on average 3 wineries per day, and over 90% travel by automobile. When Visit Napa Valley conducted its study and queried respondents on how their experience may be improved and though

Figure 4.26 Napa County Trips



visitors were mostly satisfied, they underscored the need to reduce traffic congestion and offer more affordable transportation. Reducing traffic congestion and making transportation more affordable were the two comments most frequently received between the two studies.[1] The rural geography of Napa County coupled with a rural transit system does not lend itself too easily to alternative modes of transportation for visitors, but it is clear that transportation demand management is needed to alleviate traffic congestion and provide more options for visitors, residents and workers. How this is going to be accomplished is a difficult question especially because of the specific demographic that visitors of the County represent.

Mobile Data

Anonymous reading of cell phone locations gathered over a two month period in September and October of 2013 was utilized to analyze traffic patterns within the county. Of the 206,152 data samples, approximately 55% of trips had both their origin and their destination within Napa County, indicating an internal trip This statistic is extremely useful and important as measuring the amount of internal trips within an area as large as a county would be almost impossible using traditional methods. The remaining 45% touched a Napa County external gateway, indicating an external trip. Approximately 9% of external trips were observed passing through Napa County. As indicated in Figure 4.26, approximately 45% (18% imported, 12% exported, 11% one-way inter-county and 3.3% pass-though) of Napa County data samples touched one or more Napa County external gateway.

The mobile device data also identified trip origins and destinations. A summary of the trip origin and destinations is summarized in Table 4.18. The mobile device data was able to provide information on internal trip origins and destinations shown in Table 4.18 (more information on origin-destination by jurisdiction can be found in Appendix E).

Conclusions

This report provides a snapshot of travel patterns in Napa County and thus only displays a fragment of the travel patterns, which can be volatile depending on many factors including, but not limited to the season of the year, weather, the day of the week and other factors. The resulting data will provide NCTPA and its member jurisdictions the basis for future planning efforts. Such uses may include but are not limited to the refinement of the Solano-Napa Travel Demand Model (SNTDM) and data to inform jurisdictions' future specific plans or projects that need baseline data.

When combined, the four direct data collection methods (surveys and license plates) provided valuable, information regarding the imported, exported, and through regional trip types. To supplement and complement this data, mobile device data provided information about all regional trip types, including travel internal to Napa County. While the mobile source data had advantages over the other four data collection methods, such as having a very large sample size at a relatively low cost per sample and being less reliant on observed field data and user responses which can potentially introduce error, the method required a lot of inference and lacked the ability to obtain demographic characteristics.

Table 4.18 Final Origin-Destination Trips by Personal Automobile

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%**	**17%**
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%**	
Winery Trips from Winery Regression Analysis	--	126,736	--	--	--	--
Difference	--	1,695	--	--	--	--

To correct for some uncertainties, data from all five data collection methods has been compiled in a format nearly identical to results derived from the Napa Solano Travel Demand Model (the principal computer model for transportation used by NCTPA). Study results have given us a substantial amount of real-life origin and destination-level travel results to supplement the recent (2013) California Household Travel Survey for base year calibration and validation purposes.

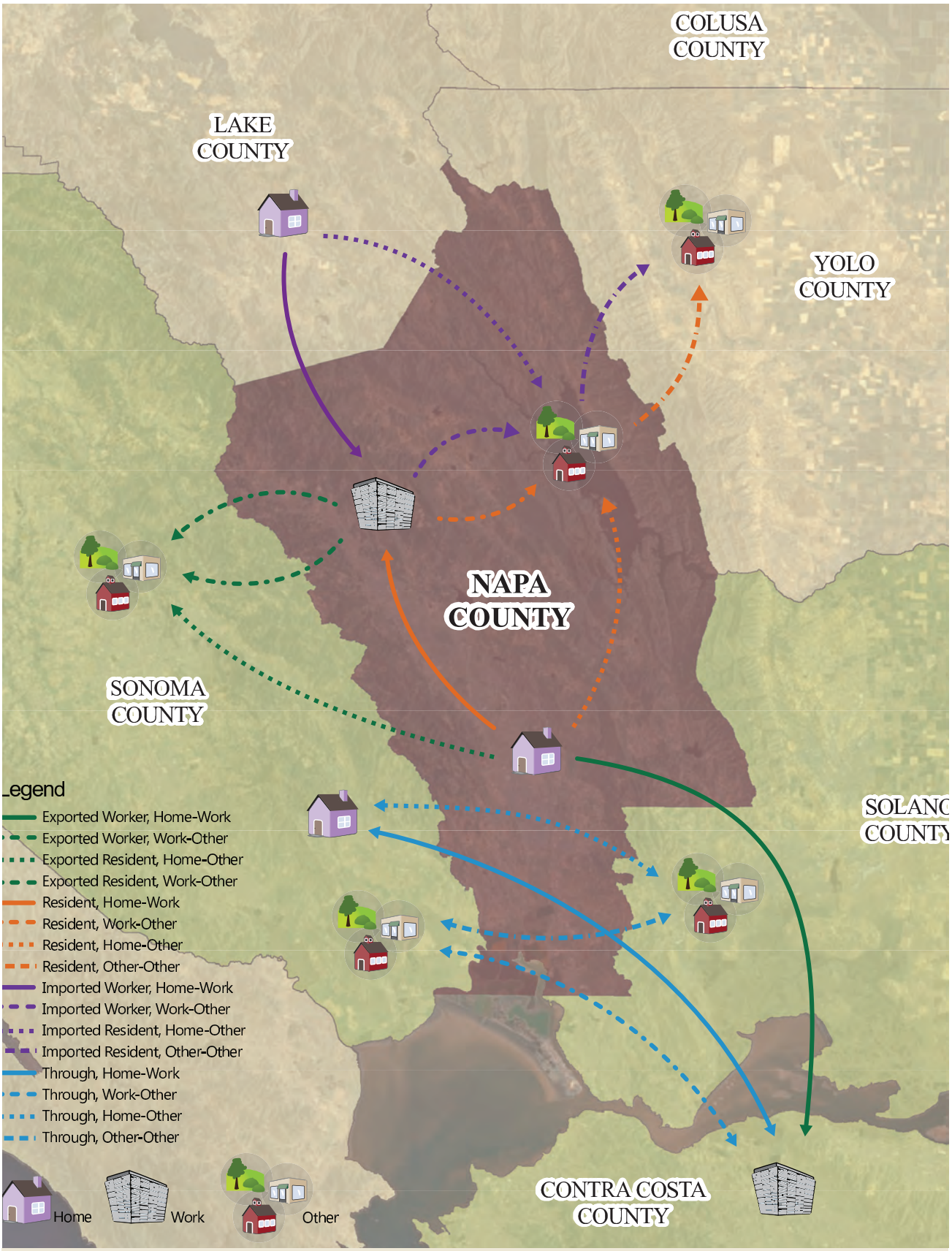


Figure 4.27 Regional Trip Types Identified in the Napa County Travel Behavior Study

The five-way intersection in the City of Napa (SR 121, Third Street, East Avenue, and Coombsville Road)

Project Considerations

This section provides a summarized version of the Napa Valley Travel Behavior study. It provides data but does not necessary underscore issues and challenges. It does suggest that NCTPA has a communication opportunity since most of the traffic congestion is caused by residents that live in Napa and employees that work in Napa. A smaller but still meaningful number are visitors. It suggests that in Priority Development Areas investment can improve the jobs/housing mix. It also suggests that additional investments in alternative transportation could provide highly desirable commute and non-auto tourist options. Investments in improving and maintaining the road system are also necessary to reduce congestion and to ensure that the County's goods and services can be provided efficiently (freight corridor improvements).

4i. Communities of Concern

Introduction

Certain segments of the population depend heavily on non-auto modes of transportation, especially public transit but also bicycle and walking modes. To help funnel resources to these groups, the Metropolitan Transportation Commission (MTC) uses the concept of communities of concern (COC) as an important category in the allocation of infrastructure funding. COCs are census tracts designated by MTC with a high concentration of challenged communities (see Table 4.19 for specific definition). There are areas of concentrated poverty and disadvantaged communities in the County which do not have the MTC COC designation. MTC, as part of its last regional transportation plan, recognized that:

"Communities of concern have distinct demographic and socioeconomic characteristics compared to the rest of the region. In particular, low-income persons, Limited English Proficiency persons, and zero-vehicle households are twice as likely to live in communities of concern compared to the population in general."[1]

MTC does not acknowledge any COCs in Napa County. MTC used eight criteria to define COCs in the Plan Bay Area Equity Analysis, with a census tract having to meet four or more factors, or have concentrations of both low-income and minority populations to qualify as a COC. Table 4.19 shows the eight criteria MTC used, the overall regional percent of the population that meets that criterion, and the percentage required in any census tract for it to be counted towards qualification as a COC. Based in these definitions, 20% of the region's population is characterized as living in a COC and 80% live in the remainder of the region.

MTC used data from the 2000 U.S. Census and 2009 American Community Survey (ACS) in COC analysis for the Bay Area. NCTPA staff reviewed these same criteria using current data from the 2010 U.S. Census and 2012 ACS and found that Napa County had three qualifying COCs.

South Downtown Napa (2002.02) meets the following criteria:

- Low income population: 48% of households are below 200% of the federal poverty level
- Zero vehicle households: more than 10% of households do not have access to a vehicle
- Single-parent families: 27% of households are single-parent families
- Cost-burdened renter: over 18% of households pay more than 50% of their income on rent

Table 4.19 Target population and Concentration Thresholds for MTC's Communities of Concern[2]

Disadvantage Factor	% of Regional Population	Concentration Thresholds
Minority Population	54%	70%
Low-Income (<200% of Poverty) Population	23%	30%
Limited English Proficiency Population	9%	20%
Zero-Vehicle Households	9%	10%
Seniors 75 or Over	6%	10%
Population with a Disability	18%	25%
Single-Parent Families	14%	20%
Cost-burdened Renter	10%	15%

Table 4.20 Communities of Concern in Napa County

Census Tract	Neighborhood Name	Number of Criteria Met
2002.02	South Downtown Napa	4
2008.04	Westwood Neighborhood	4
2016.01	South St. Helena	5

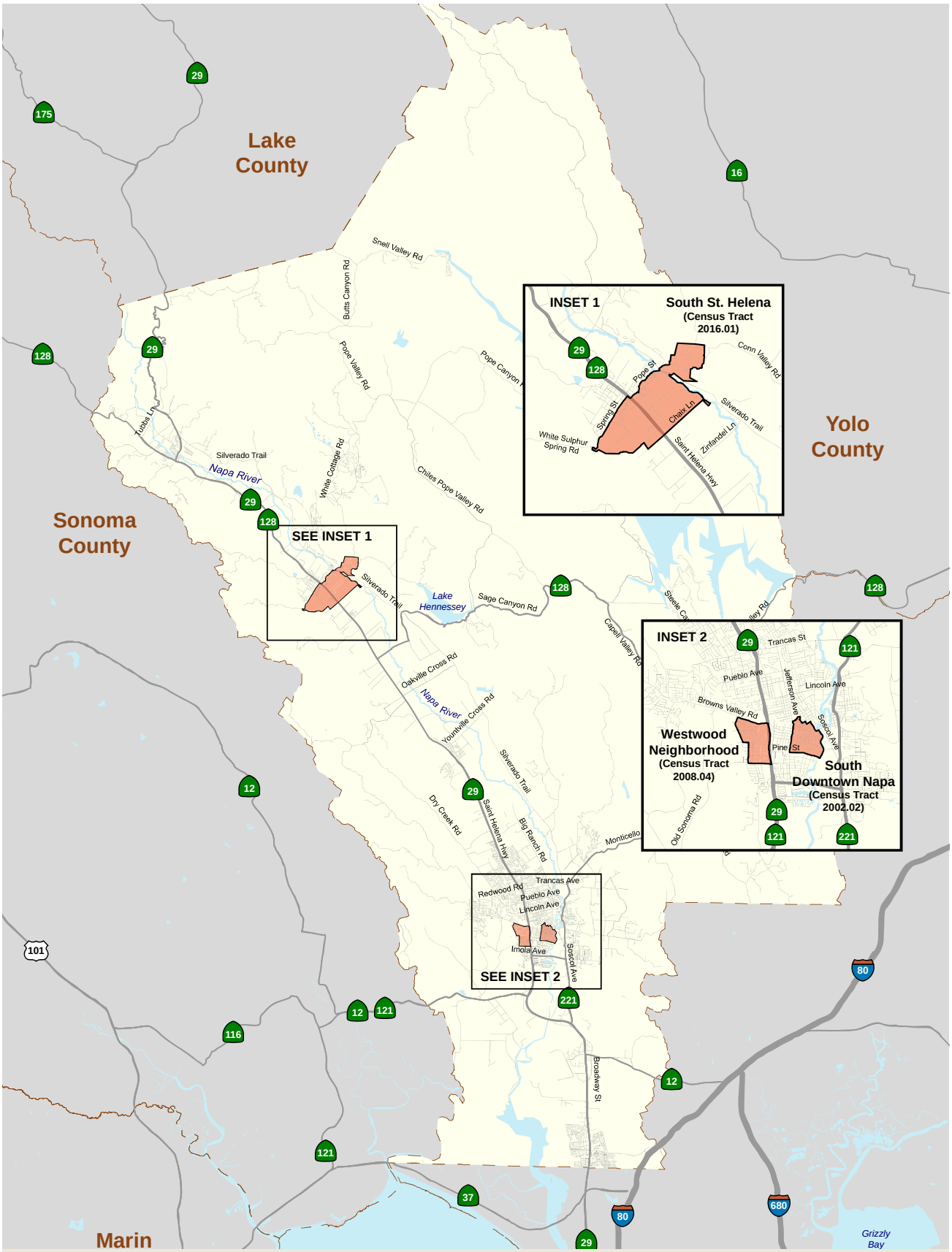


Figure 4.28 Communities of Concern in Napa County

NCTPA Bus Patrons

Westwood Neighborhood in Napa (2008.04)

– Low income population: 46% of households are 200% below the federal poverty level
– Limited English Proficiency: 27% of households have limited English proficiency
– Single-parent Families: 30% of households are single-parent families
– Cost-burdened renter: 17% of households pay more than 50% of their income for rent

South St. Helena (2016.01)

– Limited English Proficiency: 20% are limited English proficiency households
– Zero vehicle households: over 13% of households do not have access to a vehicle
– Seniors 75 and over: 13% of residents are age 75 or over
– Single-parent families: 27% of households are single-parent households
– Cost-burdened renter: 15% of households pay more than 50% of their income on rent

Further, NCTPA is also concerned that the MTC COC criteria does not fully take under consideration the income to housing cost ratio as defined by the California Poverty Measure. Napa County has a large immigrant population where multi-family households are not uncommon. Consequently, there are pockets in Napa that include multi-family and multi-generational households that may superficially inflate household income.

The Public Policy Institute of California in collaboration with the Stanford Center for Poverty and Inequality created a new poverty measure, the California Poverty Measure (CPM) which takes into account social safety net services when calculating poverty. The CPM was created to reflect the changes that have occurred in a family's spending in contrast to the Official Poverty Measure which was created in the 1960s and has not changed since.

The CPM compares monetary value of resources for a family of four to maintain a basic standard of living. CPM figures take into account nationwide spending levels on food, shelter, clothing and utilities, and are

Table 4.21 Household Spending on Essential Goods

Counties		Share of state residents	Share of state residents		Average CPM threshold
			Owners with a mortgage and renters	Owners without a mortgage	
Low-cost	Colusa, Del Norte, Fresno, Glenn, Humboldt, Imperial, Kern, Kings, Lassen, Madera, Merced, Modoc, Siskiyou, Sutter, Tehama, Trinity, Tulare, Yuba	9.2%	$23,200–$25,400	$19,500–$20,600	$23,900
Mid-range	Alpine, Amador, Butte, Calaveras, El Dorado, Inyo, Lake, Mariposa, Mendocino, Mono, Nevada, Plumas, Riverside, Sacramento, San Bernardino, San Joaquin, Shasta, Sierra, Stanislaus, Tuolumne, Yolo	21.8%	$25,500–$29,500	$20,500–$23,200	$27,200
High-cost	Alameda, Contra Costa, Los Angeles, Marin, Monterey, Napa, Orange, Placer, San Benito, San Diego, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma, Ventura	69.0%	$29,500–$37,400	$20,700–$25,600	$31,300

Source: The California Poverty Measure: A New Look at the Social Safety Net Table 1

adjusted for differences in housing costs across counties and differentiates amongst families who are renting, paying a mortgage, or living in an un-mortgaged (paid off) home.[3]

Local Trends

As noted above, there are three identifiable COCs in Napa County using current ACS data and MTC's COC criteria. Napa census tracts show a high number of low income families and high cost-burdened renters. As previously noted in the CPM, poverty can be described in several ways. For example, approximately 42% of Napa County public school students qualify for the free lunch program.[4] There are some census tracts in Napa County that fall outside of the regional agency's definition of COC although they are severely disadvantaged based on a few criteria. An example, of Census Tract 2009 in south Napa is very disadvantaged in three areas. Census tract 2009 contains a population that is very low income with over 95% of households with incomes below 200% of the federal poverty level, over 75% of residents with a disability, and 99% of residents are high-burdened renters, spending more than 50% of their income on rent. Further, this census tract is proximate to the Downtown Napa-Soscol Gateway Corridor PDA which will take on a majority of the City of Napa's future growth.

NCTPA proposes that, in the ongoing development of the Regional Transportation Plan, MTC consider two revisions to the existing equity analysis. First, include analysis based on the most recent Census data. Second, incorporate the analysis methods from the "California Poverty Measure" to acknowledge the impact of high local housing costs on equity.

Funding Opportunities

MTC has several planning and programming initiatives that support mobility in low-income communities,

communities of concern, and other transportation-disadvantaged populations. For example, when evaluating regional projects for support as part of the "Project Performance Assessment" process in the Regional Transportation Plan, MTC gives special consideration to the equity-related impacts of specific projects, with specific attention given to the "relationship between the spatial distribution of Plan investments and minority communities."[5] MTC and ABAG also have a variety of established practices and policies to ensure full and fair participation of all regional residents in the Plan Bay Area process, and specifically to identify needs and priorities of low-income, minority, and underserved communities. To be eligible to receive these funds, counties are required to develop Community Based Transportation Plans (CBTPs) to identify and prioritize transportation needs in COCs. NCTPA has developed a CBTP as part of this Plan which will be considered by the NCTPA Board for adoption as part of the Vision 2040 Plan.

Project considerations included in Vision 2040 that respond to COC needs:

– Expanding transit (Rapid Improvements on SR 29, Extended Service and Expanded Hours).

– Supporting complete street efforts.

– Improving access to transit and schools.

– Expanding shared vehicle and bicycle programs.

– Building out the active transportation network.

– Supporting Van and Carpooling.

–Support programs that subsidize COC needs.

These project considerations meet the following Vision 2040 Plan Goals:

– Serve the transportation needs of the entire community regardless of age, income or ability.

– Improve system safety in order to support all modes and serve all users.

– Minimize the energy and other resources required to move people and goods.

– Support Napa County's economic vitality.

4j. Traffic Operations and Corridor Management

Introduction

Traffic and congestion are projected to grow over the next 25 years as the result of increased demand on the system caused by a growing population, an expanding economy, and job production in Napa continuing to outstrip affordable housing starts. Simultaneously, Napa County has major highway corridors and intersections needing improvement. State Route 29 through American Canyon and the City of Napa, State Route 12 at Airport Boulevard, and the Napa five-way intersection are a few examples of needed infrastructure updates.

There is a diminishing appetite for funding major transportation infrastructure projects at the federal, state and regional levels. Moreover, the competition with large more populous counties for funding is fierce. These challenges will require implementing alternative measures to increase the efficiency of the existing roadway system in Napa County. In addition to the "Travel Demand Management" strategies outlined in the issue paper earlier in this report, it will be important to evaluate and invest in new technologies and management solutions. These solutions have the ability to optimize the operational capacity of the existing system. This will require focusing on two areas – traffic operations and corridor management.

Intersection and Roadway Design

For decades, the regulation of intersection design and traffic signal systems have advanced in step with the evolution of engineering and technology. Today, traffic control is accomplished with electronic sensors, computers and sophisticated software.

Intersection design has evolved significantly in recent years in large part because of the development of powerful micro simulation software that can model the effectiveness of various lane and turning configurations. Relevant design elements include the number of lanes provided on each approach and for each movement, whether there are shared thru-and-turn lanes, the length of turn bays, the turning radii, the presence of additional through lanes, the size and location of detectors, and presence or absence of left-turn phasing.

Roundabouts

Roundabouts, which are common in the United Kingdom and parts of Europe, are also gaining wider application in the United States. A modern roundabout is a circular intersection where drivers travel counterclockwise around a center island without

Roundabouts, which are common in the United Kingdom and parts of Europe, are also gaining wider application in the United States

traffic signals or stop signs. Drivers yield at entry to traffic, then enter the intersection and exit at their desired street.

Studies by the Federal Highway Administration have found that roundabouts can increase traffic capacity by 30% to 50% compared to traditional intersections.

Roundabouts are also safer. According to the Federal Highway Administration, roundabouts reduce fatalities by more than 90%, injuries by 76%, and collisions by 35% and because drivers are forced to lower speeds when navigating a roundabout. Roundabouts are also deemed safer for bicycle and pedestrian traffic.[1]
The City of Napa is currently working with Caltrans on the design of three roundabouts at SR 29/First Street, and the intersections of California Boulevard at First and Second Street. SR 29 and 1st on the west side of the highway.

Two-Way Left Turn Lane

Another important design approach, especially for places like Napa with limited capacity for roadway widening, is building a center channel in the roadway, wherein a third, central, lane is added to the road. This lane serves as a left-turn holding lane that allows through traffic to continue flowing while relatively low volume demand can wait for left-turn opportunities. This lane can also serve as an acceleration lane for traffic entering the roadway via a left turn.

One example of this type of project is currently underway on SR 29 in the County just south of the City of St. Helena (expected completion in 2016). This project does not significantly widen the roadway but rather adds a center channel or turn lane that allows left turn lanes onto side roads without holding up through traffic. The project also includes acceleration lanes to reduce back up on side streets which can also be used as refuge lanes to avoid conflicts between the adjacent rail operations and faster on-coming traffic on the highway.

Traffic Signals

The first traffic signals in the United States were installed to prevent accidents by simply alternating right of way. A lot has changed since these early efforts. Modern traffic signals involve a system of

Changeable Message Signs Provide Information to Drivers

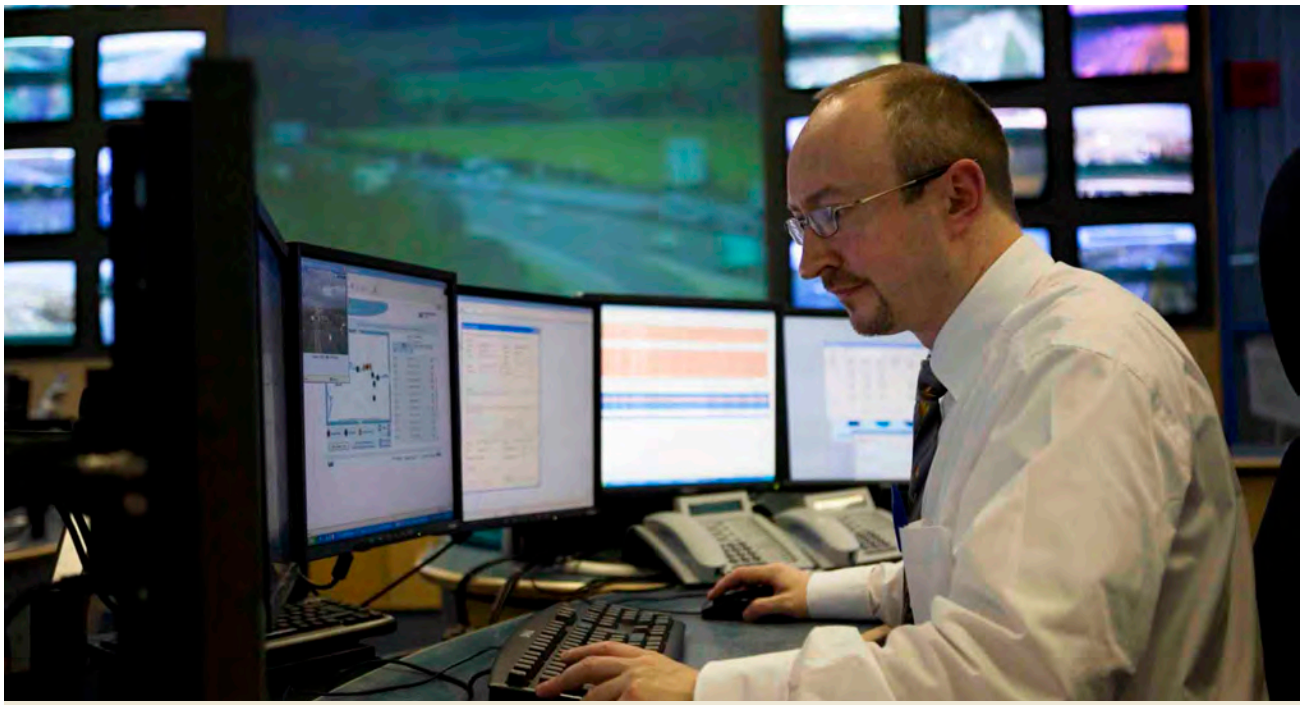
detectors, lights and computer driven controllers. Intersections are often equipped with cameras to identify operational issues and deploy emergency response vehicles more quickly.

The primary goal of traffic signal timing is to maintain the safe and efficient coordination of complementary and competing traffic demands at intersections. Traffic signal controllers manage traffic flow by distributing time to each movement at an intersection. Detectors provide the ability to sense vehicle, bicycle, and pedestrian demands at an intersection, which can enable much more efficient intersection operation than can be achieved with fixed or pre-timed sequences.

An essential element of traffic signal operation is the adjustment and modification of signal timing over time, as travel conditions change with times and seasons, as land use patterns evolve or simply in response to daily fluctuations in weather and commuter behavior (e.g. due to holidays, school schedules, etc.). There are several higher-volume corridors in Napa County where an investment in next-generation traffic control technologies would significantly improve operations. These include several in the City of Napa such as Jefferson Street and Lincoln Avenue and SR 29 through the City of American Canyon. Other possible candidates include SR 29 (Main Street) in St. Helena. The City of American Canyon and the City of Napa are currently working on upgrades and or laying the groundwork to make improvements when funding becomes available.

Changeable Message Signs

Changeable message signs are electronic signs that can give travelers information about events that affect driving conditions, such as traffic congestion and travel times to specific destinations. The signs warn of traffic congestion, accidents, or upcoming roadwork. Signs can be used to suggest alternative routes or speed reduction. Signs can provide current drive time estimates to various destinations further down the roadway. For example, a sign in the north bound lane of SR29 just north of SR 37 could display drive times to Napa and to locations up-valley and deter further congestion if drive times are too long.



Transportation System Management

Traffic Operations Centers

A Traffic Operations Center (TOC) is where the asphalt network meets the information superhighway. Traditionally, traffic engineers have used predictive methods of traffic control to manage traffic flow. A Traffic Operations Center facility is a command center that helps manage traffic flow as problems occur. By acting as a focal point for traffic information the TOC can permit engineers to more effectively use existing traffic management tools and provide a platform for the implementation of future technology advances in traffic management. Traffic engineers will be able to use this resource to gather current roadway condition information for decision making to improve overall traffic flow in the long term and possibly reduce congestion by suggesting alternate routes to drivers when incidents occur.

In a new TOC in Sacramento a high speed fiber optic data network brings video images of high volume traffic locations, law enforcement situation reports, and intersection telemetry all together in one location. Using this information engineers can adjust signal timing where appropriate and communicate with the traveling public via changeable message signs and roadway information radio transmitters. Drivers will have more current information about current route conditions and the roadway network itself will become more efficient under conditions of high demand. The City of Napa is currently investigating the potential for establishing a TOC.

Corridor Management

Several of the key roadways in Napa County are part of the State Highway system and are under the management of the California Department of Transportation. NCTPA has raised the issue of exploring a greater management role on key State highway corridors locally. However, there is a significant operational cost associated with this model, in addition to an initial capital investment. Corridor Management as practiced by Caltrans (the owner of the State Highway system), refers to the multi-jurisdictional management of a state highway corridor, with emphasis on operations and getting

the most of the existing infrastructure. It includes analyses of existing/future traffic conditions and assessments of performance measures within the corridor, and recommends operational improvements, Intelligent Transportation System (ITS) strategies, system expansion projects, and long-standing capacity improvement projects to preserve or improve performance measures within the corridor.

The State Highway system in Napa County consists of:

– SR29: the principal north-south artery running the full length of the county.

– SR 12: a principal east-west artery in the southern part of the county linking Napa to Sonoma and Solano counties and making connections to Interstate 80 and Highway 101.

– SR 121: major east-west corridor.

–SR 221: a short linking roadway connecting SR 12/29 at Soscol Junction to SR 121 at Imola Ave in the City of Napa.

– SR 128: a northern county east-west connection linking Sonoma County north of Calistoga to Solano County and Interstate 505.

Of these State roadways, the most likely candidates for a shift in management responsibility are segments of SR 29, SR 12, SR 121 and SR 221 because these highways carry the most significant portions of the county's daily traffic.

NCTPA staff in partnership with the County, Cities, and Town is exploring future corridor management options in consultation with Caltrans. Issues to be defined include how various management roles would be distributed and how costs would be allocated. Several other Congestion Management Agencies in the Bay Area have already assumed critical roles managing state facilities in their respective counties.

Some of the elements that have been deployed are:

– Changeable message signs.

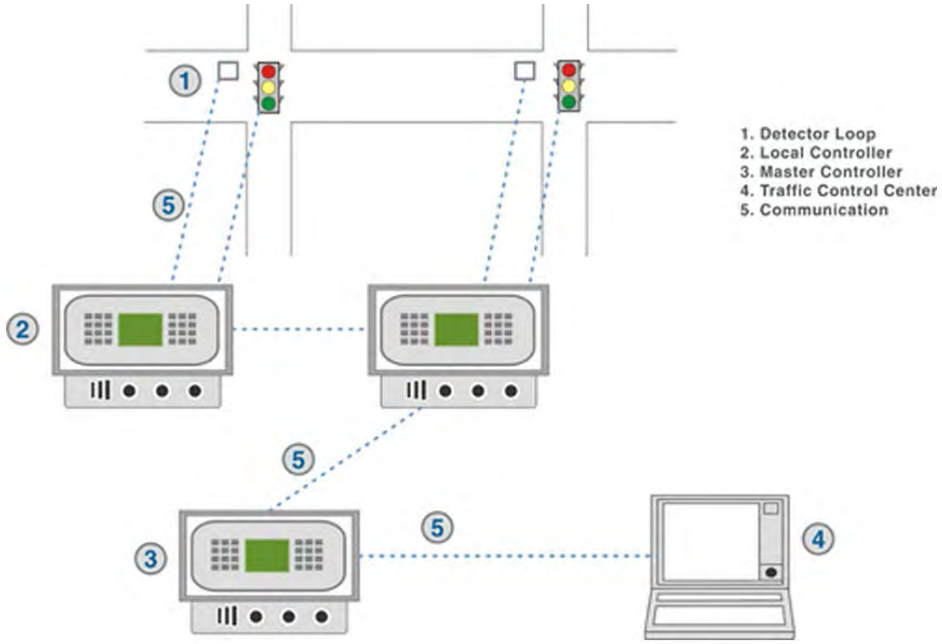
– HOV and HOT ("High Occupancy Toll") Express Lanes: Such configurations require at least three lanes to implement, so the potential for this in Napa County will be limited to the six-lane stretches of SR 29 south of the City of Napa, once the additional third lanes are added. This solution is likely to be one that will be examined at a later date.
– Traffic signal synchronizing or metering: these methods more evenly spread the traffic to eliminate or minimize bunching or back-ups. Signal synchronization links signals along a common corridor so that they work as a single system to more evenly spread the traffic. Likewise, metering lights accomplish similar outcomes by staggering vehicles to minimize bunching.

– Ramp metering: ramp metering would add signals along busy on-ramps to limit the number of vehicles merging onto a congested corridor. Given the number of ramps in Napa and their design, ramp metering may not be cost effective.

– Bus signal preemption: bus signal preemption requires equipping buses with signal preemption equipment so buses can improve on time performance making transit a more functional alternative to driving. If buses are running late, signals will remain green for a preset amount of time to aid the bus to get back on schedule. Faster, on/time, transit systems encourage greater transit ridership, which can reduce auto volume.

–Traffic Management Systems: Most highways now are equipped with cameras and other sensing devices that allow traffic to be monitored and reported through web-based programs, phones, applications and messaging signs. This allows traffic operation managers to notify drivers to avoid congested areas and utilize alternative, less congested routes. More importantly, it aids in

Figure 4.29 How a Signal System Works



Source: U.S. Department of Transportation

emergency response by locating and responding to accidents quickly.

– 511 implementation: 511.org is a phone and web source for real time Bay Area traffic, transit, rideshare, and bicycling information.

NCTPA recommends conducting a study to look at future corridor management elements that could improve system-wide traffic operations.

The study would evaluate existing traffic operations versus upgraded operations in relation to projected traffic and congestion over the next 25 years, evaluate costs associated with improvements — both operating and capital — and weigh the costs against the projected benefits. A key element to corridor management implementation is going to be defining the roles and responsibilities of NCTPA and each jurisdiction in managing a specific corridor.

A summary of possible scenarios for corridor operations management include:

1. "Advocacy Light" maintain status quo. NCTPA and its partnering agencies would maintain its advocacy position working with Caltrans to make operational improvements and maintenance.

2. "Advocacy Plus" step up advocacy to improve operations. NCTPA and its member agencies would plan for and advocate for various operational improvements such as 511.org implementation, changeable message signs, improved signal timing, and access to traffic information/cameras at various locations. Under this approach NCTPA and local partners would seek and commit funding towards that end. The City of American Canyon has already begun to do this along the SR 29 Corridor in American Canyon. American Canyon received a Transportation Fund for Clean Air (TFCA) grant to set up a Traffic Review Center in their city offices, which will allow them to review real time traffic patterns and then convey datasets to Caltrans so

Napa Riverfront Green Park at the corner of Third Street and Soscol Avenue

that timing plans can be adjusted if necessary. In addition, NCTPA has committed Federal Transit Administration funds to upgrade signal timing and add bus signal preemption to understand the efficacy of giving priorities to public transit vehicles to improve trip times.

3. "Assume Corridor Operations". NCTPA and its partnering agencies would assume full responsibility for corridor management, including installation and maintenance of equipment, data delivery and storage.

Under all three scenarios, Caltrans would retain responsibility for the safety and maintenance of the road.

Project Considerations Included in Vision 2040 for Improving Corridor Management Include:

– Traffic Operations Center in the City of Napa.

– Signal upgrades: various locations.

– Sidewalk and bicycle programs that separate pedestrians and cyclists from the roadway.

– Evaluation of corridor operations and management strategie.s

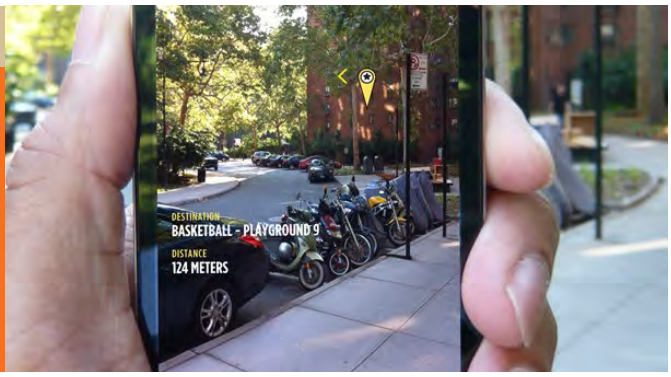
The Following Vision 2040 Goals Address Operations:

– Use taxpayer dollars efficiently.

– Support Napa County's economic vitality.

– Improve system safety in order to support all modes and serve all users.

4k. Emerging Technologies



Introduction

This section takes a look forward at some of the promising innovations on the horizon today, discusses their application to Napa's transportation systems, makes recommendations for monitoring and the study of certain technologies based on their current practicality. Many technologies are in use elsewhere but have not been widely adopted in Napa County, while other technologies are still in early development.

Emerging Trends in Transportation Infrastructure

Cold-in-Place Asphalt Recycling[1]

Cold In-place Recycling (CIR) is a technique currently in use in which existing materials are re-mixed in-place without the application of heat. The reclaimed asphalt pavement (RAP) material is obtained by milling, planing, or crushing the existing pavement. New materials are added to the RAP which is then laid and compacted. The use of cold in-place recycling can eliminate existing wheel ruts, restore the crown and cross slope, and eliminate potholes, irregularities and rough areas. It can also eliminate cracks. Some of the major reasons for the increased use of cold in-place recycling are the increased scarcity of materials, particularly gravel and crushed rock, the method's high production rate and potential for cost savings, minimum traffic disruption, and reduction of environmental concerns. Cold-in-place asphalt recycling also reduces GHG emissions related to repaving by equipment required to haul old asphalt, bring in new materials, and from the reduction in manufacturing of raw materials to produce new paving materials. In addition to CIR, RAP includes a second, and more commonly used method (partial depth) which includes using RAP as the base materials and then using a hot mix overlay or chip seal. In full depth recycling both asphalt and portions of the sub-base and base layers are re-used. In partial depth recycling, a portion of the asphalt (between 2 and 4 in) is used to produce a base course for generally low-to-medium traffic volume highways. Specifications for using reclaimed asphalt pavement (RAP) range from 10% to 50% depending on the state and most results are fair or better. AB 812, passed into law in 2012, allows Caltrans to use up to 40% of recycle materials and directs Caltrans to develop technical specifications for using recycled asphalt by 2016.

High Tech Asphalt

New developments in asphalt pavement could dramatically reduce fuel consumption, environmental pollution, and the frequency and cost of

Electric Charging Roads

maintenance. Asphalt pavement covers more than 90% of the roads in the United States because it is relatively inexpensive compared to other suitable materials such as concrete, and easy to install. But it has limited durability and lifespan and since asphalt is derived from fossil fuels, it is in limited supply.

One current area of asphalt research involves the use of nanomaterials. Nanomaterials are, in principle, materials of which a single unit is sized (in at least one dimension) between 1 and 1000 nanometers. There are about 25 million nanometers in an inch. A research group at Michigan Technological University is exploring the use of nanoclays, a nanomaterial, in asphalt pavement. Because of their unique structure, adding nanoclays to asphalt can significantly extend its useful life making it more durable, and has proven not to deform as much in hot weather and heavy traffic.

Nanoclays may also have a positive effect on fuel consumption because of the stiffening quality they lend to roadways. A research team from MIT has found that one of the issues with conventional asphalt is that it sags under the weight of vehicles (flexible pavement) and thus ordinary pavement deforms in such a way that a tire is always rolling uphill. The researchers showed that fuel consumption on roadways in the United States could be reduced by as much as 3% just by using stiffer pavements and that stiffer pavement could improve fuel efficiencies thereby reducing carbon dioxide emissions annually by as much as 46.5 million metric tons.[2]

Solar Roadways

Since 2009, the USDOT has awarded an $850,000 grant to the company, Solar Roadways to develop a concept and build a prototype road surface with embedded solar panels and underlying electronics. An independent fund raising campaign[3] has brought an additional $2.2 million to the project. The company has built a demonstration system with solar cells, LED lights, and built-in heating system.

The U.S. DOT, through the FHWA also helped test the arrays. Currently, the biggest unknown for solar roadways is safety and uncertainty about road traction. Another big unknown is the cost to construct and maintain these roadways and whether the cost

Google's Driverless Vehicle

would outweigh benefits. Durability and lifespan is also an issue and the performance of the solar cells themselves has not yet been verified.

Electric Charging Roads

Building out the electric car (and electric transit) infrastructure is expensive and slow going. Sufficient saturation of charging stations and the technology to recharge depleted car batteries efficiently may take years. Nevertheless, there is significant enthusiasm and significant progress is been made to improve batteries and expanding the EV changing station network.

Volvo is working with the Swedish Transport Association to turn a stretch of roadway in the city of Gothenburg into a rolling battery charger that would be used by specially equipped electric buses for recharging. The concept could someday help eliminate the range anxiety that electric vehicle owners suffer due to the limited capacity of today's batteries. Technology publications report that Volvo is planning to use a technology called inductive charging that can transfer energy directly from the grid to the battery of a vehicle while the vehicle is passing over that road.[4]

Induction Charging for Electric Buses

The California Air Resources Board (CARB) recently released a draft update to its Zero Emission Bus regulation that would require all public transit buses in California to be zero emission in 25 years. NCTPA fleet greening is a key priority. The agency has invested in the cleanest diesel vehicles available on the market. In addition, the agency has also purchased a limited number of compressed natural gas (CNG) vehicles but the CNG fuel supply in Napa is currently limited. NCTPA has also invested in gasoline-electric hybrid vehicles. Many newer technologies have not demonstrated an ability to perform at the levels of clean diesel and CNG fuel vehicles. Hydrogen fuel cell vehicles have shown promise but are 6 times the cost of a standard diesel vehicle, and maintenance costs are to replace fuel cells and batteries could be 10 times the cost of normal bus maintenance.

Some transit markets have been successful deploying all electric vehicles but battery technology remains a challenge. In order for electric buses to be viable in Napa, batteries will need to be able to have a longer charge and/or charging must be quicker. Several markets are testing induction charging, including Utah, Torino, Italy, Gumi, South Korea, Milton Keynes, UK, and certain areas in Germany. This involves installing charging plates in strategic locations on fixed routes. Charging occurs periodically during the day. In order to maintain charged batteries requires that the route be relatively saturated with such plates, which can be very expensive. There are also health concerns about strong electromagnetic fields.

Vehicle Technology

Vehicle to Vehicle Communications

Vehicle-to-Vehicle communication, or V2V, is being tested by automotive manufacturers like Ford as a way to help reduce the amount of accidents on the road. V2V works by using wireless signals to send information back and forth between cars about their location, speed and direction. The information is then communicated to the cars around it in order to provide

information on how to keep the vehicles safe distances from each other. At MIT, engineers are working on V2V algorithms that calculate information from cars to determine what the best evasive measure should be if another car started coming into its projected path. A study put out by the National Highway Traffic Safety Administration (NHTSA) in 2010 says that V2V has the potential to reduce 79% of target vehicle crashes on the road.[5]

In addition to V2V communication, vehicle-to-infrastructure communication, or V2I, is being tested as well. V2I would allow vehicles to communicate with road signs or traffic signals and provide information to the vehicle about safety issues. V2I could also request traffic information from a traffic management system and access the best possible routes. Reports by the NHTSA say that incorporating V2I into vehicles, along with V2V systems would reduce vehicle collisions by 81%.

Self-driving cars

There are several research teams and corporations investigating driverless automobiles. In theory, automobiles driving under computer guidance using computer aided sensing devices can react more quickly which in theory, greatly improves safety. This would allow vehicles to travel closer together and therefore more vehicles would be able to use the existing infrastructure minimizing the need for capacity enhancements. However, before this technology is widely used, considerable obstacles remain because the technologies being considered are not quite ready for market. Current systems are not able to park, cannot be used in snow or heavy rain, and and some subterranean obstacles, such as pot holes are not easily detectable.

Policies will need to be considered on how the technology will be deployed. Concern about the costs is also very real. Google currently puts a 2017 release date on their vehicles. Perhaps a more achievable interim solution will be “adaptive cruise control” offered now by some carmakers, which allows a vehicle to adaptively keep up with the flow of traffic. The aim of these technologies is to reduce congestion by adding more vehicles to the existing roadway and reducing collisions.

Cellphones and other electronic handheld devices allow transportation users to receive real-time information

Alternative Fuel Vehicles

See Vision 2040 White Paper on Transportation and the Environment for a more thorough discussion about alternative fuel vehicles.

Rideshare Technologies

Real-time ridesharing is a technology relying heavily on advanced smartphone capabilities that can arrange for shared rides on very short notice providing vastly increased flexibility over traditional carpool arrangements.

This type of carpooling generally makes use of several still-emerging technologies:

– GPS location and navigation that can determine a route and arrange the shared ride

– Smartphones with constant network connection for a traveler to request a ride from wherever they happen to be

– Ride matching and optimization algorithms

– Social networks to establish trust and accountability between drivers and passengers

– Network services to handle payments.

Like carpooling, real-time ridesharing is a way to optimize the use of the empty seats in most passenger cars — cutting into the "single occupancy vehicle" share of roadway use. Unlike traditional car/ride sharing, real-time ridesharing has recently been used more like a taxi service where drivers take on extra passengers. Some ridesharing programs are successful because the driver is paid significantly for the service — similar to traditional taxi service — but the model supports a more saturated market as opposed to limiting taxi markets through secondary medallion markets. Other ridesharing services have a pure carpooling approach and the passenger only pays the driver the federal mileage reimbursement rate. Ridesharing seems to be very compatible with transit. Transit riders are often the biggest rideshare advocates — it is an alternative to walking transit stations that may be just out of walking range and supports late night return service when many public transit systems are no longer running.

New technologies for public transit

Similar technology deployed by modern ridesharing is being used to deploy transit in several demonstrations around the country. These demonstration programs use "big data" (large and complex data sets) to analyze and deploy bus services. One experiment in Boston offers a transit service based on massive data analysis of traffic movements in the city, and matches origins and destinations with real time requests for service. In this model, areas of peak demand can be predicted on any given day and schedules can be adjusted on the fly and communicated directly to subscribers.

Vision 2040 Project Considerations Related to Emerging Technologies Include:

– Consider demonstration project for using big data to deploy on-demand bus service.

– Consider electric bus demonstration.

– Support emerging technologies in transportation.

– Road maintenance using cold in-place recycling technologies.

– Support technologies in ridesharing.

The Following Vision 2040 Goals Support Continued Exploration of Technology-based Transport Solutions

– Minimize the energy and other resources required to move people and goods.

– Use taxpayer dollars efficiently.

– Support Napa County's economic vitality.

4I. The Prospects for Rail Transportation in Napa County

Introduction

The future of transportation in Napa County is dominated by the inescapable fact that transportation needs will continue to grow steadily and the primary roadway capacity will remain constant. It is for that reason the Vision 2040 plan needs to derive a balance between opportunities to reduce the demand for transportation (using non-auto modes, staggering work/school trips, etc.) and expanding alternative modes. Recent interest by some members of the community suggests that NCTPA revisit passenger rail in Napa County.

NCTPA and Solano Transportation Authority completed a study in 2003 (Napa Solano Passenger/Freight Rail Study Final Report). The data used to understand passenger/freight prospects from that study was partially updated in the Solano Rail Facilities Plan Update in 2015. Existing rail lines run north/south between the cities of Vallejo and St. Helena (Northwestern Pacific Railroad (NWP) between Vallejo and downtown Napa and Napa Valley Railway (NVR) between downtown Napa to St. Helena). Another future possibility for passenger rail is a east/west connection along existing rail lines that run between Solano and Sonoma Counties (partially owned by SMART).

The 2003 Napa/Solano Passenger/Freight Rail Study

A 2003 study focused on passenger and freight service between Suisun/Fairfield, Vallejo, Napa Junction and the City of Napa/St. Helena, examining all elements of a comprehensive new-start public rail transportation plan including route and equipment selection, station characteristics, capital and operating costs, freight and passenger operations on shared track and environmental aspects.[1] Daily commuters were estimated at 2,000 and highly directional with an 80/20 split indicating that very few people would reverse commute. Visitor ridership was estimated at 139,000 annual trips, significantly below the Napa Valley Wine Train 400,000 passenger draw each year — some of which are local residents. This study concluded that start-up costs for such a system would be $216 million and would require an annual operating subsidy of between $3.6 and $5.9 million.

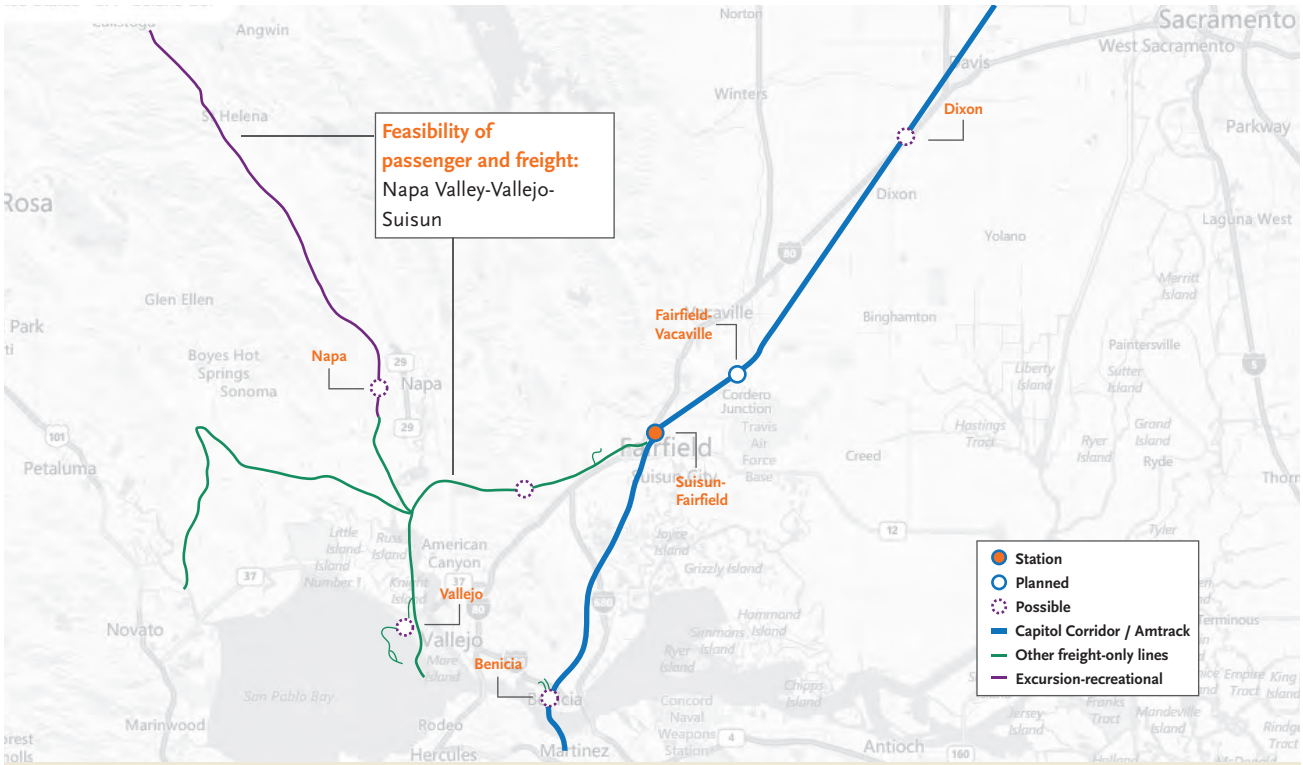


Figure 4.30 Rail Route Connections Study

Source: Solano Rail Facilities Plan Update, 2015

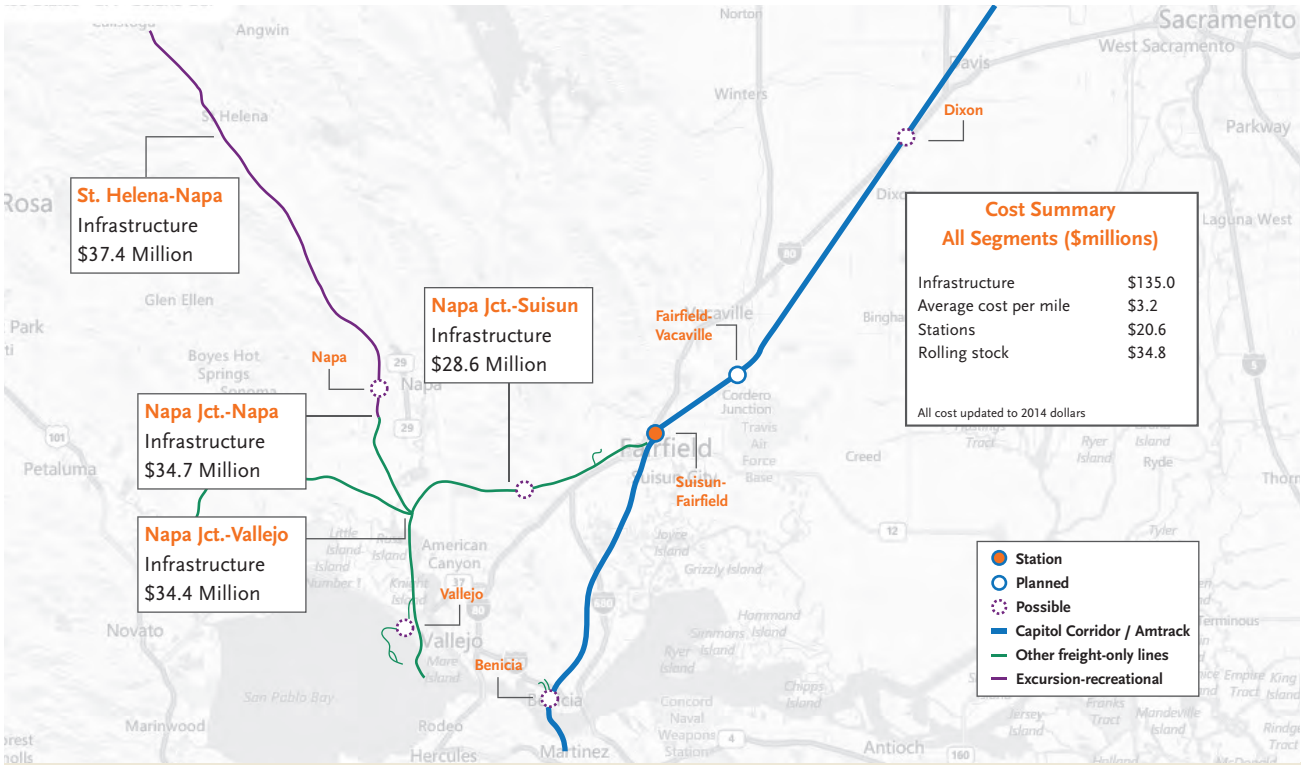


Figure 4.31 Napa-Solano Rail Costs

Source: Solano Rail Facilities Plan Update, 2015

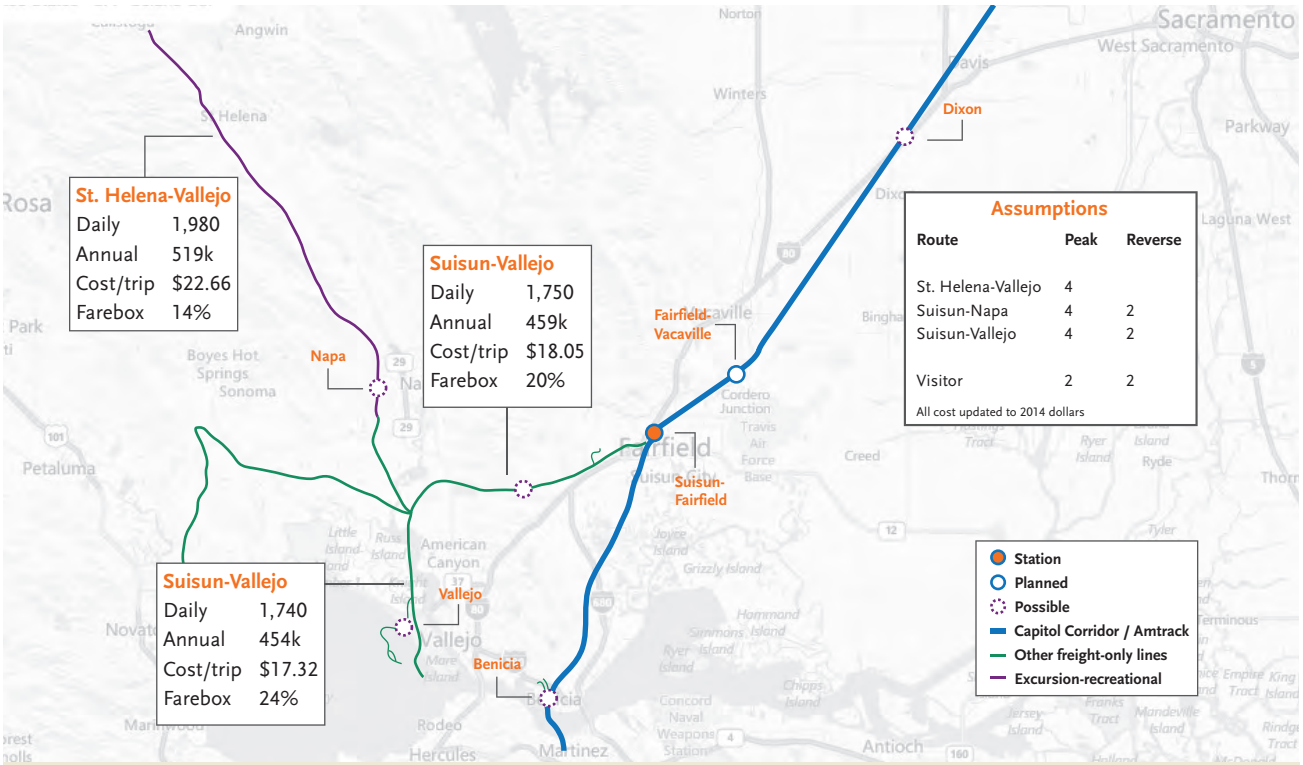


Figure 4.32 Commute Ridership / Cost per trip

Source: Solano Rail Facilities Plan Update, 2015

The 2015 Solano Rail Facilities Plan Update

The 2015 study updated population and employment growth which is just bare 5% since the 2003 study. However, land use development and anticipated expansion of wineries and the hospitality industry suggests that employment will grow faster in coming years. Further, the study notes that the Napa Pipe Development will add another 2,100 or so residents but this will only result in less than 250 daily boardings. The report further documents that the Napa Valley Wine Train trips exceeds the daily forecast in the 2003 report. It further acknowledges that residential growth in Napa County is still very limited. The study therefore concludes that the 2003 data is still valid.

The Future of Rail

Since the time of the 2003 study, the Sonoma Marin Area Rapid Transit (SMART) was created and the Bay Area Rapid Transit's contract to manage the Capitol Corridor Amtrak between San Jose and Sacramento has been extended three times due to its great success. Yet, connecting Napa to Solano and Sonoma counties via these two parallel north/south lines has not been studied.

The north south connection between Vallejo and St. Helena (Calistoga) given the potential employment, residential, and visitor growth for both passenger and freight traffic could significantly reduce congestion and offers another potential for further study.

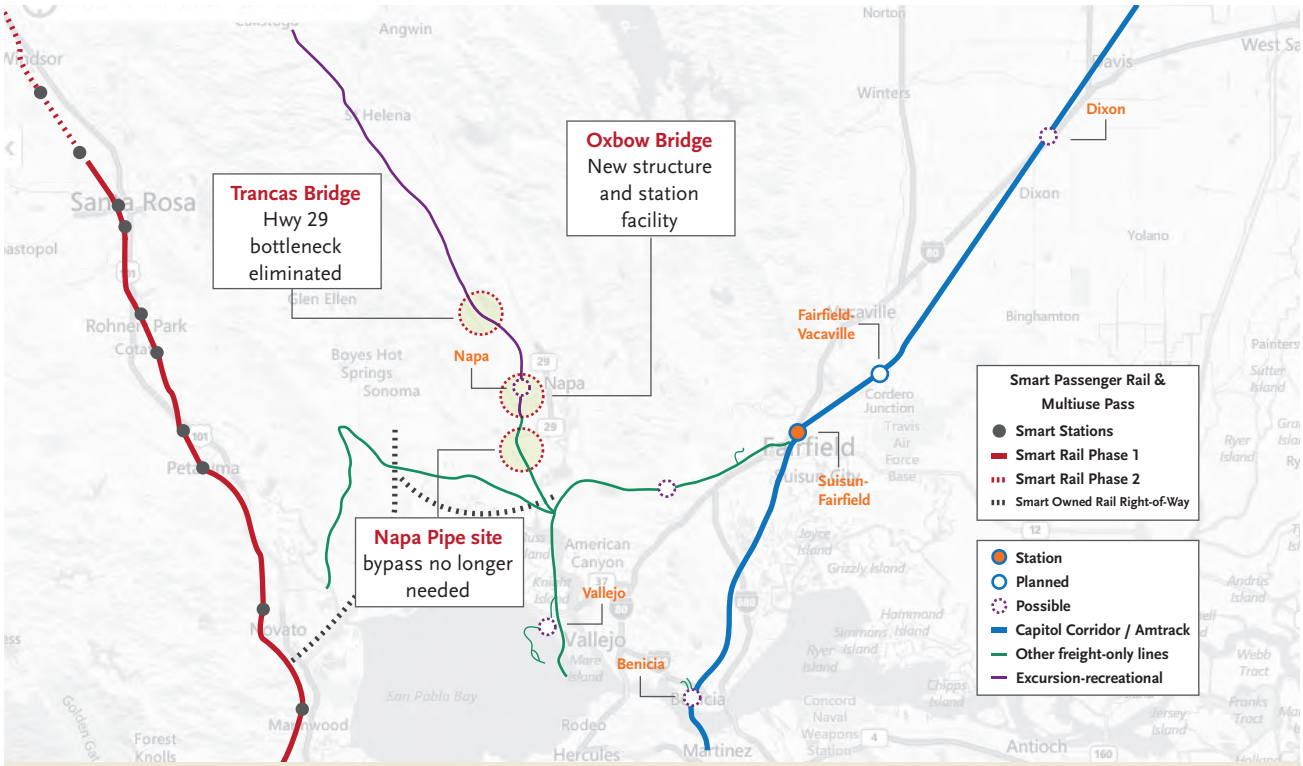


Figure 4.33 Major Napa Rail Infrastructure Changes (since 2002)

Source: Solano Rail Facilities Plan Update, 2015

The Following Vision 2040 Project Consideration Relateds to Investigation of the Potential for Rail:

– Travel demand management.

These Vision 2040 Goals Support Continued Investigation of Rail

– Minimize the energy and other resources required to move people and goods.

– Support Napa County's economic vitality.

(THIS PAGE INTENTIONALLY LEFT BLANK)

Pedestrians on the First Street Bridge in the City of Napa

5. Investment Plan

Overview

The purpose of the investment plan is to summarize the efforts and policy considerations involved to identify transportation infrastructure priorities in the County over the next 25 years. Projects submitted by jurisdictions were assessed in context of the Board adopted goals. Project submittals were also evaluated based upon total revenues and the types of revenues or "color of funds" available and discretionary revenues that are expected to become available within the 25 year time frame.

An evaluation of the project submittals also informed which alternative revenues should be pursued. A number of other issues were considered when evaluating projects, including traffic congestion relief, and weighing community and regional interests. The plan also discusses balancing maintenance needs with capacity and expansion needs.

Goals: Assessing Projects in Context of Goals

The Board established 6 goals for prioritizing investments in the Vision 2040 Plan. These goals are reiterated below:

– Serve the transportation needs of the entire community regardless of age, income or ability.

– Improve system safety in order to support all modes and serve all users. [safety]

– Use taxpayer dollars efficiently.

– Support Napa County's economic vitality.

– Minimize the energy and other resources required to move people and goods.

– Prioritize the maintenance and rehabilitation of the existing system.

The Board further noted that the goals were equally important.

Projects were evaluated based on a series of objectives (performance measures) developed with the NCTPA member jurisdictions. A complete list of objectives can be found in Chapter 3. Between two and six objectives for each goal were established. A more finite list of definitions was established to define each objective and to ensure that all projects would be fairly assessed. This was particularly important in light of the Board's directive to weigh all goals equally. Therefore, it should be emphasized that project evaluations reflect no priority but rather reflect how many of the goals were met by a particular project.

In general, projects that addressed a number of goals and objectives are largely expansion projects that often supported more than one mode. As an example, expanding SR 29 in American Canyon from four to six lanes met a number of goals and objectives because the project includes bicycle, pedestrian and automobile capacity improvements. The project improves system safety, addresses infrastructure needs for many members of the community, and supports the economic vitality of Napa County. Expanding transit infrastructure also met a number of goals and objectives for similar reasons. The City of Napa's Imola Improvements and the County of Napa's Devlin Road Extension projects met most goals and objectives due to their multi-modal nature, and because the projects addressed transportation needs for all members of the community and are expected to contribute to the County's economic vitality.

Projects meeting fewer objectives should not be considered having a lesser value to the community. Projects meeting fewer goals are often critically important to the community because these projects replace existing infrastructure such as NCTPA's Soscol Junction project and City of Napa's Main Street Sidewalk Expansion.

Projects have been defined in the plan as having distinct start and stop dates with a cost greater than $250,000 for larger jurisdictions or $100,000 for small jurisdictions. The unconstrained list of projects are projects deemed important to the community in the next 25 years but are not a priority for this RTP period due to limited funding; however, if revenues become available, these projects will become higher priorities. Only projects on the constrained list — those projects prioritized for submittal in the Regional Transportation Plan — were evaluated.

"Programs" have been defined as those that require a continuous infusion of capital over the 25 year period and have no specific start and stop dates. The six programs that were defined for the jurisdictions include: Local Streets & Road maintenance; Local Streets and Roads Enhancements, Bridge/Culvert Maintenance and Rehabilitation, Intelligent Transportation Systems (ITS), Bicycle Network Maintenance and Rehabilitation; and Pedestrian Network Maintenance and Rehabilitation. The City of Napa also included upgrading railroad crossings. The VINE programs include operations; preventive maintenance; Shelter and Stop upgrades and Replacement (bus replacements, etc.).

Serve the transportation needs of the entire community regardless of age, income or ability.

In order to equitably serve all members of the community, NCTPA completed an extensive outreach effort. This effort included holding meetings in every jurisdiction. NCTPA focused its effort on a number of groups to ensure it had heard from all members of the community. These groups included schools, organizations that serve Spanish speakers, organizations that serve the disabled communities, organizations that serve seniors, civic groups, various non-profit organizations, and business groups.

There was a general consensus from many participants that improved pedestrian and bicycle access was desired. Additional comments from the public suggested that the transit system operate more frequently and have later hours. Other comments received recommended improvements to roadway conditions and/or provided various suggestions to reduce congestion.

In addition to the broad outreach efforts, NCTPA analyzed Napa's changing demographics and

evaluated trends around the country. Results from that analysis concluded that seniors are the fastest growing group in Napa; and many seniors do not or cannot drive. The analysis also noted that Napa County will continue to create new jobs but many of these jobs will be low wage. The analysis also showed that housing will be insufficient to house new and lower income workers due to both supply and relative housing costs to the jobs being created. The cost of commuting in general is expensive. Creating alternate modes to address commute needs such as van pooling and transit will be essential to support Napa County's workforce, particularly its low income workers. Recent trends show that younger generations are interested in using non-auto modes for their mobility and contributing to the growing demand for transit.

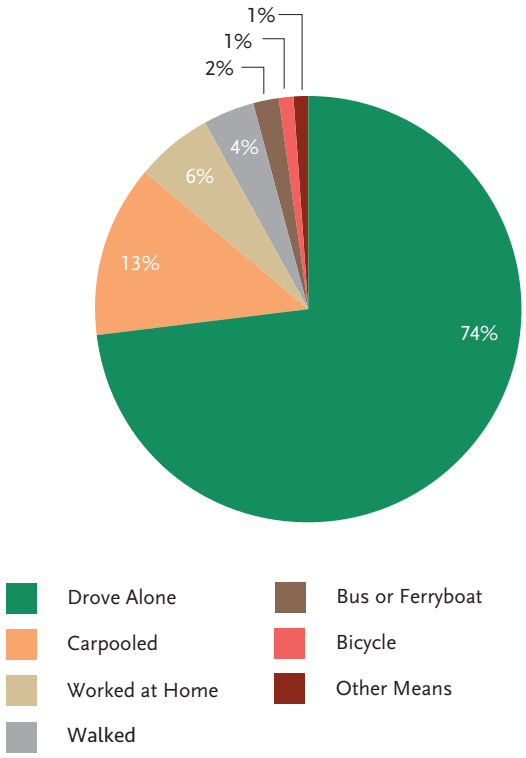
Figure 5.1 shows commute modes currently used by County residents, based on the most recent American Community Survey (U.S. Census) data. It should be noted that the data does not reflect all trips completed by members of the community during the course of a week – only commute trips. In fact, only roughly 20% of total trips are commute trips. Commute trips tend to be longer than non-commute trips but the mode used to commute is a good indicator of the population's general mode preference.

Figure 5.2 reflects the percentage by costs of project submittals and indicates that projects that address non-auto modes are significantly higher in relationship to Napa's current commute behavior. This shows an effort to respond to community demand and also address AB 32 and SB 375 requirements to reduce greenhouse gas emissions.

Improve system safety in order to support all modes and serve all users.

A number of projects included in the plan will greatly improve the safety of the system. The segregation of bicyclists and pedestrians from traffic is a key theme for projects overall as is adequate maintenance of road and transit assets. The widening of SR 29 in American Canyon improves overall level of service on the highway and includes separated bike and

Figure 5.1 Napa County Residents Commute Mode from 2006-2010 American Community Survey



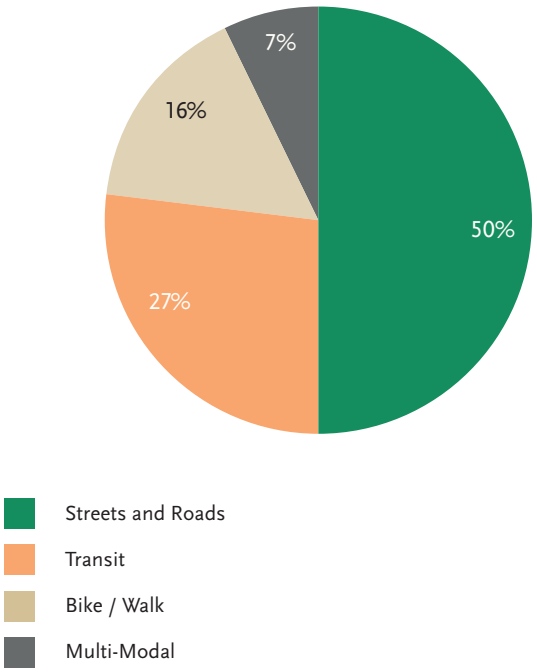
pedestrian facilities which will significantly improve safety for all highway users. Reduced speeds on the corridor will also reduce accidents and significantly reduce the impacts of auto accidents on congestion. The completion of the Vine Trail from the Vallejo Ferry Terminal to Calistoga will also keep automobiles traveling at high speeds away from bicyclists and pedestrians.

There are a number of projects that would upgrade corridor and intersection operations that are imperative for improving pedestrian crossings and reducing automobile accidents.

Use Taxpayer Dollars Efficiently

Preparing a benefit-cost analysis on transportation projects is an essential first step to prioritizing projects. It means weighing the costs of a project against its benefits. A number of factors are considered in

Figure 5.2 Proposed project and program submittals by mode



evaluating the efficacy of a project. These include needed capacity and operation improvements, reducing vehicles miles traveled, emission reductions, improved safety and health factors, and reduced maintenance costs. A primary consideration is linking the benefits of a project to the economy and more specifically to the creation of jobs. This will be discussed in greater detail under the section titled "Support Napa's Economic Vitality."

Bike, pedestrian, and transit projects are often assessed based on the number of anticipated users. As part of the SR 29 Gateway Study, NCTPA considered a number of projects, including adding a Bus Rapid Transit System (BRT) along SR 29 but the analysis showed that the number of riders would not support the investment. A full BRT system with dedicated bus lanes can cost over $55 million per mile. Instead, NCTPA is prioritizing Rapid Bus (RB) — a BRT light. This will include bus signal pre-emption and passenger amenities to improve boarding and alighting times and other investments to enhance passenger experience. Capital investments required for these improvements can be accomplished for less than $500,000 a mile. These improvements are expected to significantly increase bus frequencies and encourage new riders.

Evaluating the cost effectiveness of roads is complicated. In general, considerations need to be made about the number of users and overall performance including reduced congestion/emissions and improved safety. Consequently, road and highway projects that reduce congestion, harmful emissions and improve safety, and can accomplish this through nominal investments are key objectives for the projects included in the plan.

Support Napa County's economic vitality

There are two key objectives for evaluating transportation investments in the context of economic vitality — jobs and freight movement. Congestion and insufficient commute options undermine the County's ability to sustain its robust economy. Building capacity along the most traveled areas on SR 29 and SR 221 will not only improve freight movement, it will reduce congestion and reduce drive times. Alternative commute modes, such as transit, van and car pools, and even bicyclists, reduce the number of highway users and therefore also reduce congestion which also supports economic vitality.

Minimize the energy and other resources required to move people and goods.

Projects that reduce energy consumption include expansion and enhancements to the transit system, including expanded hours and rapid bus service on two corridors. The proposed expansion to the system reduces reliance on automobiles. The plan also includes investments in an alternative fueling (compressed natural gas) station and an electric bus demonstration project.

The plan proposes to expand the electric car infrastructure and expand the park and ride network to encourage ridesharing and transit use. Finally, there are a number of "active transporation" investments

to expand the bicycle and pedestrian network, including Class 1 (physically protected path) facilities to encourage using alternative modes of transportation.

Prioritize the maintenance and rehabilitation of the existing system.

There is a significant cost associated with maintaining the County's existing transportation infrastructure but costs are compounded if maintenance is ignored. Not maintaining infrastructure adds to costs over time, left unchecked, can also erode an agency's ability to operate effectively.

The cost of operating a transit system is significant but costs associated with poor maintenance practices can have a devastating effect on operating costs. Poorly maintained vehicles break down more frequently; causing system performance and reliability issues which diminish operating revenues and discourage riders. Moreover, buses that are poorly maintained are generally retired prematurely adding additional, and generally, unnecessary capital costs. Effectively maintaining buses can add years to the average lifetime expectancy of a bus and over time reduce operating costs making the system perform more effectively and efficiently.

The same is true for road infrastructure. The cost of rehabilitating a poorly maintained road can cost as much as fourteen times more than a road that has been well-maintained according to the Association of American Highway and Transportation Officials (AASHTO).

NCTPA partner jurisdictions included six to seven program categories that prioritize the maintenance of the existing system — including road and bridge/culvert maintenance, and bike and pedestrian facility rehabilitation. The Transit maintenance program entails preventive maintenance (maintenance of vehicles and buildings) and vehicle replacement among other programs to ensure the effectiveness of the system over the next 25 years.

System Performance

Most, if not all, of the projects on the constrained project list reduce emissions. Projects that reduce congestion can also contribute to reduced emissions. There are a number of factors that determine how successful a project is at reducing emissions. Corridor speeds, starts and stops, and even the condition of the roadway all play a role in emission levels. The optimum project is a corridor that operates at moderate speeds with minimal stops and starts. Speed reductions are being considered in conjunction with the SR 29 Widening Project in American Canyon. Since road capacity is being added to reduce congestion, it will be a priority to increase vehicle per hour capacity instead of speed, especially along stretches of the American Canyon Priority Development Area (PDA), where local access is desired. As discussed in NCTPA's State Route 29 Gateway Corridor Improvement Plan.

Encouraging alternative modes potentially garners the most emission savings but it also requires people to change their behavior. In Napa, 74% of the population are drive alone commuters. As discussed in the Travel Demand discussion (Section 4e), travel demand management employs innovative and cost-effective ways to encourage and incentivize travel behavior changes. Behavior change can be incentivized by reducing transit and carpool costs, by increasing transit operations, by discouraging auto use through parking and toll fees. There are a number of transit and active transportation investments proposed over the 25-year period of the plan that supplement the current limited framework for alternative modes and afford opportunities to develop policies to improve Napa's commute score card.

Revenue estimates

Committed Revenues

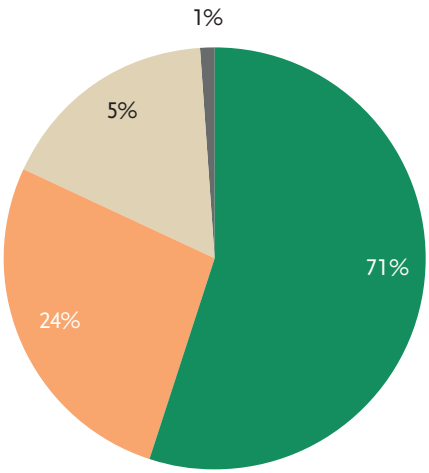
Committed revenues consisting of federal, state, and local revenues are generally formula programs or local tax programs such as Measure T and gas taxes.

Table 5.1 summarizes programs and related revenues. A more detailed list of revenues is included in Appendix E.

Table 5.1 Committed Revenues (in 1,000s) 2015-2040

Source	Revenue	Estimated Amount (in 1,000s)
	Highway, Local Streets & Roads, Bike/Ped Funds	
Federal	STP/CMAQ (Jurisdictions)	47,512
State	TDA Article 3 Bike/Pedestrian (TDA 3)	4,121
	Regional Improvement Program (RTIP)	75,405
	Gas Tax Subvention	90,662
	AB105 (Gas Tax Swap) Streets and Roads Funding	115,175
	Transportation for Clean Air (TFCA)	4,862
Local	Measure T (FY2018-19 to FY2039-40)	349,172
	Other Local Funds	100,438
Transportation Total, Excluding Transit		**$787,347**
	Transit Funds	
Federal	FTA Transit Funds Operating	$54,043
	FTA Transit Funds Capital	$4,914
State	State Transit Assistance (STA Transit Funds)	28,264
	Transportation Development Act Transit (TDA4)	159,912
	Low Carbon Transit Operating Program	3,279
Local	Fares	36,079
Transit Total		**$286,491**

Figure 5.3 Shows Committed Revenues by Mode (in 1,000s)



- Streets and Roads ($730,852)
- Transit ($250,413)
- Multi-Modal ($52,374)
- Bike / Walk ($4,121) 0%

Supervisor Wagenknecht at the Vine Trail Oak Knoll Segment Groundbreaking Ceremony

Roughly 7% of the committed revenues summarized in Table 5.1 can be used for multi-modal projects. Figure 5.3 above reflects revenues.

Discretionary Revenues

Projected discretionary revenues are competitive grant programs reasonably expected based on historical awards and funding trends. Table 5.2 summarizes programs and related revenues. Revenues have been categorized into different types of discretionary funds: competitive, formula based (pre-determined), Caltrans discretionary, regional/local fees.

Table 5.2 Projected Discretionary Revenues (in 1,000s) 2015-2040

Source	Eligibility Project Type	Estimated Amount
Competitive		
Active Transportation Program (ATP)	Bicycle and Pedestrian	$30,000
Transit & Intercity Rail Program (TIRCP)	Transit	1,590
5311f (New Projects)	Transit	1,500
FTA Small Starts	Transit	7,002
TIGER for SR29	Highway	87,250
CARB Emerging Technologies	Multi-Modal	3,750
TFCA Regional	Multi-Modal	3,960
FTA Section 5310	Transit	1,250
California CEC Solar	Multi-Modal	250
Affordable Housing/ SCS	Multi-Modal	9,765
Regional Measure 3 (RM3) Capital	Multi-Modal	2,500
Low Carbon Bus Program (Calstart)	Transit	1,000
Formula		
Regional Measure 3 (RM3) Operating	Multi-Modal	10,250
Lifeline Transportation Program	Multi-Modal	6,900
SR 37 Bridge Tolls (Potential)	Multi-Modal	16,872
Caltrans Discretionary		
ITIP for SR 29	Highway	37,500
SHOPP	Highway	32,900
Federal Highway Bridge Program	Bridge	5,000
Local Fees		
Parking fees	Road	1,150
Total		**$260,389**

Blue Print Revenues

Blue print revenues are potential new revenues that could be considered in the future. These would be generated and administered locally and could be utilized for multiple modes. An example of potential "Blue Print" revenues is included in Table 5.3 Investment Blue Print.

In consideration of new ways to generate funding for transportation projects and programs in the future, local elected officials and transportation planners will need to further analyze the Blue Print Revenues outlined in this Plan.

Table 5.3 Blue Print Revenues (in 1,000s) 2015-2040

Fund Source	Eligibility Project Type	Description	Total
Transportation Sales Tax (1/2 Cents)	To be determined	Sales tax for transportation purposes that are laid out per an Expenditure Plan that is approved by the cities/county in which the tax will be levied	$319,000
Vehicle Registration Fee	Multi-modal	Fee levied by Countywide Transportation Planning Agencies of up to $10 per vehicle. Requires a majority vote ballot measure. Revenue must be spent on specified transportation programs and project (Expenditure Plan) that bear a relationship or benefit to the owners of the motor vehicles paying the fee. Goals for the use of the VRF are reducing congestion and vehicle related pollution.	40,000
Bike Facilities Vehicle Registration Fee	Bicycle	Fee levied by Countywide Transportation Planning Agencies of up to $5 per vehicle. Requires a 2/3 vote ballot measure. Revenue must be spent on construction and/or maintanance of bike trails and paths.	20,000
Parcel Tax	Multi-modal	Fee levied by city, county or special district that is assessed based on the characteristics of the parcel rather than assessed value. Can include both residential and commercial parcels.	56,750
Total			**$435,750**

Balancing Interests and Needs

Project/Program Total

Table 5.4 shows summary data by jurisdiction for the constrained project list, unconstrained project list, and programs.

Table 5.4 Total Project/Program Submittals

Jurisdiction	Constrained Project List Total	Unconstrained Project List Total	Program Total	Total Request
American Canyon	$67,564,572	$99,508,791	$65,140,000	$232,213,363
Calistoga	$1,400,000	$18,253,000	$30,105,000	$49,758,000
City of Napa	$66,703,000	$95,100,000	$384,000,000	$545,803,000
Napa County	$32,968,000	$3,300,000	$289,660,000	$325,928,000
St. Helena	$9,746,722	$22,000,000	$26,955,473	$58,702,195
Yountville	$8,100,000	$22,500,000	$8,380,000	$38,980,00
NCTPA	$241,777,096	$144,549,360	$267,938,400	$654,264,856
Total	**$428,259,390**	**$405,211,151**	**$1,072,178,873**	**$1,905,649,414**

Table 5.5 shows the total projects (both committed and uncommitted) and program requests for all jurisdictions, NCTPA (including the VINE Bus System).

Table 5.5 Total Project and Program Requests (in 1,000s)

Project and Program by Mode	Total
Bike/Ped	$312,947
Multi-modal	$132,409
Transit	$508,465
Streets & Roads	$951,828
Total	**$1,905,649**

Table 5.6 shows all program requests by mode.

Table 5.6 Total Program Requests by Mode (in 1,000s)

Program Mode	Request
Bike/Ped	$241,625
Multi-modal	---
Transit	$267,93
Streets & Roads	$562,615
Total	**$1,072,178**

Table 5.7 shows total constrained projects by mode.

Table 5.7 Total Constrained Projects by Mode (in 1,000s)

Project Mode	Request
Bike/Ped	$21,323
Multi-modal	$43,409
Transit	$176,777
Streets & Roads	$186,751
Total	**$428,259**

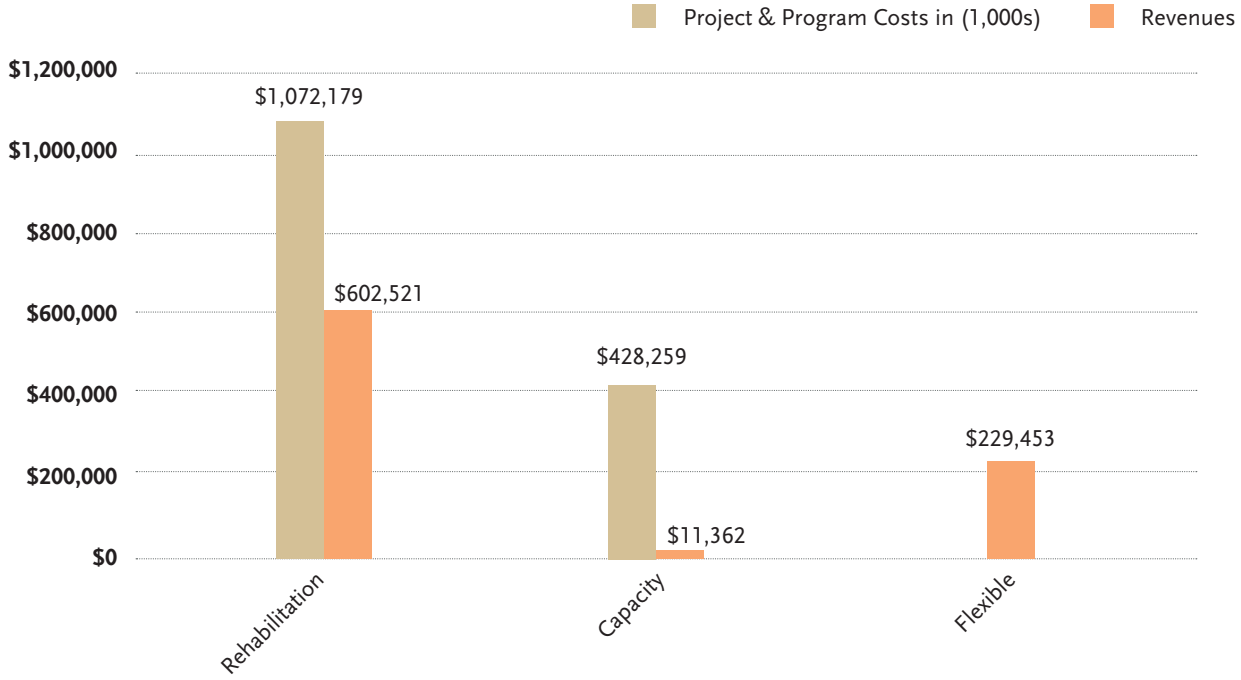
Balancing Regional/State Interests with Local Needs

Regional agencies have been tasked to meet AB 32 and SB 375 requirements. AB 32 requires the reduction of greenhouse gas levels (GHGs) to 1990 levels by 2020. To support this effort, SB 375 requires that regional planning agencies include a Sustainable Community Strategies (SCS) in their planning efforts to meet state established emission targets. The Metropolitan Transportation Commission (MTC) and Association of Bay Area Government's (ABAG) SCS, One Bay Area Plan, in part met its SB 375 requirement by concentrating transportation revenues in Priority Development Areas (PDAs). Napa County has only two PDAs: one in the City of Napa and one in American Canyon. The SCS analysis also recognizes that to meet the GHG targets, housing and jobs need to be more closely balanced. To incentivize corresponding land use development changes, the amount of highway funding a County receives is based on housing allocations and production. This has significantly reduced the amount of revenues that the County received in the last regional transportation plan and this is not expected to change in the current plan. The associated MTC/ABAG policies also put additional restrictions on how the funds can be spent.

What local jurisdictions need and want is often in conflict with the State and Regional policies exacerbating local funding shortfalls and putting greater onus on local governments to shoulder a greater share of the infrastructure costs. This is particularly problematic in Napa because its bucolic setting and burgeoning wine and hospitality industries draw significant visitors and revenues to the region, putting a disproportionate burden on local infrastructure without providing the revenues to maintain or enhance it.

Over the last few funding cycles, transportation infrastructure funding provided by federal, state, and regional agencies has dwindled. Local funding is not sufficient to bridge the gap of the growing infrastructure funding shortfall. The Revenue Blueprint provides ideas on how local funds could be raised address this.

Figure 5.4 Total Constrained Project and Program Costs for Bike and Pedestrian and Local Street and Road Needs Compared Total Eligible Revenues (in 1,000s)



Balancing Maintenance and Expansion Needs

The total committed revenues available — those revenues we can reasonably expect to receive over the 25 year period — are insufficient to fund all of the infrastructure needs. One of the most significant questions that the NCTPA Board must contend with is whether key capacity projects need to be delayed or not constructed or how much maintenance should be deferred if discretionary and blue print revenues are not realized over the 25 year period.

Some of the revenues, such as RTIP and General Fund revenues can be spent on either rehabilitation or capacity increasing projects. Federal STP/CMAQ funds can be used to increase capacity but under regional programs overseen by the Metropolitan Transportation Commission these funds must be used on projects focused on maintenance/ rehabilitation or for planning purposes. Roughly 27% of the revenues are flexible and can be spent on capacity or maintenance projects. The limited availability of funds for capacity expansion presents a challenge, particularly because it may force NCTPA and its member jurisdictions to defer maintenance and deferring maintenance leads to higher costs in the long run.

Anticipated discretionary revenues will support primarily capacity projects, but there are also state efforts underway to raise revenues for maintenance needs. However, given that neither of these revenue sources are committed, additional concepts about project priorities must be considered.

Options for Addressing Revenue Shortfall

Use General Fund Revenues for Rehabilitation and Traffic Mitigation (Developer Fees) for Expansion/Capacity

Included in the flexible revenue source are the anticipated general fund and developer fee revenues that the jurisdictions have estimated that can be expected over the next 25 years. Not all jurisdictions can rely on their general funds to be used on transportation projects since there are other competing needs for general fund dollars. Developer fees have limitations as well because they can only be used on projects identified in a fee impact study. This limits transportation improvements to those that are impacted by a specific development.

Apportion all Flexible Revenues to Capacity Projects

There are significant State efforts underway that would raise revenues. These efforts are focused on rehabilitation and maintenance needs.

Apportion all Flexible Revenues to Maintenance Projects

Most of the discretionary revenues available will be to fund new, capacity increasing projects.

Next Steps

It is clear that Napa County and its jurisdictions have a strong need for both maintenance and expansion of local infrastructure. Because the future is uncertain, the best proposal will be to balance how funds are apportioned to maintenance and expansion needs. Local elected officials and transportation experts will also need to further analyze the Blue Print Revenues as potential fund generating sources for needed improvements.

In the near term, there are travel demand management strategies that are relatively low cost projects which are easy to implement that could reduce congestion and strain on local infrastructure by encouraging alternative modes such as transit and active transportation.

Introduction

1 U.S. Census Bureau, 2010-2012 American Community Survey.

3

1 U.S. Census Bureau, 2010-2012 American Community Survey.
2 MTC requires that jurisdictions adopt a complete streets policy and update their general plans to be consistent with the Complete Streets Act of 2008 in order to receive funding after FY 2015-16 OBAG programming cycle.
3 Based on Plan Bay Area target. http://onebayarea.org/plan-bay-area/targets.html, accessed on 2/10/14. Compared to 2008 mode share.
4 SB 375 requires California's 18 metro areas to integrate transportation, land-use and housing as part of an SCS to reduce greenhouse gas emissions from cars and light-duty trucks. Source: http://onebayarea.org/about/faq.html, accessed on 2/21/14.

4a

1 Napa County http://www.countyofnapa.org/Pages/Search.aspx?keywords=Measure%20J
2 Napa County General Plan Recreation and Open Space
3 ABAG Projections 2013
4 American Communities Survey five year estimate (2008-2012)
5 San Francisco Bay Area Vehicle Miles of Travel (VMT) at http://www.mtc.ca.gov/maps_and_data/datamart/stats/vmt.htm
6 Napa County Travel Behavior Study
7 CTPP American Communities Survey 2006-2010
8 Napa's Transportation Future 2009
9 Napa County Affordable Housing Multi-Year Action Plan May 2013
10 Napa County Affordable Housing Multi-Year Action Plan May 2013
11 ABAG Projections 2013
12 County/City of Napa – Affordable Housing Multi-Year Action Plan
13 smartgrowthamerica.org

4b

1 Information in this section is derived from the The Economic Impact of Napa County's Wine and Grapes, Prepared for the Napa Valley Vintners (November 2012) - http://www.napavintners.com/community/docs/napa_economic_impact_2012.pdf
2 Napa Metropolitan Statistical Area Employment data for October 2014 from the California Employment Development Department, Labor Market Information Division - http://www.calmis.ca.gov/file/lfmonth/napa$pds.pdf
3 "A Story in Every Bottle" – Napa Valley Vintners - http://www.napavintners.com/press/docs/nvv_press_kit_2013.pdf
4 Information in this section is derived from the "Napa Valley Visitor Industry 2012 Economic Impact Report" - http://www.visitnapavalley.com/library.cfm?id=61
5 http://www.visitnapavalley.com/library.cfm?id=61
6 visitnapavalley.com
7 "Global Trends 2030: Alternative Worlds" by the National Intelligence Council - http://www.dni.gov/index.php/about/organization/national-intelligence-council-global-trends
8 Congressional Budget Office: "The Budget and Economic Outlook 2013-2024" http://www.cbo.gov/publication/45010
9 "The North Bay Economy 2014: Continued Growth, Needs" http://www.northbaybusinessjournal.com/wp-content/uploads/Robert-Eyler-2014-SSU-Economic-Outlook-Conference.pdf
10 Leading economic indicators include unemployment data, consumption of goods, housing starts, interest rate on treasury notes, inflation, stock market activity.
11 Self Sufficiency Standard for California http://www.insightcced.org/communities/besa/besa-ca/calculator.html
12 "Industry and Occupational Employment Projections: A supplement to the occupational outlook report for the North Bay Counties 2014" - http://www.napaworkforce.org/Portals/3/Downloads/report/IndustryandOccupationalEmploymentProjections.pdf
13 Association of Bay Area Governments, Plan Bay Area Projections 2013 - http://www.abag.org/planning/housing/projections13.html
14 California Association of Realtors - http://www.car.org/marketdata/data/countysalesactivity/
15 "America's Rental Housing – Evolving Markets and Needs" http://www.jchs.harvard.edu/sites/jchs.harvard.edu/files/jchs_americas_rental_housing_2013_1_0.pdf
16 http://www.zillow.com/research/affordability-2014-q3-8456/
17 Residence County to Workplace County Flows for the United States and Puerto Rico Sorted by Residence Geography: 2006-2010 http://www.census.gov/population/metro/data/other.html
18 Residence County to Workplace County Flows for the United States and Puerto Rico Sorted by Residence Geography: 2006-2010 http://www.census.gov/population/metro/data/other.html

4c

1 http://www.fehrandpeers.com/freight-goods-movement/
2 http://files.mtc.ca.gov/pdf/rgm/Draft_Task2C_Infrastructure_Dec2014.pdf

4d

1 http://www.dot.ca.gov/hq/paffairs/news/pressrel/10pr64.htm
2 Business Insider, August 2013 http://www.businessinsider.com/gross-fixed-investment-2013-8
3 World Economic Forum http://reports.weforum.org/global-competitiveness-report-2014-2015/rankings/

4f

1 US DOT Transportation and Climate Clearinghouse - http://climate.dot.gov/about/transportations-role/overview.html
2 Source Inventory of Bay Area Greenhouse Gas Emissions, Bay Area Air Quality District, 2010
3 http://californiabreathing.org/asthma-data/county-comparisons/prevalence-adults
4 US EPA - http://www.epa.gov/oaqps001/greenbk/ancl.html
5 Environmental Protection Agency
6 http://www.bcdc.ca.gov/planning/climate_change/SLRfactSheet.shtml
7 http://evtc.fsec.ucf.edu/reports/EVTC-RR-01-14.pdf

4g

1 Improving Health in the United States: The Role of Health Impact Assessment, National Academies Press, 2011
2 http://www.chp.ca.gov/switrs/
3 http://www.census.gov/statab/ranks/rank39.html
4 http://www.ots.ca.gov/Media_and_Research/Rankings/default.asp
5 Internal file here: H:\NCTPA\1000_Congestion Management Authority\Planning\Countywide Strategic Transportation Plans\ Countywide Strategic Plan 2014-15\Issue Papers\Archive and background materials\Health issue paper bg\2012 SWITRS Data Napa Only.xls
6 UCLA Center for Health Policy Research
7 2013 Community Health Assessment at http://www.countyofnapa.org/lhnc/
8 2014-2017 Live Healthy Napa County Community Health Improvement Plan http://www.countyofnapa.org/lhnc/
9 NCTPA participated in the development of this Plan as a member of the Plan Steering Committee
10 http://californiabreathing.org/asthma-data/county-comparisons/prevalence-adults
11 US EPA - http://www.epa.gov/oaqps001/greenbk/ancl.html
12 Does Commuting Cause Stress? The Public Health Implications of Traffic Congestion, M Haider , K Kerr and M Badami, – Ryerson University and McGill University 2013 http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2305010
13 http://www.indexmundi.com/facts/united-states/quick-facts/california/average-commute-time#map
14 http://www.nimh.nih.gov/health/publications/stress/index.shtml

4i

1 Metropolitan Transportation Commissions: Plan Bay Area: Equity Analysis Report - http://planbayarea.org/pdf/final_supplemental_ reports/FINAL_PBA_Equity_Analysis_Report.pdf
2 Plan Bay Area Appendix A Detailed Methodology
3 The California Poverty Measure: A New Look at the Social Safety New http://www.ppic.org/main/publication.asp?i=1070
4 Napa County Comprehensive Community Health Assessment Appendix B Page 9 – April 2013
5 Metropolitan Transportation Commissions: Plan Bay Area: Equity Analysis Report - http://planbayarea.org/pdf/final_supplemental_ reports/FINAL_PBA_Equity_Analysis_Report.pdf

4j

1 http://safety.fhwa.dot.gov/intersection/roundabouts/fhwasa08006/

4k

1 Information from Federal Highway Administration Pavement website section on asphalt recycling policy: https://www.fhwa.dot.gov/ pavement/recycling/98042/chpt_13.pdf
2 http://physicscentral.com/explore/action/roadscience.cfm
3 https://www.indiegogo.com/projects/solar-roadways
4 http://www.techtimes.com/articles/7674/20140530/volvo-wants-to-build-electric-roads-that-can-charge-city-buses.htm
5 NHTSA “Frequency of Target Crashes for IntelliDrive Safety Systems”

(THIS PAGE INTENTIONALLY LEFT BLANK)

Appendices

(THIS PAGE INTENTIONALLY LEFT BLANK)

A. Project and Program Lists

(THIS PAGE INTENTIONALLY LEFT BLANK)

Napa Countywide Transportation Plan
Project List

No.	Jurisdiction	Project Title	Project Description	Project Location			Mode	Project Phase	Total Cost	Total Committed	Types of funds Committed	Total Need	Start Year	End Year	Included in Plan Bay Area
				Location	Start Point	End Point									
1	AC	South Napa Junction Road	New Major Collector from SR 29 to extension of Newell Drive	Newell Drive	SR 29	Newell Drive	Vehicle		$8,909,227	$0		$8,909,227	2016		
2	AC	Highway 29 Signal ATS	Install Advance Traffic Signal	SR 29			Vehicle		$500,000	$220,000	TFCA	$280,000	2015		
3	AC	Eucalyptus Drive/ Theresa Avenue intersection, Complete Streets	Extend Eucalyptus 450' to the east, connecting at SR 29, Install roundabout.	Eucalyptus Drive	Theresa Avenue	SR 29	Vehicle		$3,700,000	$1,154,000	STIP	$2,546,000	2017		
4	AC	Main Street	New Minor Collector from Eucalyptus to South Napa Junction	Main Street	Eucalyptus Drive	So Napa Junction	Vehicle		$2,021,629	$0		$2,021,629	2025		
5	AC	Devlin Road Segment H	New Industrial Collector from railroad overcrossing to Green Island Rd.	Devlin Road	Railroad overcrossing	Green Island Rd	Vehicle		$7,795,573	$1,962,000	STIP	$5,833,573	2017		
6	AC	Eucalyptus Drive	Widen to 2-lane collector from Theresa to Wetlands Edge Rd.,	Eucalyptus Drive	Theresa Avenue	Wetlands Edge Rd	Vehicle		$6,393,240	$0		$6,393,240	2020		
7	AC	American Canyon Multimodal Transit Center	Construct transit center	TBD			Bike/Bus/passenger vehicle/pedestrian/rail		$12,000,000	$0	-	$12,000,000	2025		No
8	AC	Highway 29 Pedestrian Safety Overcrossings	Construct three pedestrian crossings over Highway 29	TBD			Bike/Ped		$9,000,000	$0	-	$9,000,000	2020		Yes
9	AC	Commerce Boulevard Extension	New Industrial Collector from southern terminus to Eucalyptus Drive	Commerce Boulevard	Eucalyptus Drive	Commerce Boulevard	Vehicle		$8,073,987	$0		$8,073,987	2025		
10	AC	Eucalyptus Dr/Commerce Blvd. Intersection	Add excl. NBL & SBL, Add exclusive EBL and WBL, Add new sign	Eucalyptus Dr/Commerce Blvd. Intersection			Vehicle		$840,240	$0		$840,240	2025		
11	AC	Newell Drive/So. Napa Junction Intersection	Add excl. NBL & SBR, Add exclusive EBL and EBR, New traffic signal	Newell Drive/So. Napa Junction Intersection			Vehicle		$1,202,288	$0		$1,202,288	2016		
12	AC	Newell Drive	New 4-lane arterial from Donaldson Way to South Napa Junction Rd, Newell Drive Overcross Structure, New 2-lane arterial from South Napa Junction Rd to SR 29	Newell Drive	Donaldson Way	Napa Junction Road	Vehicle		$37,398,160	$0		$37,398,160	2016	2020	
13	AC	Paoli Loop Road Widening	Widen road from Green Island to Newell Extension Industrial Collector standards	Paoli Loop Road	Green Island Road	Newell Extension	Vehicle		$8,770,020	$0		$8,770,020	2025		
14	AC	Green Island Road Widening*	Widen road from SR 29 to Commerce Blvd. to Industrial Collector standards Widen railroad crossing to three lanes	Green Island Road	SR 29	Commerce Boulevard	Vehicle		$3,516,599	$2,550,000	EDA/Local funds	$966,599	2016		
15	AC	29 South Kelly Road intersection*	Improve intersection safety and operations at South Kelly Road	SR 29	South Kelly Road	South Kelly Road	Vehicle	CON	$4,900,000	$0	-	$4,900,000	2020	2035	Yes
16	AC	SR 29 6-Lane* Parkway	6-lane Parkway from Napa Junction Road to South Kelly Road, including overpass structure	SR 29	Napa Junction Road	South Kelly Road	Vehicle		$29,000,000	$0	PE-CON	$29,000,000	2021	2025	
17	AC	SR 29 Gateway*	Highway 29 improvements, 6-lane modified boulevard, including pedestrian, transit and Vine Trail infrastructure.	SR 29	American Canyon Road	Napa Junction Road	Vehicle	CON	$26,000,000	$0	-	$26,000,000	2021	2030	Yes
18	AC	Napa Junction Road Intersection	Phase 1 Improvements, Add 2nd excl. WBL and excl. WBR, Add 2nd excl. EBL and excl. EBR, Traffic signal relocation	Napa Junction Road	SR 29	SR 29	Vehicle		$2,938,400	$0	-	$2,938,400	2018		
19	Calistoga	LSR Rehab	Lake Street Reconstruction and Complete Street Enhancements	Lake Street	Washington Ave	Grant St.	Vehicle	PSE/CON	$1,950,000	$0	-	$1,950,000	2015	2016	No
20	Calistoga	Intersection Improvements at SR 29/128 & Lincoln Ave	Signalization of Intersection at SR 29/128 & Lincoln Ave	SR 29/128 & Lincoln Ave.	SR 29	SR 128	Vehicle	PID/PSE/CON	$1,900,000	$0	-	$1,900,000	2017	2019	No
21	Calistoga	Pedestrian Safety Improvements SR 29 & Cedar Street	In Pavement Lighting	SR 29 and Cedar Street	SR 29	Cedar St	Pedestrian	PSR/PSE	$100,000	$0	-	$100,000	2017	2018	No
22	Calistoga	Pedestrian Safety Improvements SR 29 & Brannan Street	In Pavement Lighting	SR 29 and Brannan Street	SR 29	Brannan St	Pedestrian	PSR/PSE	$100,000	$0	-	$100,000	2017	2018	No
23	Calistoga	Safe Routes to School	Construct foot bridge over the Napa River at Pioneer Park	Pioneer Park and Napa River	Calistoga Community Center	Pioneer Park	Pedestrian	PSR/PSE	$850,000	$0	-	$850,000	2017	2018	No
24	Calistoga	Washington Street Reconstruction	Complete Streets Enhancements along Washington Street	Washington Street	Lincoln	Oak	Vehicle	PSE/CON	$1,200,000	$0	-	$1,200,000	2017	2018	No
25	Calistoga	Intersection Improvements at SR 128 & Berry Street	Widen SR 128 and install left turn lane onto Berry Street	SR 128 & Pet Forest Road	On SR 128 300' south of Berry St.	On SR 128 300' north of Berry St.	Vehicle	PID/PSE/CON	$650,000	$0	-	$650,000	2018	2019	No
26	Calistoga	Intersection Improvements at SR 29 & Washington Ave	Convert Signal to protected left turn phasing at Intersection of SR 29 & Washington Ave	SR 29 & Washington Ave.	SR 29	Washington	Vehicle	CON	$500,000	$0	-	$500,000	2020	2022	No
27	Calistoga	Intersection Improvements at SR 29 & Fair Way	Signalization of intersection at SR 29 & Fair Way	SR 29 and Fair Way	SR 29	Fair Way	Vehicle	CON	$950,000	$0	-	$950,000	2021	2022	No
28	Calistoga	Intersection Improvements at SR 29 & Silverado Trail	Signalization of intersection at SR 29 & Silverado Trail	SR 29 and Silverado Trail	SR 29	Silverado Trail	Vehicle	CON	$853,000	$0	-	$853,000	2027	2028	No
29	Calistoga	Intersection Improvements at SR 128 & Petrified Forest	Signalization of Intersection at SR 128 & Petrified Forest	SR 128 & Pet Forest Road	SR 128	SR 128	Vehicle	CON	$650,000	$550,000	STIP/LM	$100,000	2015	2017	Yes

* Multi-jurisdictional Project

Indicates Constrained List

Napa Countywide Transportation Plan
Project List

No.	Jurisdiction	Project Title	Project Description	Project Location			Mode	Project Phase	Total Cost	Total Committed	Types of funds Committed	Total Need	Start Year	End Year	Included in Plan Bay Area
				Location	Start Point	End Point									
30	Calistoga	SR-29 Bypass	Calistoga SR-29 Bypass Dunaweal Ln/Tubbs Ln	Dunaweal	SR 29	Silverado Trail	Vehicle		$7,000,000	$0	-	$7,000,000	2030		No
31	Calistoga	Lincoln Corridor Safety Enhancements	Signal modification, bicycle and pedestrian enhancements	Lincoln Avenue	SR 128	Silverado Trail	Vehicle		$3,500,000	$0	-	$3,500,000	2020		No
32	City of Napa	Trower Avenue Extension	Extend Trower Avenue east to connect with Big Ranch Road	Trower Avenue	Eastern terminus of Trower Ave	Big Ranch Road	Bike/Ped/Vehicle	Planning	$10,500,000	$0	-	$10,500,000	2020	2020-2040	No
33	City of Napa	Linda Vista Bridge and Extension	New bridge at Redwood Creek and extension of Linda Vista Avenue to Robinson Lane over new Linda Vista Bridge	Linda Vista Avenue	Southern terminus of Linda Vista	Robinson lane	Bike/Ped/Vehicle	Planning	$3,500,000	$0	-	$3,500,000	2020	2020-2040	No
34	City of Napa	South Terrace Bridge and Extension	New bridge at Cayetano Creek and extension of Terrace Drive from the southern terminus of Terrace Drive to the northerly terminus of South Terrace Drive	Terrace Drive	Southern terminus of Terrace Dr	Northern terminus of S Terrace Dr	Bike/Ped/Vehicle	Planning	$3,500,000	$0	-	$3,500,000	2020	2020-2040	No
35	City of Napa	Solano Bridge and Extension	New bridge at Napa Creek and extension of Solano Avenue south to connect with First Street	Solano Avenue	Southern terminus of Solano Ave	First Street	Bike/Ped/Vehicle	Planning	$7,000,000	$0	-	$7,000,000	2020	2020-2040	No
36	City of Napa	Lincoln Avenue at California Blvd & SR29 Off-Ramp	Reconfigure northbound SR 29 off-ramp at Lincoln Avenue and modify Lincoln/California intersection	Lincoln Avenue	SR29 Off-Ramp	California Avenue	Bike/Ped/Vehicle	Planning	$5,500,000	$0	-	$5,500,000	2020	2020-2040	Yes
37	City of Napa	Salvador Avenue Complete Streets	Widen Salvador Avenue from SR29 to Jefferson Street	Salvador Avenue	SR29	Jefferson Street	Bike/Ped/Vehicle	Planning	$2,500,000	$0	-	$2,500,000	2020	2020-2040	No
38	City of Napa	Imola Corridor Bicycle and Pedestrian Improvements*	Construct sidewalks and bicycle facilities along Imola Avenue where none exist or gaps are present from Foster Road to Skyline Park	Imola Avenue	Foster Road	Skyline Park	Bike/Ped/Vehicle	Planning	$6,500,000	$20,000	NCTPA	$6,480,000	2014	2020-2040	No
39	City of Napa	SR29 under Pueblo Avenue	Pueblo Avenue Overpass connecting Pueblo Avenue to West Pueblo Avenue	Pueblo Avenue	Pueblo Avenue	West Pueblo Avenue	Bike/Ped/Vehicle	Planning	$30,000,000	$0	-	$30,000,000	2020	2020-2040	No
40	City of Napa	SR29 over Trower	Trower Avenue Underpass	Trower Avenue/ SR29 Intersection	-	-	Bike/Ped/Vehicle	Planning	$30,000,000	$0	-	$30,000,000	2020	2020-2040	No
41	City of Napa	Jefferson/Laurel Signal	New signal at Jefferson Street/Laurel Street Intersection	Jefferson/ Laurel Intersection	-	-	Bike/Ped/Vehicle	Planning	$500,000	$0	-	$500,000	2020	2020-2040	No
42	City of Napa	Jefferson/Old Sonoma Signal	New signal at Jefferson Street/Old Sonoma Road Intersection	Jefferson/ Old Sonoma Intersection	-	-	Bike/Ped/Vehicle	Planning	$500,000	$0	-	$500,000	2020	2020-2040	No
43	City of Napa	Jefferson/Imola Intersection Widening	Jefferson/Imola intersection modification	Jefferson/ Imola Intersection	-	-	Bike/Ped/Vehicle	Planning	$3,000,000	$0	-	$3,000,000	2020	2020-2040	No
44	City of Napa	Solano/Redwood Intersection Widening	Widening and restriping modifications to the Solano Avenue/ Redwood Road Intersection	Solano/ Redwood Intersection	-	-	Bike/Ped/Vehicle	Planning	$750,000	$0	-	$750,000	2020	2020-2040	No
45	City of Napa	SR29 Bike & Pedestrian Undercrossing	Construct a bicycle and pedestrian undercrossing along the north bank of Napa Creek under SR29 at approximately post mile 11.67	North bank Napa Creek	-	-	Bike/Ped	Design	$850,000	$97,000	BTA; TDA-3	$753,000	2013	2017	Yes
46	City of Napa	Soscol Avenue Widening *	Widen Soscol Avenue-SR221-SR121 to six lanes from Magnolia Drive to Silverado Trail including median widening and intersection improvements	Soscol Avenue	Magnolia Drive	Silverado Trail	Vehicle	Planning	$22,750,000	$0	-	$22,750,000	2020	2020-2040	No
47	City of Napa	Lincoln/Jefferson Right Turn Lane(s)	Modify Lincoln/Jefferson intersection with right turn lanes	Jefferson/ Lincoln Intersection	-	-	Bike/Ped/Vehicle	Planning	$750,000	$0	-	$750,000	2020	2020-2040	No
48	City of Napa	Lincoln/Soscol Right turn Lane(s)	Modify Lincoln/Soscol intersection with right turn lanes	Lincoln/Soscol intersection	-	-	Bike/Ped/Vehicle	Planning	$750,000	$0	-	$750,000	2020	2020-2040	No
49	City of Napa	First Street Roundabouts (west side)	Construct roundabouts on First Street at Freeway Drive and SR29 Southbound ramps	1st/Freeway SR29 Ramp	-	-	Bike/Ped/Vehicle	Design	$8,500,000	$0	-	$8,500,000	2020	2020-2040	Yes
50	City of Napa	Jefferson/Sierra Signal	New signal at Jefferson Street/ Sierra Avenue Intersection	Jefferson/ Sierra Intersection	-	-	Bike/Ped/Vehicle	Planning	$500,000	$0	-	$500,000	2020	2020-2040	No
51	City of Napa	Browns Valley Road Complete Streets	Widen Browns Valley Road from Westview Drive to McCormick Lane	Browns Valley Road	Westview Drive	McCormick Lane	Bike/Ped/Vehicle	Planning	$3,500,000	$0	-	$3,500,000	2020	2020-2040	No
52	City of Napa	Salvador Creek Bike Trail	Construct a Class I multiuse path along Salvador Creek	adjacent to Salvador Creek	Maher Street	Big Ranch Road	Bike/Ped	Planning	$800,000	$0	-	$800,000	2020	2020-2040	Yes
53	City of Napa	5-way Intersection Modification	Construct intersection improvements at Silverado Trail/Third Street/Coombsville Road/East Avenue	Silverado/ Coombsville/ 3rd/ East Ave Intersection	-	-	Bike/Ped/Vehicle	Design	$8,500,000	$3,500,000	Caltrans	$5,000,000	2014	2019	Yes
54	City of Napa	Oxbow Preserve Pedestrian Bridge	Construct a pedestrian bridge from the Oxbow Preserve over the Napa River to the River Trail	Napa River	Oxbow Preserve	River Trail	Bike/Ped	Planning	$1,250,000	$0	-	$1,250,000	2020	2020-2040	Yes
55	City of Napa	Oxbow District Pedestrian Bridge	Construct a pedestrian bridge from the River Trail over the Napa River to Third Street	Napa River	River Trail	Third Street	Bike/Ped	Planning	$1,250,000	$0	-	$1,250,000	2020	2020-2040	Yes
56	City of Napa	Laurel Street Sidewalk	Construct sidewalks along Laurel Street from Laurel Park to Laurel Manor	Laurel Street	Laurel park	Laurel Manor	Pedestrian	Planning	$2,500,000	$0	-	$2,500,000	2020	2020-2040	No
57	City of Napa	Traffic Operations Center	Citywide signal coordination	-	-	-	Bike/Ped/Vehicle	Planning	$2,000,000	$0	-	$2,000,000	2020	2020-2040	Yes
58	City of Napa	Sierra Avenue Sidewalks	Construct sidewalks along Sierra Avenue from Jefferson Street to SR29	Sierra Avenue	Jefferson Street	SR29	Pedestrian	Planning	$800,000	$0	-	$800,000	2020	2020-2040	No
59	City of Napa	Foster Road Sidewalk	Construct sidewalks along Foster Road adjacent to Irene M. Snow Elementary School	Foster Road adjacent to Snow School	-	-	Pedestrian	Planning	$750,000	$0	-	$750,000	2020	2020-2040	No
60	City of Napa	Terrace Drive Sidewalks	Construct Sidewalks along Terrace Drive where gaps are present	Terrace Drive	Coombsville Road	Southern terminus of Terrace Drive	Pedestrian	Planning	$1,500,000	$0	-	$1,500,000	2020	2020-2040	No
61	City of Napa	Main Street Sidewalk Widening	Widening the sidewalk on Main Street from First Street to Third Street	Main Street	First Street	Third Street	Pedestrian	Planning	$2,000,000	$30,000	Local	$1,970,000	2016	2020	No

* Multi-jurisdictional Project

Indicates Constrained List

Napa Countywide Transportation Plan
Project List

No.	Jurisdiction	Project Title	Project Description	Project Location			Mode	Project Phase	Total Cost	Total Committed	Types of funds Committed	Total Need	Start Year	End Year	Included in Plan Bay Area
				Location	Start Point	End Point									
62	City of Napa	Railroad Crossing Upgrades	Upgrade all railroad crossings Citywide to concreate panels with flangeway fillers	-	-	-	Bike/Ped/Vehicle/Rail	Planning	$2,500,000	$0	-	$2,500,000	2020	2020-2040	No
63	City of Napa	SR29 Corridor Improvements (Urban Highway)*	Landscape enhancements to Urban Highway from Carneros Intersection to Trancas. SR29 at Imola Avenue, 1st Street, Lincoln Avenue, Trancas Street	SR29	Carneros Intersection	Trancas Street	Vehicle	Planning	$250,000	$0	-	$250,000	2020	2020-2040	Yes
64	Napa County	Devlin Rd Extension*	Complete construction of collector road as parallel facility for SR 29 corridor	Airport Industrial Area	Soscol Ferry Rd	Green Island Rd	Vehicle	CON	$5,500,000	$1,300,000	TMF	$4,200,000	2015	2020	Yes
65	Napa County	Silverado Trail intersections	Improve intersection safety and operations Oak Knoll Avenue, Yountville Crossroad, Oakville Crossroad, Deer Park Rd, Dunaweal Ln	Silverado Trail, various	Napa	Calistoga	Vehicle	CON	$2,500,000	$0	-	$2,500,000	2020	2040	No
66	Napa County	Solano Ave Corridor Improvements	Construct improvements to reduce flooding and reduce noise impacts in corridor	Solano Ave	Yountville	Dry Creek	Vehicle	CON	$300,000	$0	-	$300,000	2020	2025	Yes
67	Napa County	29 North County intersections*	Improve intersection safety and operations Oakville Grade Rd, Oakville Crossroad, Rutherford Rd (SR 128), Deer Park Rd, Dunaweal Ln	SR 29	Napa	Calistoga	Vehicle	CON	$2,500,000	$0	-	$2,500,000	2025	2040	No
68	Napa County	Route 221*	Improve corridor operations	SR 221 Napa Vallejo Highway	SR 29	SR 121	Vehicle	CON	$5,200,000	$0	-	$5,200,000	2030	2040	No
69	Napa County	Carneros Intersection*	SR 29/SR12/SR 121 (Carneros intersection) Improvements	SR29/SR12/SR121			Vehicle		$500,000	$0	-	$500,000	2020	2030	Yes
70	Napa County	SR 29-Unincorporated Napa County/Carneros*	4-Lane Rural Highway, from unincorporated Napa County to Carneros intersections.	SR 29	Jameson	Napa City Limits	Vehicle		$8,000,000	$0	PE-CON	$8,000,000	2021	2023	Yes
71	Napa County	SR-29 Unincorporated Napa/ AC*	6-Lane Rural Highway in unincorporated Napa County from South Kelly Road to Jameson Canyon	SR 29	South Kelly Road	Jameson Canyon Road	Vehicle		$13,068,000	$0	PE-CON	$13,068,000	2021	2024	Yes
72	NCTPA	Vine Trail (Redwood Rd Crossing)*	Construct a grade separated crossing across Redwood Road connecting the adjacent sections of the Vine Trail	Redwood Road	-	-	Bike/Ped/Vehicle	Planning	$4,500,000	$0	-	$4,500,000	2020	2020-2040	Yes
73	NCTPA	Napa Valley Vine Trail - Calistoga*	Construct Class I mixed use path, including Fairway Extension.	SR 29	Calistoga	St. Helena	Bike/Ped	CON	$9,200,000	$2,350,000	Local Donation	$6,850,000	2016	2018	Yes
74	NCTPA	Vine Trail (3rd-Vallejo)*	Construct Class I multiuse path between 3rd Street and Vallejo Street	adjacent to Soscol	Vallejo	Third Street	Bike/Ped	Planning	$3,500,000	100,000	TDA-3; NVVT Coalition	$3,400,000	2016	2020	Yes
75	NCTPA	Vine Trail*	Class I bike trails, including portions of American Canyon, St. Helena, and unincorporated Napa County.	Napa County	Bothe Park	South end of American Canyon	Bike	PE-CON	$19,799,360	$0	-	$19,799,360	2015	2023	Yes
76	NCTPA	Soscol Junction*	Construct SB 221 to SB 29/12 flyover structure	SR 29/12/221	-	-	Vehicle	PE-CON	$50,000,000	$0	-	$50,000,000	2015	2035	Yes
77	NCTPA	Airport Junction*	Construct grade separated interchange	SR 29/12/Airport		-	Vehicle	CON	$73,000,000	$0	-	$73,000,000	2020	2040	Yes
78	NCTPA	Park and Ride Lots, (Construction and O&M)	Park and Ride lots throughout Napa County	Countywide	-	-	Bus	PE-CON	$2,025,000	$0	-	$2,025,000	2015	2040	No
79	NCTPA	SR-37/PID	Project Initiation Documentation	SR 37	Hwy 80	Hwy 101	Vehicle	PE	$250,000	$0		$250,000	2030	2032	No
80	NCTPA	Bus/Agency Signage	New NCTPA Image, Including Bus Stop Signage	Napa County	-	-	Bus	None	$550,000	$0	-	$550,000	2015	2018	No
81	NCTPA	VINE Maintenance Facility (Construction O&M)	Acquisition and construction of new maintenance facility	TBD	-	-	Bus	CON	$38,300,000	$0	-	$38,300,000	2017	2018	No
82	NCTPA	Fueling Station (Construction and O&M)	Construction of new fueling station	TBD	-	-	Bus	CON	$3,792,000	$0	-	$3,792,000	2017	2018	No
83	NCTPA	Rapid Bus Project	13.5 miles of bus rapid corridor enhancements	SR 29	Vallejo Ferry Terminal	Napa Valley College	Bus	PE-CON	$25,000,000	$0	-	$25,000,000	2020	2025	No
84	NCTPA	Rapid Bus Buses	Acquisition of 14 articulated buses for Rapid Bus from Vallejo Ferry Terminal to NVC	N/A	-	-	Bus	None	$14,000,000	$0		$14,000,000	2025	2027	
85	NCTPA	Rapid Bus Project	4.7 miles of bus Rapid Corridor Enhancement	SR 29	Napa Valley College	Redwood P&R	Bus	PE-CON	$25,000,000	$0	-	$25,000,000	2022	2025	No
86	NCTPA	Rapid Bus Buses	Acquisition of 6 articulated buses for Rapid Bus from NVC to Redwood Avenue Park and Ride	N/A	-	-	Bus	None	$6,000,000	$0	-	$6,000,000	2022	2024	
87	NCTPA	State of Good Repair/ PM	(Replacement of Rapid Bus buses) 6 low-floor articulated buses, 14 articulated buses	N/A	-	-	Bus	None	$20,750,000	$0	-	$20,750,000	2037	2040	
88	NCTPA	ZE Bus Project	Acquisition of 2 zero emission buses for a zero emission pilot bus project	N/A			Bus	CON	$3,720,000	$0		$3,720,000	2018	2040	No
89	NCTPA	Local routes (1-8) - expanded service hours	Expand service hours from 4am-12am, add Sunday service	N/A	-	-	Bus	None	$10,281,880	$0	-	$10,281,880	2018	2040	No
90	NCTPA	Regional routes (10/11)- expanded service hours	Expand service hours from 4am-12am, add Sunday service	N/A	-	-	Bus	None	$10,346,000	$0	-	$10,346,000	2018	2040	No
91	NCTPA	Regional routes (10/11)- Enhanced frequency	Increase frequency from 30 peak, 60 midday and weekends to 15 peak and 30 midday and weekends.	N/A	-	-	Bus	None	$33,122,216	$0	-	$33,122,216	2018	2040	No

* Multi-jurisdictional Project

Indicates Constrained List

Napa Countywide Transportation Plan
Project List

No.	Jurisdiction	Project Title	Project Description	Project Location			Mode	Project Phase	Total Cost	Total Committed	Types of funds Committed	Total Need	Start Year	End Year	Included in Plan Bay Area
				Location	Start Point	End Point									
92	NCTPA	New Transit Vehicles (EXPANSION)	Acquisition of new paratransit vehicles, community shuttle buses and VINE buses for service expansion	N/A	-	-	Bus	None	$27,510,000	$0	-	$ 27,510,000	2017	2040	No
93	NCTPA	Transit System Growth (Operating Costs)	Operation costs for the expansion of the transit system	N/A	-	-	Bus	None	$2,800,000	$0	-	$ 2,800,000	2018	2040	No
94	NCTPA	New Shelters and Stop Amenities (EXPANSION)	Improved bus stops throughout Napa County	N/A	-	-	Bus	None	$4,850,000	$0	-	$ 4,850,000	2020	2040	No
95	NCTPA	IT Equipment Upgrades & Replacement Program	Wi-Fi for all buses, Camera System & Real Time signage, Asset Management Database, sales office equipment, taxi scrip automated readers	N/A	-	-	Bus	None	$480,000	$0	-	$ 480,000	2015	2019	No
96	St Helena	Main Street Corridor Improvements	Install traffic calming devices (e.g.. bulb outs), upgrade sidewalk, pedestrian lighting, pedestrian furniture, landscaping, bike infrastructure and traffic signal synchronization	Main Street (SR29)	Spring Street	Adams Street	Bike/Ped/Vehicle	PE-CON	$700,000	$21,278	Local	$678,722	2011	2018	No
97	St Helena	Sulphur Creek Class I Bikeway	Construct Class I Bikeway	Sulphur Creek	Sulphur Springs Avenue	Napa River	Bike		$5,800,000	$0	-	$5,800,000	2020	2030	No
98	St Helena	Spring Mountain Road Class I Bikeway	Construct Class I Bikeway	Spring Mountain Road	Lower Reservoir	Spring Mountain Court	Bike		$1,700,000	$0	-	$1,700,000	2020	2030	No
99	St Helena	Oak Avenue Extension	Extend Oak Avenue	Oak Avenue	Charter Oak Avenue	Grayson Avenue	Vehicle		$1,800,000	$0	-	$1,800,000	2020	2025	No
100	St Helena	Starr Avenue Extension	Extend Starr Avenue	Starr Avenue	Hunt Avenue	Adams Street	Vehicle		$617,000	$0	-	$617,000	2025	2030	No
101	St Helena	Adams Street Extension	Extend Adams Street	Adams Street	end	Starr Avenue	Vehicle		$851,000	$0	-	$851,000	2025	2030	No
102	St Helena	New North-South Collector	Extend College Avenue, or Starr Avenue, or Allison Avenue	New	Mills Lane	Pope Street	Vehicle		$1,900,000	$0	-	$1,900,000	2025	2030	No
103	St Helena	Mills Lane Safety Improvements	Improve Mills Lane to two lanes with bike and pedestrian access	Mills Lane	Main Street (SR29)	End	Vehicle		$3,500,000	$0	-	$3,500,000	2025	2030	No
104	St Helena	Napa River Class I Bikeway	Construct Class I Bikeway (River Trail)	Napa River	South City Limit	North City Limit	Bike		$9,800,000	$0	-	$9,800,000	2030	2040	No
105	St Helena	New East-West Collector	Extend Adams Street or Mills Lane	New	End	Silverado Trail	Vehicle		$2,900,000	$0	-	$2,900,000	2035	2040	No
106	St Helena	Fulton Lane Safety Improvements	Improve Fulton Lane to two lanes with bike and pedestrian access	Fulton Lane	Railroad Ave	End	Vehicle		$2,200,000	$0	-	$2,200,000	2035	2040	No
107	Yountville	Oak Circle Parking Improvement	Parking improvements to existing infrastructure	Future Oak Circle Park, near Oak Circle and Vintner Ct	N/A	N/A	Vehicle	Planning, Design, Construction	$75,000	$0	-	$75,000	2015	2018	No
108	Yountville	South Veteran's Park Parking Improvements	Parking improvements to existing infrastructure	At Veteran's Park, Washington St. South of California Dr	N/A	N/A	Vehicle	Planning, Design, Construction	$175,000	$0	-	$175,000	2020	2021	No
109	Yountville	Washington Park Sidewalk Project	Adding sidewalk to the Washington Park Subdivision	Washington Park	East of Washington, North of Forrester Ln	East of Washington, South of Yountville Cross Rd	Pedestrian	Planning, Design, Construction	$850,000	$0	-	$850,000	2022	2023	No
110	Yountville	Yountville Crossroads Bicycle Path & Sidewalk	A full lane bicycle path along Yountville Crossroads	Length of Yountville Crossroads	Yountville Cross Roads and Yount St	Yountville Cross Roads and Stags View Ln	Bike	Planning, Design, Construction	$1,500,000	$0	-	$1,500,000	2030	2031	No
111	Yountville	Future Parking Garage Facility	New parking facility	To be determined	N/A	N/A	Vehicle	Planning, Design, Construction	$5,500,000	$0	-	$5,500,000	2030	2031	No
112	Yountville	Transportation Infrastructure	Extend Yount Mill Road and Yountville Cross Rd, connecting the new development to the Town.	Northeast of Washington and Yountville Cross Rd	Entire Site	Entire Site	Bike/Ped/Vehicle	Planning, Design, Construction	$2,500,000	$0	-	$2,500,000	2030	2035	No
113	Yountville	SR-29 Interchange Project	Construct Interchange at Madison and SR-29	Madison & SR-29	N/A	N/A	Vehicle	Planning, Design, Construction	$20,000,000	$0	-	$20,000,000	2030	2031	No

* Multi-jurisdictional Project

Indicates Constrained List

Napa Countywide Transportation Plan
Constrained Project List

No.	Jurisdiction	Project Title	Project Description	Project Location			Mode	Project Phase	Total Cost	Total Committed	Types of funds Committed	Total Need	Start Year	End Year	Included in Plan Bay Area	Avg Objectives Met
				Location	Start Point	End Point										
1	AC	Highway 29 Signal ATS	Install Advance Traffic Signal	SR 29			Vehicle		$500,000	$220,000	TFCA	$ 280,000	2015			7
2	AC	Eucalyptus Drive/ Theresa Avenue intersection, Complete Streets	Extend Eucalyptus 450' to the east, connecting at SR 29, Install roundabout.	Eucalyptus Drive	Theresa Avenue	SR 29	Vehicle		$3,700,000	$1,154,000	STIP	$ 2,546,000	2017			12
3	AC	Devlin Road Segment H	New Industrial Collector from railroad overcrossing to Green Island Rd.	Devlin Road	Railroad overcrossing	Green Island Rd	Vehicle		$7,795,573	$1,962,000	STIP	$ 5,833,573	2017			12
4	AC	Green Island Road Widening	Widen road from SR 29 to Commerce Blvd. to Industrial Collector standards Widen railroad crossing to three lanes	Green Island Road	SR 29	Commerce Boulevard	Vehicle		$3,516,599	$2,550,000	EDA/Local funds	$ 966,599	2016			9
5	AC	Napa Junction Road Intersection	Phase 1 Improvements, Add 2nd excl. WBL and excl. WBR, Add 2nd excl. EBL and excl. EBR, Traffic signal relocation	Napa Junction Road	SR 29	SR 29	Vehicle		$2,938,400	$0	-	$ 2,938,400	2018			8
6	AC	SR 29 6-Lane* Parkway	6-lane Parkway from Napa Junction Road to South Kelly Road, including overpass structure	SR 29	Napa Junction Road	South Kelly Road	Vehicle		$29,000,000	$0		$ 29,000,000	2021	2025		17
7	AC	SR 29 Gateway*	Highway 29 improvements, 6-lane modified boulevard, including pedestrian, transit and Vine Trail infrastructure.	SR 29	American Canyon Road	Napa Junction Road	Vehicle	CON	$26,000,000	$0	-	$ 26,000,000	2021	2030	Yes	17
8	Calistoga	Pedestrian Safety Improvements SR 29 & Cedar Street	In Pavement Lighting	SR 29 and Cedar Street	SR 29	Cedar St	Pedestrian	PSR/PSE	$100,000	$0	-	$ 100,000	2017	2018	No	13
9	Calistoga	Pedestrian Safety Improvements SR 29 & Brannan Street	In Pavement Lighting	SR 29 and Brannan Street	SR 29	Brannan St	Pedestrian	PSR/PSE	$100,000	$0	-	$ 100,000	2017	2018	No	13
10	Calistoga	Washington Street Reconstruction	Complete Streets Enhancements along Washington Street	Washington Street	Lincoln	Oak	Vehicle	PSE/CON	$1,200,000	$0	-	$ 1,200,000	2017	2018	No	10
11	City of Napa	Lincoln Avenue at California Blvd & SR29 Off-Ramp	Reconfigure northbound SR 29 off-ramp at Lincoln Avenue and modify Lincoln/California intersection	Lincoln Avenue	SR29 Off-Ramp	California Avenue	Bike/Ped/Vehicle	Planning	$5,500,000	$0	-	$ 5,500,000	2020	2020-2040	Yes	9
12	City of Napa	Imola Corridor Bicycle and Pedestrian Improvements*	Construct sidewalks and bicycle facilities along Imola Avenue where none exist or gaps are present from Foster Road to Skyline Park	Imola Avenue	Foster Road	Skyline Park	Bike/Ped/Vehicle	Planning	$6,500,000	$20,000	NCTPA	$ 6,480,000	2014	2020-2040	No	14
13	City of Napa	Jefferson/Imola Intersection Widening	Jefferson/Imola intersection modification	Jefferson/ Imola Intersection	-	-	Bike/Ped/Vehicle/Rail	Planning	$3,000,000	$0	-	$ 3,000,000	2020	2020-2040	No	9
14	City of Napa	SR29 Bike & Pedestrian Undercrossing	Construct a bicycle and pedestrian undercrossing along the north bank of Napa Creek under SR29 at approximately post mile 11.67	North bank Napa Creek	-	-	Bike/Ped	Design	$850,000	$97,000	BTA; TDA-3	$ 753,000	2013	2017	Yes	13
15	City of Napa	Soscol Avenue Widening*	Widen Soscol Avenue-SR221-SR121 to six lanes from Magnolia Drive to Silverado Trail including median widening and intersection improvements	Soscol Avenue	Magnolia Drive	Silverado Trail	Vehicle	Planning	$22,750,000	$0	-	$ 22,750,000	2020	2020-2040	No	11
16	City of Napa	First Street Roundabouts (west side)	Construct roundabouts on First Street at Freeway Drive and SR29 Southbound ramps	1st/Freeway SR29 Ramp	-	-	Bike/Ped/Vehicle	Design	$8,500,000	$0	-	$ 8,500,000	2020	2020-2040	Yes	12
17	City of Napa	Browns Valley Road Complete Streets	Widen Browns Valley Road from Westview Drive to McCormick Lane	Browns Valley Road	Westview Drive	McCormick Lane	Bike/Ped/Vehicle	Planning	$3,500,000	$0	-	$ 3,500,000	2020	2020-2040	No	10
18	City of Napa	5-way Intersection Modification	Construct intersection improvements at Silverado Trail/Third Street/Coombsville Road/East Avenue	Silverado/ Coombsville/ 3rd/ East Ave Intersection	-	-	Bike/Ped/Vehicle	Design	$8,500,000	$3,500,000	Caltrans	$ 5,000,000	2014	2019	Yes	12
19	City of Napa	Traffic Operations Center	Citywide signal coordination	-	-	-	Bike/Ped/Vehicle	Planning	$2,000,000	$0	-	$ 2,000,000	2020	2020-2040	Yes	9
20	City of Napa	Main Street Sidewalk Widening	Widening the sidewalk on Main Street from First Street to Third Street	Main Street	First Street	Third Street	Pedestrian	Planning	$2,000,000	$30,000	Local	$ 1,970,000	2016	2020	No	6
21	City of Napa	Linda Vista Bridge and Extension	New bridge at Redwood Creek and extension of Linda Vista Avenue to Robinson Lane over new Linda Vista Bridge	Linda Vista Avenue	Southern terminus of Linda Vista	Robinson lane	Bike/Ped/Vehicle	Planning	$3,500,000	$0	-	$ 3,500,000	2020	2020-2040	No	11
22	City of Napa	Solano/Redwood Intersection Widening	Widening and restriping modifications to the Solano Avenue/ Redwood Road Intersection	Solano/ Redwood Intersection	-	-	Bike/Ped/Vehicle	Planning	$750,000	$0	-	$ 750,000	2020	2020-2040	No	10
23	City of Napa	Jefferson/Sierra Signal	New signal at Jefferson Street/ Sierra Avenue Intersection	Jefferson/ Sierra Intersection	-	-	Bike/Ped/Vehicle	Planning	$500,000	$0	-	$ 500,000	2020	2020-2040	No	9
24	City of Napa	Railroad Crossing Upgrades	Upgrade all railroad crossings Citywide to concreate panels with flangeway fillers	-	-	-	Bike/Ped/Vehicle	Planning	$2,500,000	$0	-	$ 2,500,000	2020	2020-2040	No	5
25	Napa County	Devlin Rd Extension*	Complete construction of collector road as parallel facility for SR 29 corridor	Airport Industrial Area	Soscol Ferry Rd	Green Island Rd	Vehicle	CON	$5,500,000	$1,300,000	TMF	$ 4,200,000	2015	2020	Yes	14
26	Napa County	29 North County intersections*	Improve intersection safety and operations Oakville Grade Rd, Oakville Crossroad, Rutherford Rd (SR 128), Deer Park Rd, Dunaweal Ln	SR 29	Napa	Calistoga	Vehicle	CON	$2,500,000	$0	-	$ 2,500,000	2025	2040	No	8
27	Napa County	Route 221*	Improve corridor operations	SR 221 Napa Vallejo Highway	SR 29	SR 121	Vehicle	CON	$5,200,000	$0	-	$ 5,200,000	2030	2040	No	13

Napa Countywide Transportation Plan
Constrained Project List

No.	Jurisdiction	Project Title	Project Description	Project Location			Mode	Project Phase	Total Cost	Total Committed	Types of funds Committed	Total Need	Start Year	End Year	Included in Plan Bay Area	Avg Objectives Met
				Location	Start Point	End Point										
28	Napa County	SR 29-Unicorporated Napa County/Carneros*	4-Lane Rural Highway, from unincorporated Napa County to Carneros intersections.	SR 29	Jameson	Napa City Limits	Vehicle	CON	$8,000,000	$0	PE-CON	$ 8,000,000	2021	2023	Yes	8
29	Napa County	SR-29 Unincorporated Napa/ AC*	6-Lane Rural Highway in unincorporated Napa County from South Kelly Road to Jameson Canyon	SR 29	South Kelly Road	Jameson Canyon Road	Vehicle	CON	$13,068,000	$0	PE-CON	$ 13,068,000	2021	2024	Yes	13
30	NCTPA	Park and Ride Lots, (Construction and O&M)	Park and Ride lots throughout Napa County	Countywide	-	-	Bus	PE-CON	$2,025,000	$0	-	$ 2,025,000	2015	2040	No	12
31	NCTPA	Vine Trail (Redwood Rd Crossing)*	Construct a grade separated crossing across Redwood Road connecting the adjacent sections of the Vine Trail	Redwood Road	-	-	Bike/Ped/Vehicle	Planning	$4,500,000	$0	-	$4,500,000	2020	2020-2040	Yes	13
32	NCTPA	Napa Valley Vine Trail - Calistoga*	Construct Class I mixed use path, including Fairway Extension.	SR 29	Calistoga	St. Helena	Bike/Ped	CON	$9,200,000	$2,350,000	Local Donation	$6,850,000	2016	2018	Yes	13
33	NCTPA	Vine Trail (3rd-Vallejo)*	Construct Class I multiuse path between 3rd Street and Vallejo Street	adjacent to Soscol	Vallejo	Third Street	Bike/Ped	Planning	$3,500,000	100,000	TDA-3; NVVT Coalition	$ 3,400,000	2016	2020	Yes	13
34	NCTPA	Soscol Junction*	Construct SB 221 to SB 29/12 flyover structure	SR 29/12/221			Vehicle	PE-CON	$50,000,000	$0	-	$ 50,000,000	2015	2035	Yes	6
35	NCTPA	VINE Maintenance Facility (Construction O&M)	Acquisition and construction of new maintenance facility	TBD	-	-	Bus	CON	$38,300,000	$0	-	$ 38,300,000	2017	2018	No	16
36	NCTPA	Fueling Station (Construction and O&M)	Construction of new fueling station	TBD	-	-	Bus	CON	$3,792,000	$0	-	$ 3,792,000	2017	2018	No	17
37	NCTPA	Rapid Bus Project	13.5 miles of bus rapid corridor enhancements	Vallejo to Napa	Vallejo Ferry Terminal	Napa Valley College	Bus	PE-CON	$25,000,000	$0	-	$ 25,000,000	2020	2040	No	11
38	NCTPA	Rapid Bus Buses	Acquisition of 14 articulated buses for Rapid Bus from Vallejo Ferry Terminal to NVC	N/A	-	-	Bus	None	$14,000,000	$0		$ 14,000,000	2025	2027	No	11
39	NCTPA	Bus/Agency Signage	New NCTPA Image, Including Bus Stop Signage	Napa County			Bus	None	$550,000	$0	-	$ 550,000	2015	2018	No	5
40	NCTPA	ZE Bus Project	Acquisition of 2 zero emission buses for a zero emission pilot bus project	Napa County			Bus	None	$3,720,000	$0		$ 3,720,000	2018	2040	No	7
41	NCTPA	Local routes (1-8) - expanded service hours	Expand service hours from 4am-12am, add Sunday service	N/A	-	-	Bus	None	$10,281,880	$0	-	$ 10,281,880	2018	2040	No	12
42	NCTPA	Regional routes (10/11)-expanded service hours	Expand service hours from 4am-12am, add Sunday service	N/A	-	-	Bus	None	$10,346,000	$0	-	$ 10,346,000	2018	2040	No	12
43	NCTPA	Regional routes (10/11)-Enhanced frequency	Increase frequency from 30 peak, 60 midday and weekends to 15min peak and 30 midday and weekends.	N/A	-	-	Bus	None	$33,122,216	$0	-	$ 33,122,216	2018	2040	No	12
44	NCTPA	New Transit Vehicles (EXPANSION)	Acquisition of new paratransit vehicles, community shuttle buses and VINE buses for service expansion	N/A	-	-	Bus	None	$27,510,000	$0	-	$ 27,510,000	2017	2040	No	10
45	NCTPA	Transit System Growth (Operating Costs)	Operation costs for the expansion of the transit system	N/A	-	-	Bus	None	$2,800,000	$0	-	$ 2,800,000	2018	2040	No	12
46	NCTPA	New Shelters and Stop Amenities (EXPANSION)	Improved bus stops throughout Napa County	N/A	-	-	Bus	None	$4,850,000	$0	-	$ 4,850,000	2020	2040	No	12
47	NCTPA	IT Equipment Upgrades & Replacement Program	Wi-Fi for all buses, Camera System & Real Time signage, Asset Management Database, sales office equipment, taxi scrip automated readers	N/A	-	-	Bus	None	$480,000	$0	-	$ 480,000	2015	2019	No	9
48	NCTPA	SR-37 PID	Project Initiation Documentation	SR 37			Vehicle	PE	$250,000	$0		$ 250,000	2030	2032	No	N/A
49	St Helena	Main Street Corridor Improvements	Install traffic calming devices (e.g.. bulb outs), upgrade sidewalk, pedestrian lighting, pedestrian furniture, landscaping, bike infrastructure and traffic signal synchronization	Main Street (SR29)	Spring Street	Adams Street	Bike/Ped/Vehicle	PE-CON	$700,000	$21,278	Local	$ 678,722	2011	2018	No	12
50	St Helena	Sulphur Creek Class I Bikeway	Construct Class I Bikeway	Sulphur Creek	Sulphur Springs Avenue	Napa River	Bicycle	PE-CON	$5,800,000	$0	-	$ 5,800,000	2020	2030	No	12
51	St Helena	Oak Avenue Extension	Extend Oak Avenue	Oak Avenue	Charter Oak Avenue	Grayson Avenue	Vehicle	PE-CON	$1,800,000	$0	-	$1,800,000	2020	2025	No	11
52	St Helena	Starr Avenue Extension	Extend Starr Avenue	Starr Avenue	Hunt Avenue	Adams Street	Vehicle	PE-CON	$617,000	$0	-	$617,000	2025	2030	No	11
53	St Helena	Adams Street Extension	Extend Adams Street	Adams Street	end	Starr Avenue	Vehicle	PE-CON	$851,000	$0	-	$851,000	2025	2030	No	11
54	Yountville	Oak Circle Parking Improvement	Parking improvements to existing infrastructure	Future Oak Circle Park, near Oak Circle and Vintner Ct	N/A	N/A	Vehicle	Planning, Design, Construction	$75,000	$0	-	$ 75,000	2015	2018	No	4
55	Yountville	South Veteran's Park Parking Improvements	Parking improvements to existing infrastructure	At Veteran's Park, Washington St. South of California Dr	N/A	N/A	Vehicle	Planning, Design, Construction	$175,000	$0	-	$ 175,000	2020	2021	No	4

Napa Countywide Transportation Plan
Constrained Project List

No.	Jurisdiction	Project Title	Project Description	Project Location			Mode	Project Phase	Total Cost	Total Committed	Types of funds Committed	Total Need	Start Year	End Year	Included in Plan Bay Area	Avg Objectives Met
				Location	Start Point	End Point										
56	Yountville	Washington Park Sidewalk Project	Adding sidewalk to the Washington Park Subdivision	Washington Park	East of Washington, North of Forrester Ln	East of Washington, South of Yountville Cross Rd	Pedestrian	Planning, Design, Construction	$850,000	$0	-	$ 850,000	2022	2023	No	10
57	Yountville	Yountville Crossroads Bicycle Path & Sidewalk	A full lane bicycle path along Yountville Crossroads	Length of Yountville Crossroads	Yountville Cross Roads and Yount St	Yountville Cross Roads and Stags View Ln	Bicycle	Planning, Design, Construction	$1,500,000	$0	-	$ 1,500,000	2030	2031	No	13
58	Yountville	Future Parking Garage Facility	New parking facility	To be determined	N/A	N/A	Vehicle	Planning, Design, Construction	$5,500,000	$0	-	$ 5,500,000	2030	2031	No	3
Total Constrained List Funding Shortfall												**$428,259,390**				

Napa Countywide Transportation Plan
Constrained Totals

Jurisdiction	Number of Projects	Estimated Project Cost
American Canyon	7	$ 73,450,572
Calistoga	3	$ 1,400,000
City of Napa	14	$ 70,350,000
Napa County	5	$ 34,268,000
St. Helena	5	$ 9,768,000
Yountville	5	$ 8,100,000
NCTPA	19	$ 244,227,096
TOTAL	58	$ 441,563,668

CTP Program List

No.	Sponsor	Program Category	Program Description	Mode	Total Cost	Total Committed	Types of funds Committed	Total Need	Start Year	End Year	Included in Plan Bay Area
1	AC	Pedestrian Network (Maintenance, rehab & expansion)	Sidewalk improvement, expand the pedestrian network	Pedestrian	$ 1,468,000	$ -	-	$ 1,468,000	2015	2040	
2	AC	Bicycle Network (Expansion)	Expansion of Class I bicycle facilities	Bicycle	$ 8,672,000	$ -	-	$ 8,672,000	2015	2040	Yes
3	AC	Bicycle Network (Maintenance & Rehab)	Maintenance and rehabilitation of Class I bicycle facilities	Bicycle	$ 12,000,000	$ -	-	$ 12,000,000	2015	2040	
4	AC	Local Streets & Roads (Maintenance & Rehab)	Rehabilitate, restore, and preserve pavement for local streets and roads	Vehicle	$ 25,000,000	$ -	-	$ 25,000,000	2015	2040	
5	AC	Bridge / Culvert (Maintenance, rehab & replacement)	Rehabilitate, restore, preserve and rejuvenate local bridge and culvert pavement, replace or widen existing structures	Vehicle	$ 17,000,000	$ -	-	$ 17,000,000	2015	2040	No
6	AC	ITS	Intersection synchronization enhancements, traffic signal upgrade, electronic traffic management	Vehicle	$ 1,000,000	$ -	-	$ 1,000,000	2015	2040	No
7	Calistoga	Bridge / Culvert (Maintenance, rehab & replacement)	Rehabilitate, restore, preserve and rejuvenate local bridge and culvert pavement, replace or widen existing structures	Vehicle	$ 4,375,000	$ -	-	$ 4,375,000	2015	2040	No
8	Calistoga	Bicycle Network (Expansion)	Expansion of Class I bicycle facilities	Bicycle	$ 8,000,000	$ -	-	$ 8,000,000	2015	2040	Yes
9	Calistoga	Bicycle Network (Maintenance & Rehab)	Maintenance and rehabilitation of Class I bicycle facilities	Bicycle	$ 1,250,000	$ -	-	$ 1,250,000	2015	2040	Yes
10	Calistoga	Pedestrian Network (Maintenance, rehab & expansion)	Sidewalk improvement, expand the pedestrian network	Pedestrian	$ 5,580,000	$ -	-	$ 5,580,000	2015	2040	No
11	Calistoga	Local Streets & Roads (Maintenance & Rehab)	Rehabilitate, restore, and preserve pavement for local streets and roads	Vehicle	$ 10,650,000	$ -	-	$ 10,650,000	2015	2040	Yes
12	Calistoga	Local Streets & Roads (Enhancements)	Road expansion, new road connections, dedicated turn lanes, safety improvements, complete streets elements	Vehicle	$ 250,000	$ -	-	$ 250,000	2015	2040	Yes
13	City of Napa	Local Streets & Roads (Maintenance & Rehab)	Rehabilitate, restore, and preserve pavement for local streets and roads	Vehicle	$ 175,000,000	$3,000,000 FY14/15*	Local; Gas Tax	$ 172,000,000	2015	2040	Yes
14	City of Napa	Bridge / Culvert (Maintenance, rehab & replacement)	Rehabilitate, restore, preserve and rejuvenate local bridge and culvert pavement, replace or widen existing structures	Vehicle	$ 40,000,000	-	-	$ 40,000,000	2015	2040	No
15	City of Napa	ITS	Intersection synchronization enhancements, traffic signal upgrade, electronic traffic management	Vehicle	$ 4,500,000	-	-	$ 4,500,000	2015	2040	Yes
16	City of Napa	Bicycle Network (Expansion)	Expansion of Class I, II, and III bicycle facilities	Bicycle	$ 3,000,000	-	-	$ 3,000,000	2015	2040	Yes
17	City of Napa	Bicycle Network (Maintenance & Rehab)	Maintenance and rehabilitation of Class I bicycle facilities	Bicycle	$ 10,000,000	-	-	$ 10,000,000	2015	2040	No
18	City of Napa	Pedestrian Network (Maintenance, rehab & expansion)	Sidewalk improvement, expand the pedestrian network	Pedestrian	$ 156,000,000	$1,500,000 FY14/15*	Local; Gas Tax; CDBG	$ 154,500,000	2015	2040	Yes
19	Napa County	Local Streets & Roads (Maintenance & Rehab)	Rehabilitate, restore, and preserve pavement for local streets and roads	Vehicle	$ 228,750,000	7,840,000	General Fund	$ 220,910,000	2015	2040	Yes
20	Napa County	Bridge / Culvert (Maintenance, rehab & replacement)	Rehabilitate, restore, preserve and rejuvenate local bridge and culvert pavement, replace or widen existing structures	Vehicle	$ 40,000,000	-	N/A	$ 40,000,000	2015	2040	Yes
21	Napa County	Bicycle Network (Expansion)	Expansion of Class I bicycle facilities	Bicycle	$ 25,000,000	-	N/A	$ 25,000,000	2015	2040	No
22	Napa County	Bicycle Network (Maintenance & Rehab)	Maintenance and rehabilitation of existing Class I bicycle facilities	Bicycle	$ 2,500,000	-	N/A	$ 2,500,000	2015	2040	Yes

CTP Program List

No.	Sponsor	Program Category	Program Description	Mode	Total Cost	Total Committed	Types of funds Committed	Total Need	Start Year	End Year	Included in Plan Bay Area
23	Napa County	Pedestrian Network (Maintenance, rehab & expansion)	Sidewalk improvement, expand the pedestrian network	Pedestrian	$ 1,250,000	-	N/A	1,250,000	2015	2040	Yes
24	VINE	Transit Vehicles (REPLACEMENT)	Acquisition of new paratransit vehicles, community shuttle buses and VINE buses for state of good repair.Shop truck w/ hoist & push bar for road calls, Support Vehicle for Supervisors.	Bus	$ 62,625,000	$ -	-	$ 62,625,000	2015	2040	
25	VINE	Bus Shelter Program (REPLACEMENT)	Replacement of existing bus shelters throughout the county	Bus	$ 3,000,000	$ -	-	$ 3,000,000	2015	2040	
26	VINE	VINE Transit PM	Preventive Maintenance for the buses. Routine maintenance on vehicles.	Bus	$ 7,402,700	$ -	-	$ 7,402,700	2015	2040	
27	VINE	VINE Transit Operations	General	Bus	$ 194,910,700	$ -	-	$ 194,910,700	2015	2040	
28	St Helena	Local Streets & Roads (Maintenance & Rehab)	Rehabilitate, restore, and preserve pavement for local streets and roads	Vehicle	$ 18,855,473	$ -	-	$ 18,855,473	2015	2040	No
29	St Helena	Pedestrian Network (Maintenance, rehab & expansion)	Sidewalk improvement, expand the pedestrian network	Pedestrian	$ 3,000,000	$ -	-	$ 3,000,000			
30	St Helena	Bridge / Culvert (Maintenance, rehab & replacement)	Rehabilitate, restore, preserve and rejuvenate local bridge and culvert pavement, replace or widen existing structures	Vehicle	$ 2,100,000	$ -	-	$ 2,100,000			No
31	St Helena	Bicycle Network (Expansion)	Expansion of Class I bicycle facilities	Bicycle	$ 3,000,000	$ -	-	$ 3,000,000			No
32	Yountville	Pedestrian Network (Maintenance, rehab & expansion)	Sidewalk improvement, expand the pedestrian network	Pedestrian	$ 2,740,000	$ 335,000	Gas Tax; Capital Projects Fund	$ 2,405,000			No
33	Yountville	Local Streets & Roads (Maintenance & Rehab)	Rehabilitate, restore, and preserve pavement for local streets and roads	Vehicle	$ 8,500,000	$ 2,525,000	Gas Tax; Capital Projects Fund	$ 5,975,000			Yes

Agency: _____ Project: _____

Countywide Plan Project Evaluation Criteria Checklist

Goal 1: Serve the transportation needs of the entire community regardless of age, income or physical ability.

1. ☐ Objective 1: Provide safe access to jobs, schools, recreation and other daily needs for Napa's residents and visitors:
    a. Provides complete streets
    b. Improves safety
    c. Provides access to transit
2. ☐ Objective 2: Endeavor to serve the special transportation needs of seniors, children and the disabled:
    a. Compliant sidewalks/crossings
    b. Strengthens access to transit
    c. Provides Safe Routes to School
3. ☐ Objective 3: Coordinate transportation services for disabled persons, seniors, children and other groups so each serves as many people as possible:
    a. Improve mobility coordination – centralized coordination of public transportation services with user groups: schools/seniors advocacy groups
    b. Improve information and marketing
    c. Expand or enhance transit
    d. Optimize service efficiencies
4. ☐ Objective 4: Provide affordable transportation solutions to ensure access to jobs, education, goods, and services for all members of the community:
    a. Keep transit service affordable
    b. Expand or enhance Class I, II, & III bicycle facilities consistent with the Napa Countywide Bicycle Plan
    c. Implement technologies that reduce costs of transportation

Goal 2: Improve system safety in order to support all modes and serve all users.

5. ☐ Objective 1: Design roadways and other transportation facilities to enhance coexistence of users of all modes:
    a. Provides complete streets
    b. Implements technology that supports alternative modes
    c. Maintains street and roads in a state of good repair for all modes
    d. Implements highway, street, road, and safety improvements

6. ☐ Objective 2: Educate all users so they may safely coexist:
    a. Provides wayfiniding and safety signage
    b. Provides Public information/education
    c. Provides education for school-aged children
7. ☐ Objective 3: Work with Napa Jurisdictions to adopt complete streets policies to meet the Metropolitan Transportation Commission's funding eligibility requirements:
    a. Implements complete streets
8. ☐ Objective 4: Ensure Measure T roadway funds are maximized to improve infrastructure, as allowed under the Ordinance, to benefit all transportation modes:
    a. Develop logical approach to Measure T rehab/maintenance
    b. Implement projects on time and within budget
9. ☐ Objective 5: Prioritize projects that expand travel options for cyclists and pedestrians as well as those projects that improve operation and safety for vehicles, pedestrians, and cyclists.
    a. Implement Complete Streets
    b. Implement technologies that improve the operation of the road for all users
    c. Close gaps on existing Class I path network
    d. Expands or enhances the transit system

Goal 3: Use taxpayer dollars efficiently.

10. ☐ Objective 1: Continue to prioritize local streets and road maintenance, consistent with Measure T:
    a. Adhere to Measure T ordinance
    b. Implement state of good repair principles
11. ☐ Objective 2: Invest in fast and reliable bus service and infrastructure, so public transit is an attractive alternative to driving alone:
    a. Implement bus rapid transit where appropriate
    b. Implement rapid services in strategic locations
    c. Maintain system effectively
12. ☐ Objective 3: Identify alternative solutions that minimize costs and maximize system performance:
    a. Implement State of Good Repair Programs
    b. Implement technologies that reduce cost
    c. Implement travel demand strategies

13. ☐ Objective 4: Provide real-time traffic and transportation information via MTC's 511 or similar system by 2017:
    a. Improve system information/communication to the public
    b. Improve transit trip planner
    c. Explore private sector options for system monitoring and reporting
14. ☐ Objective 5: Explore new transportation funding sources, including fees associated with new development:
    a. Identify and prioritize projects that significantly improve the network and encourage community support
    b. Implement working group to evaluate potential revenue sources
    c. Use polling techniques to engage the public
15. ☐ Objective 6: Develop partnerships with Caltrans, California Transportation Commission (CTC), Metropolitan Transportation Commission (MTC), and Napa's state legislators to support expanded transportation funding for local mobility needs and to accommodate demand from regional traffic that travels through Napa County:
    a. Promote Napa's projects and unique characteristics within the Bay Area and State
    b. Work Collaboratively with regional, federal, and state partners to fund large infrastructure improvements
    c. Advocate and work with north bay county-partners on common issues

Goal 4: Support Napa County's economic vitality.

16. ☐ Objective 1: Identify and improve key goods movement routes
    a. Ensure adequate separation between freight movement and bike/ped activity
    b. Improve connectivity on key truck routes
    c. Improve access to airport and other port/shipping destinations
    d. Identify and improve access in farm-to-market corridors
17. ☐ Objective 2: Work with employers to improve access to employment centers, as well as dispersed agricultural employment sites:
    a. Support transportation for service and agricultural workers
    b. Improve multi-modal access to employment center for low income neighborhoods
    c. Expand vanpool and other commute alternatives
    d. Expand transit/park and ride network

18. ☐ Objective 3: Improve transportation services aimed at visitors, including alternatives to driving:
    a. Market transit and work with hospitality industry on fare subsidies
    b. Implement bike sharing
    c. Implement projects that support walkable city centers
    d. Improve non-auto connectivity between cities
19. ☐ Objective 4: Use demand management techniques to shift travel from peak to non-peak times:
    a. Identify pricing mechanisms to encourage off peak commute
    b. Implement highway messaging signs and systems that divert traffic
    c. Stagger school and other start times
    d. Work with employers to encourage programs that reduce peak commute congestion
    e. Encourage freight movement during off peak

Goal 5: Minimize the energy and other resources required to move people and goods.

20. ☐ Objective 1: Prioritize projects that reduce greenhouse gases:
    a. Expand and enhance transit
    b. Invest in alternative fuel technologies
    c. Invest in priority development areas that encourage non-auto use
    d. Improve bike/ped network and facilities
    e. Implement projects that reduce congestion
21. ☐ Objective 2: Increase mode share for transit, walking, and bicycling by 10% by 2035:
    a. Implement complete streets
    b. Expand and enhance transit
    c. Implement projects that close gaps in Class I and II networks
    d. Improve road infrastructure to make transit faster
    e. Implement Marketing strategies that encourage non-auto use and improve coordination with other agencies
22. ☐ Objective 3: Reduce the growth of automobile vehicle miles traveled (VMT) by shifting trips to other modes
    a. Encourage employer policies that reduce auto use
    b. Encourage mixed use development
    c. Participate in programs that consider alternative pricing mechanisms to reduce VMT
    d. Implement systems that encourage better trip planning
    e. Develop messaging and marketing programs that reduce VMT

23. ☐ Objective 4: Encourage the provision of alternative fuel infrastructure:
    a. Expand electric vehicle charging network
    b. Invest in alternative fuel technologies
24. ☐ Objective 5: invest in improvements to the transportation network that serve land use, consistent with SB 375:
    a. Invest in priority development areas that encourage non-auto growth
    b. Encourage missed use development
    c. Improve coordination between employment locations and housing
25. ☐ Objective 6: Identify revenues that support investments in Priority Development Areas (PDAs)
    a. Evaluate local opportunities to increase revenues
    b. Develop educational materials to inform the public of investments
    c. Partner with other organizations and collaborate on policy and messaging

Goal 6: Prioritize the maintenance and rehabilitation of the existing system.

26. ☐ Objective 1: Deliver Measure T projects effectively:
    a. Identify revenues to ensure Measure T projects are fully funded
    b. Prioritize projects using State of Good Repair principles
    c. Identify alternative revenues to ensure maintenance of effort requirements are met and exceeded
27. ☐ Objective 2: Focus funding on maintenance priorities

Total # of boxes checked: _____

B. Revenues

(THIS PAGE INTENTIONALLY LEFT BLANK)

Countywide Plan
Revenue Projections 2015-2040

Napa County Transportation & Planning Agency

Source	TRANSPORTATION REVENUE	Amount ($'000)
Federal		
	OBAG (STP/CMAQ Jurisdictions)	47,512
State		
	TDA Article 3 Bike/Pedestrian (TDA 3)	4,121
	Regional Improvement Program (RTIP)	75,405
	Gas Tax Subvention	90,662
	AB105 (Gas Tax Swap) Streets and Roads Funding	115,175
Local		
	Measure T (FY2018-19 to FY2039-40)	349,172
	Class I Measure T Equivalent Funds	23,290
	Class I Measure T Equivalent Funds*	-23,290
	Transportation for Clean Air (TFCA)	4,862
	Other Local Funds ©	149,927
	Private Contributions	6,500
Transportation Total		**$843,336**
	Total Costs - Highway and Roads	$1,397,184
	Total Shortfall - Highway and Roads	($553,848)

Source	TRANSIT REVENUE	Amount ($'000)
Federal		
	FTA Transit Operating	$54,425
	FTA Transit Capital	$4,914
State		
	State Transit Assistance (STA Transit Funds)	28,264
	Transportation Development Act- Transit (NCTPA)	173,666
	Low Carbon Transit Operating Program	3,279
Local		
	Lifeline Transportation Program	7,799
	Passenger Fares	36,079
Transit Total		**$308,426**
	Total Costs - Transit	$508,465
	Total Shortfall - Transit	($200,039)

	#	$833,471	Project FundingShortfall
		$1,072,179	Program Funding Shortfall
TOTAL FUNDING SHORTFALL	($753,887)	$1,905,649	TOTAL FUNDING SHORTFALL

*All figures are for planning purposes and subject to updates/revisions.

25 Yr Projection

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Revenues	Funding	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Federal	FTA (Federal Transit Administration Section 5307)	$1,518,496	$1,533,681	$1,549,018	$1,564,508	$1,580,153	$1,595,955	$1,611,914
	FTA (Federal Transit Administration Section 5311)	395,000	413,110	417,241	421,414	425,628	429,884	434,183
	FTA (Federal Transit Administration Section 5339)	174,000	175,740	177,497	179,272	181,065	182,876	184,705
	OBAG (STP/CMAQ Jurisdictions)	1,132,836	1,181,791	1,232,394	1,284,696	1,338,747	1,394,599	1,452,307
State	STA (State Transit Assistance Transit Funds)	1,000,743	1,010,750	1,020,858	1,031,067	1,041,377	1,051,791	1,062,309
	TDA (Transportation Development Act Transit)	6,150,100	6,100,300	6,171,300	6,243,000	6,315,400	6,388,500	6,462,400
	TDA Article 3 Bike/Pedestrian (TDA 3)	145,920	147,379	148,853	150,342	151,845	153,363	154,897
	Regional Improvement Program	2,669,859	2,696,558	2,723,523	2,750,758	2,778,266	2,806,049	2,834,109
	Gas Tax Subvention	3,811,758	3,744,681	3,679,000	3,614,690	3,551,723	3,490,072	3,502,711
	Low Carbon Transit Operating Program (LCTOP)	61,689	246,756	249,224	251,716	254,233	259,192	264,249
	AB105 (Gas Tax Swap) Streets and Roads Funding	2,275,429	2,440,265	2,631,093	2,742,826	3,080,582	3,327,810	3,480,328
Local	Measure T (FY2018-19 to FY2039-40)	-	-	-	15,237,318	15,314,664	15,467,811	15,467,811
	Class I Measure T Equivalent	-	-	-	1,016,329	1,021,488	1,031,703	1,031,703
	Class I Measure T Equivalent*	-	-	-	(1,016,329)	(1,021,488)	(1,031,703)	(1,031,703)
	Transportation for Clean Air (TFCA)	192,000	193,000	193,000	193,000	194,000	194,000	194,000
	Other Local Funds ©	5,167,508	5,282,508	5,367,508	5,408,008	5,449,723	5,517,508	5,562,508
	Passenger Fares	1,291,800	1,303,465	1,315,249	1,327,150	1,339,171	1,351,311	1,363,573
	Lifeline Transportation Program	592,130	305,669	291,065	291,824	292,591	293,366	294,148
	Private Contributions	400,000	400,000	400,000	400,000	400,000	400,000	400,000
	YEARLY TOTALS	$26,979,268	$27,175,652	$27,566,822	$43,091,588	$43,689,167	$44,304,086	$44,726,152
Discretionary	Discretionary Programs Transit	875,000	875,000	875,000	875,000	2,842,121	2,542,121	1,777,121
Discretionary	Discretionary Programs Transportation	5,184,400	4,184,400	64,234,400	17,234,400	38,199,400	5,699,400	23,357,295
	YEARLY TOTALS including DISCRETIONARY	$33,038,668	$32,235,052	$92,676,222	$61,200,988	$84,730,688	$52,545,606	$69,860,568

* Class I Measure T Equivalent is accounted for through other funding sources identified in this table.

© May include General Funds, Tranffic Impact Fees, etc.

25 Yr Projection

	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Funding	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
FTA (Federal Transit Administration Section 5307)	$1,628,033	$1,644,314	$1,660,757	$1,677,364	$1,694,138	$1,711,079	$1,728,190	$1,745,472
FTA (Federal Transit Administration Section 5311)	438,525	442,910	447,339	451,812	456,330	460,894	465,503	470,158
FTA (Federal Transit Administration Section 5339)	186,552	188,417	190,301	192,204	194,126	196,068	198,028	200,009
OBAG (STP/CMAQ Jurisdictions)	1,511,927	1,573,514	1,637,130	1,702,834	1,770,689	1,840,759	1,913,112	1,987,816
STA (State Transit Assistance Transit Funds)	1,072,932	1,083,661	1,094,498	1,105,443	1,116,497	1,127,662	1,138,939	1,150,328
TDA (Transportation Development Act Transit)	6,537,000	6,612,300	6,688,500	6,765,400	6,843,000	6,921,400	7,000,600	7,080,600
TDA Article 3 Bike/Pedestrian (TDA 3)	156,446	158,010	159,591	161,186	162,798	164,426	166,071	167,731
Regional Improvement Program	2,862,450	2,891,075	2,919,986	2,949,185	2,978,677	3,008,464	3,038,549	3,068,934
Gas Tax Subvention	3,515,400	3,528,138	3,540,925	3,553,762	3,566,649	3,579,587	3,592,574	3,605,613
Low Carbon Transit Operating Program (LCTOP)	269,406	274,664	280,027	285,495	291,072	291,236	-	-
AB105 (Gas Tax Swap) Streets and Roads Funding	3,637,771	3,800,296	3,968,069	4,141,259	4,320,040	4,504,594	4,695,106	4,891,768
Measure T (FY2018-19 to FY2039-40)	15,622,489	15,622,489	15,622,489	15,778,714	15,778,714	15,778,714	15,936,501	15,936,501
Class I Measure T Equivalent	1,042,020	1,042,020	1,042,020	1,052,440	1,052,440	1,052,440	1,062,965	1,062,965
Class I Measure T Equivalent*	(1,042,020)	(1,042,020)	(1,042,020)	(1,052,440)	(1,052,440)	(1,052,440)	(1,062,965)	(1,062,965)
Transportation for Clean Air (TFCA)	194,000	195,000	195,000	195,000	195,000	195,000	195,000	195,000
Other Local Funds ©	5,608,858	5,692,508	5,742,758	5,794,515	5,917,508	5,974,508	6,042,508	6,103,258
Passenger Fares	1,375,958	1,388,466	1,401,100	1,413,860	1,426,747	1,439,763	1,452,910	1,466,188
Lifeline Transportation Program	294,938	295,736	296,543	297,357	298,179	299,009	299,848	300,695
Private Contributions	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000
YEARLY TOTALS	$45,312,684	$45,791,500	$46,245,011	$46,865,392	$47,410,166	$47,893,163	$48,263,438	$48,770,070
Discretionary Programs Transit	1,777,121	1,777,121	2,077,121	610,000	610,000	610,000	610,000	910,000
Discretionary Programs Transportation	3,357,295	3,357,295	3,911,801	3,911,801	3,911,801	3,911,801	3,911,801	3,911,801
YEARLY TOTALS including DISCRETIONARY	$50,447,099	$50,925,915	$52,233,933	$51,387,193	$51,931,967	$52,414,964	$52,785,239	$53,591,871

* Class I Measure T Equivalent is accounted for through other funding s

© May include General Funds, Tranffic Impact Fees, etc.

25 Yr Projection

Funding	Year 16 2030-31	Year 17 2031-32	Year 18 2032-33	Year 19 2033-34	Year 20 2034-35	Year 21 2035-36	Year 22 2036-37	Year 23 2037-38
FTA (Federal Transit Administration Section 5307)	$1,762,927	$1,780,556	$1,798,362	$1,816,345	$1,834,509	$1,852,854	$1,871,382	$1,890,096
FTA (Federal Transit Administration Section 5311)	474,859	479,608	484,404	489,248	494,140	499,082	504,073	509,113
FTA (Federal Transit Administration Section 5339)	202,009	204,029	206,069	208,130	210,211	212,313	214,436	216,581
OBAG (STP/CMAQ Jurisdictions)	2,064,940	2,144,558	2,226,745	2,311,577	2,399,135	2,489,499	2,582,754	2,678,986
STA (State Transit Assistance Transit Funds)	1,161,832	1,173,450	1,185,184	1,197,036	1,209,007	1,221,097	1,233,308	1,245,641
TDA (Transportation Development Act Transit)	7,161,400	7,243,100	7,325,500	7,408,700	7,492,800	7,577,700	7,663,500	7,750,100
TDA Article 3 Bike/Pedestrian (TDA 3)	169,409	171,103	172,814	174,542	176,287	178,050	179,831	181,629
Regional Improvement Program	3,099,623	3,130,620	3,161,926	3,193,545	3,225,481	3,257,735	3,290,313	3,323,216
Gas Tax Subvention	3,618,702	3,631,842	3,645,033	3,658,276	3,671,571	3,684,917	3,698,316	3,711,767
Low Carbon Transit Operating Program (LCTOP)	-	-	-	-	-	-	-	-
AB105 (Gas Tax Swap) Streets and Roads Funding	5,094,780	5,304,347	5,520,679	5,743,996	5,974,523	6,212,493	6,458,146	6,711,729
Measure T (FY2018-19 to FY2039-40)	15,936,501	15,936,501	16,095,866	16,095,866	16,095,866	16,256,825	16,256,825	16,256,825
Class I Measure T Equivalent	1,062,965	1,062,965	1,073,594	1,073,594	1,073,594	1,084,330	1,084,330	1,084,330
Class I Measure T Equivalent*	(1,062,965)	(1,062,965)	(1,073,594)	(1,073,594)	(1,073,594)	(1,084,330)	(1,084,330)	(1,084,330)
Transportation for Clean Air (TFCA)	195,000	195,000	195,000	195,000	195,000	195,000	195,000	195,000
Other Local Funds ©	6,165,830	6,247,508	6,314,408	6,383,315	6,517,508	6,592,508	6,669,758	6,749,325
Passenger Fares	1,479,598	1,493,143	1,506,823	1,520,640	1,534,595	1,548,690	1,562,925	1,577,303
Lifeline Transportation Program	301,551	302,415	303,288	304,169	305,059	305,958	306,867	307,784
Private Contributions	500,000	-	-	-	-	-	-	-
YEARLY TOTALS	$49,388,961	$49,437,778	$50,142,101	$50,700,386	$51,335,691	$52,084,720	$52,687,431	$53,305,095
Discretionary Programs Transit	610,000	610,000	610,000	610,000	910,000	610,000	610,000	610,000
Discretionary Programs Transportation	3,911,801	3,911,801	3,911,801	3,911,801	3,911,801	3,911,801	3,911,801	3,911,801
YEARLY TOTALS including DISCRETIONARY	$53,910,762	$53,959,579	$54,663,902	$55,222,187	$56,157,492	$56,606,521	$57,209,232	$57,826,896

* Class I Measure T Equivalent is accounted for through other funding s

© May include General Funds, Tranffic Impact Fees, etc.

Funding	Year 24 2038-39	Year 25 2039-40	TOTAL
FTA (Federal Transit Administration Section 5307)	$1,908,997	$1,928,087	$42,887,185
FTA (Federal Transit Administration Section 5311)	514,205	519,347	$11,538,008
FTA (Federal Transit Administration Section 5339)	218,746	220,934	$4,914,317
OBAG (STP/CMAQ Jurisdictions)	2,778,286	2,880,744	$47,512,376
STA (State Transit Assistance Transit Funds)	1,258,097	1,270,678	$28,264,184
TDA (Transportation Development Act Transit)	7,837,700	7,926,100	$173,666,400
TDA Article 3 Bike/Pedestrian (TDA 3)	183,445	185,280	$4,121,248
Regional Improvement Program	3,356,448	3,390,013	$75,405,362
Gas Tax Subvention	3,725,270	3,738,827	$90,661,804
Low Carbon Transit Operating Program (LCTOP)	-	-	$3,278,958
AB105 (Gas Tax Swap) Streets and Roads Funding	6,973,500	7,243,723	$115,175,154
Measure T (FY2018-19 to FY2039-40)	16,256,825	16,419,393	$349,171,508
Class I Measure T Equivalent	1,084,330	1,095,174	$23,289,740
Class I Measure T Equivalent*	(1,084,330)	(1,095,174)	(23,289,740)
Transportation for Clean Air (TFCA)	195,000	195,000	$4,862,000
Other Local Funds ©	6,817,508	6,837,508	$149,926,861
Passenger Fares	1,591,825	1,606,491	$36,078,744
Lifeline Transportation Program	308,710	309,646	$7,798,546
Private Contributions	-	-	$6,500,000
YEARLY TOTALS	$53,924,562	$54,671,770	$1,151,762,654
Discretionary Programs Transit	610,000	910,000	$26,342,723
Discretionary Programs Transportation	3,911,801	3,911,796	$227,397,096
YEARLY TOTALS including DISCRETIONARY	$58,446,363	$59,493,566	$1,405,502,473

* Class I Measure T Equivalent is accounted for through other funding s

© May include General Funds, Tranffic Impact Fees, etc.

C. Community Based Transportation Plan

(THIS PAGE INTENTIONALLY LEFT BLANK)

Napa County Transportation & Planning Agency

Countywide Transportation Plan

Community Based Transportation Plan

Public Review | July 7, 2015

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number

Arup North America Ltd
560 Mission Street
Suite 700
San Francisco 94105
United States of America
www.arup.com

ARUP

Contents

Tables

Figures

Appendix

1 Executive Summary

This Community Based Transportation Plan (CBTP) has been developed through a collaborative planning process between Napa County residents, transportation planners, and Napa County Transportation and Planning Agency (NCTPA) staff, with a focus on ensuring equitable access to transportation for Communities of Concern (COCs). COCs are defined as places that have concentrated populations in four of the following eight categories:

1. Minority Population
2. Low income (<200% of Poverty) Population
3. Limited English Proficiency Population
4. Zero-Vehicle Households
5. Seniors 75 or Over
6. Population with a Disability
7. Single-Parent Families
8. Cost-burdened Renter[1]

The Metropolitan Transportation Commission (MTC) encourages County Congestion Management Agencies (CMAs), such as NCTPA, to prepare CBTPs. Projects that address transportation gaps identified through CBTPs are given preference for funding through MTC's Lifeline Program. This is Napa County's second CBTP, replacing the first CBTP prepared in 2004.

Transit service in Napa County is provided by NCTPA, which offers fixed route bus service within the cities of Napa and express bus service to Sonoma, Solano, and Contra Costa Counties. NCTPA also provides on-demand shuttle service in Calistoga, St. Helena, American Canyon and the Town of Yountville. NCTPA also provides paratransit for persons with disabilities and taxi scrip as a supplement to the VINE service for seniors and persons with disabilities. In addition, NCTPA collaborates with the Solano Transportation Authority to provide commuter information, including rideshare matching, vanpools, and transit information.

This Plan is the result of substantial community outreach, for which NCTPA relied upon a network of community partners. These partners included social service agencies and religious organizations, as well as neighborhood and employer organizations representing service workers. NCTPA also reached out directly to people with potential interest in the CBTP through radio spots, meetings, and survey tools.

Improving access to transit for COCs requires providing safe access to transit stops including connections for bicyclists and pedestrians. Therefore, the safety

[1] Please see Communities of Concern (Section 4i) in the Napa Countywide Transportation Plan.

of the roadway and pedestrian network is of great importance when developing the CBTP plan and prioritizing projects.

NCTPA's outreach resulted in the following four themes to improve transportation for Napa's Communities of Concern:

- Improve Traffic Safety
- Maintain and Repair Bike and Pedestrian Facilities
- Add Sidewalks and Bikeways to Expand the Network
- Enhance Bus Service

This CBTP provides examples of specific projects identified through the outreach program, and also links those projects to both projects and programs listed in the Countywide Transportation Plan (CTP). The CTP takes a more comprehensive look at transportation needs, and identifies projects and programs that are often at a larger scale than those in this CBTP. However, the two plans address the same transportation network, and have been prepared in parallel and therefore are closely related. Over the approximate 4-year life of the plan, specific projects may be identified that are consistent with the four themes, and will be considered as funding becomes available and project viability allows. As this CBTP is implemented, it will draw on funding from a variety of Federal, State, Regional, and Local fund sources. Some of these sources have a particular focus on COCs, safety or access to transit for all riders, making them most appropriate for some of the projects identified here.

2 Introduction

The Community Based Transportation Planning (CBTP)Program is a collaborative planning process between residents in Bay Area COCs, community and faith-based organizations that serve them, transit operators, county congestion management agencies (CMAs), and the Metropolitan Transportation Commission (MTC) to identify resident-generated transportation improvements specific to each community.

a. The CBTP program was initiated as a result of the findings of the Lifeline Transportation Network Report completed in 2001.[2] The report identified transit needs in economically disadvantaged communities throughout the San Francisco Bay Area, and recommended creating a community based planning program as a first step to addressing them. Each CBTP is guided by the county CMA to ensure the participation of local transit operators as well as residents and community based organizations providing services within the COCs. For Napa County, NCTPA serves as the CMA. NCTPA also oversees the operation of the VINE, a transit

[2] Community Based Transportation Planning. http://www.mtc.ca.gov/planning/cbtp/, visited on March 17, 2015.

service which facilitates improved coordination to better serve Napa's COCs. Specifically, the CBTP is intended to identify and prioritize gaps in transportation which particularly impact COCs, as well as projects, strategies, and solutions to address the gaps.

2.1 Communities of Concern

The Lifeline Transportation Network Report and the 2001 Regional Transportation Plan Environmental Justice Report identified 43 low-income communities of concern, one of which was in the City of Napa. MTC periodically updates its approach for identifying COCs. In the most recent iteration, MTC used 2000 census data and 2009 American Community Survey data. The criteria and the specific data used did not identify any COCs in Napa. No communities of concern were identified in part because MTC's approach focuses on identifying places with high concentrations of low-income households and communities of color using a regional scale which is not entirely applicable to Napa County's rural context. Napa County's populations are at lower densities than in many other parts of the Bay Area. In addition, because of Napa's substantial immigrant population, households are more likely to have multi-generational or multi-family situations that also inflate household income. Finally, MTC's approach does not factor in housing costs, which is a primary issue for many of Napa's low income households. There is a complete discussion of this issue in NCTPA's Countywide Transportation Plan (CTP), which identifies three COCs in Napa County: South Downtown Napa, Westwood Neighborhood in Napa, and South St. Helena in the Communities of Concern Section (4i).

2.2 NCTPA's Role in the CBTP

NCTPA serves as the CMA for Napa County. In that capacity, NCTPA is tasked with programming (distributing) State, Federal, and Local transportation funds in partnership with MTC and its jurisdictions. It is further tasked with a number of planning functions and transportation coordination within a multi-modal context. These multiple roles create a strong foundation for understanding and serving the targeted populations and is integral to a successful community based process. NCTPA will work to identify funding for projects that emerge from this CBTP. The projects may be eligible for regional funding administered by MTC. Further discussion of funding opportunities is in Section 7.

3 Napa County Background

Napa County has the smallest population of any county in the Bay Area. However, considering land area alone, Napa is the fourth largest county in the Bay Area,

with 754 square miles.[3] (Including water area, it is the seventh largest Bay Area county with 788 square miles.)

Four cities and a town make up the urban centers within Napa County: American Canyon, Calistoga, Napa, St. Helena and Town of Yountville. The City of Napa is the largest in both size and population of the five urban centers, followed in population size by American Canyon, St. Helena, Calistoga and Town of Yountville. Combined the five urban centers make up 32 square miles of the 788 square miles in the county. The remaining 756 square miles lies within the unincorporated county. It is largely rural in nature and is home to the second largest population base. The population base in the unincorporated areas being largely spread out makes transportation service challenging.

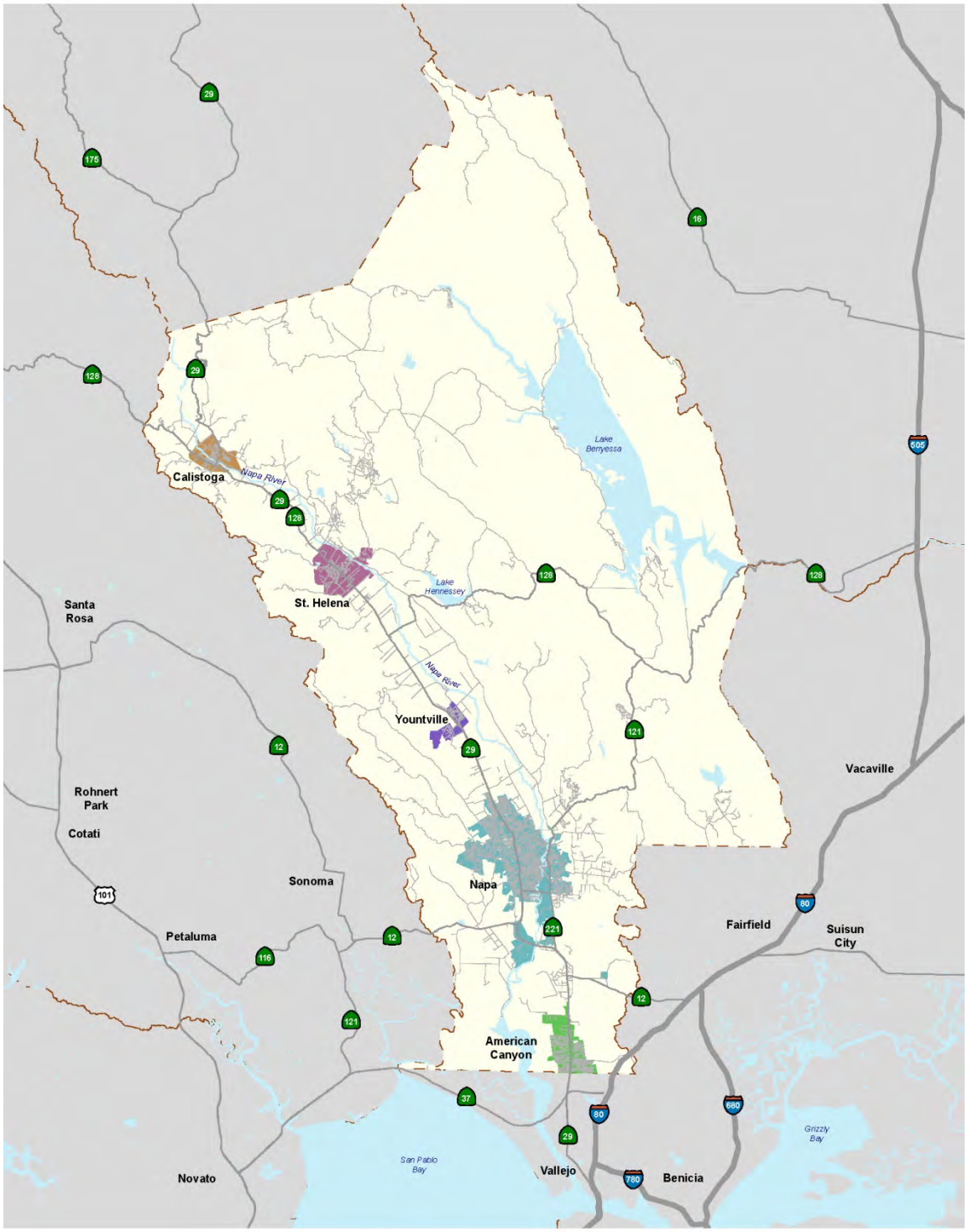
Table 1: Napa County Jurisdictions' Population and Area

Jurisdiction	Population (2013)[4]	Area (square miles)
American Canyon	20,208	4.8
Calistoga	5,254	2.6
Napa	79,068	18.1
St. Helena	5,947	5
Yountville	2,933	1.5
Unincorporated Napa County	26,916	756
Total	**140,326**	**788**

Napa's four cities and town are shown in Figure 1.

[3] State of California, Department of Finance, California Statistical Abstract, Table A-1: Land & Water Areas, California & Counties. January 2009.
[4] U.S. Census State & County Quickfacts. www.quickfacts.census.gov

Figure 1: Napa County Cities and Town



3.1 Demographics

3.1.1 Population by Ethnicity

Of the Bay Area's 7.3 million residents, only about 140,000 (2% of the Bay Area total) live in Napa County. Roughly 53% of Napa's population is aged 25-64 and 56% is white in ethnicity. Hispanics and Latinos make up the largest ethnic group in the county at 32%, followed by Asians and African Americans at 7% and 2% respectively. Table 2 provides a breakdown of the County's population by ethnicity as well as how the groups are forecasted to grow through 2040.

Table 2: Napa County Population by Ethnicity

	2010	2020	2030	2040
Total Population[5]				
County Population	136,484	142,892	152,938	163,609
Population by Ethnicity[6]				
White, not Hispanic or Latino	56.1 %	50.6 %	45.6 %	40.9 %
African American	1.9 %	1.9 %	1.7 %	1.5 %
Hispanic or Latino	32.6 %	36.7 %	40.6 %	44.2 %
Asian	6.6 %	7.7 %	8.6 %	9.6 %
American Indian	0.4 %	0.4 %	0.4 %	0.4 %
Native Hawaiian or other Pacific Islander	0.2 %	0.3 %	0.3 %	0.3 %
Two or more races	2.1 %	2.4 %	2.8 %	3.2 %

[5] Association of Bay Area Governments, Metropolitan Transportation Commission, Plan Bay Area. July 2013.
[6] State of California, Department of Finance, Report P-1 (Race): State and County Population Projections by Race/Ethnicity, 2010-2060. December 2014.

Figure 2: Napa County Minority Population Distribution

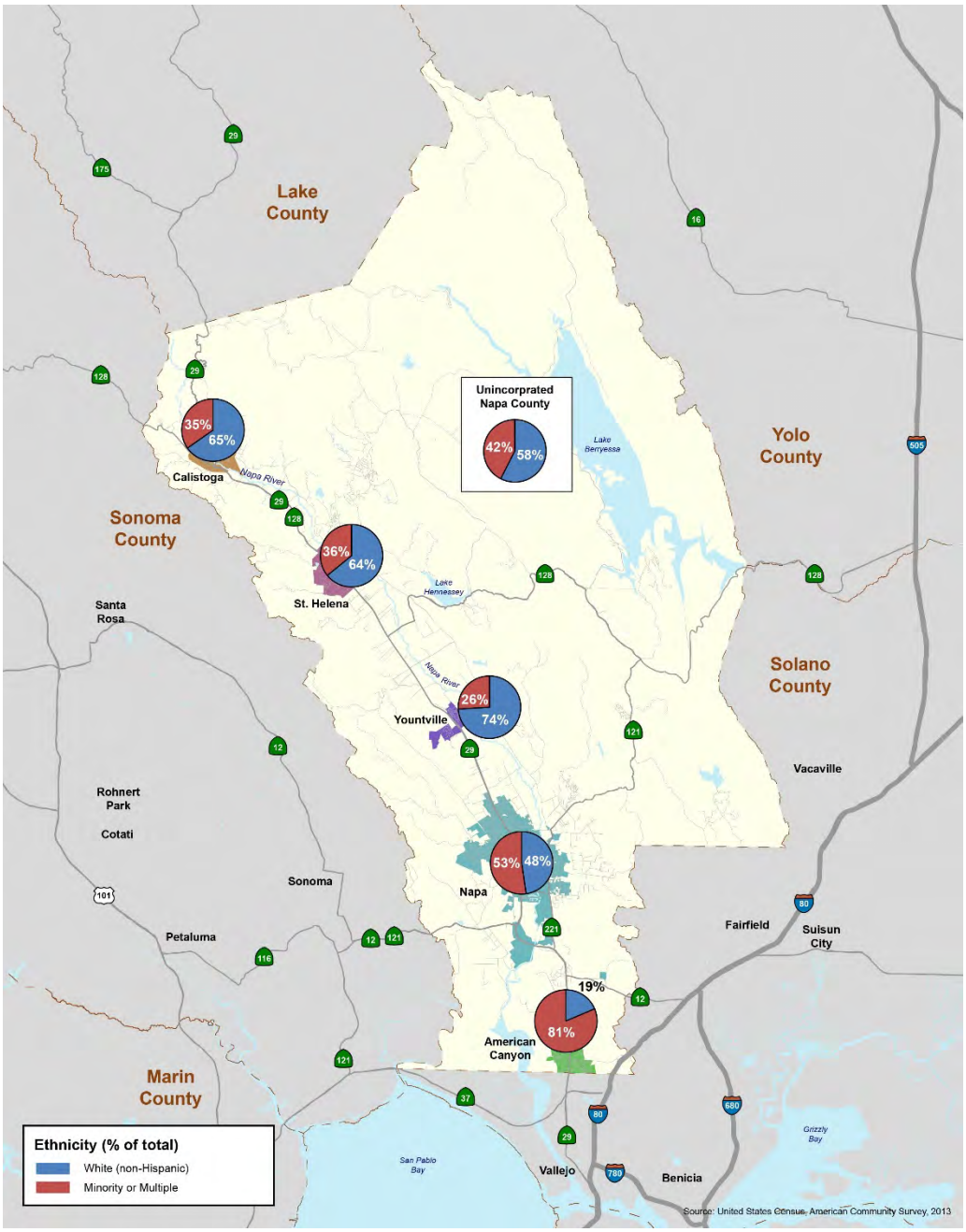


Figure 2 highlights the minority population distribution by each urban area and unincorporated Napa County. American Canyon has the largest minority population with 81% of the total, but the population of the City of Napa is also majority minority.

3.1.2 Population by Age

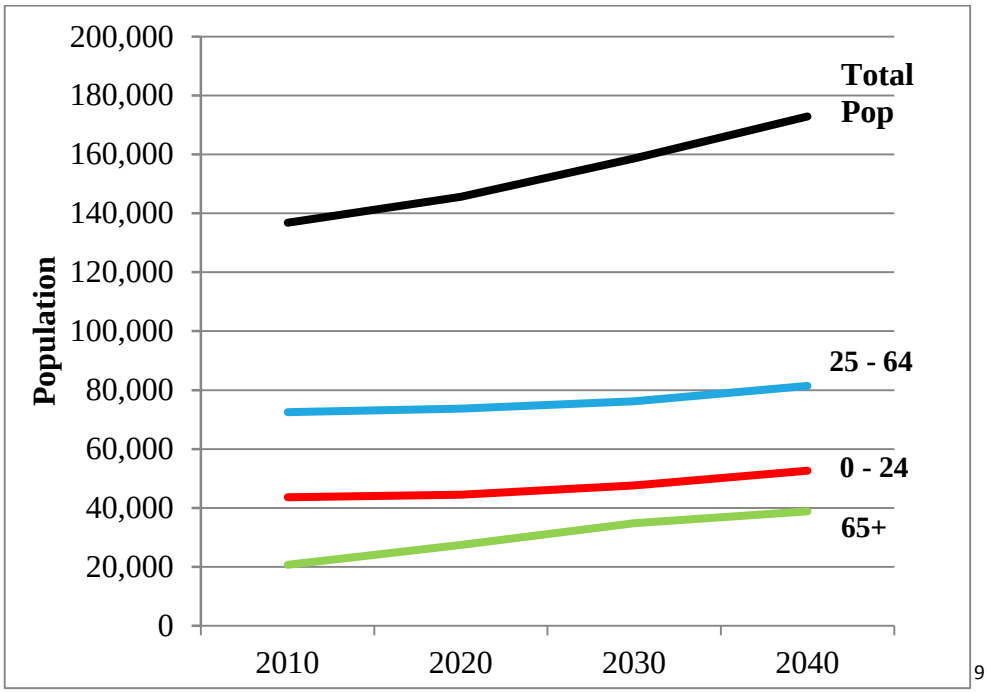
Approximately 53% of the county's population is aged 25-64 years old. The next largest age group is youth aged 5 to 17 years which makes up 17% of the county's population. Table 3 below highlights forecasted changes through 2040. The 25-64 year group is expected to decrease by six percent over the next 25 years, while all age groups over 64 are expected to increase. While the 25-64 age group is still forecasted to be the majority in 2040, the table shows that Napa County's senior population is increasing (from 16% of the population to 23%) while its share of "middle-age adult" residents is expected to decrease by about 6%.

Table 3: Napa County Population by Age

	2010	2020	2030	2040
Total Population[7]				
County Population	136,811	142,892	152,938	163,609
Population by Age[8]				
< 5 years	6 %	6 %	6 %	6 %
5 – 17 years	17 %	15 %	16 %	16 %
18 – 24 years	9 %	9 %	8 %	9 %
25 – 64 years	53 %	51 %	48 %	47 %
65 – 74 years	8 %	11 %	11 %	10 %
75 – 84 years	5 %	6 %	8 %	8 %
> 85 years	3 %	2 %	3 %	5 %

[7] Association of Bay Area Governments, Metropolitan Transportation Commission, Plan Bay Area. July 2013.
[8] State of California, Department of Finance, Report P-1 (Age): State and County Population Projections by Major Age Groups, 2010-2060. January 2013

Figure 3: Age distribution in Napa County over Time



[9]

Figure 3 shows the expected growth in overall population, with separate line charts for each age bracket. The <25 and 25-64 age brackets have the flattest forecasted growth while the >65 age bracket is expected to grow the fastest over the next 25 years.

[9] State of California, Department of Finance, Report P-1 (Age): State and County Population Projections by Major Age Groups, 2010-2060. January 2013. Note that totals are slightly different in these projections compared to those for 2040 shown in Table 3.

Figure 4: Napa County Age Distribution[10]

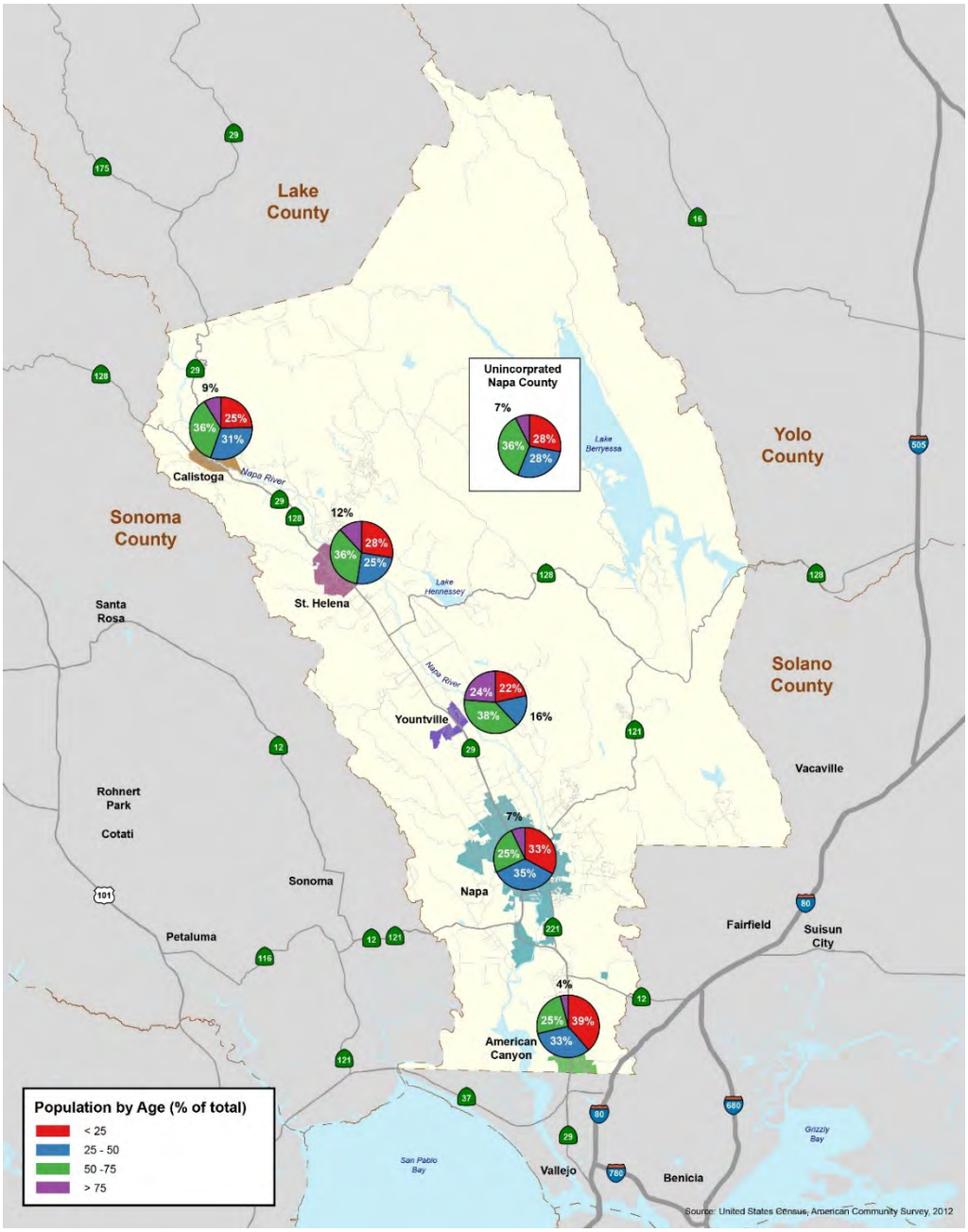


Figure 4 shows the age distribution by each urban area and unincorporated Napa County. Overall each urban area and unincorporated Napa County had a fairly even distribution among the age groups <25, 25-50, and 50-74. Those aged 75 and above comprised of the smallest percentage within the total population, with exception of Yountville.

[10] Age percentages represented in Figure 4 are aggregated from age percentages given in Table 3.

3.1.3 Population by Income

Areas with household earners over $100,000 are in portions of unincorporated Napa County and in St. Helena. Households with earnings of between $50,000 and $75,000 are concentrated in American Canyon, portions of Napa, Yountville and the City of Calistoga. There are two areas where household incomes are less than $50,000 - one within the City of Napa and the other in Moskowite Corner, an unincorporated area in Napa County. Figure 5 shows the household income distribution across the county.

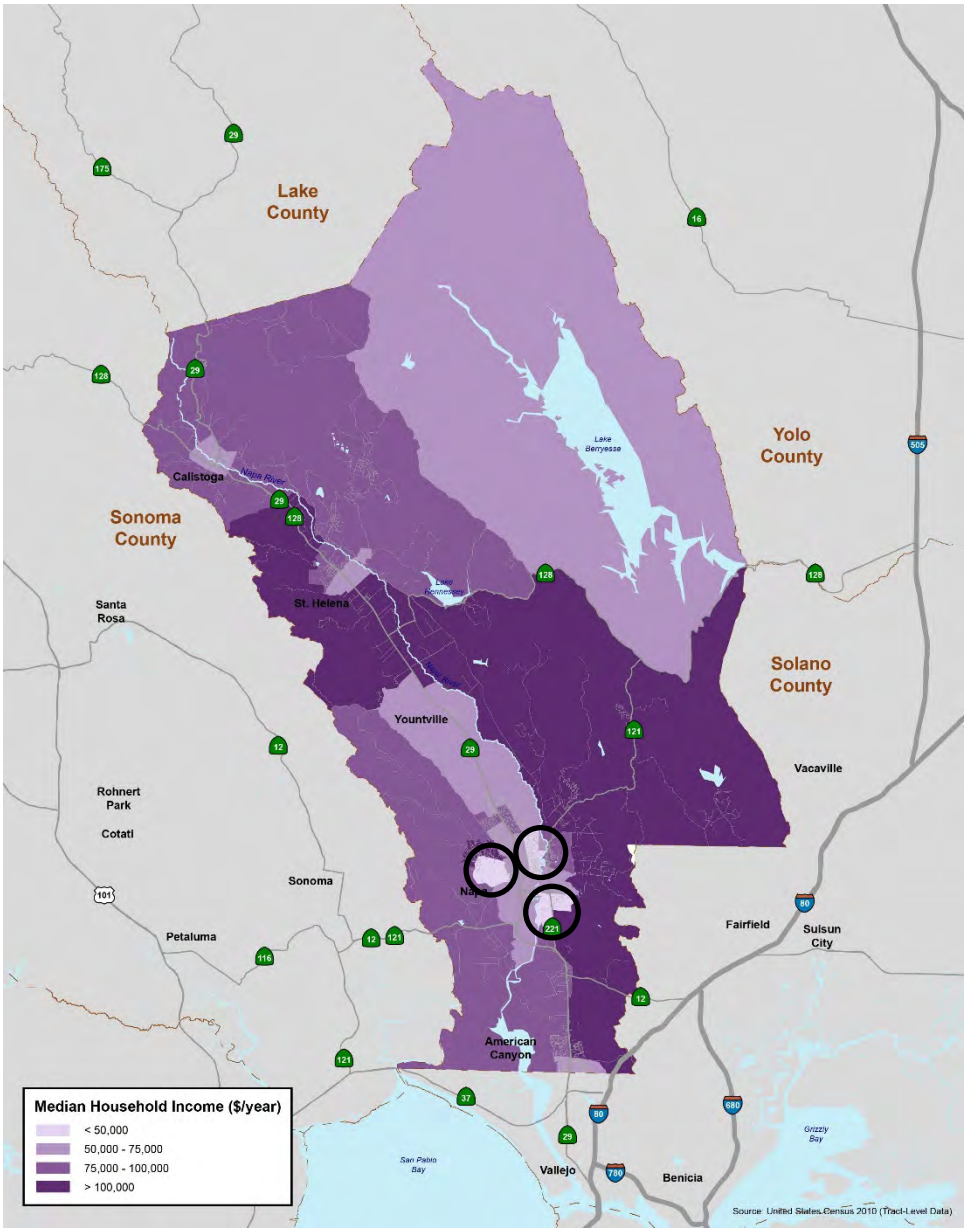


Figure 5: Napa County Household Income Distribution

MACINTOSH HD:USERS:MARK.PEARSALL:DOCUMENTS:ARUP:PROJECTS:SF OFFICE:NAPA COUNTY TRANSPORT PLAN:NAPA_V2:APPENDIX_A-TO BUILD:BUILD:REPLACE_9-3:CBTP PUBLIC REVIEW_REVISED20150820.DOCX

3.1.4 County Travel Patterns

Work trips in Napa County are primarily in single-passenger vehicles, followed by shared rides. Table 4 shows the breakdown by mode.

Table 4: Share of Daily Work Trips by Mode of Travel

	% of Total Work Trips	
Primary Mode	**Napa County**	**Bay Area Average**
Shared Ride	13%	11%
Drive Alone	74%	67%
Walk	4%	4%
Bike	1%	3%
Transit	2%	10%
Other	1%	1 %
Work at Home	6%	5%
Source: United States Census, American Community Survey, 2010		

One indicator for how competitive transit travel may be is the level of auto ownership. A higher level of auto ownership typically indicates that most trips are made by cars and that the market for transit may not be very strong. The reverse in auto ownership may indicate that transit travel is more competitive as a travel mode. Generally, the higher the household income level the greater the number of cars. As shown in Figure 5, most of the county is fairly high earning, and this translates to higher volume of car ownership. The breakdown of auto ownership by income is shown in Table 5.

Table 5: Auto Ownership by Income

Tract Median Annual Household Income	Average Vehicles per Household
< $50,000	1.71
$50,000 - 75,000	1.90
$75,000 – 100,000	2.10
$100,000 – 125,000	2.31
Source: United States Census 2010	

3.2 Existing Transportation Network

3.2.1 Major Corridors

Napa's urban centers generally align north to south, corresponding with State Route (SR) 29, which is the most heavily traveled corridor in the county

connecting all five urban centers together. SR 29 is also perceived as the gateway into Napa County from the south. Other major highways within the county are shown in Table 6.

Table 6: Napa County Major Highways

Highway	Description
State Route 12	State Route 12 is an east-west highway that connects Solano and Sonoma Counties to Napa County. SR 12 also connects to Interstate 80.
State Route 29	State Route 29 is a north-south highway that is the "gateway" to Napa County from the south. It also connects all five urban centers and is the most heavily traveled corridor in the county.
State Route 121	State Route 121 is an east-west highway that connects from SR 37 at Sears Point in Sonoma County to SR 128 near Lake Berryessa in Napa County
State Route 128	State Route 128 is an east-west highway that begins from Highway 1 in Mendocino County, travels through Calistoga and St. Helena in Napa County and ends at Interstate 605 in Winters in Yolo County.
State Route 221	State Route 221 is a short, 2.7-mile highway that connects SR 29 and SR 121 between Vallejo and Napa.

3.3 Public Transit

Ridership has increased dramatically in the recent past – 20% in 2014 over 2013 and 58% since the introduction of major service changes in December 2012. At the same time, rides per hour and on-time performance increased on all VINE routes.[11] This increase has been supported by the new Soscol Gateway Transit Center. The positive growth in ridership has encouraged NCTPA to forecast ridership will continue to increase for the next several years. This section describes transit service provided by VINE transit in Napa County.

3.3.1 Local Routes

VINE operates ten local routes within the City of Napa, described in Table 7 and shown in Figure 6. Routes 10 and 11 overlap to create a rapid transit corridor within the City of Napa and connections outside the county to Calistoga and Vallejo. VINE local routes, while not exclusively school service, are timed with high school and middle school bell times and most routes meet up at the Soscol Gateway Transit Center in downtown Napa within a narrow period to allow convenient transfers. In addition, the routes are designed to intersect in several other locations to provide easy transfers. All of the local routes, with the exception of Route 7, serve the two COCs in the City of Napa, while Routes 10 and 11 serve the South St. Helena COC.

[11] 2014 VINE Annual Report. Page 8.

Table 7: VINE Local Routes

Route	Route Description
1	Operates between Soscol Transit Center and Browns Valley in a modified one-way loop with service from 7AM to 6:05PM Monday through Friday. Saturday service runs from 6:55AM to 5:57PM. There is no Sunday service.
2	Operates between Soscol Transit Center and West/Center Napa and the Downtown in a one-way loop from 6:45AM to 6:49PM Monday through Friday. Saturday service runs from 6:55AM to 5:58PM. There is no Sunday service.
3	Operates between Soscol Transit Center and West Center Napa and the Downtown in a modified one-way loop with service from 6:30AM to 6:34PM Monday through Friday. Saturday service runs from 6:55AM to 5:56PM. There is no Sunday service.
4	Operates between East Napa and the Downtown in a one-way loop with service from 6:45AM to 6:51 PM Monday through Friday. Saturday service runs from 6:50AM to 5:55PM. There is no Sunday service.
5	Operates between Northeast Napa and the Downtown on a modified one-way loop with service from 6:30AM to 6:33PM Monday through Friday. Saturday service runs from 6:55AM to 5:57 PM. There is no Sunday service
6	Operates in Northwest Napa on a one-way loop with service from 7:15AM to 7:05PM Monday through Friday. Saturday service runs from 7:15AM to 6:20PM. There is no Sunday service.
7	Operates in North Napa on a modified one-way loop with service from 7AM to 6:24PM Monday through Friday. Saturday service runs from 7:05AM to 5:59PM. There is no Sunday service.
8	Operates between Soscol Transit Center and Redwood Park and Ride with service from 6:30AM to 6:48PM Monday through Friday. Saturday service runs from 7AM to 5:48PM. There is no Sunday service.
10	Operates from Soscol Transit Center to Downtown Calistoga with select trips to Napa Valley College. Service runs from 5AM to 9:49PM Monday through Friday, 5:50AM to 6:41PM on Saturdays and 7:30AM to 5:57PM on Sunday.
11	Operates from Redwood Park and Ride and the Vallejo Ferry Terminal. Service runs from 5:10AM to 8PM Monday through Friday, 6:30AM to 7:17PM on Saturday and 8:35AM to 7:20PM on Sunday.

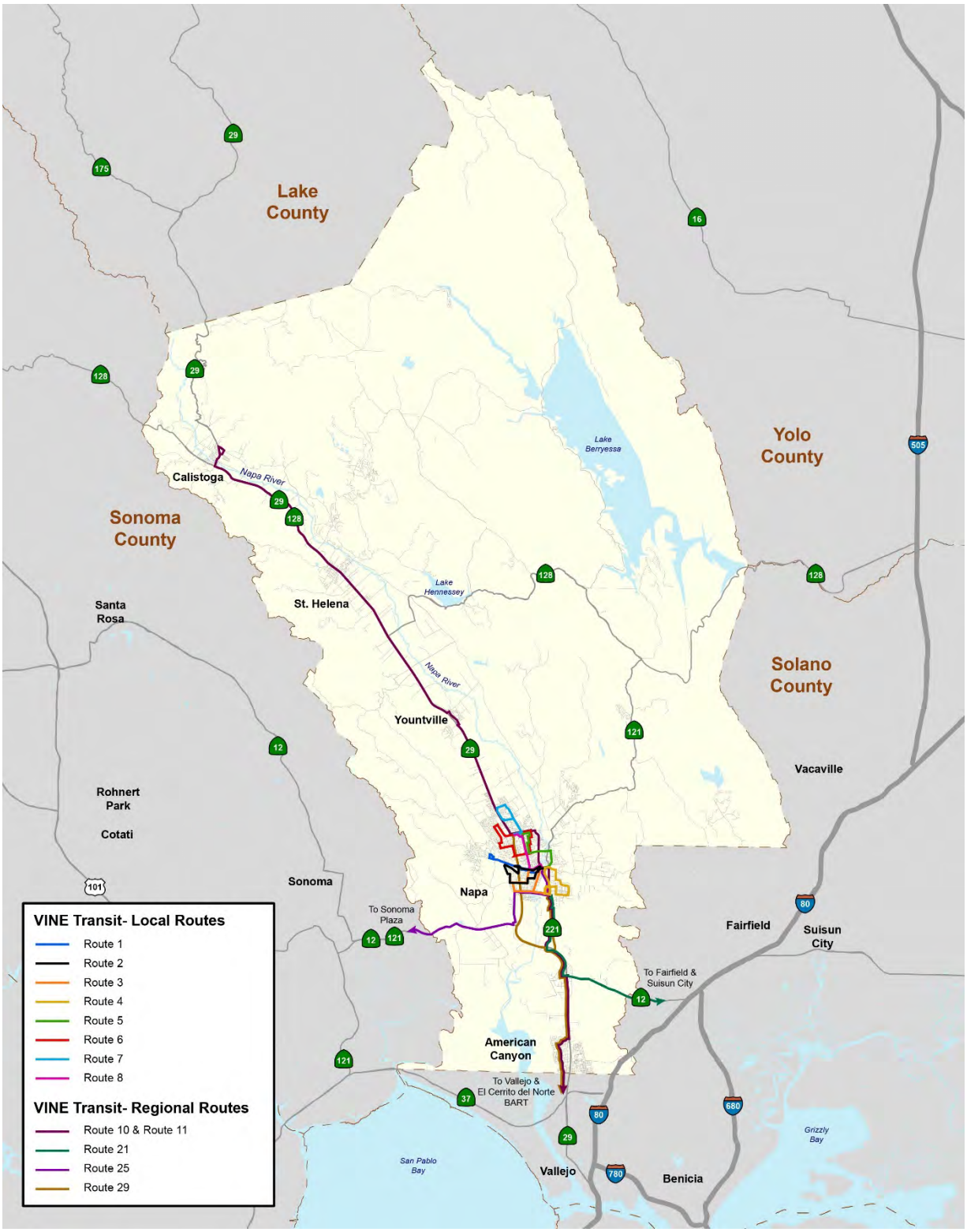
3.3.2 Regional Routes

VINE operates longer distance regional routes to Solano, Sonoma and Alameda counties, as described in Table 8 and shown in Figure 6. Lake Transit operates a route connecting Lake County to the St. Helena Shuttle and the Calistoga Shuttle. The Amtrak Thruway bus route running between Martinez and McKinleyville makes daily stops at the Soscol Gateway Transit Center. These routes are shown in Figure 7. All of the regional routes that serve the Soscol Transit Center provide service to the City of Napa's two COCs, while Lake Transit Route 3 serves the South St. Helena COC.

Table 8: InterCity Routes

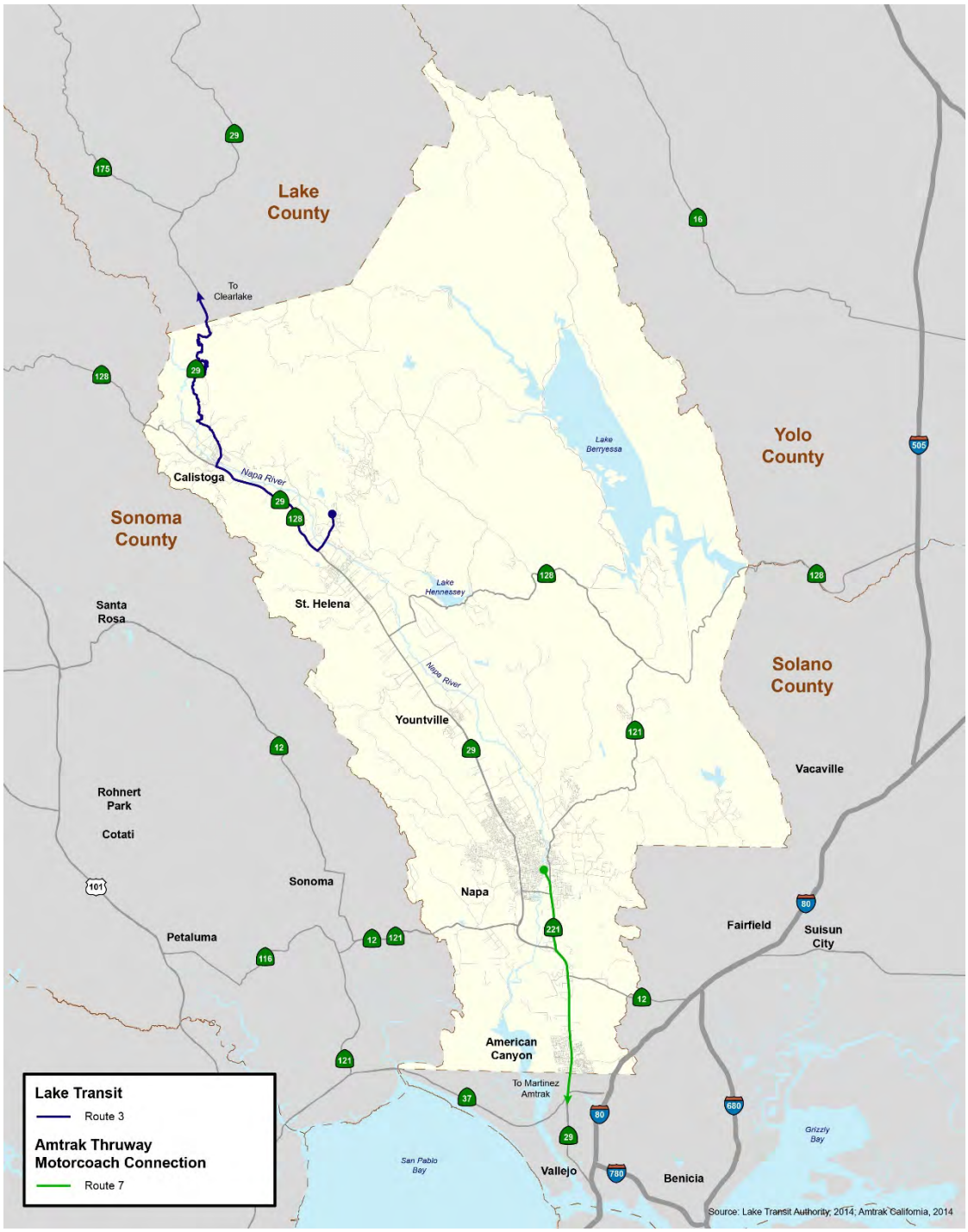
Route	Operator	Description
10	VINE	See detailed information about this route above. The route, in combination with the Route 11, serves as both an intercity route and local route.
11	VINE	See detailed information about this route above. The route, in combination with the Route 10, serves as both an intercity route and local route.
21	VINE	Operates from Soscol Gateway Transit Center to the Suisun Train Depot. Connects to Capital Corridor. Service runs from 5:30 AM to 7:26 PM on Monday through Friday (southbound) and 6:25 AM to 7:46 PM (northbound) with no service on Saturday or Sunday.
25	VINE	Operates from Soscol Gateway Transit Center to Sonoma Plaza. Service runs from 6:25AM to 7:11PM Monday through Friday with no service on Saturday or Sunday.
29	VINE	Operates from Soscol Gateway Transit Center to El Cerrito del Norte BART station with select trips from Calistoga, St. Helena and Yountville. Service runs from 4:44AM to 8:33PM (southbound) and 5:55AM to 8:17AM (northbound) with no service on Saturday or Sunday.
3	Lake Transit	Operates from Clearlake to Deer Park in St. Helena. Service runs from 6:10AM to 7:21PM Monday through Saturday with select trips not served on Saturday.
7	Amtrak	Operates between Martinez and McKinleyville, with three stops daily at the Soscol Transit Center

Figure 6: Vine Transit Network



MACINTOSH HD:USERS:MARK.PEARSALL:DOCUMENTS:ARUP:PROJECTS:SF OFFICE:NAPA COUNTY TRANSPORT PLAN:NAPA_V2:APPENDIX_A-TO BUILD:BUILD:REPLACE_9-3:CBTP PUBLIC REVIEW_REVISED20150820.DOCX

Figure 7: Inter-county Routes



3.3.3 Paratransit

VINE Go is an origin to destination, shared ride service which provides demand response, door-to-door, transportation to persons with disabilities in the cities of Calistoga, St. Helena, Napa, American Canyon, the Town of Yountville The service area is shown in Figure 10. VINE Go is the Americans with Disabilities Act (ADA) complementary paratransit service to the fixed route operators and runs at times corresponding to the fixed routes, as shown in Table 9. Riders must make reservations; these can generally be made on the same day, but not all same-day requests can be honored.

Table 9: VINE Go Service Information

Service	Hours of Operation
Monday - Friday	5:20am - 9:25pm
Saturday	6:30am - 8:41pm
Sunday	8:00am - 7:00pm

On July 1, 2015, new VINE Go fares went into effect. Fares range from $3.20 to $6.40 and are based on distance traveled. Passes are also available at a discounted price. Rides are charged based on the actual fare. ADA fares are no more than twice the adult fixed route fare charged by the VINE.

VINE Go paratransit service is supplemented by:

1) Taxi Scrip Program – Available to residents of the City of Napa. This service is for seniors and/or persons with disabilities that have evening trips after the bus goes out of service, or on a day when the rider may not feel well enough to take the bus. Eligible City of Napa residents may take a cab ride anywhere in the City of Napa and NCTPA will pay up to 50% of the cost of the cab ride up to a predetermined maximum amount.
2) Mileage Reimbursement Program – Available to qualifying residents of Napa County, traveling to medical appointments or grocery shopping and either beginning or ending their trip outside of transit service boundaries. The rider recruits a volunteer to drive them on such a trip and receives reimbursement to be provided to the volunteer driver to compensate for the driver's per-mile costs.

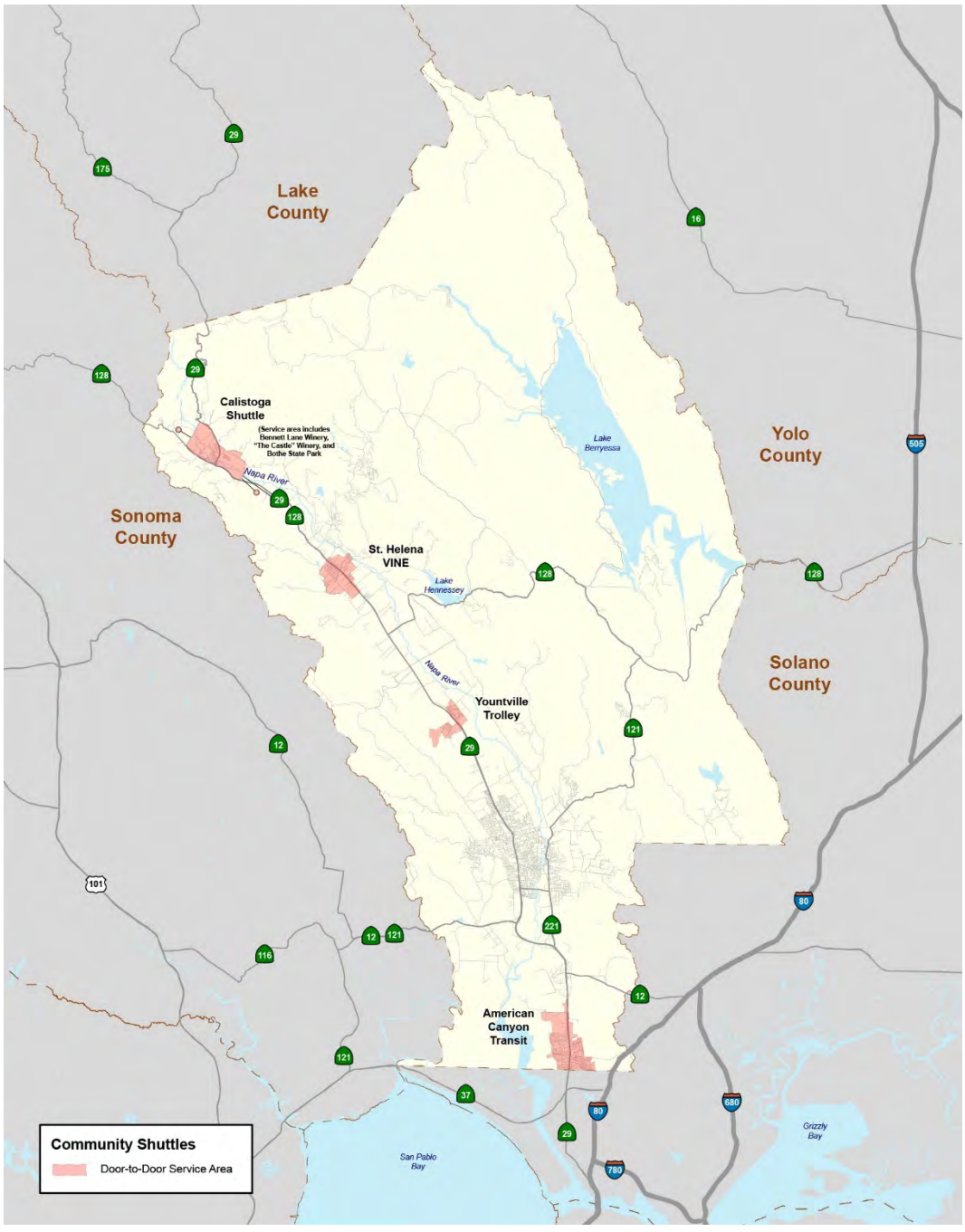
3.3.4 Community Shuttles

In addition to its local Napa City routes, NCTPA provides community shuttles that connect to the VINE's regional routes, including American Canyon Transit, Calistoga Shuttle, St. Helena Shuttle and the Yountville Trolley. These community shuttles act as local circulators and feeder service to the regional routes operating along Highway 29. They are described in Table 10 and shown in Figure 8. The South St. Helena COC is served by the St. Helena Shuttle.

Table 10: Community Shuttle Routes

Shuttle	Operator	Route Description
American Canyon Transit	NCTPA	An on-demand transit service within city limits for the general public for most of the day, with fixed route service during the morning and afternoon peak periods between Napa Junction/Walmart and Crawford/James/Post Office.
Calistoga	NCTPA	An on-demand transit service within city limits for the general public. No advanced reservations required. Service operates Monday through Sunday, with Sunday service May - November.
St. Helena	NCTPA	An on-demand transit service within city limits for the general public. No advanced reservations required. Service operates Monday through Sunday.
Yountville Trolley	NCTPA	An on-demand service between Yountville Park and the California Veterans Home. Service runs Monday through Saturday 10AM to 11PM and Sunday 10AM to 7PM.

Figure 8: Community Shuttle Service Area and Routes



3.3.5 VINE Fares

Fares are charged based on the route type. Local fares are $1.60, with discounts for youth, seniors, and the disabled. Children 5 and younger (limit 2 per paying adult) ride free. Adults with more than 2 children pay $0.50 per child. Seniors

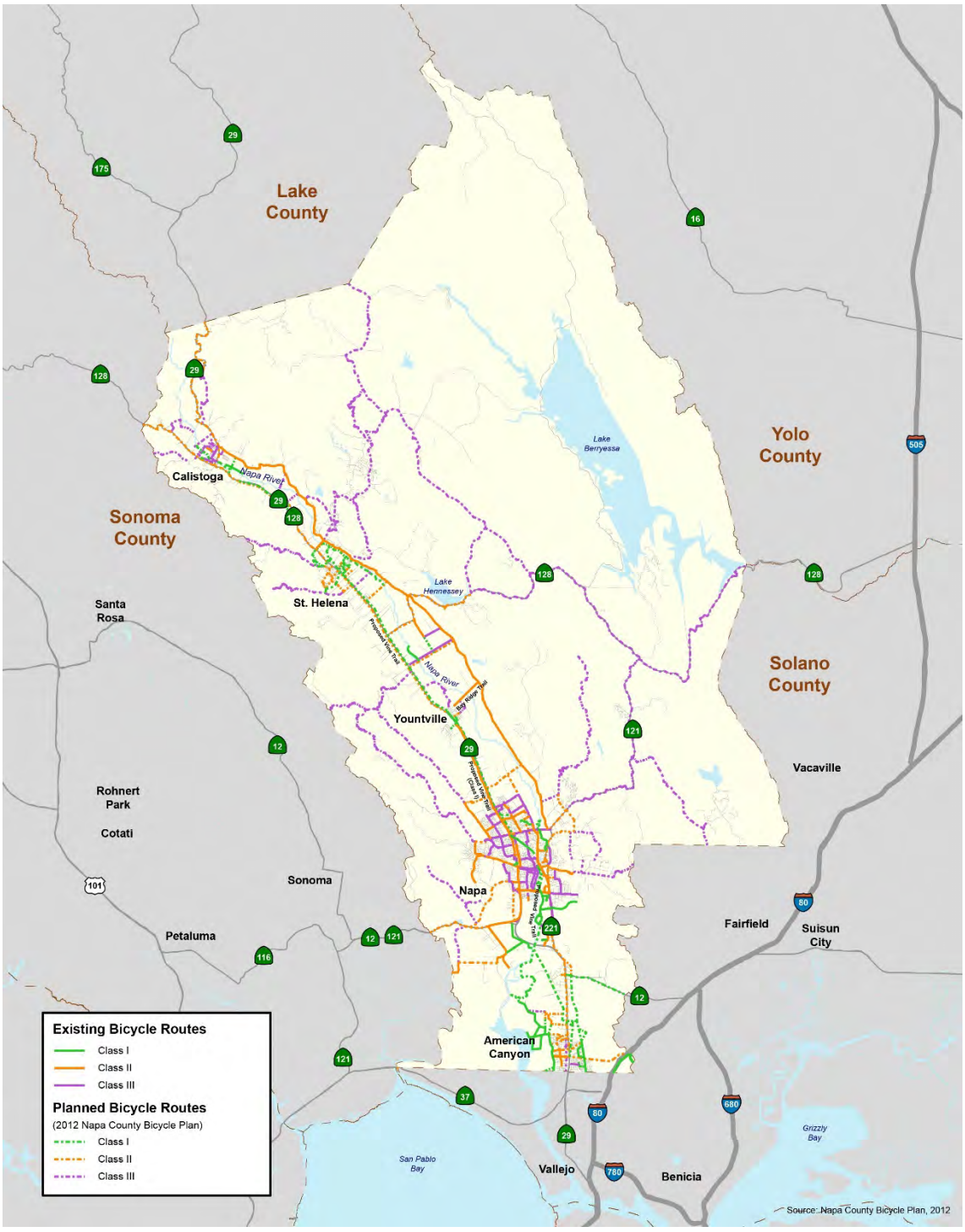
over 90 ride for free with a Lifetime Pass. Longer-haul routes have adult fares up to $5.50.

3.3.6 Bicycle and Pedestrian

NCTPA has adopted a long range strategic goal of having 10% of all trips in Napa County made by bicycle[12]. To achieve this goal, NCTPA developed the Countywide Bicycle Plan, described in section 3.5, which provides supportive policies and programs designed to increase the bicycle network. All jurisdictions have completed bicycle plans. NCTPA is currently preparing a Countywide Pedestrian Master Plan, expected to be completed in 2015. Both the Countywide Bicycle Plan and Countywide Pedestrian Master Plan reflect local planning efforts to improve the active transportation network. Figure 12 shows the existing and planned bicycle network in Napa County. The network provides both local and Countywide bicycle transportation options. This includes routes in both of the Napa Communites of Concern, as well as the South St. Helena COC.

[12] NCTPA Countywide Bicycle Plan (2012)

Figure 9: Napa County Existing and Planned Bicycle Network



3.3.7 Other transportation services

Napa County is also served by taxis, shared vehicles, private cars, and private shuttles and tour services. Taxi companies are headquartered in the City of Napa and in St. Helena, and there are a number of private transportation and tour companies offering tours to local destinations. Napa VINE offers a taxi scrip program, which provides a lifeline service for seniors within the City limits of Napa. Under the program, participants may take a cab ride anywhere in the City of Napa and NCTPA will pay up to half the cost of the cab ride up to a $12 maximum total. The average out of pocket cost for senior riders is $4 per ride.

In addition to traditional taxi service, new “shared economy” based ride sharing companies also operate in Napa County. Companies such as Uber and Lyft also offer ride services in Napa County.

NCTPA partners with Solano Transportation Authority to fund and operate the Solano Napa Commuter Information (SNCI). SNCI offers personalized transportation information to individuals and organizations regarding carpooling, vanpooling, bicycling and transit use. SNCI’s primary service area is the Solano and Napa area, but the program offers information on alternative transportation services throughout the Sacramento and Bay areas. Incentives include bicycle and vanpool incentives, and the Emergency Ride Home program. SNCI is a public agency program housed within the Solano Transportation Authority. All services are free. It is also a part of the Bay Area 511 Regional Rideshare Program.

4 Community Engagement

The CBTP is intended to be a collaborative document, resulting from a planning process that includes substantial input from community partners. These participants provided comments particularly with respect to gaps in the transportation system and reviewed preliminary strategies and solutions to address those gaps. The targeted groups include social service agencies and non-profit organizations with significant membership from low income and underrepresented minority communities. The groups also included transit riders and participants from neighborhood associations serving such communities. This approach to outreach closely tracks MTC’s new (2014) recommendations for outreach for the Countywide Transportation Plan (CTP), to which this CBTP is appended.

NCTPA worked with several key partners in developing this CBTP. These included:

- Continuum of Care: A consortium of non-profit, and government agencies that supply homeless services to the population of Napa County.
- Napa Healthy Aging Population Initiative (HAPI): HAPI is a broad-based, community committee within the Napa Valley Coalition of Non-Profit Agencies of more than 25 organizations and individuals that provide support services for Napa’s aging population. HAPI focuses on creating aging- friendly communities that benefit all.

- Napa Senior Center: Provides a wide range of programs and activities including daily meal program, Sunday Pot Lucks, and Pancake breakfasts.
- Napa Valley Coalition of Nonprofit Agencies: Influences local public policy and works to strengthen quantity and quality of services in Napa County via an extensive membership and committee structure.
- Paratransit Coordinating Council: Serves in an advisory capacity to the NCTPA Board of Director's on the transportation issues of persons with special needs, including elderly, disabled, and those of low income.
- Puertas Abiertas: This Community Resource Center works with local Latino residents in Napa to achieve healthy living, self-sufficiency, and opportunities for leadership and community engagement.
- Rianda House: Offers a one-stop shop connecting the local senior population to the programs, services and resources needed to support independence and successful aging.
- Visit Napa Valley: Lodging Committee: The valley's official tourism marketing association's committee specifically focused on lodging operations.
- Area Agency on Aging: This group has formed a sub-group (Upper Valley Senior Collaborative) primarily focused on issues (transportation, housing etc.) affecting senior populations.

In addition, NCTPA partnered with the management or resident associations of several low income housing locations.

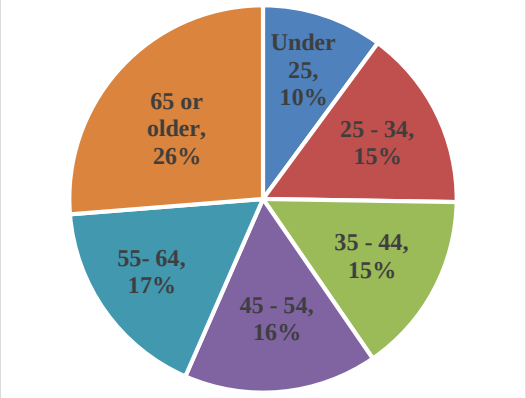
4.1 Outreach Effort

NCTPA's outreach for the CBTP took several forms to ensure Napa County residents and visitors had a variety of ways to participate and could find one or more approach that worked for them. Significant assistance this effort was provided by all of the partners described above. The outreach techniques included:

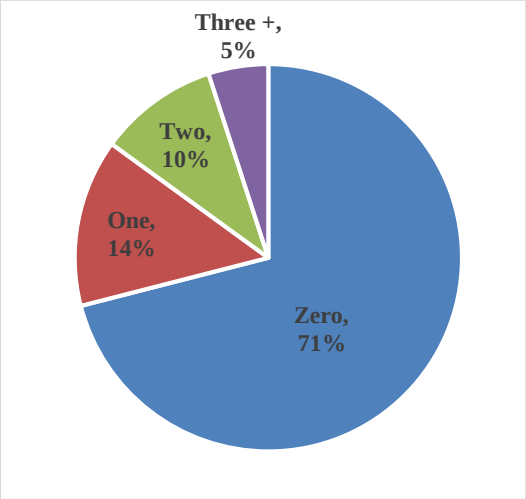
- Citizens Advisory Committee: Convened at the beginning of the project to gather expertise from local stakeholders representing the full geography of the County, service providers, employers, and groups with a particular interest in transportation.
- Public Workshops: Events open to the public that allowed participants to provide input on any transportation issues they felt should be addressed in Napa County. The workshops were held in three locations throughout the County to give people opportunities to attend at a convenient time and place.
- Surveys (in English and Spanish): The survey focused on topics of particular interest to disadvantaged communities and was distributed widely to workers in the hospitality industry in partnership with Visit Napa Valley as well as being handed out at other meetings and available online. The survey received 292 responses (244 from English version, 48

from Spanish version). Respondents were well distributed across age groups and roughly a third of the responses came from households with children. 15% of respondents reported having some kind of disability and 14% had no access to an automobile. Although 75% of the respondents drive, this figure fell to 45% among Spanish language respondents. The survey was successful in reaching low-income people; 38% of English respondents and nearly half of the Spanish-speaking respondents reported an income of $20,000 per year or less. See Appendix A for a full summary of results and a list of survey questions.

Age of Respondent



Number of School-Age Children in Household



- Online Map: Users were able flag any location in the County and post a comment on potential transportation issues at that location. The comments could be categorized as roadway, bicycle, pedestrian, and transit comments.
- Radio and Newspaper Public Service Announcements: Media outlets were used to publicize other opportunities to be involved in the CBTP process.
- Targeted Stakeholder Meetings: The NCTPA team convened meetings and attended regularly scheduled meetings of key partners described in Section 4.

Opportunities to participate in the process were publicized through NCTPA's partners, as well as via the radio and newspaper public service announcements, fliers posted on VINE buses and around the community, bookmarks distributed at local libraries and other public facilities, and NCTPA's website and email distribution network.

4.2 Public feedback summary

Comments from community members regarding transportation issues that particularly impacted communities of concern in Napa County fell generally into the following four categories:

- Improve Traffic Safety

Community members were interested in safety improvements for all modes, including access to transit. They mentioned several specific locations listed below, but also a general comment that potholes and striping on roadways need to be addressed for safety. In addition, there was interest in an education program focused on ensuring drivers, cyclists, and pedestrians are aware of traffic laws related to pedestrian and bicycle safety.

American Canyon:

- Crosswalk across Elliott Drive connecting American Canyon Senior Multi-Use Center to parking facility

City of Napa

- Add high-visibility crosswalk across Jefferson Street to access the Napa Senior Center
- Add lighted sidewalk reflectors at railroad crossing on Lincoln
- Add signalized pedestrian crossing at Lincoln near Adult Education
- Broken sidewalks (Lincoln near railroad tracks)
- Crosswalks on Imola Avenue
- Design streets for scooter/wheelchairs in bike lane (wider bike lane on Lincoln/Soscol)
- Improve traffic safety for autos entering/exiting Napa Park Homes from Lincoln Avenue
- Merge lane, reduced speed limit, or signage could help on Lincoln Ave
- Traffic light at Pueblo/Jefferson should have protected left turns

Countywide

- Crosswalks across SR 29.
- Improve lighting in areas around bus stops for safety
- Improve pedestrian crossing at Airport Blvd and SR 29 intersection
- Signals for cyclist crossings of Highway 12/Old Sonoma Road
- Pedestrian use of bike lanes in places without sidewalks moves cyclists into vehicle lane causing traffic danger.

St. Helena:

- Add a crosswalk at Woodbridge Apartments on Hunt Avenue.
- Add a stop light at the intersection of Silverado Trail and Pope Street
- Add sidewalk on south side of Hunt Avenue, east of Woodbridge Apartments
- Enhanced pedestrian crosswalks across SR 128/White Lane.
- Improve lighting, sidewalks, and pavement markings at the intersection of Pope and Peppertree

- Maintain and Repair Bike and Pedestrian Facilities

Participants noted that sidewalks were in poor repair Countywide, and also that bicycle facilities often consist of shoulders that are either unpaved (gravel) or in need of repair. Specific suggestions included:

Countywide:

- Repave Highway 12/Old Sonoma Boulevard
- Paving shoulders on SR 29 to provide space for bicycles
- Repair and improve sidewalks near bus stops

City of Napa:

- Repair sidewalks near Harvest Middle School

- Add Sidewalks and Bikeways to Expand the Network

  In addition to making the existing bicycle and pedestrian network more functional, CBTP commenters noted opportunities to expand the network to make it more complete. These included:

American Canyon:

- Add bike lanes to American Canyon Road

City of Napa:

- Bike lanes on Trancas Street from Redwood Road to Silverado Trail
- Sidewalks in the area around the Soscol Transit Center
- Complete southbound bicycle lanes on Soscol Avenue after Imola Avenue in the City of Napa
- City of Napa: Add bike lanes on First Street from Main to California in the City of Napa
- City of Napa: North side of Old Sonoma Road is missing sidewalk

St. Helena:

- Add sidewalk on south side of Hunt Avenue, east of Woodbridge Apartments
- Keep the Pope Street bridge for pedestrians, and add a new bridge for autos

- Enhance Bus Service

  Comments focused on the limitations of the bus schedule, including long travel and wait times, and concerns that the routes did not serve destinations that were important to them. Participants often noted that it is faster to drive to their destination, particularly due to the rural nature

of Napa County. Some noted that that accessing bus stops was difficult and potentially dangerous due to the distance from home or work or a lack of sidewalks while walking to the bus stop. There was strong interest across all respondents in expanded early morning, later evening and weekend buses. Specific suggestions included:

American Canyon:

- Add bus shelters in front of WalMart
- Improve Route 11 stop in front of American Canyon City Hall
- Locate bus stops closer to the Senior Center

City of Napa:

- Add an eastbound Route 5 stop across Lincoln Avenue from the Napa Park Homes and shelters on both sides of the street
- Create a new bus route on California Boulevard

Countywide

- Create an Oxbow bus or shuttle to serve Downtown Napa and a shuttle between Rutherford and St. Helena
- Improve Route 10 by adding a Downtown Napa stop before the Soscol Transit Center and removing diversion to Veteran's Home in Yountville
- Add bus shelters at stops near schools
- Add earlier/weekend service on Route 29 to BART
- Add Spanish-speaking drivers and dispatchers
- Improve marketing of bus service with: schedules at each bus stop/shelter and contact information; work with local media to highlight transit options/users; work with Napa Valley College to encourage students to take transit
- Improve VINE Go service
- Add Route 11 bus stop at Airport Blvd and Route 29
- Extension of VINE service to the Napa Pipe project

St. Helena:

- Add dedicated bus stop and regular transit for those going to appointments at the Women's center
- Add service to St. Helena Shuttle to alleviate overcrowding on route to schools
- Connect VINE to Lake County Transit Route 3, with stops at St. Helena City Hall and Rianda House

5 Transportation Solutions

Based on the community engagement effort, a set of programmatic themes emerged highlighting the types of transportation needs desired by the community. These themes are not tied to specific transportation solutions, but help to define the types of priorities the community views as important. The creation of the themes is helpful given the CBTP speaks for communities across the entire county, which may not necessarily all share the same concerns and needs.

Table 11 shows the program themes that emerged from the engagement process, along with a brief description of the program and examples that would fit with program themes. While the focus of the CBTP is broadly on access to transit, participants in meetings about the Plan raised issues of importance to them that often focused on the safety and effectiveness of the transportation network as a whole. Improving this will also improve access to transit, and access to destinations – in a rural county like Napa, bus service cannot directly serve all important destinations and is supplemented with biking, walking, shuttles, paratransit, taxis, and use of passenger vehicles (shared or single-user).

Table 11: CBTP Recommended Programmatic Themes

Program Theme	Program Description	Program Examples
Improve Traffic Safety	Improve pedestrian, bicycle conditions to reduce traffic incidents and accidents and increase safety	1. Pedestrian crosswalks 2. Pedestrian, bicycle caution signage 3. Pedestrian crossing signals 3. Bicycle signals
Maintain and Repair Bike and Pedestrian Facilities	Maintain and repair pedestrian and bicycle facilities to enable and encourage pedestrian and bicycle mobility	1. Fix broken sidewalks 2. Complete sidewalk paths and missing links 3. Pave shoulders to create Class III bicycle paths 4. Re-striping bicycle lanes
Add Sidewalks and Bikeways to Expand the Network	Install new pedestrian and bicycle facilities to enable and encourage pedestrian and bicycle mobility	1. New sidewalks 2. New bicycle paths 3. New bicycle lanes

Program Theme	Program Description	Program Examples
Enhance Bus Service	Introduce bus service enhancements that improve service for existing riders and attract new riders	1. New bus routes, connections, extended service hours 2. Bus stop amenities 3. Educational/outreach activities

6 Implementation Plan

While some specific comments about locations and program improvements were received by members of the community during the outreach process, many community members provided comments that more generally characterized mobility challenges or areas of the transportation infrastructure that could be improved. These comments were then categorized into programs in order to facilitate longer term action plans. The community engagement process for this CBTP yielded a number of transportation solutions will be considered for further development as the CBTP and the Countywide Transportation Plan (CTP) are implemented. Table 12 highlights some of the transportation solutions that emerged during the community engagement and how they relate to identified programs and projects within the CTP.

Table 12: Potential CBTP Projects and Programs Related to CTP

	Related Countywide Transportation Plan Projects and Program	
Program Theme	Potential CBTP Projects (from Community Engagement)	Specific CTP Program or Project
Improve Traffic Safety	• Improve pedestrian crossing at Airport Blvd and SR 29 intersection • Improve lighting, sidewalks, and pavement markings at the intersection of Pope and Pepperwood • Signals for cyclist crossings of Highway 12/Old Sonoma Boulevard	• Program #18: City of Napa Sidewalk and Pedestrian Network Expansion • Program #22: Napa County Expansion of Class I Bicycle Facilities • Program #23: Napa County Maintenance and Rehabilitation of Existing Class I Bicycle Facilities

	Related Countywide Transportation Plan Projects and Program	
Program Theme	Potential CBTP Projects (from Community Engagement)	Specific CTP Program or Project
		• Program #24: Napa County Sidewalk and Pedestrian Network Expansion
Maintain and Repair Bike and Pedestrian Facilities	• Complete southbound bicycle lanes on Soscol Avenue after Imola Avenue in the City of Napa • Enhanced pedestrian crosswalks across SR 128/White Lane. • Non-profit/community organization partnership program to affordably lease or rent bicycles to the community	• Project #37: Construct Sidewalks Along Imola Ave Where None Exist From Foster Rd to Eastern City Limits • Project #78: Install Traffic Calming Devices, Upgrade Sidewalk, Lighting, and Landscaping in Downtown St. Helena • Program #40: St. Helena Sidewalk and Pedestrian Network Expansion
Add Sidewalks and Bikeways to Expand the Network	• Bike lanes on Trancas Street from Redwood Road to Silverado Trail • Add bike lanes on First Street from Main to California in the City of Napa • Sidewalks in the area around the Soscol Transit Center	• Project #60: Widen Sidewalks on Main St. from First St. to Third St. • Program #18: City of Napa Sidewalk and Pedestrian Network Expansion • Program #21: Napa County Bicycle Network (Expansion) • Program #22: Napa County Bicycle Network (Maintenance &

Program Theme	Related Countywide Transportation Plan Projects and Program	
	Potential CBTP Projects (from Community Engagement)	Specific CTP Program or Project
		Rehab)
Enhance Bus Service	• Extension of VINE service to the Napa Pipe project • Add Route 11 VINE bus stop at Airport Blvd and Route 29 • Extend evening service hours past 7pm • Add bus shelters in front of WalMart in American Canyon • Create a new bus route on California Boulevard • Add dedicated bus stop and regular transit for those going to appointments at the Women's center • Offer supplemental transportation service with taxis and similar services	• Program #25: VINE Bus Shelter Replacement Program • Project 105: New Shelters and Stop Amenities • Program #27: VINE Transit Operations • Project 104: VINE Transit System Growth (Operating Costs)

7 Funding Options

The Lifeline Transportation Program is one of the major umbrella funding sources for projects originating from the CBTP. The program consists of funds from the Job Access and Reverse Commute (JARC) and the State Transit Assistance (STA) funds and supports a wide range of transportation improvements that primarily benefit Communities of Concern. Now on its fourth cycle of funding, the program of projects for the next cycle is scheduled to be adopted by April 2017. Depending on the funds, project sponsors need to demonstrate eligibility for use of the fund source, as well as the applicability to the CBTP. Cycle 5 will cover a three-year programming cycle, FY2016-17 to FY2018-19. Typically, the funding program is administered by the county CMA.

Besides the Lifeline Transportation Program, other grant opportunities are available. Potential CBTP funding sources include:

7.1 Federal Funding Sources

Federal Highway Administration (FHWA): The FHWA provides assistance for improvements to sidewalks, bicycle facilities, and transit infrastructure, primarily through the Surface Transportation Program.

Federal Transit Administration (FTA) Section 5337: FTA Section 5337 program is a new grant program to maintain public transportation systems in a state of good repair. This program replaces the fixed guideway modernization program (Section 5309). Funding is limited to fixed guideway systems (including rail, bus rapid transit, and passenger ferries) and high intensity bus (high intensity bus refers to buses operating in high occupancy vehicle (HOV) lanes). Projects are limited to replacement and rehabilitation, or capital projects required to maintain public transportation systems in a state of good repair.

FTA Section 5303: FTA Section 5303 funds are set aside for Metropolitan Planning Organizations (MTC in the Bay Area) to support planning activities that meet a wide range of goals, including increasing transportation safety for motorized and non-motorized users, as well as improving accessibility and connectivity within the transportation network.

FTA Section 5310: FTA Section 5310 funds are targeted to discretionary capital assistance to serve the transportation needs of elderly persons and persons with disabilities. Projects funded through this fund must be consistent with a plan that relates human service and public transit needs, similar to the content of this CBTP.

FTA Section 5311: FTA Section 5311 funds are distributed to the regions based on a non-urbanized area formula. For Napa, funds are used in unincorporated areas of the County. These funds are used for transit capital and operating purposes in non-urbanized areas

7.2 State Funding Sources

Transportation Development Act Articles 4, 4.5, and 8: In 1971, the State Legislature passed the Transportation Development Act (TDA), which generates funds from a tax of one-quarter of one percent on all retail sales in each county. This tax is collected by the state and allocated by MTC to fund transit operations, special transit for disabled persons and other transit related programs. These funds are currently used by NCTPA for operations and capital improvements for the VINE system.

Transportation Development Act Article 3: In addition to the transit funds described above, TDA funds under Article 3 support development of pedestrian and bicycle facilities

Active Transportation Program: The State of California created the Active Transportation Program (ATP) to consolidate a number of other funding sources intended to promote active transportation, such as the Bicycle Transportation

Account and Transportation Alternatives Program, into one program. MTC will be releasing a Call for Projects for the ATP program on March 26, 2015.

State Transportation Improvement Program (STIP): The State of California administers a five-year plan identifying specific projects for receipt of State transportation funds for State highway improvements, intercity rail, and regional highway and transit improvements.

7.3 Regional Funding Sources

Safe Routes to School: Within the Climate Initiatives Program, MTC has newly established a Safe Routes to School Program in the region which provides funding to the counties, further augmenting the federal and state SR2S programs, administered by Caltrans, and local programs. Monies are distributed to the counties proportionately according to their share of total school enrollment in the region. The county congestion management agencies (CMA) are responsible for convening a collaborative county process in order to decide which investments and which agency will implement the program.

One Bay Area Grant Program : As Part of the OBAG program each CMA may program funds to a number of transportation improvement categories**:**

- Local Streets and Roads Preservation
- Bicycle and Pedestrian Improvements
- CMA Planning Activites
- Safe Routes to School
- Priority Conservation Areas
- Tranportation for Livable Communities

7.4 Local Funding Source

Measure T: In 2012, Napa County passed Measure T, a local tax measure that raises money exclusively for street and road repairs in Napa County. Estimated to raise $282 million dollars over 25 years, Measure T will take effect when the current Measure A sunsets in 2018. Complete streets improvements will be eligible for funding under Measure T.

8 Next Steps

The CBTP is an ongoing conversation tool between the local communities of concern and the local jurisdictions, the County, and NCTPA to maintain an inventory of transportation needs in Napa's COCs.

The CBTP recommends the following next steps:

1. Finalizing and adopting the CBTP

2. Matching specific projects to the program themes
3. Identifying and obtaining project funding

NCTPA will lead the process to coordinate with the individual cities within the county to facilitate implementation. NCTPA and the cities will hold periodic public meetings in order to maintain implementation momentum and update the public on progress with projects identified in the CTP and CBTP.

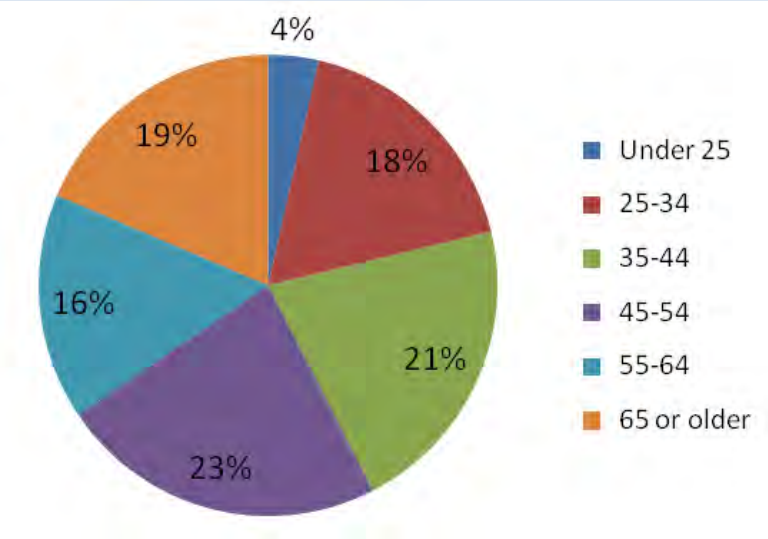
Appendix A: CBTP Survey Summary

CBTP survey

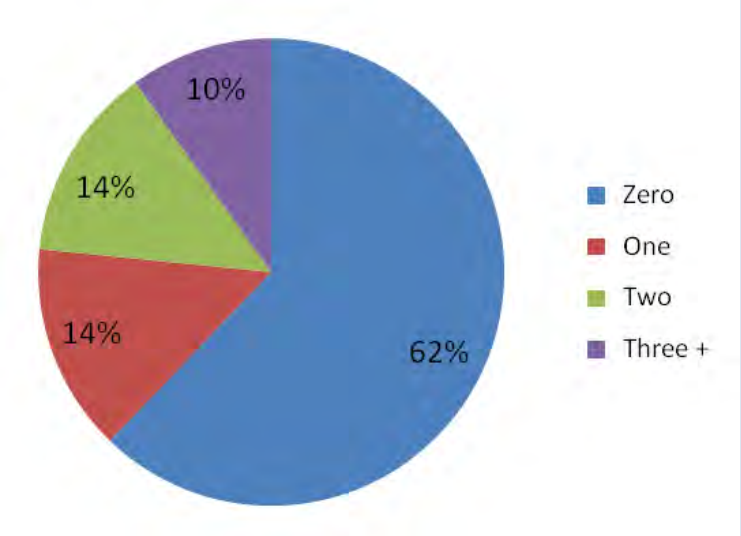
- **Purpose:** Learn about the transportation needs and concerns of disadvantaged communities, and get input on ways to improve the system
- **English** and **Spanish** versions
- **Open one month:** July 15–August 31
- **21 questions**
- **117 responses** (69 from English version, 48 from Spanish version)

Demographics of respondents

Age



School-age children in household

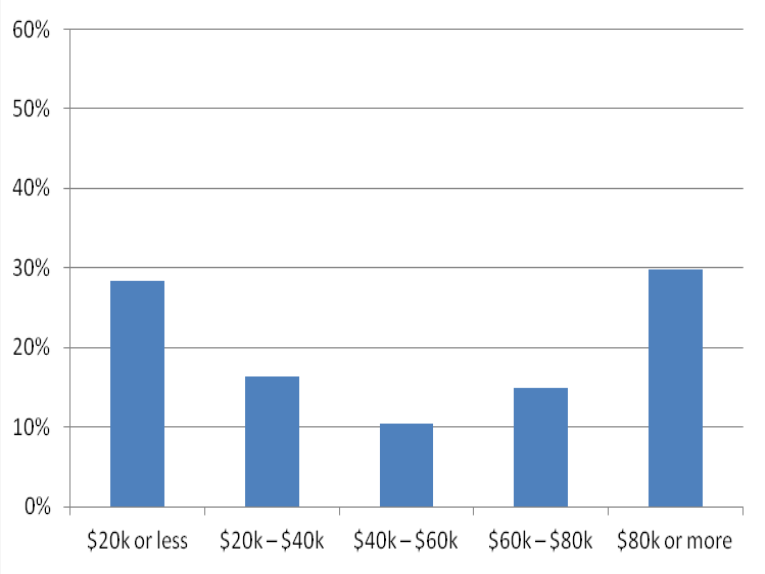


Demographics of respondents

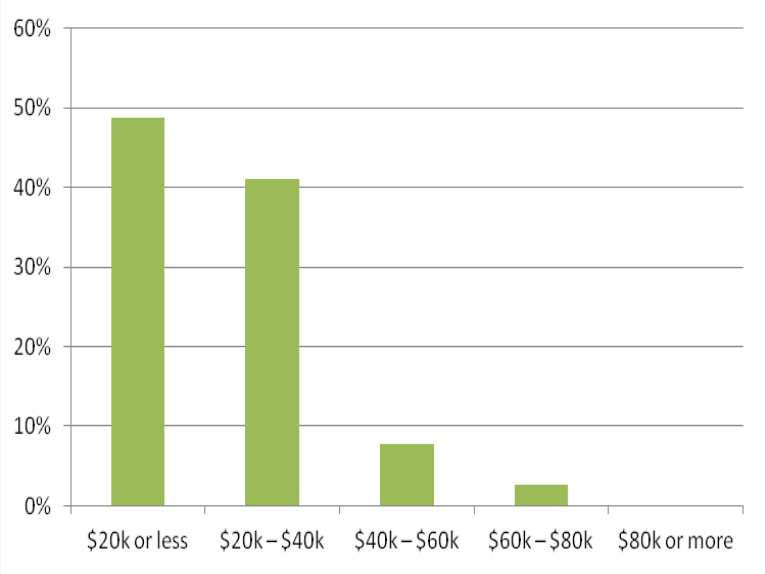
- 12% have a **disability**
- **Access to a car?** 57% always, 14% never
- 66% **drive** (80% on English survey, 45% on Spanish)
- 37% said others frequently **depend on them for rides**

Annual household income

English survey



Spanish survey

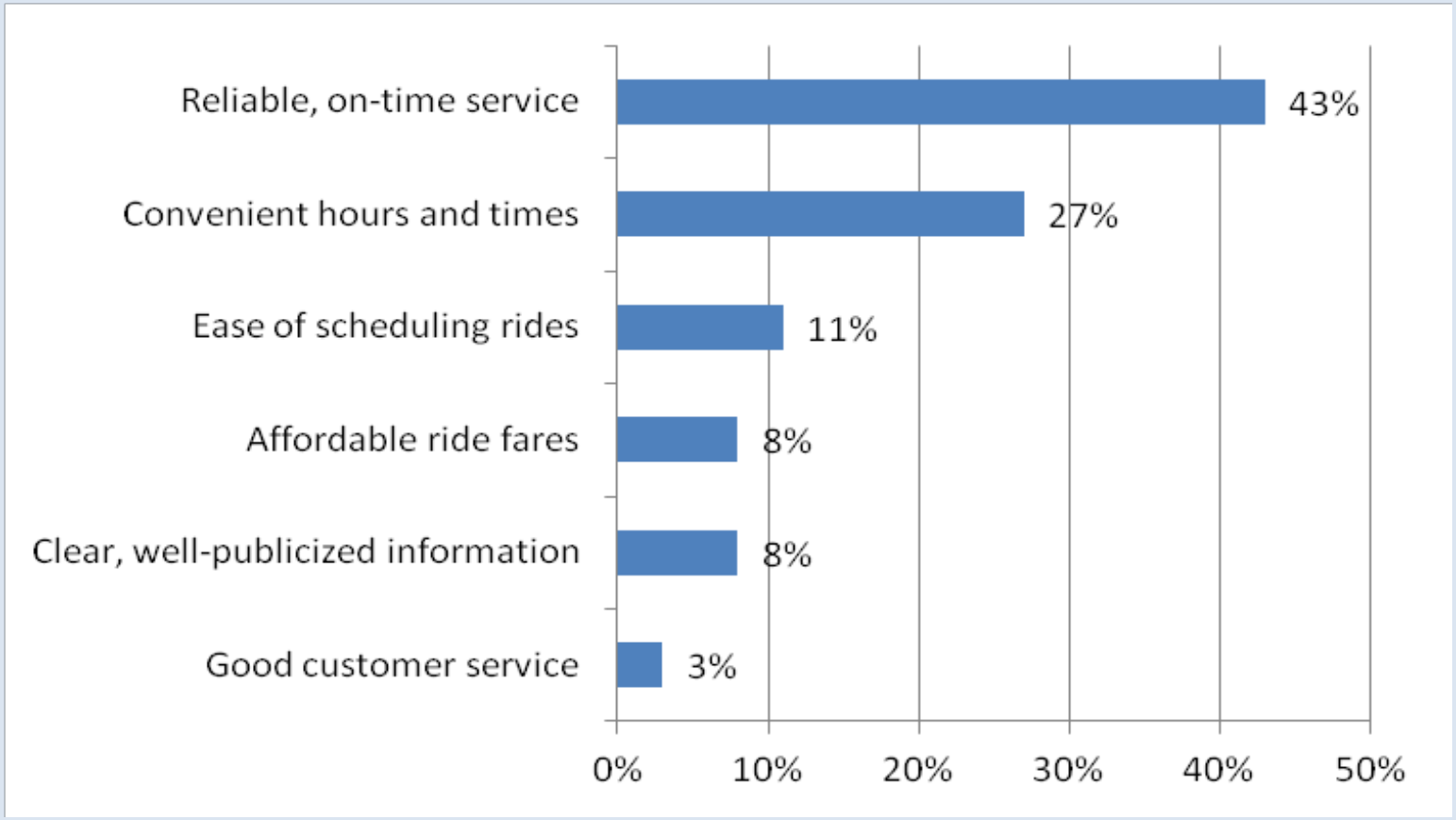


Challenges related to transit

Number of people who cited…

- Takes too long 37
- Doesn't go where I need 31
- Stop is too far from home or destination 22
- Doesn't run late enough 21
  - Doesn't run early enough 12
  - Information about bus services isn't clear 11
  - Inadequate bus shelters 10
  - Doesn't feel safe on the bus 9
    - It's too expensive 7
    - Getting to bus isn't safe 2

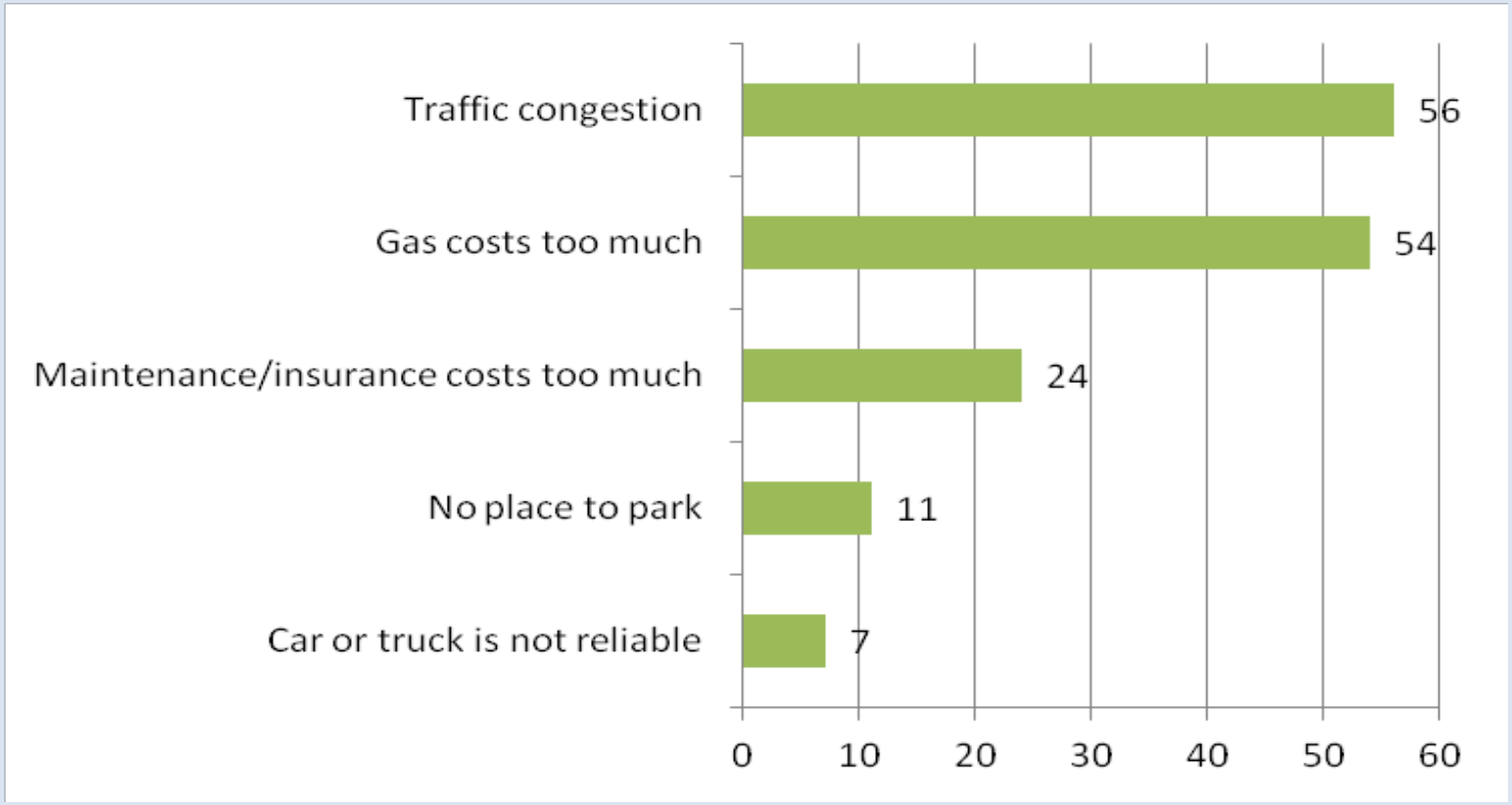
Top paratransit need



37 responses

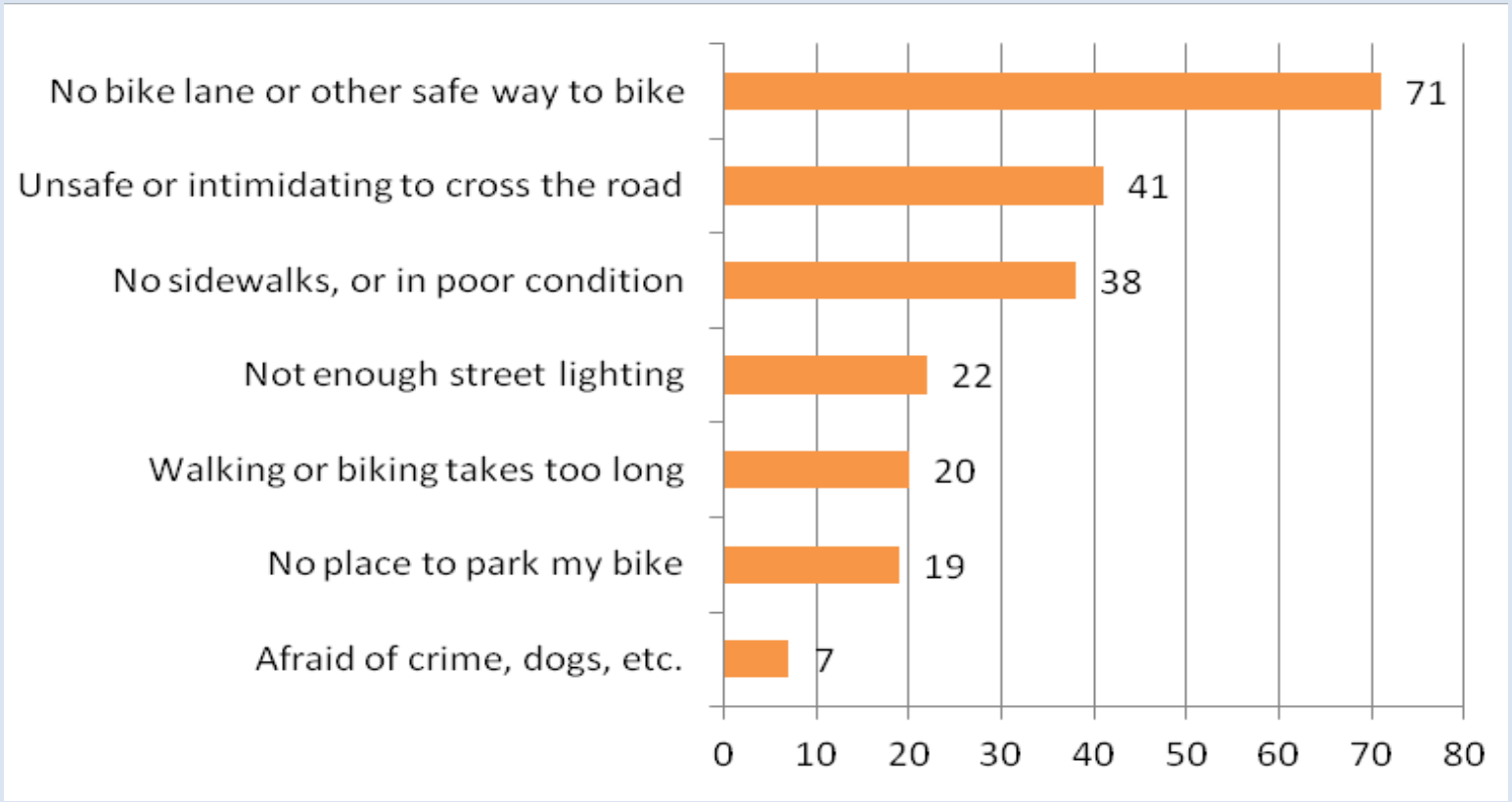
Issues related to driving

Number of people who cited…



Issues related to walking or biking

Number of people who cited…



How important are these to you?

Percent saying "very important"…

- More bike lanes or bike paths 77 %
- Faster or more frequent bus service 60 %
- Better bus connections to outside of Napa County 60 %
- Safer crosswalks around schools 56 %
- Better bus connections within Napa County 51 %
- Safer crosswalks around bus stops 51 %

- Traffic-calming in residential neighborhoods 46 %
- Late-night transit service 44 %
- Better information about transit services 40 %
- More or nicer bus shelters 39 %
- More extensive network of sidewalks 38 %
- Vanpools or shuttles to jobs 34 %

109 responses

How would you improve conditions?

Main themes

- More and safer bike lanes, trails, sidewalks and footpaths
- Early-morning and night-time bus service
- Better maintained facilities: bike lanes/trails, roads, sidewalks

50 comments

D. Priority Development Area Investment and Growth Strategy

(THIS PAGE INTENTIONALLY LEFT BLANK)

Napa County Priority Development Area (PDA) Investment and Growth Strategy

Napa County Transportation and Planning Agency

April 4, 2013
Final Draft

NC TPA Napa County Transportation & Planning Agency

Table of Contents

Chapter 1: INTRODUCTION and BACKGROUND

In an effort to encourage future growth near transit and in existing communities, Napa County Transportation and Planning Agency (NCTPA) has partnered with the County of Napa's local jurisdictions to create strategies that promote a priority-setting process for future development in Napa County's Priority Development Areas (PDAs). PDAs are locally identified areas that can accommodate future housing and employment growth near public transportation. The development of PDAs will help to reduce traffic congestion and encourage transit use, walking, and biking. With the growing population, worsening traffic conditions and constrained natural and urban environments it is more important than ever to plan smarter for future generations. The shift to more transit oriented development (TOD) has not only been driven by these factors, but has also been mandated by recent California State laws, in particular AB 32 and SB 375. These laws require Metropolitan Planning Organizations (MPO) and other regional agencies to develop a Sustainable Communities Strategy (SCS) as a part of the long range planning process.

The San Francisco Bay Area's MPO is the Metropolitan Transportation Commission (MTC). In partnership with the Association of Bay Area Governments (ABAG), MTC is developing the Bay Area's SCS as part of the emerging Regional Transportation Plan (RTP) – known as "Plan Bay Area" www.onebayarea.org. To meet the SCS goals and as a requirement for receiving federal highway funds, MTC is requiring each county Congestion Management Agency (CMA) to create a PDA Investment and Growth Strategy. NCTPA serves as the CMA for Napa County and is creating this PDA Investment and Growth Strategy in partnership with the County of Napa, the City of Napa, the City of American Canyon, the City of St. Helena, the City of Calistoga, and the Town of Yountville. This PDA Investment and Growth Strategy is a working document and will be updated periodically to include new policies, growth strategies, and data as needed.

The California State Global Warming Solutions Actions Act of 2006 (AB 32) calls for the reduction of greenhouse gas emission to 1990 levels by 2020.

Senate Bill 375, signed into law in 2008, requires that the California Air Resources Board establish emission budgets for each region and requires that each of the State's 18 MPOs prepare a Sustainable Communities Strategy.

SB 375- Sustainable Communities Strategy

The Global Warming Solutions Actions Act of 2006 (AB 32) tasked the California Air Resources Board (CARB) and other state agencies to develop plans and programs to reduce California's greenhouse gas emissions (GHGs) to 1990 levels by 2020. The cornerstone of the program is the development and adoption of a Scoping Plan that identifies specific reduction strategies, implementation mechanisms, and timelines. CARB adopted the Scoping Plan in December of 2008. The complete Plan can be accessed at: www.arb.ca.gov/cc/ab32/ab32.htm.

Senate Bill 375 (Steinberg) became law in 2008 and imposed AB 32-like requirements on local and regional planning practices to encourage sustainable development strategies to reduce GHGs. SB 375 required that CARB establish reduction targets for 2020 and 2035 for each region covered by one of California's 18 MPOs. For the San Francisco Bay Area, CARB followed the recommendation adopted by MTC in July of 2010, requiring a 7 percent per capita reduction target for 2020 and 15 percent per capita reduction target for 2035, relative to 2005 levels. SB 375 requires local and regional governments to identify measures to meet their emissions targets by promoting good planning through sustainable strategies. Each of California's MPOs are required to prepare a SCS that demonstrates how it will meet

its greenhouse gas reduction target through integrated land use, housing and transportation planning. In the San Francisco Bay Area this task fell to MTC, in partnership with ABAG, the Bay Area Air Quality Management District (BAAQMD), and Bay Conservation and Development Commission (BCDC) to create the SCS for the nine county Bay Area.

The goal of the Sustainable Communities Strategy is to link land use development with transportation and to make transportation investments where people live, eat, work, and play.

The SCS is intended to improve land use and transportation coordination as part of the 25-year long range transportation plan prepared by MTC. The SCS must be consistent with the Regional Housing Needs Allocations (RHNA), and provide a strategy for housing 100 percent of the region's growth by year 2035, while not displacing low-income residents. The goals of the SCS is to link land use development to transportation investments outlined in the Regional Transportation Plan (RTP), and to invest in transportation infrastructure where people live, eat, work, and play. The goals include: preservation of agriculture by directing development into the urban footprint; increasing non-auto trips by 10 percent; increasing the percentage of people walking or biking for transportation by 60 percent; and decreasing the automobile miles traveled per capita by 10 percent.

Meeting the emission reduction targets and the goals outlined in the region's SCS is a daunting task. Lack of critical funding, decentralization of jobs, loss of redevelopment revenues, foreclosures, and the high cost of infill development present the greatest challenges. However, with strong partnerships, a common vision, and sustainable planning efforts, the stage has been set for Napa County and the larger Bay Area region to not only meet its objectives but exceed them, making our communities desirable places to live and work. The PDA Investment and Growth Strategies for each of the nine Bay Area counties will be key to the success of the region.

Funding Better Development – The One Bay Area Grant (OBAG) Program

Prior to the passage of AB 32 and SB 375, MTC encouraged TOD-type developments through funding incentives such as the Transportation for Livable Communities (TLC) Program. The program offered technical assistance and capital grants for projects that supported developments that encourage non-auto travel, more livable neighborhoods and mixed-use town centers. In Plan Bay Area, MTC has replaced incentives with planning and development requirements outlined in the new One Bay Area Grant (OBAG) Program. The OBAG Program is a new funding approach intended to integrate the region's federal transportation program with California's climate law (Senate Bill 375, Steinberg, 2008) and the SCS mandated by that legislation. The OBAG program was established in 2012 by MTC's resolution 4035, which includes the requirement that countywide transportation agencies, such as NCTPA, create PDA Investment and Growth Strategies.

The OBAG funding distribution to the nine Bay Area counties is linked to progress toward achieving local land-use and housing policies by:

- Rewarding jurisdictions that accept housing allocations through the Regional Housing Need Allocation (RHNA) process and produce housing using transportation dollars as incentives.
- Supporting the SCS for the Bay Area by promoting transportation investments in PDAs and by initiating a pilot program that will support open space preservation in Priority Conservation Areas (PCAs). Additional funding for each county has been set aside to support these efforts.

- Providing a higher proportion of funding to local agencies and additional flexibility by eliminating required program targets (the OBAG program allows each county the flexibility to invest in transportation categories such as Transportation for Livable Communities, bicycle and pedestrian improvements, local streets and roads preservation, and planning activities, while also providing specific funding opportunities for Safe Routes to School (SR2S) and PCAs).

The OBAG Program establishes program commitments and policies for investing roughly $320 million over a 4-year period from FY 2012-13 to FY 2015-16, funded through the new federal transportation legislation, Moving Ahead for Progress in the 21st Century (MAP-21). Napa County's share of OBAG revenues is roughly $6.7 million of which $2.7 million will be retained for county-wide planning purposes and almost $4 million will go towards funding OBAG eligible projects.

Focus Program and Priority Development Areas

Before the SCS, the Bay Area agencies developed the FOCUS program. FOCUS is a regional development and conservation program that promotes a more compact land use pattern for the Bay Area. It unites the discipline areas of the four regional agencies (MTC and ABAG plus The Bay Conservation and Development Commission and the Bay Area Air Quality Management District) into a single program that links land use and transportation by encouraging the development of complete, livable communities in areas served by transit, and promotes conservation of the region's most significant resource lands.[1] The FOCUS program was the context in which the region's Priority Development Areas (PDAs) and Priority Conservation Areas (PCAs) were initially identified and provided resources to help in their development. Through the FOCUS program, local jurisdictions identified areas that could accommodate future growth. This designation of PDAs by Bay Area cities and counties identified to the regional agencies where resources should be spent to achieve housing objectives.

The FOCUS program was the context in which the region's Priority Development Areas and Priority Conservation Areas were initially identified. Through the FOCUS program, local jurisdictions identified areas that could accommodate future growth.

In general, PDA eligibility is dependent on key characteristics, such as being located in an existing community, near transit service and planned for more housing. More specifically, a PDA must meet the following criteria:

Size - the recommended area size is 100 acres, which is approximately a ¼ mile radius.

Existing Community – means the area is within an existing urbanized area, is located within an urban growth boundary or limit line if one is established, and has existing or planned infrastructure to support development that will provide or connect to a range of services and amenities that meet the daily needs of residents, making non-motorized modes of transportation an option.

[1] FOCUS Program http://www.bayareavision.org/initiatives/index.html

Priority Development Areas are located within urban growth boundaries, have existing infrastructure, are located near transit, and include areas with planned housing.

Near Transit – means (1) the area surrounds an existing rail station or ferry terminal (typically a half-mile around the station), (2) the areas a served by a bus or bus rapid transit service with minimum headways of 20 minutes during peak weekday commute periods, or (3) the area is defined as a planned transit station by MTC's Resolution 3434.[2]
Housing – means the area has plans for a significant increase in housing units to a minimum density of the selected "place type" from MTC's Station Area Planning Manual, including affordable units, which can also be a part of a mixed use development that provides other daily services, maximizes alternative modes of travel, and makes appropriate land use connections.

Finally, a PDA can be either "Planned" or "Potential"

- A planned area is part of an existing plan that is more detailed than a general plan, such as a specific plan or an area plan.
- A potential area may be envisioned as a potential planning area that is not currently identified in a plan or may be part of an existing plan that needs changes.

Local jurisdictions must categorize their PDAs as one of seven types using the categories included in the MTC Station Area Planning Manual.

Table 1.1-a PDA Types based on Station Area Planning Manual[3]

	Centers			
	Regional Center	**City Center**	**Suburban Center**	**Transit Town Center**
Housing Mix	High-rise & mid-rise apt./condos	Mid-rise, low-rise, some high-rise and townhomes	Mid-rise, low-rise, some high-rise and townhomes	Mid-rise, low-rise, townhomes, small lot single family
Target Total Housing Units	8,000-30,000	5,000-15,000	2,500-10,000	3,000-7,500
Net Project Density	75-300 du/acre	50-150 du/acre	35-100 du/acre	20-75 du/acre
Target Total Jobs	40,000-150,000	5,000-30,000	7,500-50,000	2,000-7,500
Minimum FAR (New Employment)	5.0 FAR	2.5 FAR	4.0 FAR	2.0 FAR

[2] Association Bay Area Governments Application Guidelines for Priority Development Area Designation http://www.mtc.ca.gov/funding/onebayarea.
[3] MTC's Station Area Planning Manual: Place Types http://www.mtc.ca.gov/planning/smart_growth/stations

Table 1.1-b PDA Types based on Station Area Planning Manual

	Districts		Corridors
	Urban Neighborhood	**Transit Neighborhood**	**Mixed Use Neighborhood**
Housing Mix	Mid-rise, low-rise, townhomes	Low-rise, townhomes, some mid-rise and small lot single family	Mid-rise, low-rise, townhomes, some small lot single family off corridor
Target Total Housing Units	2,500-10,000	1,500-4,000	2,000-5,000
Net Project Density	40-100 du/acre	20-50 du/acre	25-60 du/acre
Target Total Jobs	N.A.	N.A.	750-1,500
Minimum FAR (New Employment)	1.0 FAR	1.0 FAR	2.0 FAR

Table 1.2 Program Breakdown

Program	Description	Agency
FOCUS	Regional program to encourage and develop more compact land use pattern that links housing to transportation infrastructure within the Bay Area. The program is used to identify local PDAs and PCAs.	ABAG
TLC	Program to support community-based transportation projects that bring new vibrancy to downtown areas, commercial cores, neighborhoods, and transit corridors, enhancing their amenities and ambiance and making them places where people want to live, work and visit. The TLC Program supports the region's FOCUS Program by investing in Priority Development Areas	MTC
RTP	Regional long-range transportation plan (25 years) done every 4 years by MTC. In the next iteration of the RTP (known as Plan Bay Area) MTC will have to a SCS.	MTC
SCS	Sustainable Communities Strategy that links transportation and housing in the RTP.	MTC/ABAG
OBAG	Program to support transportation projects listed in the RTP but focuses on providing funding to those that best meet the intent of the SCS which is to fund projects within PDAs near transit.	MTC
Napa's Countywide Transportation Plan	Local long-range transportation plan that identifies transportation priorities and goals for the next 25 years and identifies projects for future inclusion in the RTP.	NCTPA

Napa County Priority Development Areas

Napa County has two PDAs. One PDA is located in Downtown Napa and the adjacent Soscol Gateway Corridor and the other PDA is located along State Route 29 in American Canyon.

Table 1.3 Napa County PDAs

PDA Name	PDA Description	PDA Designation
Downtown Napa – Soscol Gateway Corridor (Planned PDA)	Approximately 585 acres located in downtown Napa boarded by Polk, Clinton, and Caymus Streets to the north, Jefferson Street to the west, Division Street to the south and then extends east across the Napa River to Silverado Trail and south to Imola Avenue.	Transit Neighborhood (Figure 3.2)
American Canyon Hwy 29 Corridor (Potential PDA)	Approximately 225 acres located on the Hwy 29 corridor; geographic boundaries are generally Green Island Road on the north, James Road on the west, the railroad tracks on the east, and the City of Vallejo on the south.	Mixed Use Corridor (Figure 3.8)

Purpose and Goals of the PDA Investment and Growth Strategy

The purpose of this Priority Development Area Investment and Growth Strategy is to identify specific transportation needs for each PDA in Napa County. This document is both a requirement of NCTPA under MTC's Resolution 4035 and is also a tool for NCTPA and its member jurisdictions to aid in establishing priorities and focus planning and development efforts. Identifying funding needs in each PDA will assist NCTPA in prioritizing revenues so jurisdictions can meet their housing and job goals.

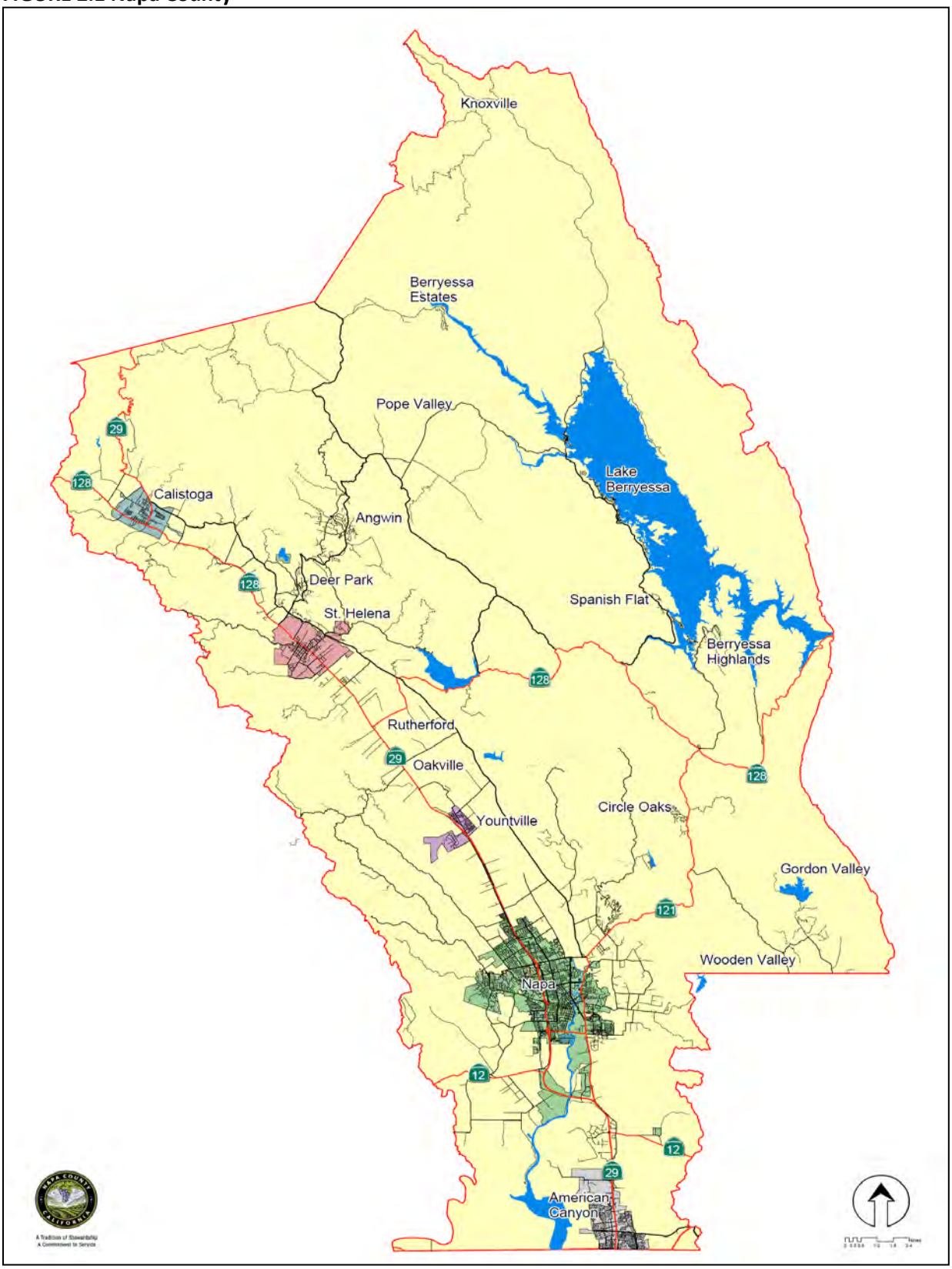
In order to gauge the progress of each PDA in meeting its development goals, baseline data and current-conditions analysis are included in this document. This will include a summary of planning documents, a summary of planned development goals, and an inventory of planning and capital needs. As noted in Table 1, each of the PDAs within Napa County has a different designation and is at different stage of development. The City of American Canyon has a "Potential" PDA, and City of Napa is has a "Planned" PDA. A Potential PDA needs assistance with more detailed planning. This could include a Specific Plan, Area Plan, Master Plan, redevelopment plan, or more detailed section of the General Plan. Planned PDAs already have completed all or most of these planning elements, as well as the necessary California Environmental Quality Act (CEQA) review.

Chapter 2: NAPA COUNTY BACKGROUND

Located approximately fifty miles northeast of San Francisco, Napa County is the least populous and most rural county in the San Francisco Bay Area. With a population of 136,484 it is home to a multibillion dollar wine industry, and is a leader in agricultural preservation. Napa County encompasses five incorporated areas: Napa, St. Helena, Calistoga, American Canyon, and the Town of Yountville. The City of Napa, with a population of 76,915, is the largest city in the county. Napa County has a median age of 39.7 and a population that is steadily aging with 15.3 percent of the population being over the age of 65.[4] In comparison, only 11.7 percent of the population is over 65 statewide.

[4] US Census Bureau 2007-2011 http://quickfacts.census.gov/qfd/states/06/06055.html

FIGURE 2.1 Napa County



By the year 2040 the population's median age is projected to be 42.1 years.[5] This growing trend towards an aging population brings new challenges to the County and its jurisdictions. Elderly populations tend to live closer to support services in the incorporated areas, drive less and require more public services such as transit. Another important demographic trend is that Napa County's Hispanic population has grown significantly in recent years; from 8.7 percent in 1980 to 23.7 percent in 2000. During the same period, the Hispanic population in the Bay Area- increased from 12.2 percent to 19.4 percent. Napa County, which in 1980 had one of the lowest percentages of Hispanic persons among Bay Area counties, now has the highest percentage of Hispanics among the nine counties in the Bay Area at 33 percent.[6] There are approximately 70,660 jobs in Napa County and 54,760 housing units. With approximately one housing unit per employed resident, this represents a relative balance between jobs and housing. However, as described below, the cost of housing and the nature of employment in the County result in commute patterns that contribute significantly to the congestion along the County's major corridors. The unemployment rate in Napa County is 7.9 percent.[7]

Table 2.1 Jobs and Housing Units[8]

Jurisdiction	Total Housing Units (2010)	Total Jobs (2010)
American Canyon	5,980	2,920
Calistoga	2,320	2,220
Napa	30,150	33,950
St. Helena	2,780	5,340
Yountville	1,250	1,600
Unincorporated County	12,280	24,630
Total	54,760	70,660

Napa County is comprised of approximately 500,000 acres of which 450,000 acres, or 90% of the total land mass, is designated as various types of "open space". Approximately 115,000 acres are dedicated open space in public ownership, and approximately 20,000 acres are either owned by a private land trust or protected via conservation easement. Napa County has long been a leader in agricultural preservation and the balance of open space lands are in private ownership and have been protected from urban development through a series of actions taken by the County's elected officials and the electorate starting in 1968. The passage of Measure J in 1990 set the minimum parcel size for agricultural land at 40-160 acres and required voter approval before agricultural property can be converted to other uses. Measure J was extended with the passage of Measure P in 2008, and continues the policies of Measure J until the year 2058.[9]

In 1970, 50 percent of the county's population lived in unincorporated areas. Since then, growth in the incorporated jurisdictions has resulted in a dramatic shift in the city/county split; by 2005, nearly 80 percent of the County's residents lived in incorporated jurisdictions.[10] Much of this trend is influenced by the strict growth policies that the County and cities have enacted to protect agricultural land and open space. Coupled with new legislation such as SB 375, that encourages growth toward incorporated

[5] Napa County General Plan Economic Development Element
[6] US Census Bureau 2007-2011 http://quickfacts.census.gov/qfd/states/06/06055.html and Napa County General Plan Economic Development Element
[7] State of California Employment Development Department - Monthly Report dated December 2012
[8] ABAG's Jobs-Housing Connection Strategy (May 2012)
[9] Napa County http://www.countyofnapa.org/Pages/Search.aspx?keywords=Measure%20J
[10] Napa County General Plan Recreation and Open Space

city centers, this trend will continue to guide development to be compact/mixed-use near transit in the incorporated areas of the county.

2.1 Priority Conservation Area Program

The OBAG program also contains provisions to preserve open space and set aside funds for a Priority Conservation Area (PCA) program. Napa County has ten PCAs. PCAs have been identified as part of the regional FOCUS program. PCAs are areas of regional significance that have broad community support and an urgent need for protection. These areas provide important agricultural, natural resource, historical, scenic, cultural, recreational, and ecological values and ecosystem functions. The purpose of designating priority conservation areas is to accelerate protection of key natural lands in the San Francisco Bay Area through purchase or conservation easements within the next few years. Conservation will be promoted through regional designation by:

- Coordinating conservation efforts within a regional framework of near-term priorities
- Providing a strong platform on which to leverage public and private resources
- Building upon prior and existing land protection efforts and investments
- Providing opportunities for forging new partnerships

Knowing the region's land conservation priorities will promote collaboration and investment in these areas that are critical to the region's quality of life and ecological diversity. In 2007 Bay Area jurisdictions nominated areas for PCA consideration. The ABAG Executive Board adopted a set of Priority Conservation Areas on July 17, 2008.

Table 2.2 PCAs

Napa County designated ten Priority Conservation Areas	
Bay and Ridge Trails	Bay Trail hugs the shoreline of Bay and the Ridge Trail runs along the ridgelines overlooking the Bay
Blue Oak Woodlands of the Lake District	Located in northeastern Napa County near Lake Berryessa
Bothe – Napa State Park to Sugarloaf Ridge State Park	Encompasses thickly forested hills of the western side of Napa Valley where the Mayacamas Mountain Range terminates
Interior Mountains – Moore Creek Milliken Creek	Includes the lands in central Napa County, west of the county's urban centers.
Lake Curry – Suisun Creek Watershed	Located east of the City of Napa towards the Napa county border with Solano County; containing oak woodlands and grassland
Napa County Agricultural Lands and Watershed	Encompasses the unincorporated agricultural and watershed lands of Napa County
Napa Valley – Napa River Corridor	Follows the lands along Napa River, which runs from northwestern Napa County, northeast of Calistoga, to the San Pablo Bay
Palisades Mt. St. Helena – Angwin	Located in northwestern Napa County, the Palisades form the range of mountains between Mt. St. Helena and Angwin
Redwood and Dry Creek Watersheds	Watersheds located on the western sloped of Napa Valley and drain into the Napa River; the area contains redwood forests
Southern Mountains – Skyline to Newell Preserve	Southern Mountains located in Skyline Park to Newell Preserve area is located east of and between the City of Napa and the City of American Canyon

2.2 Economic Feasibility and Funding

Build out for the City of Napa and American Canyon PDAs is anticipated in 2037 and 2035 respectively. The overall objective for concentrating growth within a PDA is to improve the link between transportation and land use to reduce vehicle miles traveled (VMT). To achieve these goals, PDAs need to bring jobs and housing closer together and offer adequate transit, pedestrian, and bicycle alternatives. Higher density developments, with a mix of housing located closer to commercial centers that provide jobs, access to educational centers, goods, services, and areas for recreation have proven to be effective at encouraging alternative modes of transportation and reducing overall VMT.

The American Census Survey (2007-2011) indicates that 76 percent of American Canyon's workers and 77 percent of Napa's workers commute alone to work. This is significantly higher than the overall Bay Area percentage of drive alone commuters of 67 percent. Addressing this challenge will require that the jurisdictions plan housing to meet the needs of its workforce. This is a particularly salient issue for lower income workers. Currently the County's economic base is agriculture, wine making, hospitality and restaurant industries. Jobs in these industries tend to pay lower wages, particularly in relationship to Napa County's housing costs. This relationship between worker wages and housing costs is a critical factor in driving up the VMT as housing costs prevent the people who work in Napa County from living in Napa County. Likewise, more efforts will need to be made to diversify the County's employment base in industries that create better paying jobs and to provide alternative transportation options to current residents who commute because housing costs are too high.

A robust economy and adequate revenues for critical infrastructure improvements are necessary to achieve long range objectives and foster economic development. Napa County's economy, like much of the Bay Area, is slowly recovering from the Great Recession of 2008-2009. The County's unemployment rates continue to drop, but very slowly. The Consumer Price Index remains relatively stable, keeping some costs down, but certain costs continue to rise, such as fuel and housing. Housing costs in Napa County increased by almost 15 percent in 2012, contributing to the County's omnipresent challenge of providing affordable housing to some its lower income residents and workers.

Local government revenues, essential for redevelopment, are still lagging behind, which in part is the result of persistent budgetary shortfalls and related remedies at the State level resulting in the diversion of revenues to address State budgetary shortfalls. Dwindling revenues in the Federal Highway Trust Fund, limited options for infrastructure financing coupled with the competition for scarce resources with larger jurisdictions, will make meaningful development within Napa County's PDAs a formidable challenge.

Funding for Infrastructure Improvements

As the least populous County in the Bay Area, Napa receives limited financial resources for transportation infrastructure. The County will receive just over $6.7 million federal OBAG funds to cover a four year period from FY 2002-13 to FY 2015-16, of which over $2.7 million is needed for CMA

planning purposes. The County also receives roughly $1-2 million each two year STIP cycle. Combined, the federal and state funds for rehabilitation and enhancements are projected to total roughly $625 million (in 2013 dollars) over the next 25 years. Over the life of the One Bay Area Regional Transportation Plan, the County submitted projects totaling over $1.1 billion, leaving a shortfall of $475 million. In order to meet this capital demand, additional revenues will need to be identified, including general fund revenues from the jurisdictions.

To achieve this, NCTPA will need to put greater emphasis on advocating for its larger infrastructure projects and pursuing discretionary funding at the federal and state levels. NCTPA will need to invest in focused planning, such as the State Route 29 Gateway Corridor Study, in order to bring State and Federal attention to the challenging issues surrounding the County's transportation infrastructure and funding predicament.

NCTPA will outline strategies to address PDA development in its upcoming Countywide Transportation Plan, scheduled for adoption in 2014. The plan will include detailed economic forecasts, identify financing mechanisms, prioritize transportation improvements that will build on SB 375 objectives, and include a detailed development strategy in partnership with the Cities of Napa and American Canyon so that the PDAs will be realized within the next 25 years.

Chapter 3: PRIORITY DEVELOPMENT AREAS

3.1 City of Napa

Located in the southern end of the county, the City of Napa is the largest jurisdiction in Napa County. According to the 2010 census the City has a population of 76,915 and is home to approximately 56 percent of Napa County's residents. As of 2010, the City of Napa had approximately 30,150 housing units and 33,095 jobs.[11] The median household income for Napa is $62,642 thousand.[12] Napa's housing stock is predominantly single family. In 2005, single family detached or attached units were about 68 percent of the total housing stock while multifamily housing (including duplexes and apartments) comprised about 27 percent of the housing stock. The remaining units are mobile homes.[13]

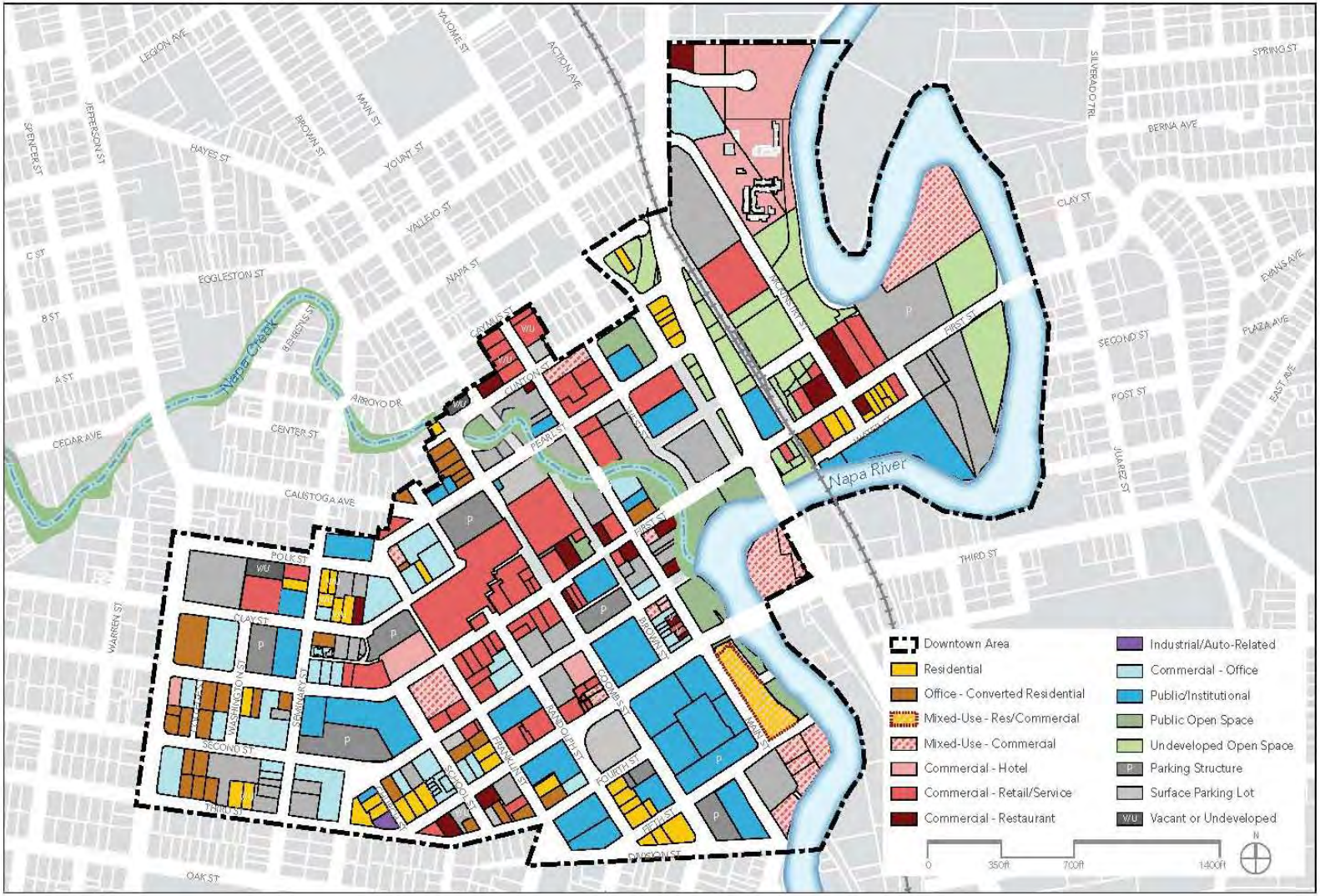
Downtown Napa - Soscol Gateway

Napa's downtown has gone through significant changes over the years. In May 2012 the City adopted its Downtown Specific Plan to refine the vision for the downtown area. The downtown area is currently characterized by a wide range of land uses. It is predominantly composed of commercial, office and public uses with a limited amount of housing. Existing uses are clustered in various subareas, with the highest density of uses within the heart of downtown along Main and First Streets, and a mix of commercial and residential uses in adjacent areas.

Downtown Napa also includes unique natural features like the Napa River and Creek which cuts through the downtown and Soscol corridor**.**

[11] ABAG's Jobs-Housing Connection Strategy (May 2012)
[12] US Census Bureau 2007-2011 http://quickfacts.census.gov/qfd/states/06/06055.html
[13] City of Napa General Plan – Housing

Figure 3.1 Existing Land Use Conditions[14]



[14] Source: Downtown Napa Specific Plane Figure 2.1 Existing Conditions

Both the river and creek have hindered development in the downtown due to flooding issues, but with the 1998 passage of Measure A – the Countywide Flood Control Measure – the City incorporated features of the natural river environment into the development and recreational features of Downtown, while making improvements that minimize the threat of flooding in the area.

The Soscol Corridor provides most visitors with their first view of Napa as a "gateway" to the Downtown. Currently the Soscol corridor contains varied land uses, building forms, streetscapes, commercial centers, auto dealerships, and residences that lack a cohesive design and feel. As outlined in the 2004 Soscol Gateway Corridor Vision Plan, the City provided an overall framework of planning concepts for land use, open space, and circulation. The concepts anticipate a substantial evolution of the Soscol Avenue corridor and adjacent areas over a 25 year period. They provide direction for early phase investment so that it supports the community's long-term vision. Some elements of the plan include a central transit node – the Soscol Gateway Transit Center –this project has already been built, absent the high density housing development that the project originally included.

Since 2000, Napa has experienced significant growth. This is particularly true in Downtown Napa and along the Soscol Gateway Corridor. Several mixed use commercial-residential and hotel developments have been constructed in these areas in recent years reflecting Napa's smart growth principles and strong city-centered planning practices. To retain existing commercial uses and encourage new commercial and residential development in the Downtown and its surrounding area, Napa prepared comprehensive master plans for Downtown Napa and the Soscol Gateway area. These comprehensive plans propose 1,274 housing units (976 net new units) in the 20 to 30 year horizon. Although development recently slowed as a result of the prolonged recession and State's dismantlement of redevelopment agencies, the vision remains as a solid foundation for attracting and retaining new local-serving uses, hotels and residential development in the future.[15]

Napa's Vision

By creating the Downtown Specific Plan, Napa is paving the way for a vibrant downtown including a thriving business community, extensive pedestrians and bicyclist networks, historic preservation of buildings, as well as new sustainable buildings and architecture. These features will help create a distinct sense of place within the downtown, complementing the surrounding world-renowned Napa Valley. The vision for the Soscol Gateway is a mixed use corridor with neighborhoods and commercial villages. The overall planning approach emphasizes creation of villages and neighborhoods that have mutually supporting land uses, site plans and pedestrian experiences.[16]

Welcome to Downtown Napa in 2030. Enjoy Downtown's unique environment where the community comes together to enjoy a vibrant collection of inviting public spaces, attractive streets, distinctive shops and eateries, exciting entertainment venues, creative public art, historic buildings, sustainable new buildings and an array of housing options. As the distinctive heart of Napa, Downtown is a welcoming, fun and intimate city center – a place where history, charm, neighborhood and economic vitality come together along the Napa River.

-Excerpt from the Napa Downtown Specific Plan contains the following vision statement:

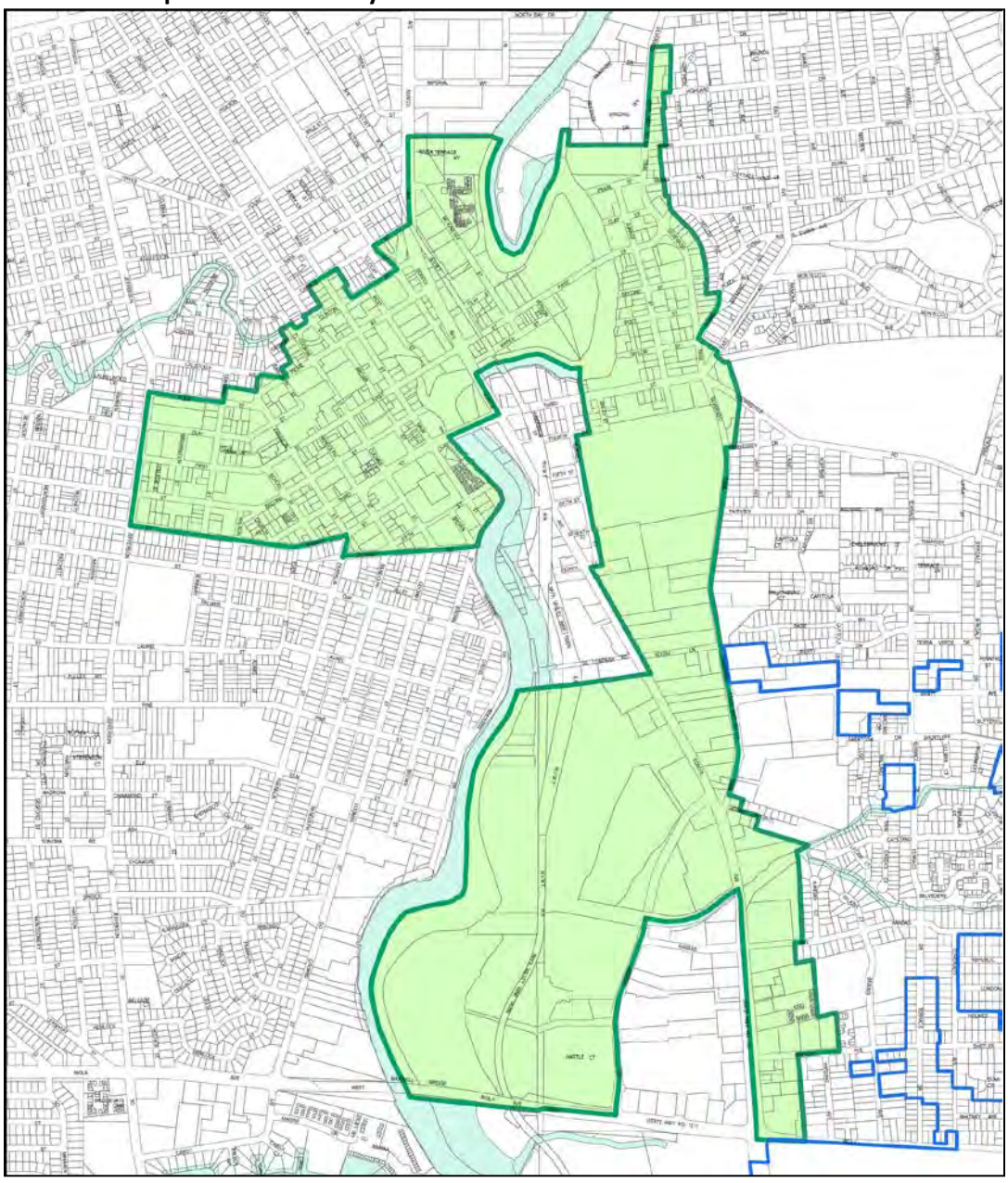
Napa's Planned Priority Development Area

The Downtown Napa-Soscol Gateway PDA generally follows the boundaries the Soscol Gateway Corridor

[15] City of Napa PDA Application Narrative
[16] City of Napa Soscol Gateway Vision Plan (2004)

outlined in Napa's adopted Soscol Gateway Vision (2004) and the Soscol Gateway Redevelopment Project Area (2007). The Downtown Specific Plan area boundaries include the Napa River on the east, Division and Third Streets on the south, and Jefferson Street on the west. The northern boundary generally follows the zigzagging edge of the existing "Downtown Commercial" zoning area boundary adjacent to northern residential neighborhoods along Polk and Caymus Streets west of Soscol Avenue. The boundaries extend east to include the Oxbow Public Market and former Copia site east of Soscol Avenue. The Planning Area encompasses approximately 58 acres.

FIGURE 3.2 Napa's PDA Boundary



Napa County is predominantly an agricultural community and the City of Napa, along with the four other incorporated cities within the County, are served by Highway 29 and Silverado Trail (from Napa north to Calistoga) which extends through the vast agricultural and open space lands ubiquitous in Napa Valley. Much of this land is protected by voter initiative (Measures J and P and the City's RUL) and by recognized conservation areas future where development is prohibited, except when specifically associated with agricultural activities or by a vote of the people.

The Downtown Napa-Soscol Gateway PDA provides for compact, mixed-use development of substantial new residential and commercial uses that will serve existing residents and new residents in the 976 new dwelling units planned for the area. These residential neighborhoods or "villages" will be walkable, located near services and transportation, connected by trails to recreation and open space, and located in and near Napa's historic downtown and Soscol Gateway Transit Center.

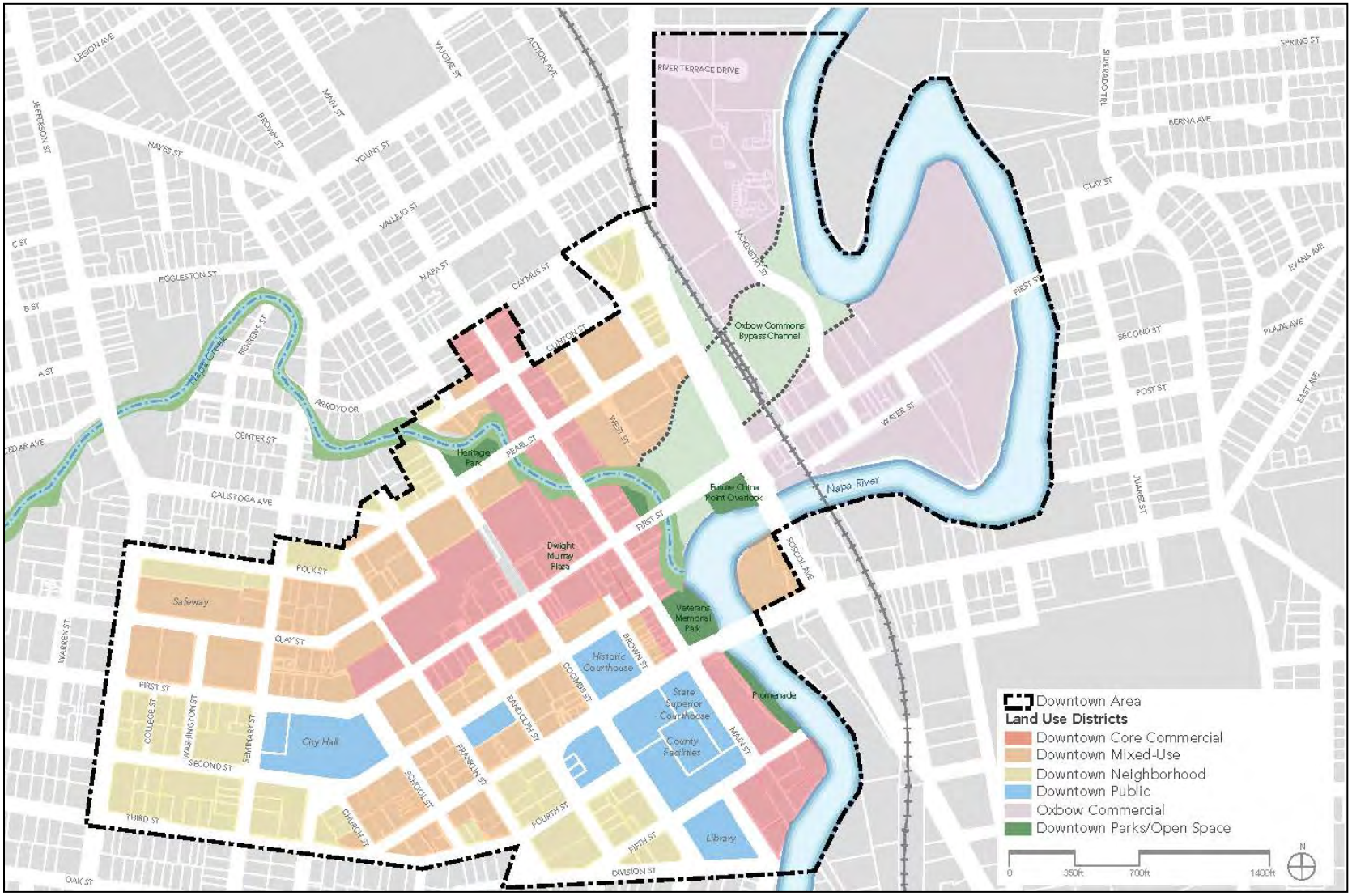
To fully realize and implement the vision of the PDA, resources are necessary to address infrastructure deficiencies, including those primarily related to drainage and circulation (e.g., street, bicycle and pedestrian improvements). General upgrades to roads, road maintenance and traffic delays at key intersections have been identified as deficiencies needing to be addressed with future development. The total cost associated with all infrastructure needs in the Soscol Gateway area is approximately $50 million, with approximately $35.5 million specific to transportation improvements. However, many improvements are already underway. New Hartle Court is presently under construction as part of the Gasser Theater Project, and improvements at the Imola/Gasser (Kansas) Street intersections will be completed as part of this project. Within the Downtown Specific Plan area the infrastructure needs are approximately $38 million. The development, when built out, will create more than 1,600 jobs and bring more than 1,400 people to the Downtown.

Densities and floor area ratios are increased along with the diversity in building height, parking requirements and similar strategies to accommodate the vision for a city-centered, sustainable Downtown with residents living near services. Collectively, these strategies provide increased housing and transportation alternatives to the community and align with regional goals for creating a complete community and planning for land use, transportation and the environment.

Table 3.1 Napa PDA

Downtown Napa – Soscol Gateway Corridor PDA		
Area Name and Location	Located in downtown area bordered by Polk, Clinton and Caymus Streets to the north, Jefferson Street to the west, Division Street to the south and extends east across the Napa River to Silverado Trail and south to Imola Avenue.	
Area Size	585 Acres	
Public Transit Serving the Area	NCTPA operates the countywide and regional fixed-route transit system (VINE), the main hub of the system is located within the PDA on the corner of Fourth and Burnell Street. The new transit center provides bus service on a pulse system, includes commuter options, and is in a prime location for future light rail and Ferry Service. There are 15 minutes headways within the planned PDA.	
Place Type	Transit Neighborhood	
	Current Conditions (2006)	Future Goal (Horizon Year 2037)
Total Housing Units	298	1,274
Total Jobs	3,184	5,689
Net Project Density (New Housing)	Existing density ranges are variable in the area by land use designation ranging from 20-40 du/ac in the Downtown Commercial area, 10-40 du/ac on the Mixed Use sites in the Soscol Gateway area; and 3-8 du/ac on the sites set aside for limited single-family residential development.	Within the Downtown Specific Plan area, density ranges have been increased to 20-60 du/ac in the core (Downtown I designation), remain20-50 du/ac in the downtown edge (Downtown II designation) and 10-25 du/ac in the transitional area between the downtown and the surrounding neighborhoods (Transition designation) Within the Soscol Gateway area densities are revised by converting 5.3 acres to Mixed Use, 16.9 acres to Transit Village, assigning 2.5 acres at the Napa Expo site Mixed Use, and applying the mid-range of the number of units assumed in the 1998 General Plan for the area. The density ranges in the Soscol Gateway area are 10-40 du/ac on mixed Use sites and 3-8 du/ac on the limited number of low density residential sites in the area These revisions provide for 1,274 housing units or 976 net new units in the PDA with approved planning and environmental review.
Minimum/Maximum FARs (New Employment Development)	1.25-4.0 FAR in Downtown Specific Plan area for commercial use and .35 FAR for Residential/Offices .35-.95 FAR in the Soscol Gateway area	The FAR has been increased with the adoption of the Downtown Specific Plan to 5.0 Downtown I designation, 4.0 Downtown II designation, and 3.0 Transition designation. Within the Soscol Gateway area the FAR is .35-.95, although far more land is now zoned for multi-family use as part of Mixed Use designation.

FIGURE 3.3 Downtown Napa Land Use Designations [17]



[17] Source: Figure 4.3 in City of Napa's Downtown Specific Plan

The Downtown Napa - Soscol Gateway Area specific plan will guide public and private investment in the area. The PDA is already being transformed by the Napa River Flood Protection Project which prompted redevelopment along the water front, improved the transit and pedestrian network, and significantly mitigated flood risks in the area. As outlined in adopted plans, the vision provides an overall framework for land use, circulation, open space, and the foundation for new neighborhoods and revitalization of existing neighborhoods. The Soscol Gateway Corridor Plan covers 376 acres, including 24.7 acres of land rezoned to accommodate the transit center and mixed residential-commercial uses, a 2.5-acre portion of the Napa Expo, a State-owned property, and the 80-acre Gasser site.

Construction was recently completed on the new Napa County Transportation and Planning Agency (NCTPA) Soscol Gateway Transit Center, and Gasser South development, which includes a 12-screen movie theater and 30,000 square feet of associated commercial-retail space in an entertainment village. Also, community-serving facilities are either near completion or are completed, including a 60-bed homeless shelter and 24 units of transitional housing, and 30,000 square feet of office space for non-profit organizations is planned. Future development of Gasser North includes Tulocay Village and Tulocay Square —a mixed-density residential neighborhood with 80,000 square feet of commercial retail space. Within the Soscol Gateway Corridor, a minimum of 458 new housing units are planned at densities up to 40 du/acre, including 20 percent affordable housing to lower-income residents. These neighborhoods will connect to 13 acres of open space and wetlands through a network of public use trails linking the commercial development, Napa River trails and Downtown Napa.

Similarly, the Downtown Specific Plan enhances Napa's unique, colorful and historically significant downtown to meet the needs of existing and new residents, while continuing to draw visitors to the area. The Downtown Napa Specific Plan, which was started in 2009 and was adopted by the Napa City Council in May 2012, will provide the framework for realizing the vision of a vibrant, healthy and balanced pedestrian-oriented city center. To help achieve its objectives, the Specific Plan outlines a set of recommended improvements to cultivate a physically attractive, economically healthy and socially animated city center where people choose to live and visit. This includes establishing an appropriate mix, density and orientation of residential and commercial uses to improve the business environment to enhance community in the downtown Napa area. It also entails enhancing the auto, transit and bicycle circulation network and pedestrian streetscape. Such improvements will allow people to have easy and efficient access into and out of downtown, as well as great mobility options throughout the city core.

Both the approved Soscol Gateway Corridor vision and the Downtown Napa Specific Plan help to achieve Napa's overall community vision of protecting farmland and vineyards surrounding the community while focusing development inside the Rural Urban Limit (RUL).

Public transit is a significant part of Napa's future plans for success. The NCTPA operates Napa's fixed route transit service (VINE) which serves greater Napa County and destinations in Solano, Sonoma, and Contra Costa Counties. Napa's transit hub was recently re-located from Downtown Napa, to the new intermodal Soscol Gateway Transit Center located one block east of Downtown Napa on the corner of Fourth and Burnell Streets. The new Transit Center is centrally located one block east of Downtown Napa, one block south of the Oxbow Public Market, and immediately adjacent to the Napa County Expo and Soscol Gateway area and provides bus transit services of between 15 minute and 30 minute headways during peak period in downtown Napa with access to interregional commuter services,

including Amtrak (Capital Corridor), BART, and Ferry Services, as well as close proximity to locations that could be developed to provide future ferry service and light rail.[18]

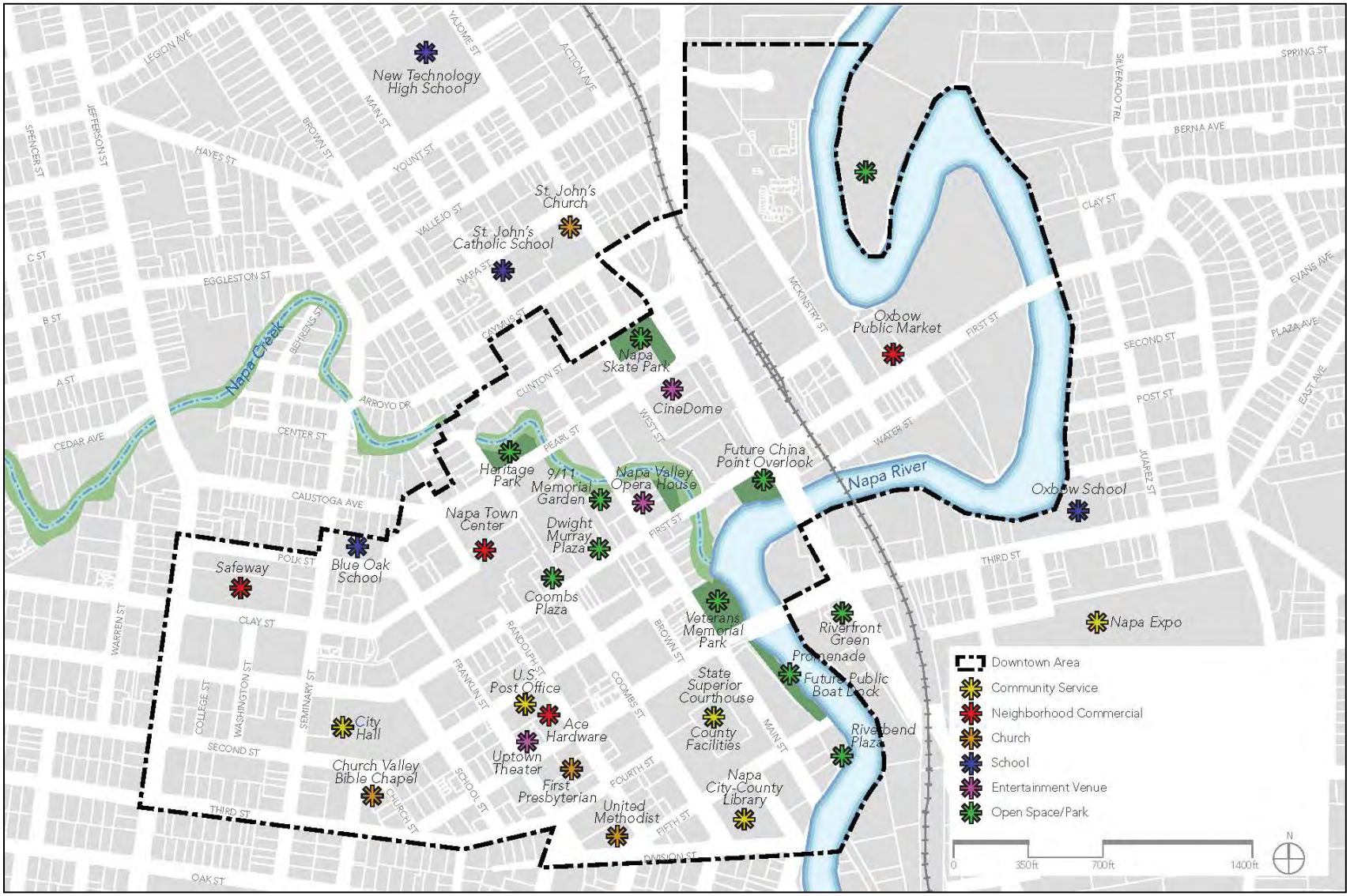
Physical Landscape:

The physical landscape of the Napa PDA has a wide array of uses. The Soscol Gateway has recently gone through major development including the construction of the new movie theater on the South Gasser site, the homeless shelter, and a 24-unit transitional housing complex. The Downtown Expo is also within the Napa PDA boundary. In Downtown Napa there is a mix of old and new development, park and recreational space, and natural features such as the Napa River and Creek. Downtown is home to many social and governmental services such as the County and City offices, the Napa Library, and other social service facilities such as COPE, the Family Services of Napa Valley, the Hope Center, ALDEA, and The Table. The County of Napa is also developing plans to relocate the jail and social services facilities to a location just south of the City of Napa. This will open up areas of the downtown for other redevelopment opportunities. There are also schools in Downtown Napa including St. John the Baptist Catholic School and Blue Oak Elementary. There is limited housing in Downtown Napa.

Downtown Napa Riverfront Mixed-Use Development:

[18] City of Napa PDA Application Narrative

Figure 3.4 Community Resources in Downtown Napa[19]



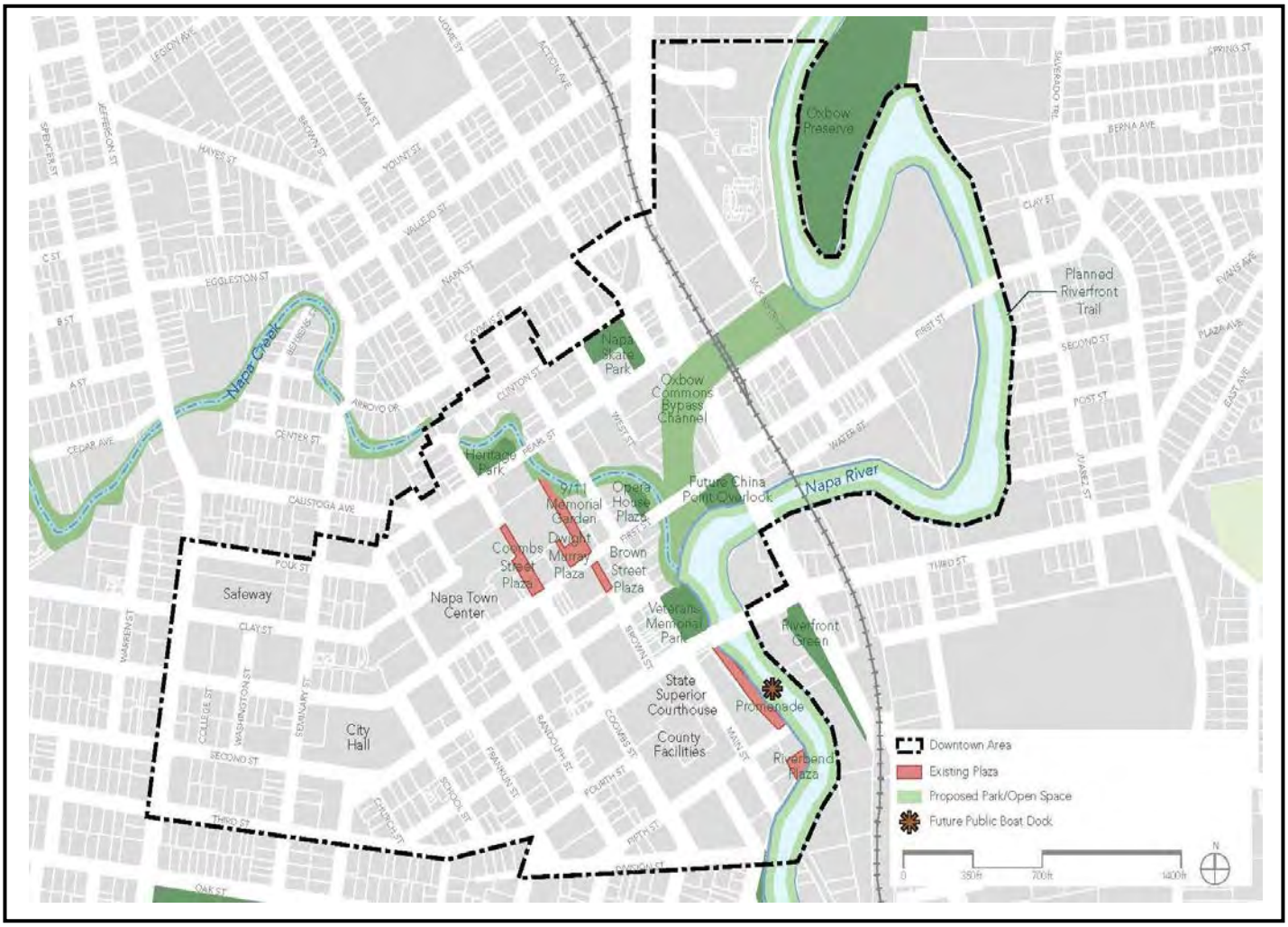
[19] Source: Downtown Specific Plan Figure 2.3 Community Amenities

The Downtown Specific Plan categorizes the following area types within Downtown Napa:

- Downtown Commercial Subarea – includes community amenities, neighborhood servicing retail, churches, schools, hair and nail salons, and entertainment venues
- Residential/Office Subarea – includes historic residential structures converted to offices, contains mixed residential and offices
- Tourist Commercial Subarea – includes Oxbow area, hotels, restaurants, and wine tasting rooms and retail shops
- Public/Quasi Public Subarea – includes County offices and courthouse, the County jail, City of Napa Administration offices and Fire and Polices stations

Downtown also has numerous public spaces such as plazas and parks.

FIGURE 3.5 Parks and Open Space in Downtown[20]



[20] Source: Napa Downtown Specific Plan Figure 2.7 Parks and Open Space

Housing

Increased land densities will provide the opportunity for future mixed use development along the Soscal Gateway Corridor.

Currently, there are approximately 125 units in downtown. Housing consists primarily of single family homes, with some apartments and duplexes. The Napa Riverfront is the largest mixed use development containing 50 condominiums located above retail and restaurant space.[21] The Soscol Corridor has more land to accommodate future housing. Current housing consists of 173 units of low density residential units intermixed with commercial. The City of Napa General Plan increased land density to 10-40 du/ac for mixed-use development along the Soscol Corridor. This will provide the opportunity for future mixed-use development along the Soscol Corridor to be residential and commercial. The City's Copia Reuse Plan, currently underway, proposes 180 new housing units in the Downtown.

Market Conditions

The 20 year projection for Downtown Napa market conditions is roughly 60,000 square feet of new retail space, which can include up to 49,543 square feet of mixed use space, between 375,000 and 400,000 square feet of new office space, of which 31,431 square feet can be converted to mixed-use space, and approximately 253,000 square feet of hotel space.[22] The 87,000 square feet of retail space is projected to be smaller national and regional retailers intermixed with specialty retail and restaurants and eateries.

Currently retail space is achieving a taxable rate of $215 per square feet. If demand for retail services increases, and the average rate were to reach $300 per square foot creating new retail space would be feasible. The actual retail space created in the Downtown area will be determined by residential demand. Improved infrastructure, recreational amenities, and a more vibrant downtown will attract residential tenants and in turn drive the demand for retail space. The future office space of Downtown Napa would employee approximately 1,300 employees. The most prevalent business types would comprise of finance, insurance, and real estate. Professional services, corporate offices, and some institutional space (City and County) would also be part of future office space. The Downtown Specific Plan projects that the new office development would result in increased demand for 800 new financial and professional service employees and about 450 employees in health, education, and recreation services.[23]

The Downtown Napa-Soscol Gateway Corridor has numerous hotel and lodging accommodations. The Westin Verasa and River Terrace Inn is already located on Soscol. Other downtown Napa hotels include the restored Napa Mill and the Avia Hotel. Future development includes a proposed 250 room hotel in the COPIA area. This size hotel would create about 200,000 square feet of space. The Downtown Specific Plan forecasts a hotel of this size to be built within the next twenty years.[21]

Transportation: Existing Conditions

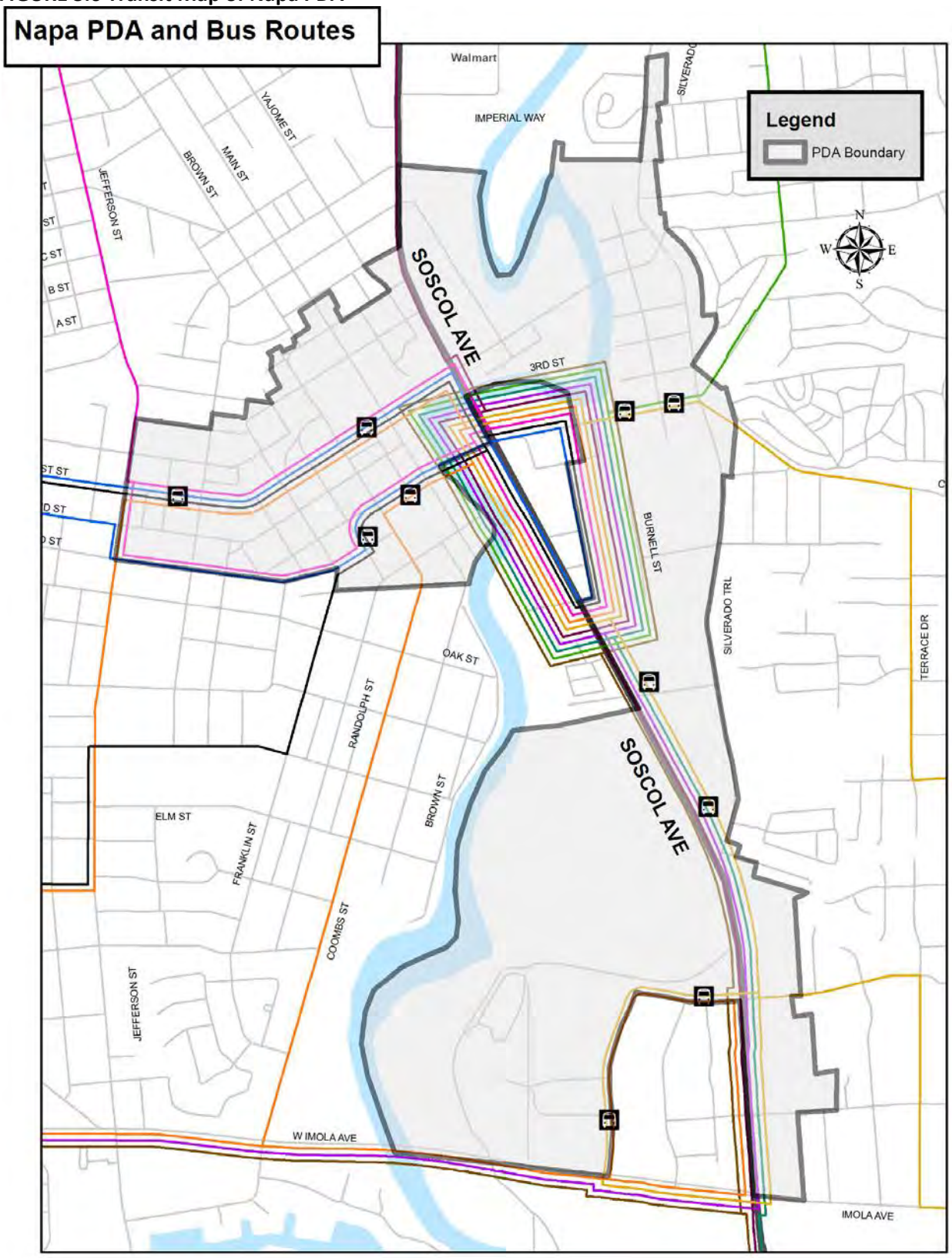
Transit - NCTPA operates the fixed route transit service for the City of Napa – The VINE. The entire VINE system was restructured to reduce headways, improve transfer times and locations, greatly improving

[21] Downtown Napa Specific Plan Existing Conditions Chapter 2.1 Land Use and Urban Design Assets
[22] City of Napa Downtown Specific Plane Appendix E – Economic Analysis
[23] City of Napa Downtown Specific Plan Appendix E – Economic Analysis

system flexibility. This new restructuring has resulted in 15-20 minute headways in the Downtown Napa Soscol Gateway PDA. The VINE also provides commuter services to the Vallejo Ferry terminal and El Cerrito Del Norte BART station.

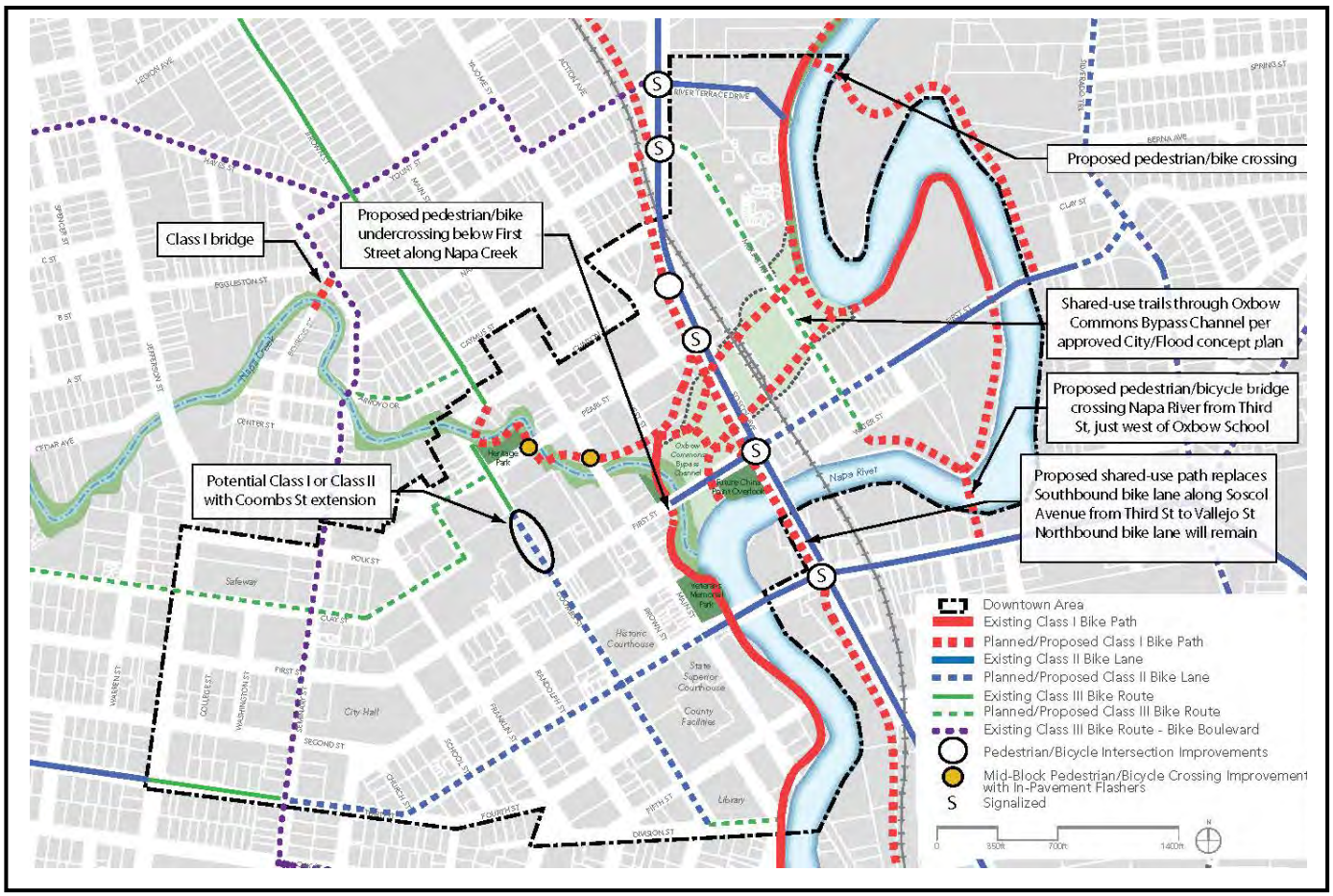
Soscol Gateway Transit Center:

FIGURE 3.6 Transit Map of Napa PDA



Bicycle and Pedestrian – Downtown Napa offers many pedestrian-friendly features including continuous network of sidewalks on both sides of the street, crosswalks, pedestrian signals at intersections, short crossings at most intersections, pedestrian friendly streetscapes, and sidewalk curb extensions. The Soscol Corridor provides less pedestrian friendly sidewalks and holds higher traffic volumes at higher speeds than Downtown. There are also fewer pedestrian-friendly features on the Soscol Corridor. There is a discontinuous class II bike lane on parts of Soscol Avenue, the main thoroughfare of the Soscol Corridor. The City of Napa has a bicycle network made up of various Class 1, II, and III bike lanes and bicycle boulevards. Some of these bicycle lanes cut through Downtown and go along the Soscol Corridor. In addition, the Napa River Trail and the Class I Napa Vine Trail connect to the Downtown and Soscol Gateway Corridor. Barriers to bicycle and pedestrian travel include the natural environment like the Napa River and high traffic volumes and speeds on main arterials such as Third Street and Soscol Avenue. There are two crossings for the river at First Street and Third Street both accommodate pedestrian and bicycle infrastructure.[24]

FIGURE 3.7 Downtown Bike and Pedestrian Network[25]



[24] City of Napa Downtown Specific Plan Section 6.6 Pedestrian and Bicycle Circulation

[25] Source: City of Napa Downtown Specific Plan Figure 6.6

Roadway System - The Downtown Napa Soscol Gateway PDA is bordered by State Highway 29 to the west and State Highway 221 (which becomes 121 when it turns into Soscol) on the east. Silverado Trail (SR 121) is also a main road that runs north-south parallel to Soscol up to Monticello road. The major arterials that feed the PDA include First Street which connects to SR 29 and feeds the downtown area. It is a two-way east-west serving arterial until to California Boulevard and then becomes one-way for westbound traffic between Main and California. Second Street is also a one-way two lane arterial headed eastbound from California to Main Street. Third Street is a two-way east-west arterial that runs parallel to First and Second and connects the downtown to Soscol Avenue. Soscol Avenue is a four lane two-way arterial that runs from Imola Avenue in the South to Trancas Street in the north. Collectors in the PDA include – Main, Coombs, Seminary, and Pearl Streets. The primary access to the PDA from SR 29 is Jefferson Street, Soscol Street, First and Second Streets.[26]

Future Improvements

Transit Improvements – Future transit improvements potentially include a Bus Rapid Transit system, Light Rail Service, and downtown trolley service.

Napa's Strategies to Support Transit Development:

- Emphasize the importance of streetscape improvements and pedestrian connectivity as essential strategies for increasing transit ridership.
- Work with NCTPA to identify sources of funding for bus stop upgrades and improvement of amenities.
- Coordinate with NCTPA as it explores a strategy of Bus Rapid Transit service. The downtown area would be a primary destination for Bus Rapid Transit and would require additional infrastructure in terms of stations, potential exclusive rights-of-way, and/or operational modifications.
- Accommodate for buses in the design of streets – understanding that buses need more generous curb radii
- Coordinate with NCTPA as it evaluates the potential for commuter or light rail service and identify downtown Napa as a viable regional transportation hub, central destination and distribution center for tourism.[27]

Pedestrian Improvements – Downtown Napa streets serve a higher volume of pedestrians than other streets in Napa. In the Downtown Specific Plan, the City of Napa has indentified the need to enhance the downtown streets with additional pedestrian friendly amenities such as wider sidewalks spanning at least 10 feet that accommodate pedestrians as well as sidewalk landscaping. Other enhancements in the Downtown include: public art, sidewalk café space, bulbouts, lighting, wayfinding signage, and street furniture.[28] Improved pedestrian crossings on Silverado Trail and Soscol Avenue are identified in the Soscol Gateway Study. The Soscol Gateway study identifies two pedestrian bridges that would greatly increase pedestrian circulation along the Soscol Corridor including one over the Napa River extending from Third Street to the Oxbow and COPIA area. This bridge would be in close proximity to the Soscol Gateway Transit Center. The other pedestrian bridge crosses over the railroad tracks spanning from Oil Co. Road to the Napa River Trail.

[26] City of Napa Downtown Specific Plan Section 6.2 Existing Roadway System
[27] City of Napa Downtown Specific Plan Section 6.5 Public Transit System
[28] City of Napa Downtown Specific Plan Section 6.6 Pedestrian and Bicycle Circulation

Bicycle Improvements – The City plans on creating a well connected network of Class I, II, and III bicycle facilities throughout the Downtown Napa and Soscol Gateway PDA. The network will facilitate an east-west and north-south circulation pattern. The Downtown/Soscol bicycle system will also connect to the trails and pedestrian paths along the Napa River and the Oxbow Commons Bypass Channel. Other future bicycle improvements include: Downtown bike-sharing program, reconstructing street frontages to accommodate pedestrians and bicyclists, require downtown developers to contribute to streetscape improvements and the Class I multi-use trail system along the Downtown Napa waterways, and share lane markings.[29]

Parking and Travel Demand Management- To accommodate future housing and job growth in downtown Napa, the City has outlined a series of parking strategies. Included in these strategies is variable parking pricing, expansion of the parking exemption zone, shared parking for businesses, and implementation of a residential parking permit program. In addition, capital parking improvements identified by the City is an additional 300-400 parking space structure on the west side of Soscol Avenue, and 75-100 additional spaces in the Oxbow District. The Downtown Specific Plan also made a recommendation to adopt revised parking requirements to support the vision of a higher-density, mixed use downtown Napa, where visitors are encouraged to park once and visit several destinations. This recommendation was amended into the general plan. This revision reduced parking ratios by approximately twenty five percent for 2 and 3 plus bedroom units, lowered ratios for office and commercial parking ratios are 20 percent, and remain the same for lodging units at 1 space per sleeping room and 1 space per every 2 employees. [30]

Table 3.2 Revised Downtown Automobile Parking Standards[31]

Residential Uses		
Single family attached, residential and condominiums and apartments of two or more attached	Per Unit Parking Requirements	
	Studio	1.0
	1 bedroom	1.0
	2 bedrooms	1.2
	3 bedrooms	1.3
Guest parking for the above uses	Not required unless within 200 feet of a residential district, in which case guest parking shall be provided at 1 space per 5 units; or 1 space per 3 units if units take access from arterials or collectors where on street parking is prohibited.	
Commercial and Office Uses		
All uses except hotels and motels, bed and breakfasts which shall use the Citywide standard	3.2 spaces per 1,000 sq. ft. ground floor 2.4 spaces per 1,000 sq. ft. other floors	
Bed and Breakfast Inns	No reduction in ratios. See bed and breakfast standards.	

[29] City of Napa Downtown Specific Plan Section 6.6 Pedestrian and Bicycle Circulation
[30] City of Napa Downtown Specific Plan Section 6.7 Parking Supply and Demand / Parking Management Plan
[31] Source: Table 6.2 in the City of Napa's Downtown Specific Plan Section 6.7 Parking Supply and Demand / Parking Management Plan

Hotels and Motels	1 space per sleeping room plus 1 space for manager plus 1 space for every 2 employees (full or part time) plus, if a hotel has a convention, banquet, restaurant or meeting facilities, parking shall be provided in addition to the hotel requirement, as determined by Planning Commission, based on parking study provided by applicant and acceptable to the City.
Public/Quasi public facilities	Standards are typically established through parking studies of the specific use.

Roadway Improvements - The City has identified a series of roadway improvements in the Downtown Specific Plan. These improvements include the following:

Table 3.3 Capital Roadway Improvements[32]

1	California and First and Second Street Roundabouts
2	Implement minor widening of Soscol Avenue between Silverado Trail and Lincoln Avenue to provide four through lanes with a center median and landscaping
3	Widen the southbound approach of the intersection of Silverado Trail at Soscol Avenue to provide one through lane and two left turn lanes
4	Extend Saratoga Drive west to intersect with Silverado Trail (under construction)
5	Complete the missing segment of Terrace Avenue over Cayetano Creek
6	Extend Gasser Drive to Soscol Avenue at a new intersection north of the intersection of Soscol Avenue/Silverado Trail
7	Widen Silverado Trail to provide left turn lane improvements between Soscol Avenue and Third Street
8	Improve the five-legged intersection of Third Street/East Avenue/Coombsville Road/Silverado Trail to improve safety, increase vehicular capacity, and improve level of service.
9	Implement Class II bike lanes on Silverado Trail and Soscol Avenue between Silverado Trail and Third Street

Numbers are for reference only and do not represent a priority order.

The City of Napa also has plans to change the existing one-way First, Second, Third and Fourth Streets to two-way between Main Street and Jefferson. First and Second west of Jefferson to California will remain one-way in each direction. The "concept" is currently being studied to determine if the directions should be reversed. The City plans to install roundabouts at the intersections of First and California and Second and California to improve level of service at these two intersections. The one-way portion of Third Street and Fourth Street in the downtown core is also proposed for two-way in the Downtown Specific Plan. Advantages of converting Napa's one-way streets back to two-way include:

- Provides direct routes to Downtown destinations
- Improves emergency vehicle access to and from Downtown
- Reduces traffic speeds through the Downtown commercial district due to fewer lanes in each direction

[32] City of Napa Downtown Specific Plan Appendix C Transportation Analysis

- Slows speeds to improve pedestrian safety
- Increases exposure of adjacent businesses to passing motorists
- Increases access to adjacent properties served by driveways
- Improves wayfinding for bicycle routes
- Improves transfers between bus routes for transit riders; and
- Increases rider recognition and visibility of routes for the Napa VINE system.[33]

NCTPA's support of PDA Development in Napa:

- Support the City's efforts to create a "park once and walk' Downtown atmosphere
- Look for opportunities to implement alternative modes of transportation in the Downtown and Soscol Corridor such as light rail, bus rapid transit, and trolley service
- NCTPA understands the need for infrastructure and streetscape improvements along the Soscol Corridor to support future housing growth. NCTPA will support the City in exploring funding options for the transportation improvements, in particular the pedestrian trails identified in the Soscol Gateway Potential Infrastructure Funding Needs.
- Encourage and support Napa to expand their non-automotive transportation network within the PDA (non-automotive includes transit, pedestrian, and bicycle projects).
- Refine the list of transportation capital improvement projects for the jurisdictions including projects within or within proximate access to the PDAs and identify revenues and financing mechanism to fund them
- Create a strategic transportation plan that prioritizes projects within the county. Some of the prioritizing will be toward the benefit of improving PDAs.
- Support Transportation Demand Management (TDM) efforts within the PDA, such as parking pricing strategies
- Assist with the RHNA process and tracking a jurisdiction's ability to meet their RHNA allocations

3.2 City of American Canyon

The City of American Canyon is located at the southern end of Napa County between the Napa River and the Sulphur Spring Mountain Range. The City has a 2010 population of 19,454 residents. American Canyon has experienced the greatest percentage increase in population of any jurisdiction in Napa County in the last twenty years, including a 99 percent growth in population from 2000 to 2010. The City's median household income is $68,512 and the median age is 36.8 years. As of 2010, the median home value was $281,328 dollars.[34]

American Canyon experienced a 99% population growth from 2000 to 2010 - far surpassing any other jurisdiction in Napa County

The City of American Canyon is an entry point for most visitors to the Napa Valley. American Canyon, bordered by Highway 37 to the south, Highway 12 to the north serves as a throughway to reach Napa Valley for visitors coming on Highway 80. An obstacle to establishing a vibrant Priority Development Area in American Canyon is high posted speed limits and lack of complete street features along Highway 29, which currently serves as an east-west divide through the heart of the City.

[33] City of Napa Downtown Specific Plan Section 6.3 Roadway System Improvements
[34] City of American Canyon Community Profile 2011

The City encompasses a variety of suburban density tract residential neighborhoods, several mobile home parks, three apartment projects, several recent commercial shopping centers and some vacant and underutilized properties along Highway 29, a large industrial park on the north side of the City, and open space.[35]

Hwy 29 Corridor

Built in the 1970's Highway 29 is a four-lane, center divided regional highway. Highway 29 runs through the center of American Canyon. The Highway corridor is often the first and last impression made on visitors as they make their way through the City. Development along the corridor varies from the northern end of American Canyon where commercial, industrial and some rural residential is located, to the heart of the City which contains a shopping center and high density residential, to the southern end where low density residential is located. The majority of the traffic on Highway 29, through American Canyon, is single occupancy vehicle pass through traffic, meaning the vehicles are not arriving or departing in American Canyon. Highway 29 has an Annual Daily Traffic Volume (ADT) of approximately 40,000 vehicles. With its high volume and speed, and little pedestrian and bicycle infrastructure, Highway 29 is very vehicle centered and therefore presents a challenge for encouraging a complete community within the Highway 29 Corridor PDA.

Highway 29 Corridor Vision

In 2008 the City of American Canyon City Council adopted a vision for Highway 29.
Highway 29 Corridor Vision:

- Highway 29 is a thriving retail, service and residential hub for the community with new open space and gathering places and well-integrated circulation for pedestrians, bicyclists and vehicles.
- Highway 29 will provide opportunity for new and unique businesses and catalyst projects.
- Highway 29 will continue to function as the primary north/south automobile route for residents and commuters while also providing well integrated travel lanes and pathways for pedestrians and cyclists.
- Improvements will be made along the corridor to enhance pedestrian and cycling opportunities and safety along the busy corridor. East-west vehicle, pedestrian, and bicycle connectivity will be improved to breach the divide and provide greater safety for shopping and west-side student access to the new High School on the east side of town.
- Traffic calming measures replace the "stop and go" experience on Highway 29 with a slower, and even travel speed through intersection improvements, highway beautification, and fewer individual curb cut access ways.
- Mixed use and higher density residential projects along the corridor will boost transit ridership to BART stations in the East Bay, the Vallejo Ferry to San Francisco, and to local wine industry jobs in American Canyon, the Napa Airport Industrial Park, and North County.[36]

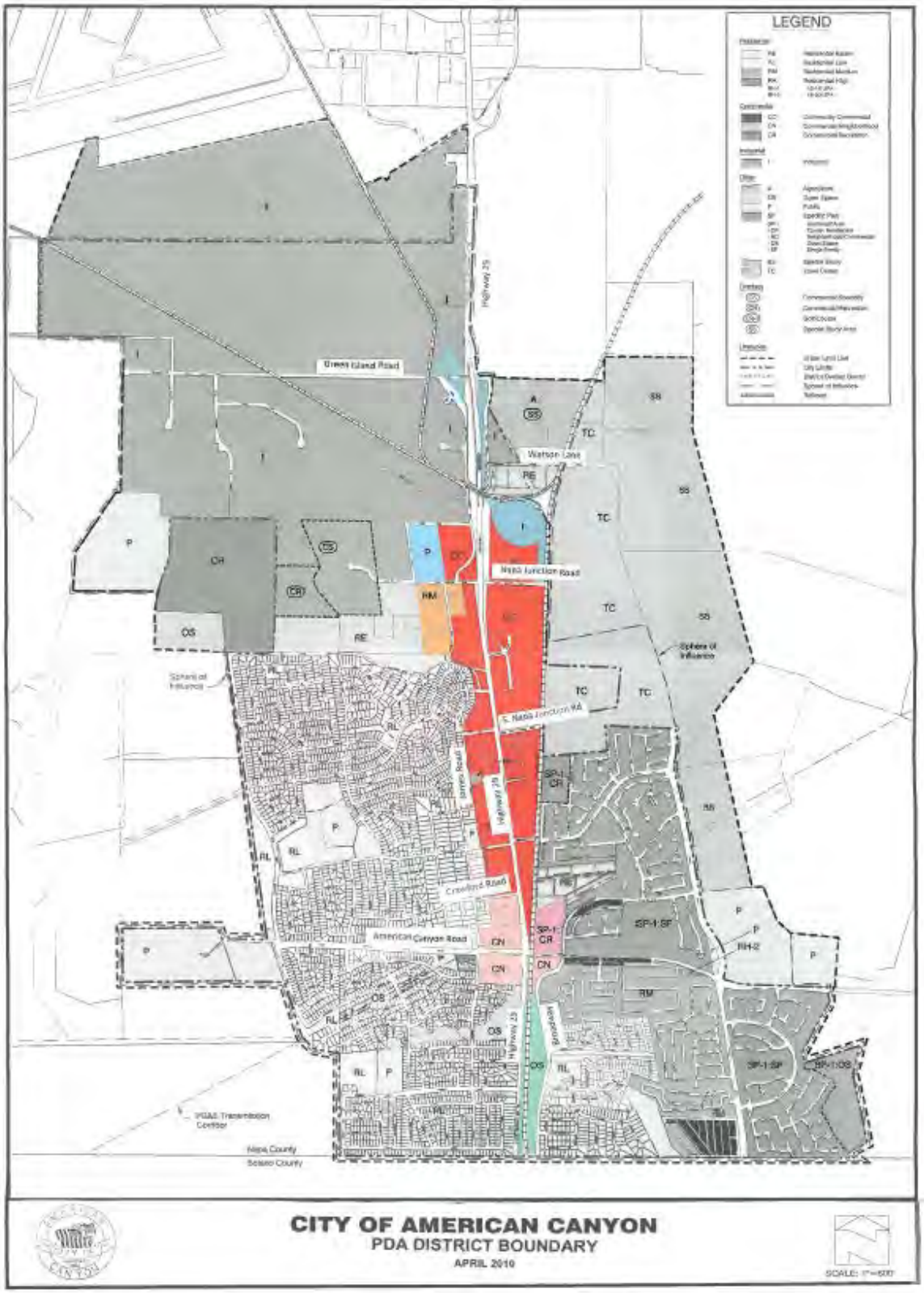
[35] City of American Canyon General Plan Housing Land Use Element
[36] City of American Canyon PDA Application

Table 3. 4 American Canyon PDA

American Canyon – Hwy 29 Mixed Use Corridor PDA		
Area Name and Location	Highway 29 Corridor	
Area Size	225 Acres	
Public Transit Serving the Area	The VINE and American Canyon Transit	
Place Type	Mixed Use Corridor	
	Current Conditions (2008)	Future Goal (2035)
Total Housing Units	272	652
Total Jobs	593	1,993
Net Project Density (New Housing)	35 du/acre	TBD
Minimum/Maximum FARs (New Employment Development)	1.5 FAR	TBD

American Canyon Highway 29 Corridor:

FIGURE 3.8 American Canyon PDA



Physical Landscape

The American Canyon PDA's geographic boundaries are generally Green Island Road on the north, James Road on the west, the railroad tracks on the east, and the City of Vallejo on the south. The northern end of the PDA near Napa Junction Road contains Napa Junction Elementary School, City of American Canyon Administration offices and City Hall, and the Napa Junction shopping center. The shopping center consists of one major anchor retailer – Walmart, and other retail stores and restaurants, as well as high density residential. Below the Napa Junction center on the east side of the Highway 29 is Adobe Lumber, and on the west of Highway 29 are the Broadway Market and a Garden Statuary store. Further south along Highway 29 is interspersed office and commercial space, lodging, religious institutions, restaurants, retail, and low density residential. The west side of the PDA also contains the City Library, the American Canyon Fire Protection District, and the Chamber of Commerce.

> Mixed use and higher density residential projects along the corridor will boost transit ridership to BART stations in the East Bay, the Vallejo Ferry to San Francisco, and to local wine industry jobs in American Canyon, the Napa Airport Industrial Park, and North County.

Housing

There are currently 272 apartment housing units within the PDA. On the west side of the Highway 29 the majority of housing is low density single family residential units. On the east side of the PDA there are high density residential units at The Lodge at Napa Junction.[37]

Market Conditions

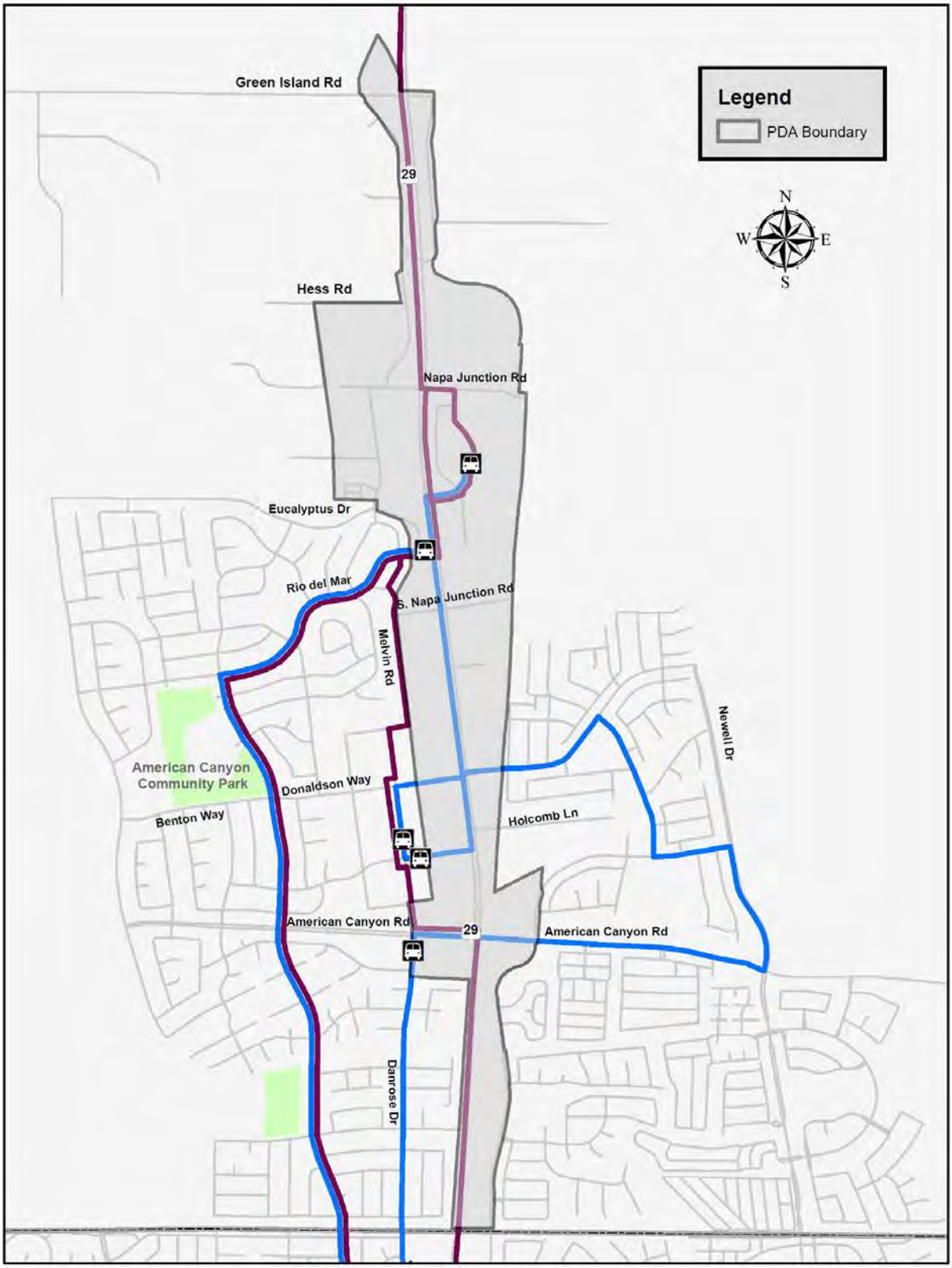
The top five employers in American Canyon are Walmart- 426 employees, Amcam Beverages - 155 employees, G.L. Mezzetta – 150 employees, Kona Coast Food Productions – 150 employees, and American Canyon High School – 100 employees.[38] In December of 2010 the City annexed approximately 300 acres east of Highway 29 east of the Napa Junction Retail Center for a future Town Center which will consist of up to 1600 single and multi-family residential units and a mix of urban uses such as retail and tourism/entertainment uses. This development could bring significant economic growth to the city and establish a new distinct neighborhood.

Transportation: Existing Conditions

Transit – American Canyon is served by VINE Routes 11 and 29 and American Canyon Transit. American Canyon Transit is a deviated fixed route bus service that provides service along Highway 29, Rio Del Mar, Donaldson Way, Elliot Drive, and American Road. The VINE Route 11 is a fixed route service that runs along Highway 29, Napa Junction Road, Rio Del Mar, and Donaldson Way. Route 11 provides a regional service for residents wanting to travel north to Napa or south to the Vallejo Ferry Terminal. Route 29, which is the commuter express route, operates along Highway 29, as well as Melvin and James Road taking residents as far north as the City of Calistoga and as far south as the El Cerrito Del Norte BART Station.

[37] City of American Canyon Housing Element B-30
[38] City of American Canyon Community Profile 2011

FIGURE 3.9 American Canyon PDA Map Existing Transit Circulation



Bicycle and Pedestrian – Highway 29 poses a north-south divide with limited safe access for bicyclist and pedestrians travelling north or south, or crossing the Highway. Because Highway 29 serves as a local main street there is a need to accommodate bicyclist and pedestrians. There are a few spans of safe pedestrian access on Highway 29 in the form of a Class I multipurpose path and discontinuous segments of sidewalk on Donaldson Way, American Canyon Road, Napa Junction Road, Theresa Avenue, and South Napa Junction Road. Currently, there is little pedestrian access on Highway 29. The existing pedestrian crossings are as follows:

- Pedestrian crosswalk at Highway 29 and Napa Junction Road
- Class I multipurpose path along Highway 29 from Napa Junction Road to Eucalyptus Drive
- Crosswalk at Rio Del Mar and Highway 29
- Crosswalk at Donaldson Way and Highway 29
- Crosswalk at American Canyon Road and Highway 29

Although there is an existing bicycle network consisting of Class I, II, and III bike lanes in American Canyon, much of it is located outside of the Highway 29 PDA. Existing bike routes inside the PDA include a include a Class I multipurpose path on the east side of Highway 29 in front of the Napa Junction Center that parallels Highway 29 from Napa Junction Road to Eucalyptus Drive.

American Canyon Highway 29 Corridor:

Photo Courtesy: Napa Valley Register

Roadway System – The Major Highways surrounding the PDA include, Interstate 80 to the south, Highway 37 to the south, Highway 12 to the north, and Highway 29. The major arterials that feed Highway 29 through the American Canyon PDA are American Canyon Road and Flosden Road. American Canyon Road runs east-west bisecting the PDA at the southernmost tip. Flosden Road does not connect to Highway 29 but it is a major north-south arterial that feeds vehicles from Highway 37 to American Canyon Road. Collectors that serve the PDA include – James Road, Eucalyptus Drive, Donaldson Way, Elliot Drive, Theresa Avenue, Green Island Road, Napa Junction Road, South Napa Junction Road, Poco Way, Rio Del Mar, Paoli Loop, Lombard Road, Kimberly Road, Crawford Way, Melvin Road, Silver Oak Drive, and Broadway.

Future Improvements

Transit Improvements – Transit Improvements include the continuation of the Citywide Trip Reduction Ordinance, a potential multi-modal transit center within the City limits, better transit connections to regional transit modes such as BART and the Vallejo Ferry. The City will also consider, the possibility of light rail, and will establisha marketing and educational program to promote transit, bicycling and other alternative modes of transportation.[39]

Table 3.5 Future Transit Improvements[40]

1	Improved BRT
2	Investigate rail transit feasibility
3	Bus turnouts and Transit Center

American Canyon's Policies to support Transit Development:

- Encourage developers to work with agencies providing transit service with the objective of maximizing the potential for transit use.
- Promote the development of a multi-modal transit center within the designated Community Center, Town Center, or other locations that facilitate transit use by the City's residents and is compatible with surrounding land uses.
- Consult and coordinate with the various transit agencies in order to bring about improved transit service to the City of American Canyon.
- Provide transit linkages between the Community Center or Town Center and regionally-related transit such as BART, commuter railway and the Vallejo ferry.

Bicycle and Pedestrian Improvements – The City of American Canyon's goal is to provide a citywide system of safe, efficient and attractive bicycle and pedestrian routes for commuter, school and recreational use. The City has identified future bicycle and pedestrian routes as part of the Countywide Bike Plan which includes future class I, II, and III facilities within the PDA. [41]

[39] City of American Canyon Circulation Element – Transit Policies
[40] City of American Canyon PDA Application
[41] City of American Canyon Circulation Element – Bicycle, Pedestrian and Equestrian Facilities

Table 3.6 Future Bicycle and Pedestrian Improvements[42]

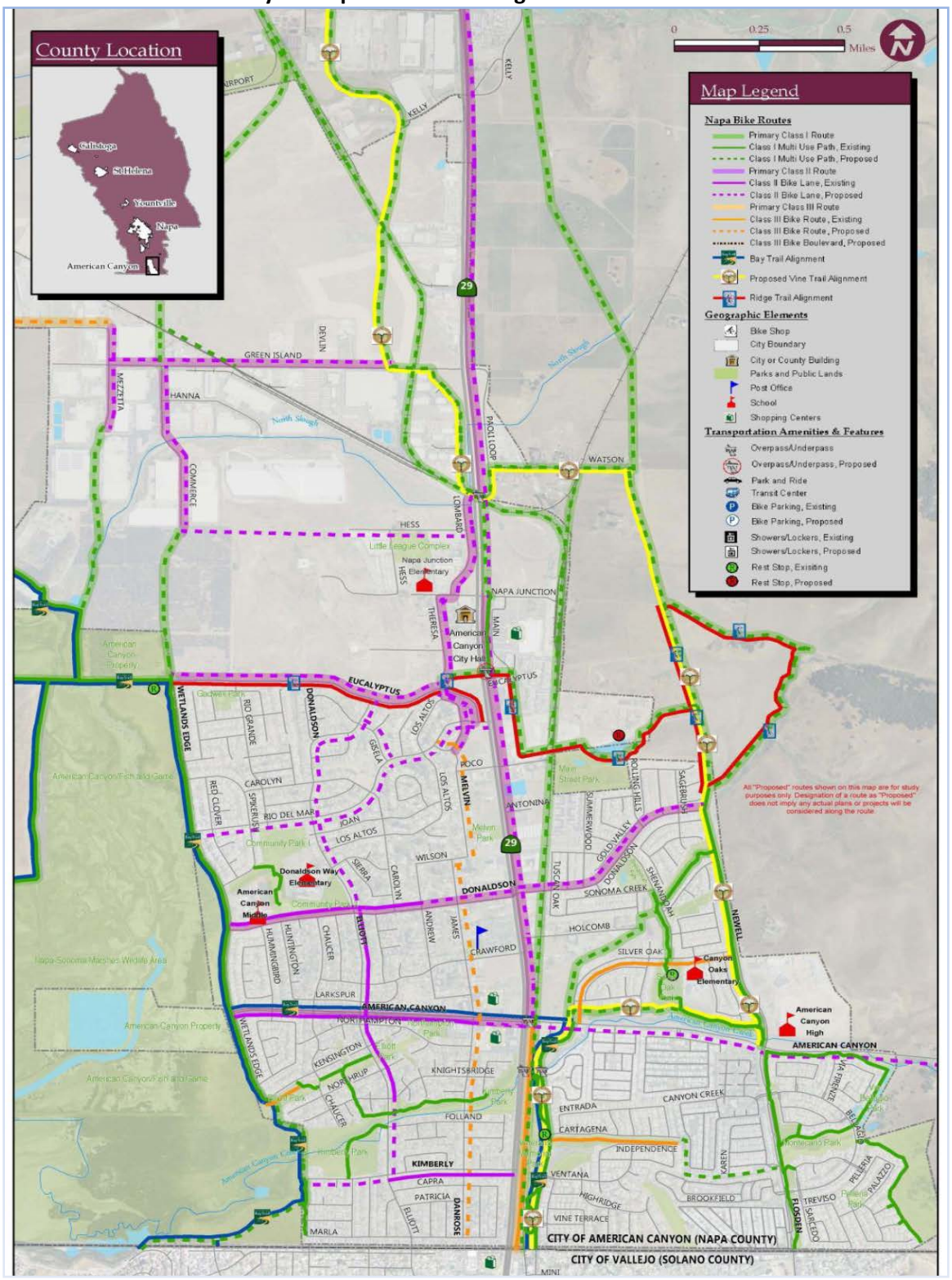
1	Construct new and replacement sidewalks on Highway 29
2	Separated bicycle paths along Highway 29 and across Highway 29
3	Pedestrian overcrossings for Highway 29
4	Bicycle/Pedestrian Bridge parallel to Highway 29 over railroad

Policies to support Bicycle and Pedestrian travel:

- Maintain existing pedestrian facilities and require new development to provide pedestrian walkways between developments, schools and public facilities.
- Design and construct safe bicycle and pedestrian crossings of SR-29 at key locations that provide safe crossings for children and seniors.
- Provide pedestrian and bicycle linkages between all residential areas and employment centers within the City.
- Promote the transition of abandoned rail rights-of-way to trails.
- Require that sufficient and secure bicycle parking be provided in all parking areas.

[42] City of American Canyon PDA Application

FIGURE 3.10 American Canyon Proposed and Existing Bike Lanes from Circulation Element[43]



[43] Source: City of American Canyon Circulation Element Figure 1

Parking and Travel Demand Management – To curb future single occupancy vehicle trips, American Canyon will continue the Citywide Trip Reduction Ordinance. The City's goal is to limit congestion on Highway 29, local arterials and collectors around the city.[44]

Table 3.7 Future Travel Demand Management[45]

1	Traffic Calming through adjacent neighborhoods
2	Construct park and ride lot

Policies to support improvement in circulation:

- Require nonresidential developments to provide employee feasible incentives for utilizing alternatives to the conventional single occupant automobile (i.e. carpools, vanpools, buses, bicycles, walking, telecommuting, etc.).
- Support national, state and regional legislation directed at encouraging the use of carpools and vanpools.
- Promote ridesharing through publicity and provision of information to the public.
- Encourage the preservation and development of freight and passenger/commuter rail.
- Encourage the development of a telecommunications center within the City to reduce vehicle miles traveled.
- Utilize synchronized traffic signals, where appropriate, to improve traffic flow efficiency.

American Canyon's goal is to limit congestion on Highway 29, local arterials and collectors.

Roadway Improvements – Capital improvements in the PDA include the reconstruction of Highway 29, street medians and tree line streetscapes, landscape parkway improvements, and added street lights. The following roadway improvements have been identified by the City of American Canyon and lie within or in proximate access to the Highway 29 Corridor PDA:

Table 3.8 Capital Roadway Improvements[46]

1	Eucalyptus Road Realignment/ Widening	Realign Eucalyptus Drive from Theresa Road to intersect with Hwy 29; remove signal at Rio Del Mar; construct auxiliary lane southbound on Hwy 29 between Napa Jct Rd. and Rio Del Mar.
2	SR 29 – Napa Jct Rd Intersection Improvements	Improvements to SR 29 and Napa Jct Rd. intersection including SR 29 widening and Napa Jct Rd. widening
3	Theresa Ave. Sidewalk Project	Construct sidewalk on Theresa Ave. to Eucalyptus Drive.
4	Annual Pedestrian Improvement Project	Design for extending sidewalk westerly on Rio Del Mar from SR 29 to Cassayre; sidewalk along SR 29 from Rio Del Mar to Donaldson Way and sidewalk along Donaldson Way from SR 29 to James Road.
5	Newell Drive, Silver Oak Trail to	One additional lane from Silver Oak Trail to Donaldson Way.

[44] City of American Canyon Circulation Element – Transportation Demand Management
[45] City of American Canyon PDA Application
[46] City of American Canyon Capital Improvement Plan

	Donaldson Way	Includes curb, gutter and sidewalk
6	Newell Drive, Donaldson Way to Eucalyptus	Extend Newell Drive from Donaldson Way to Eucalyptus Dr. as a two-lane collector. Obtain right-of-way for a four lane collector.
7	Paoli Loop Upgrade	Upgrade Paoli Loop Road to a two-lane industrial road. Widen shoulders and redesign the southwest loop radius.
8	South Napa Jct, 2 lanes (Hwy 29-Newell)	Widen South Napa Junction Road to a major collector from SR 29 to Newell Drive.
9	Green Island Road, Paoli Loop Rd to Commerce Blvd.	Add 2 lanes from Paoli Loop to Commerce Boulevard.
10	Traffic Enhancements	Pedestrian bridge, grade separated railroad crossings, landscaping, etc, primarily along SR 29
11	Eucalyptus Road West of Theresa Ave.	Improve Eucalyptus Drive from Wetlands Edge Road to SR 29 as a two-lane collector.
12	Commerce Blvd. Extension	Extend Commerce Way from the end of the existing cul-de-sac to Eucalyptus Drive as a two-lane collector. Paving, curb, gutter and sidewalk.

Numbers are for reference only and do not represent a priority order

American Canyon Policies to guide Roadway Improvements:

- Establish a street system hierarchy within the City of American Canyon that is defined, yet flexible enough to address the unique circumstances that may arise.
- Reserve rights-of-way for future roadways, extensions or widening.
- Prioritize existing and future facility needs in order to properly allocate limited funds to areas of highest need.
- Pursue the timely extension of Flosden Road (and consider the phasing of east/west connectors to Highway 29), including the realignment of its intersection with American Canyon Road, and the development of other necessary primary north-south roadways such as the Western Parallel along the wetlands edge.
- Review the need for extending east-west roadways across SR-29 to the east side of the City.
- Improve the connection between Green Island Road and SR-29.
- Consider alternative circulation concepts that provide street or driveway connectivity between parcels fronting on SR-29 to consolidate driveway access along SR-29 as well as consolidate parking for the businesses along this roadway.
- Consider whether it is appropriate to establish a transportation benefits district for the area along the American Canyon Road Corridor east of SR-29.
- Implement an impact fee system in order to offset the cost of transportation required by new development.
- Create a second access to the Green Island Industrial Park, possibly through the construction of the new Wetlands Edge Road and Devlin Road extension from the north.
- Provide linkages between industrially zoned areas, paying specific attention to connecting the industrial areas north and south of the railroad tracks.[47]

[47] City of American Canyon Circulation Element Consistency and Compatibility

NCTPA's support of PDA Development in American Canyon:

- NCTPA is currently developing the SR 29 Gateway Study and anticipates that additional roadway, transit, bike and pedestrian improvements along the corridor will be defined by this plan.
- Continue to work with the City to identify resources for more specific plans for the PDA – because the American Canyon PDA is a potential PDA, more detailed planning is needed. NCTPA will work with the City to identify resources to support planning efforts, as well as assist in transportation planning for the PDA.
- NCTPA understands the need for infrastructure and streetscape improvements along the Highway 29 Corridor to support future housing growth. NCTPA will support the City in exploring funding options for the transportation improvements, in particular the pedestrian trails identified in the General Plan Circulation Element.
- Encourage and support American Canyon to expand their non-automotive transportation network within the PDA (non-automotive includes transit, pedestrian, and bicycle projects).
- Support Transportation Demand Management (TDM) efforts within the PDA
- Assist with the RHNA process and tracking a jurisdiction's ability to meet their RHNA allocations
- Refine the list of transportation capital improvement projects for the jurisdictions including projects within the PDAs and identify revenues and financing mechanism to fund them
- Create a strategic transportation plan that prioritizes projects within the county. Some of the prioritizing will be toward the benefit of improving PDAs.

CHAPTER 4: NEXT STEPS

In fall 2013, NCTPA will kick off Napa's Countywide Transportation Plan, scheduled for adoption in 2014, which will provide countywide transportation goals and priorities. The focus of the transportation plan will be to set priorities for future transportation projects over the next 25 years. This plan will also respond to new policies such as SB 375, which mandate reductions in greenhouse gas emissions and vehicle miles traveled.

The Countywide Transportation Plan will go beyond traditional transportation planning, focusing on the integration of transportation with land use and local policies that drive land use patterns. This focus on land use, not only represents a shift in transportation planning, it represents a shift in work done by NCTPA. New legislation and requirements such as the SCS have extended NCTPA's role beyond the scope of strictly transportation. An example of this would be the recent Regional Housing Needs Allocation process, where NCTPA was the entity representing the Napa Subregion for the purpose of determining a methodology and distributing housing allocations for the 2014-2022 RHNA cycle.

NCTPA will also focus agency efforts on developing project specific plans and advocacy to bring greater attention to the County's (with focus on the PDAs) infrastructure needs and funding challenges. This will involve coordinating with federal, state, and regional partners to prioritize investments in the County's PDAs. NCTPA will stay abreast of funding and regulatory opportunities and identify financing mechanisms to support sustainable development, and encourage a rich mix of affordable housing and employment to remove barriers to PDA development and growth.

This PDA Investment and Growth Strategy is a harbinger for NCTPA's focus on sustainable development within the county's PDAs. Moving forward, NCTPA will work with the jurisdictions to develop baseline

data for each PDA and identify housing, employment, and growth goals and objectives to measure PDA progress. Data to be assessed will include: employment, housing, vehicle miles traveled, and percent of non-auto trips. This will further inform NCTPA's development of policies and planning strategies, and identify ways that NCTPA can support local jurisdictions in making future investment decisions in PDAs.

APPENDIX A: GLOSSARY OF TERMS

Affordable Housing - Housing that can be purchased or rented by a household with very low income (earning below 50 percent of the area median income), low income (earning between 50 percent and 80 of the area median income), or moderate income (earning between 80 to 120 percent of the area median income) based on a household's ability to make monthly payments necessary to obtain housing. Housing is considered affordable when a household pays less than 30 percent of its gross monthly income (GMI) for housing, property taxes, insurance, and utilities.

Assembly Bill 32 (AB 32) – California Global Warming's Solutions Act of 2006. AB 32 requires California to lower greenhouse gas emissions to 1990 levels by 2020.

Association of Bay Area Governments (ABAG) – A comprehensive regional planning agency and Council of Governments for the nine counties and 101 cities and towns of the San Francisco Bay region. The Bay Area is comprised of nine counties: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma.

Bay Area Rapid Transit (BART) – Bay Area high-speed rapid rail network.

Bay Area Air Quality Management District (BAAQMD) - is the public agency entrusted with regulating stationary sources of air pollution in the nine counties that surround San Francisco Bay: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, southwestern Solano, and southern Sonoma counties

Bay Conservation and Development Corporation (BCDC) – was established in 1965 as the nation's first state coastal management agency.

Bike Facilities - These include Class I, Class I and Class III Bike Facilities. A Class I Facility, typically called a "bike path" or "multi-purpose path", provides bicycle travel on a paved right-of-way completely separated from any street. A Class II Facility often referred to as a "bike lane," which provides a striped and stenciled lane for one-way travel on either side of a street or highway. A Class III Facility, generally referred to as a "bike route," provides routes through areas not served by Class I or II facilities or to connect discontinuous segments of a bikeway. Class III facilities can be shared with either motorists on roadways and is identified only by signing.

Bulbout- A traffic calming measure, primarily used to extend the sidewalk, reducing the crossing distance and allowing pedestrians about to cross and approaching vehicle drivers to see each other when vehicles parked in a parking lane would otherwise block visibility.

Bus Rapid Transit (BRT) - is a term applied to a variety of public transit systems using buses to provide faster, more efficient service than an ordinary bus line. Many times this is achieved through a designated bus lane or right of way.

Caltrans – California Department of Transportation.

California Environmental Quality Act (CEQA) - Enacted in 1970 and amended through 1983, established state policy to maintain a high-quality environment in California and set up regulations to inhibit degradation of the environment by instituting a statewide policy of environmental protection.

Capital Investment Program (CIP) – Is a plan that identifies future infrastructure needs for a municipality.

Congestion Management Agency (CMA) - develops and updates the legislatively required Congestion Management Program (CMP), a plan that describes the policies and strategies to address congestion problems in the county, and ultimately protects the environment with strategies to help reduce greenhouse gas emissions.

Congestion Mitigation and Air Quality Program (CMAQ) – program that funds surface transportation projects and other related efforts that contribute air quality improvements and provide congestion relief.

Density Units (du) - The number of residential dwelling units per acre of land. Densities specified in General Plans are expressed in units per gross developable acre.

Environmental Impact Report (EIR) - A document used to evaluate the potential environmental impacts of a project, evaluate reasonable alternatives to the project, and identify mitigation measures necessary to minimize the impacts. The California Environmental Quality Act (CEQA) requires that the agency with primary responsibility over the approval of a project (the lead agency) evaluate the project's potential impacts in an Environmental Impact Report (EIR).

Federal Highway Administrations (FHWA) - The agency within the U.S. Department of Transportation that supports State and local governments in the design, construction, and maintenance of the Nation's highway system (Federal Aid Highway Program) and various federally and tribal owned lands (Federal Lands Highway Program).

Federal Transit Administration (FTA) - The agency within the U.S. Department of Transportation that provides funding and technical assistance for local public transit systems.

Floor Area Ratio (FAR) - regulates the intensity of non-residential development, is the ratio of the total floor area of a building to the size of the land or parcel on which it sits.

FOCUS – An ABAG regional development and conservation strategy that promotes a more compact land use pattern for the Bay Area. It unites the efforts of four regional agencies into a single program that links land use and transportation by encouraging the development of complete, livable communities in areas served by transit, and promotes conservation of the region's most significant resource lands

Greenhouse Gas (GHG) – Air pollutants such as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases.

Infill Development - The development of new housing or other buildings on scattered vacant lots in a predominantly developed area or on new building parcels created by permitted lot splits.

Infrastructure - Permanent utility installations, including roads, water supply lines, sewage collection pipes, drainage pipes, and power and communications lines.

Level of service (LOS) - A qualitative term describing operating conditions a driver will experience while traveling on a particular street or at an intersection during a specific time interval. It ranges from LOS A (very little delay) to LOS F (long delays and congestion).

Mixed-Use Development - Defined as a development form in which a mix of uses is located in close proximity to each other, sometimes within the same building. The land uses may be stacked on top of each other (i.e., a retail land use on the ground floor with multi-family residential units or offices above). Alternately, the mix could be "horizontal" in nature where, for example, commercial or institutional (school or civic) uses are placed directly next to multi-family residential uses. In all instances the intent of a mixed-use designation is to allow a higher density and intensity of uses that encourage pedestrian activity by placing residents within walking distance of daily needs, reducing automobile dependence.

Moving Ahead for Progress in the 21st Century (MAP 21) – Federal transportation legislation signed into law by President Obama on July 6, 2012. Funding surface transportation programs at over $105 billion for fiscal years (FY) 2013 and 2014.

Metropolitan Planning Organization (MPO) - Metropolitan Planning Organizations are responsible for planning, programming and coordination of federal highway and transit investments in urbanized areas.

Metropolitan Transportation Commission (MTC) – Is the local MPO tasked with transportation planning, coordinating and financing for the nine county Bay Area.

Napa County Transportation and Planning Agency (NCTPA) – Is a Joint Powers Authority (JPA) made up of all the jurisdictions in Napa County. NCTPA's duties include transportation policy development and providing the region with transportation planning and funding, as well as serving at the countywide transit provider.

National Environmental Policy Act (NEPA) –is a United States environmental law that established a U.S. national policy promoting the enhancement of the environment and also established the President's Council on Environmental Quality (CEQ).

One Bay Area Grant (OBAG) - a new funding approach that better integrates the region's federal transportation program with California's climate law (Senate Bill 375, Steinberg, 2008).

Pedestrian-oriented Development - Development designed with an emphasis on the street sidewalk and on pedestrian access to the building, rather than an auto access and parking areas.

Plan Bay Area – Plan Bay Area is an integrated long-range transportation and land-use/housing plan for the San Francisco Bay Area. It includes the Bay Area's Regional Transportation Plan, which the Metropolitan Transportation Commission (MTC) updates every four years, and the Association of Bay Area Governments' (ABAG's) demographic and economic forecast, which is updated every two years

Priority Conservation Area (PCA) – area of regional significance that has broad community support and an urgent need for protection. These areas provide important agricultural, natural resource, historical, scenic, cultural, recreational, and/or ecological values and ecosystem functions

Priority Development Area (PDA) – are locally-identified, infill development opportunity areas within existing communities. They are generally areas of at least 100 acres where there is local commitment to developing more housing along with amenities and services to meet the day-to-day needs of residents in a pedestrian-friendly environment served by transit.

Regional Housing Needs Allocation (RHNA) – state-mandated process to identify the total number of housing units (by affordability level) that each jurisdiction must accommodate in its Housing Element.

Regional Transportation Plan (RTP) – Carried out by MPOs the RTP is a long-range transportation plan which identifies and analyzes transportation needs of the metropolitan region and creates a framework for project priorities.

Senate Bill 375 (SB 375) – Sustainable Communities and Climate Protection Act of 2008. Sustainable Communities requires ARB to develop regional greenhouse gas emission reduction targets for passenger vehicles. ARB is to establish targets for 2020 and 2035 for each region covered by one of the State's 18 metropolitan planning organizations (MPOs). Requires each of California's MPOs to then prepare a "sustainable communities strategy (SCS)" that demonstrates how the region will meet its greenhouse gas reduction target through integrated land use, housing and transportation planning.

SOV – Single Occupancy Vehicle

Sustainable Communities Strategy (SCS) – Mandated by SB 375 the SCS is a regional blueprint for transportation, housing and land use that is focused on reducing driving and associated greenhouse gas emissions

Transportation Control Measure – strategies to reduce vehicle emissions specifically identified and committed to in State Implementation Plans (SIPs); and are either listed in Section 108 of the Clean Air Act (CAA) or will reduce transportation-related emissions by reducing vehicle use or improving traffic flow.

Transportation Demand Management (TDM) - The application of strategies and policies to reduce travel demand, particularly by single-occupant vehicles during peak commute periods. Instead of increasing roadway capacity, TDM programs focus on using existing transportation systems and modes in ways that contributes less to traffic congestion.

Transportation for Livable Communities – a regional program to support community-based transportation projects that bring new vibrancy to downtown areas, commercial cores, neighborhoods, and transit corridors, enhancing their amenities and ambiance and making them places where people want to live, work and visit.

Transportation Oriented Development – planning and design that seeks to create compact, mixed-use, pedestrian-oriented communities located around public transit.

VMT – Vehicle Miles Traveled

APPENDIX B: PDA APPLICATIONS

This page intentionally left blank

CITY of NAPA

CITY MANAGER
955 School Street
Mailing Address:
P.O. Box 660
Napa, California 94559-0660
(707) 257-9501
FAX (707) 257-9534

July 11, 2012

Ken Kirkey, Planning Director
Association of Bay Area Governments (ABAG)
Post Office Box 2050
Oakland, CA 94604-2050

Dear Mr. Kirkey:

On July 10, 2012 the City Council was provided an update on the City of Napa's Priority Development Area (PDA) application. After considering the issues, the Council directed me to revise our PDA application to the "transit neighborhood" place type. This place type provides a strong fit with the characteristics that define Downtown Napa and the Soscol Gateway Corridor, including low to moderate density residential organized around a transit station providing multiple bus lines. Napa County Transportation and Planning Agency's intermodal transit station, located in the relative center of the PDA at Fourth and Burnell streets, is under construction and scheduled for completion in 2013. Moreover, Downtown Napa and Soscol Gateway Corridor serve as retail hubs in the historic center of the community which provide opportunities for well-planned growth. Significant community-based planning has already been completed in the adopted Soscol Gateway Implementation Plan, Gasser Master Plan and recently adopted Downtown Specific Plan. These plans provide for approximately 1,300 housing units consistent with the underlying place type characteristics as envisioned in ABAG's *Station Area Planning Manual*.

Please note that by submitting this application for a PDA, regardless of the place type identified in our application or ABAG's *Station Area Planning Manual*, the City understands that the PDA designation does not establish a commitment by the City to permit or facilitate the development of a specific number of housing units. As noted above, the City's current plans in this area project a total of approximately 1,300 dwelling units by 2030, which is supportive of the expectations of this designation.

Thank you for your continued recognition of the City's role in supporting the FOCUS program and its goals. If you have any questions, please do not hesitate to contact me.

Sincerely,

Mike Parness
City Manager

cc: Mayor Techel and Council Members

RESOLUTION R2012 4

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF NAPA, STATE OF CALIFORNIA, AUTHORIZING THE SUBMITTAL OF APPLICATIONS TO ABAG TO DESIGNATE DOWNTOWN NAPA AND SOSCOL GATEWAY CORRIDOR AS PRIORITY DEVELOPMENT AREAS

WHEREAS, the Association of Bay Area Governments ("ABAG") and the Metropolitan Transportation Commission in coordination with the Bay Area Air Quality Management District and Bay Conservation and Development Commission (collectively, the "regional agencies") are undertaking a regional planning initiative called FOCUS; and

WHEREAS, FOCUS program goals support a future regional development pattern that is compact and connected; and

WHEREAS, the regional agencies seek local government partners to create a specific and shared concept where growth can be accommodated in Priority Development Area ("PDAs") in the region; and

WHEREAS, PDAs must be within an existing community, near existing or planned fixed transit (or served by comparable bus service) and planned for more housing (or is undergoing a planning process for more housing); and

WHEREAS, local governments in the nine county San Francisco Bay Area are eligible to apply for designation of an area within their community as a PDA; and

WHEREAS, the regional agencies are committed to securing incentives and providing technical assistance to designated PDAs so that positive change can be achieved in communities working to advance focused growth; and

WHEREAS, Downtown Napa represents a potential PDA which is characterized as the planning area boundaries of the City's Downtown Specific Plan including generally Polk, Clinton, Caymus Streets to the north, Jefferson to the west, Division and Third Streets to the south, and the Napa River to the east; and

WHEREAS, Soscol Gateway Corridor also represents a potential PDA which is located in the southern part of Napa generally between Silverado Trail and Soscol Avenue south of Silverado Trail to the east, the Napa River to the west, Highland Drive to the north, and Imola Avenue to the south.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Napa, as follows:

1. The City Council hereby finds that the facts set forth in the recitals to this resolution are true and correct, and establish the factual basis for the City Council's adoption of this resolution.

2. The City Council hereby authorizes the Community Development Director to submit an application to ABAG to designate Downtown Napa and Soscol Gateway Corridor as PDAs.

3. This Resolution shall take effect immediately upon its adoption.

I HEREBY CERTIFY that the foregoing Resolution was duly adopted by the City Council of the City of Napa at a public meeting of said City Council held on the 17th day of January, 2012, by the following vote:

AYES: Inman, Mott, van Gorder, Techel

NOES: None

ABSENT: Krider

ABSTAIN: None

ATTEST: _____

for Dorothy Roberts
City Clerk

Approved as to form:

_____

Michael Barrett
City Attorney

Area Overview - The City of Napa is a community of approximately 77,000 residents located in the northern part of the San Francisco Bay Area. It is the largest of five incorporated cities in Napa County, serving as the County seat and providing a gateway to the world famous Napa Valley. The City of Napa in its own right has become a world class destination that offers a unique environment of entertainment, culinary and wine-related experiences in a modest-sized urban environment that is surrounded by agriculture and open space.

Since 2000, Napa has experienced significant growth. This is particularly true in Downtown Napa and along the Soscol Gateway corridor—a significant connection between Downtown Napa, Highway 29 and the greater Bay Area. Several mixed use commercial-residential and hotel developments have been constructed in these areas in recent years reflecting Napa's smart growth principles and strong city-centered planning practices. To retain existing commercial uses and encourage new commercial and residential development in the downtown and its environs, Napa prepared comprehensive master plans for Downtown Napa and the Soscol Gateway area. These comprehensive plans propose 1,274 housing units (976 net new units) in the 20 to 30 year horizon. Although development recently slowed resulting from the national recession, the vision remains as a solid foundation for attracting and retaining new local-serving uses, hotels and residential development in the future.

Area Vision - The Downtown Napa/Soscol Gateway area will guide public and private investment in this area, which is being transformed by the Napa River Flood Protection Project. As outlined in adopted plans for the area, the vision provides an overall framework for land use, circulation, open space, and the foundation for new neighborhoods and revitalization of existing neighborhoods. The Soscol Gateway Corridor Plan contains 376 acres, including 24.7 acres of land rezoned to accommodate the transit center and mixed residential-commercial uses, a 2.5-acre portion of the Napa Expo, and the 80-acre Gasser site. Construction is underway for the NCTPA transit center and Gasser South development which includes a 12-screen movie theater and 30,000 square feet of associated commercial-retail space in an entertainment village. Also, community-serving facilities are either near completion or are completed, including a 60-bed homeless shelter and 24 units of transitional housing, and 30,000 square feet of office space for non-profit organizations is planned. Future development of Gasser North includes Tulocay Village and Tulocay Square —a mixed-density residential neighborhood with 80,000 square feet of commercial-retail space. Within the Soscol Gateway Corridor, a minimum of 458 new housing units are planned at densities up to 40 du/acre, including 20% affordable housing to lower-income residents. These neighborhoods will connect to 13 acres of open space and wetlands through a network of public use trails linking the commercial development, Napa River trails and Downtown Napa.

Similarly, the Downtown Specific Plan enhances Napa's unique, colorful and historically significant Downtown to meet the needs of existing and new residents, while continuing to draw visitors from around the region and world. The pursuit to prepare the Downtown Napa Specific Plan, which began in 2009 and was adopted by the Napa City Council in May 2012, will provide the guiding framework for realizing the vision of a vibrant, healthy and balanced pedestrian-oriented city center. To help achieve its objectives, the Specific Plan outlines a set of recommended improvements to cultivate a physically attractive, economically healthy and socially animated city center where people choose to live and visit. This includes establishing an appropriate mix, density and orientation of residential and commercial uses to improve the business environment and provide people with more opportunities to live, work and play in Downtown Napa. It also entails enhancing the auto, transit and bicycle circulation network and pedestrian streetscape. Such improvements will allow people to have easy and efficient access into and out of Downtown, as well as great mobility options throughout the city core.

Both the approved Soscol Gateway Corridor vision and the Downtown Napa Specific Plan help to achieve Napa's overall community vision of protecting farmland and vineyards surrounding the community while focusing development inside the Rural Urban Limit (RUL). This helps support citizen-initiated efforts to provide efficient, well-designed use of land by mixing jobs and housing in one place. Additionally, this vision provides opportunities to create neighborhoods close to services, including countywide and regional transit, and to integrate open space into the community fabric.

Public transit is a significant part of Napa's future plans for success. The NCTPA operates Napa's fixed route transit service (VINE) which serves greater Napa County and destinations in Solano and Sonoma Counties. Napa's existing transit hub is located in Downtown Napa, less than one-quarter mile from the Soscol Gateway area. Scheduled to be completed in 2013, a new intermodal Transit Center is currently under construction on the southwest corner of Fourth and Burnell Streets. The new Transit Center will be centrally located one block east of Downtown Napa, one block south of the Oxbow Public Market, and immediately adjacent to the Napa County Expo and Soscol Gateway area and will provide transit with 20-minute headways with access to light rail and commuter services, as well as close proximity to a future boat dock capable of ferry service as future opportunities arise.

Planned Priority Development Area - The Downtown Napa/Soscol Gateway PDA generally follows the boundaries the Soscol Gateway Corridor as outlined in Napa's adopted Soscol Gateway Vision (2004) and the Soscol Gateway Redevelopment Project Area (2007). The Downtown Specific Plan area boundaries include the Napa River on the east, Division and Third Streets on the south, and Jefferson Street on the west. The northern boundary generally follows the zigzagging edge of the existing "Downtown Commercial" zoning area boundary adjacent to northern residential neighborhoods along Polk and Caymus Streets west of Soscol Avenue. The boundaries extend east to include the Oxbow Public Market and former Copia site east of Soscol Avenue. The Planning Area encompasses approximately 58 acres.

Napa County is a predominantly agricultural community and the City of Napa, along with the four other incorporated cities within the County, are served by Highway 29 and Silverado Trail (from Napa north to Calistoga) which extends through the vast agricultural and open space lands ubiquitous in Napa Valley. Much of this land is protected by voter initiative (Measures J and P and the City's RUL) and by recognized conservation areas that cannot be developed in the future, except when specifically associated with agricultural activities or a vote of the people. The Downtown Napa/Soscol Gateway PDA provides for compact, mixed-use development of substantial new residential and commercial uses that will serve existing residents and new residents in the 976 new dwelling units planned for the area. These residential neighborhoods or "villages" will be walkable, located near services and transportation, connected by trails to recreation and open space, and located in and near Napa's historic downtown.

To fully realize and implement the vision of the PDA, resources are necessary to address infrastructure deficiencies, including those primarily related to drainage and circulation (e.g., street, bicycle and pedestrian improvements). General upgrades to roads, road maintenance and traffic delays at key intersections have been identified as deficiencies needing to be addressed with future development. The total cost associated with all infrastructure needs in the Soscol Gateway area is approximately $50 million. However, many improvements are already underway. New Hartle Court is presently under construction as part of the Gasser Theater Project, and improvements at the Imola/Gasser (Kansas) Street intersections will be completed as part of this project. Within the Downtown Specific Plan area the infrastructure needs are approximately $38 million, which will create more than 1,600 jobs and bring more than 1,400 people to the Downtown. Densities and floor area ratios are increased along with the creation of flexibility in building height, parking requirements and similar strategies to accommodate the vision for a city-centered, sustainable Downtown with residents living near services. Collectively, these strategies provide increased housing and transportation alternatives to the community and align with regional goals for creating a complete community and planning for land use, transportation and the environment.

Community Involvement – Planning and developing the vision for the Soscol Gateway Corridor involved significant opportunities for community involvement since 2002 when the planning effort began with the visioning process for the Flood Protection Project intended to attract a new river edge and open up previously flood-prone land for development. Numerous planning documents were prepared and each of these documents reflects the public process and numerous opportunities for public input. This includes adoption of the Soscol Corridor/Downtown Riverfront Development & Design Guidelines (2000), Soscol Gateway Vision (2004), Soscol Gateway Implementation Plan (2006), Soscol Gateway Redevelopment Plan and EIR (2007),

Soscol Gateway/East Napa Historic Context Statement and Survey Report (2010), and the Preliminary Drainage Plan for Interior Drainage within the study area, which is now complete and final design is underway. The public process supported the regional Vine Trail and citywide River Trail, which will connect through the area and are embraced as key recreational and economic assets to the area. These connections help achieve the objective of providing resources to residents and visitors of the planned PDA. Additionally, the Napa Countywide Bicycle Plan identifies several key routes and links throughout the county, including connections through the planned PDA.

As part of the Downtown planning effort, the City led a broad community-based process that engaged local stakeholder agencies, business and property owners, neighborhood representatives, elected and appointed officials, and members of the public. In order to garner input from the widest range of participants, the community outreach and engagement process was broad in its approach. The process included large community workshops, stakeholder interviews and focus groups, meetings of a steering committee, City Council and Planning Commission sessions, and special outreach events to specific segments of the Napa community such as youth and Latinos. Technical tools, including a comprehensive website and surveys, were also utilized. A 15-member Downtown Steering Committee was also created to bring together representatives from the community to help guide the planning process and provide input on specific tasks. The varied perspectives of the committee members brought a depth and breadth of knowledge and interests to all aspects of the Specific Plan. Over 30 meetings were held as part of this process, and more meetings are scheduled through to completion of the project in April 2012.

Leadership in Planning - The Downtown Napa/Soscol Gateway PDA illustrates leadership in planning by consolidating complex issues into a comprehensive mixed-use development plan for the area to achieve a vision of revitalized existing commercial and residential uses with access to a variety of transportation opportunities, creation of new residential neighborhoods. The PDA establishes the foundation for how mid-sized rural towns can plan for city-centered growth in a way that protects both a community's unique natural and built resources and provides a place for people to live, work and visit. Destination communities do not have to be pristine places to look but not touch. Napa is positioned in the next 20 years to provide leadership in planning for land use, transportation and the environment with the Bay Area region and beyond.

FOCUS
a development and conservation strategy for the San Francisco Bay Area

Application for Priority Development Area Designation

Enter information in the spaces provided and submit the requested attachments.

Part 1 - APPLICANT INFORMATION & AREA DETAILS Attach resolution showing local support for involvement in FOCUS		
a. Lead Applicant -City/County	City of Napa	
Contact Person	Rick Tooker	
Title	Planning Manager	
Department	Community Development Department - Palnning Division	
Street Address	1600 First Street	
City	Napa	
Zip Code	94559	
Phone Number	(707) 257-9530	
Fax Number	(707) 257-9522	
Email	rtooker@cityofnapa.org	
b. Area Name and Location	Downtown Napa/Soscol Gateway Corridor -- The Priority Deevelopment Area (PDA) is located generally in the downtown bounded by Polk, Clinton an Caymus Streets to the north, Jefferson Street to the west, Division Street to the south and extends east across the Napa River to Silverado Trail and south to Imola Avenue (see map with PDA bouandaries)	
c. Area Size *(minimum acreage = 100)*	585 Acres	
d. Public Transit Serving the Area (existing and planned). From this list, please identify at least one route that has minimum 20-minute headways.	The Napa County Transporation and Planning Agency (NCTPA) operates the countywide and regional fixed-route transit (VINE), the main hub of which is currently in Downtown Napa within the PDA. NCTPA is constructing a new multi-model transit center on the southwest corner of Fourth and Burnell Streets which is also located within the PDA in its relative center. This new transit center will be completed in 2013 and will provide more space for VINE's pulse transfer system (where multiple buses arrive and depart at the same time), and the planned PDA will provide 20-minute headways in the area.	
e. Place Type (Identify based on the Station Area Planning Manual or from others in Application Guidelines)	Transit Neighborhood	
	Current Conditions (Year: 2006)	Future Goal (Horizon Year: 2037)
f. Total Housing Units	298	1,274
g. Total Jobs	3,184	5,689

FOCUS is a regional, incentive-based development and conservation strategy for the San Francisco Bay Area. FOCUS is led by the Association of Bay Area Governments and the Metropolitan Transportation Commission in coordination with the Bay Area Air Quality Management District and the Bay Conservation and Development Commission. It is partially funded by a regional blueprint planning grant from the State of California Business, Transportation, and Housing Agency.

h. Net Project Density (New Housing)	Existing density ranges are variable in the area by land use designation ranging from 20 - 40 du/ac in the Downtown Commercial area, 10 - 40 du/ac on the Mixed Use sites in the Soscol Gateway area; and 3 - 8 du/ac on the sites set aside for limited single-family residential development.	Within the Downtown Specific Plan area, density ranges have been increased to 20 - 60 du/ac in the core (Downtown I designation), remain at 20 - 40 du/ac in the downtown edge (Downtown II designation), and 10 - 25 du/ac in the transitional area between the downtown and the surrounding neighborhoods (Transition designation) Within the Soscol Gateway area densities are revised by converting 5.3 acres to Mixed Use, 16.9 acres to Transit Village, assigning 2.5 acres at the Napa Expo site to Mixed Use, and applying the mid-range of the number of units assumed in the 1998 General Plan for the area. The density ranges in the Soscol Gateway area are 10 - 40 du/ac on the Mixed Use sites and 3 - 8 du/ac on the limited number of low density residential sites in the area. These revisions provide for 1,274 housing units or 976 net new units in the PDA with approved planning and environmental review (no additional planning is required).
i. Minimum/Maximum FARs (New Employment Development)	1.25 - 4.0 FAR in the Downtown Specific Plan area for commercial use and .35 FAR for Residential/Offices. .35 - .95 FAR in the Soscol Gateway area	The FAR has been increased with the adoption of the Downtown Specific Plan to 5.0 Downtown I designation), 4.0 (Downtown II) and 3.0 (Transition). Within the Soscol Gateway area the FAR is .35 - .95, although far more land is now zoned for multi-family use as part of the Mixed Use designation.

Part 2 – ADDITIONAL AREA INFORMATION		
	Yes	No
a. Is the proposed priority area currently recognized in the General Plan (i.e., called out as TOD, infill etc.)?	☒	☐

FOCUS
a development and conservation strategy for the San Francisco Bay Area

Application for Priority Development Area Designation

b. Have other plans (any targeted planning efforts including specific plans, precise plans, area plans, and supporting environmental studies) been developed within the last 15 years that cover the priority area? Note: If yes, please attach brief list of individual planning efforts and date completed (including web links to electronic versions if available). In the list, identify the primary plan for the area.	☒	☐
c. Is the proposed priority area within the boundaries of a redevelopment area?	☒	☐

Part 3 – MAPS OF PRIORITY DEVELOPMENT AREA

Attach map(s) showing the proposed boundaries, land use designations and zoning, major transit services, and any other relevant information about the proposed priority area. In your electronic submission, please include GIS files of the PDA boundaries, if available. Photos of current conditions in the priority area are optional.

Part 4 – NARRATIVE

Attach separately a maximum two-page (8½ x 11 with 12 point font) narrative that addresses the following questions and provides any other relevant information.

- What is the overall vision for this area? How does the vision align with the place type selected (See Place Type Development Guidelines p. 18-19 in Station Area Planning Manual)?
- What has to occur in order to fully realize this vision and place type? What has occurred in the past 5 years?
- Describe relevant planning processes, and how community members were involved in developing the vision and/or plan for the area.
- Describe how this priority area has the potential to be a leading example of smart growth for the Bay Area.

Part 5 – POTENTIAL ASSISTANCE REQUESTED (check all that apply)

Note: Assistance is not being offered at this time. This information will aid the development of tools and incentives for designated areas.

TECHNICAL ASSISTANCE	REQUEST FOR PLANNING GRANTS	REQUEST FOR CAPITAL GRANTS
☐ Assistance with policies to implement existing plan	☐ Funding for new area-wide specific plan or precise plan	☒ Funding for transportation projects (including pedestrian/bicycle)
☐ Assistance with photo- simulations to depict future conditions	☐ Funding to update existing area-wide specific plan or precise plan	☒ Funding for housing projects
☐ Assistance with local workshops and tours	☐ Funding for EIR to implement existing area-wide plan	☒ Funding for water/sewer capacity
☐ Other:	☐ Other:	☐ Funding for parks/urban greening
		☒ Funding for streetscape improvements
		☐ Other:

Part 6 – INFRASTRUCTURE BUDGET FOR PRIORITY AREA

Attach a completed Excel file on the FOCUS website for entering information about infrastructure needs and funding sources.

FOCUS is a regional, incentive-based development and conservation strategy for the San Francisco Bay Area. FOCUS is led by the Association of Bay Area Governments and the Metropolitan Transportation Commission in coordination with the Bay Area Air Quality Management District and the Bay Conservation and Development Commission. It is partially funded by a regional blueprint planning grant from the State of California Business, Transportation, and Housing Agency.

Part 7 – FOR EMPLOYMENT CENTER PLACE TYPE PROPOSALS ONLY		
Please provide the following information for the entire jurisdiction.		
	Current Conditions (Year:)	General Plan (Horizon Year:)
Total Jobs		
Total Households		
Total Employed Residents		

E-mail this completed application form and attachments requested to FOCUS@abag.ca.gov, and mail one hard copy of this application and attachments requested to the Association of Bay Area Governments, Attn: Jackie Reinhart, P.O. Box 2050, Oakland, CA 94604-2050. Please contact Jackie Reinhart, ABAG Regional Planner, at JackieR@abag.ca.gov or 510-464-7994 with questions about the application.

CITY OF AMERICAN CANYON

Napa Valley's New Destination

November 23, 2009

Jackie Guzman
ABAG Regional Planner
Association of Bay Area Governments
P.O. Box 2050
Oakland, CA 94604-2050

Subject: FOCUS Priority Development Area Application – Highway 29 Corridor

Dear Ms. Guzman;

I am pleased to submit the attached Priority Development Area Application for the Highway 29 Corridor in the City of American Canyon. Also enclosed is the signed City Council Resolution supporting this application. If you have any questions, I may be contacted at (707) 647-4355 or by e-mail at bcooper@cityofamericancanyon.org.

Sincerely,
CITY OF AMERICAN CANYON

Brent Cooper, AICP
Community Development Director

Attachment:

FOCUS Application for Priority Development Area

FOCUS
a development and conservation strategy for the San Francisco Bay Area

Application for Priority Development Area Designation

Enter information in the spaces provided and submit the requested attachments.

Part 1 - APPLICANT INFORMATION & AREA DETAILS Attach resolution showing local support for involvement in FOCUS	
a. Lead Applicant -City/County	City of American Canyon, Napa County
Contact Person	Brent Cooper, AICP
Title	Director
Department	Community Development Department
Street Address	4381 Broadway, Suite 201
City	American Canyon
Zip Code	94503
Phone Number	707-647-4335
Fax Number	707-643-2355
Email	bcooper@cityofamericancanyon.org
b. Area Name and Location	Highway 29 Corridor
c. Area Size *(minimum acreage = 100)*	225 acres
d. Public Transit Serving the Area (existing and planned)	NCTPA
e. Place Type (Identify based on the Station Area Planning Manual)	Mixed Use Corridor

Part 2 – AREA INFORMATION
A spreadsheet for entering area information on demographics, housing, and land use is provided. Please complete these worksheets with all currently available information and attach.

Part 3 – ADDITIONAL AREA INFORMATION		
	Yes	No
a. Is the proposed priority area currently recognized in the General Plan (i.e., called out as TOD, infill etc.)?	☒	☐
b. Have other plans (any targeted planning efforts including specific plans, precise plans, area plans, and supporting environmental studies) been developed within the last 15 years that cover the priority area? Note: If yes, please attach brief list of individual planning efforts and date completed.	☒	☐
c. Is the proposed priority area within the boundaries of a redevelopment area?	☐	☒

FOCUS is a regional, incentive-based development and conservation strategy for the San Francisco Bay Area. FOCUS is led by the Association of Bay Area Governments and the Metropolitan Transportation Commission in coordination with the Bay Area Air Quality Management District and the Bay Conservation and Development Commission. It is partially funded by a regional blueprint planning grant from the State of California Business, Transportation, and Housing Agency.

Part 4 – MAP OF PRIORITY DEVELOPMENT AREA

Attach a map showing the proposed boundaries of the potential priority area and any other relevant information for land uses, transit, etc. Photos of current conditions in the priority area are optional.

Part 5 – NARRATIVE

Attach separately a maximum two-page (8½ x 11 with 12 point font) narrative that addresses the following questions and provides any other relevant information.

- What is the overall vision for this area?
- What has to occur in order to fully realize this vision? What has occurred there recently (past 5 years)? Describe relevant planning processes, and how the needs of community members were addressed.
- Describe how this priority area has the potential to be a leading example of smart growth for the Bay Area.

Part 6 – POTENTIAL ASSISTANCE REQUESTED (check all that apply)

Note: Assistance is not being offered at this time. This information will aid the development of a tools and incentives package for designated areas.

TECHNICAL ASSISTANCE	REQUEST FOR PLANNING GRANTS	REQUEST FOR CAPITAL GRANTS
☐ Assistance with policies to implement existing plan	☒ Funding for new area-wide specific plan or precise plan	☒ Funding for transportation projects (including pedestrian/bicycle)
☒ Assistance with photo- simulations to depict future conditions	☐ Funding to update existing area-wide specific plan or precise plan	☒ Funding for housing projects
☒ Assistance with local workshops and tours	☒ Funding for EIR to implement existing area-wide plan	☒ Funding for water/sewer capacity
☐ Other:	☐ Other:	☒ Funding for parks/urban greening
		☒ Funding for streetscape improvements
		☐ Other:

Part 7 – INFRASTRUCTURE BUDGET FOR PRIORITY AREA

Please attach a budget that details the types of infrastructure improvements that will be needed in order to realize the vision for the priority area. This budget can include transportation, housing, road repairs, water/sewer capacity, parks and other critical amenities. A sample budget is provided for guidance.

E-mail this completed application form and attachments requested to FOCUS@abag.ca.gov. In addition to electronic submission, mail one hard copy of this application and attachments requested in this application form to the following address:

Association of Bay Area Governments
P.O. Box 2050
Oakland, CA 94604-2050
Attn: Jackie Guzman

For questions regarding the application, please contact Jackie Guzman, ABAG Regional Planner, at JackieG@abag.ca.gov or 510-464-7994.

PDA Name: **Highway 29 Corridor**

PDA Jurisdiction: **American Canyon**

Data for the PDA	2008	2035 – Local Planning Assumptions
Population	789	1,891
Household Population	789	1,891
Total Housing Units	272	652
Single-Family	56	46
Multi-Family	216	606
Persons per Unit	2.90	2.90
Employed Residents	506	1,212
Mean Household Income	$51,738	$76,400
Total Jobs	593	1,993

Data Sources:
Department of Finance
2000 Census
City of American Canyon General Plan
ABAG Projections 2009

Part 3 – Additional Information

Other Plans Developed in the Last 15 Years:

Highway 29 Corridor Economic Development Plan (2002)
Highway 29 Corridor Revitalization study *BMS Design Group* (2004)

Envision Highway 29 From A

MEAN Street to a Main Street

Architectural Standards and Personal Space

Mixed Use Zoning

Pedestrian Trails, Recreation

Wine Country Lodging

Economic Activity

Bicycle Paths

Infrastructure

Regional Traffic

Goods Movement

Auto Only Zone

Pedestrian/Bicycle Access

Disconnected Sidewalks

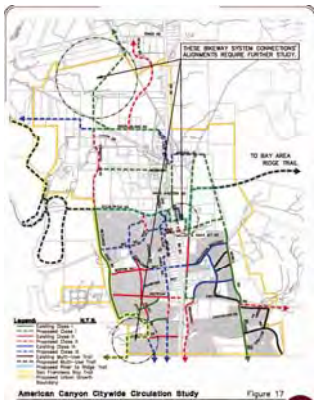
Vacant and Underutilized Sites

Properties in Transition

Overhead Utilities

Roadway Improvements

Bicycle Trail Improvements



Part 5. HIGHWAY 29 CORRIDOR: Application for Priority development Area, City of American Canyon, CA

What is the overall vision for this area?

Highway 29 is the "face" of American Canyon to its residents and visitors. The corridor is characterized by fresh, new shopping centers, high density residential, hotels, as well as vacant property, and outdoor storage retail uses, originally built in the 1970's as a 4-lane divided regional highway, Highway 29 remains essentially the same configuration today. Even thought American Canyon experienced significant growth in residential and commercial services over the past 10 years, the majority of vehicles on the highway carry single occupant vehicle commuter traffic from outside the community. The speed and volume of Highway 29 traffic coupled with a lack of cohesive pedestrian, bicycle routes and landscaping creates a "vehicle-only" zone that divides the community and discourages smart growth principles.

Because of Highway 29's importance to the City, the City Council in 2008 adopted a Goal to create a new vision for Highway 29. In August 2009, the City Council adopted a strategy for a new Highway 29 vision.

Highway 29 Corridor Vision:

- Highway 29 is a thriving retail, service and residential hub for the community with new open space and gathering places and well-integrated circulation for pedestrians, bicyclists and vehicles.
- Highway 29 will provide opportunity for new and unique businesses and catalyst projects.
- Highway 29 will continue to function as the primary north/south automobile route for residents and commuters while also providing well integrated travel lanes and pathways for pedestrians and cyclists.
- Improvements will be made along the corridor to enhance pedestrian and cycling opportunities and safety along the busy corridor. East-west vehicle, pedestrian, and bicycle connectivity will be improved to breach the divide and provide greater safety for shopping and west-side student access to the new High School on the east side of town.
- Traffic calming measures replace the "stop and go" experience on Highway 29 with a slower, and even travel speed through intersection improvements, highway beautification, and fewer individual curb cut access ways.
- Mixed use and higher density residential projects along the corridor will boost transit ridership to Bart stations in the East Bay, the Vallejo Ferry to San Francisco, and to local wine industry jobs in American Canyon, the Napa Airport Industrial Park, and North County.

What has to occur to fully realize this vision?

To fully realize this corridor vision, streetscape improvements, bicycle facilities and other public infrastructure will need to be designed and installed. Transit service, park and ride lots, and waiting areas would need to be enhanced. Significant outreach effort with local stakeholders, NCTPA, Caltrans will be needed to reconcile the dual function of Highway 29 as a local retail core and commuter and goods movement portal. Market

research is needed to fully realize the land use opportunities for vacant and underutilized properties with highway visibility.

What has occurred there recently (past five years)?

- American Canyon high school is under construction on the east side of town and will draw students from neighborhoods west of Highway 29
- The zoning code was amended to permit mixed use and high density housing on the Highway 29 corridor
- Three new centers were constructed that provide retail services, a hotel, a public park, a pedestrian/bicycle path segment, and civic uses.
- The nation's first Gold LEED Certified Hotel and a new carwash were constructed.
- City Hall was relocated to a new office building on Highway 29.
- New signals were installed on Highway 29 at: Donaldson Way, Eucalyptus Drive, and Napa Junction Road
- Two shopping centers and a condominium development were approved
- Caltrans is making pedestrian improvements to the crosswalk at Rio del Mar.

Describe relevant planning processes, and how the needs of community members were addressed.

The City commenced outreach efforts on the Citywide Circulation study which will lead to recommendations on future circulation improvements and funding for Highway 29.

The City Council approved a strategy for updating the vision for Highway 29. This effort will include significant community outreach.

The NCTPA recently approved a smart growth planning document entitled "Napa's Transportation Future". The NCTPA held local outreach meetings and worked extensively with the city of American Canyon on this document.

The City signed an agreement with the County Board of Supervisors to modify and reduce the City's Urban Limit Line. This agreement will focus urban development in American Canyon:

Describe how the priority area has the potential to be a leading example of smart growth in the Bay Area

Recent investment in new shopping centers has upgraded the community's image. The Corridor's location within the Napa County famed wine country provides market opportunities. The existence of a significant amount of vacant and underutilized property coupled with mixed use zoning, and close-in location to the East Bay and Solano County provide a framework for significant reinvestment in the corridor. The presence of a lightly used rail corridor offers the potential for rail transit connections from American Canyon to north Napa County and south to Vallejo. Appropriate and integrated mixed use development on Highway 29 will support and enhance smart-growth development in the anticipated Town Center project located adjacent to and east of the Highway 29 corridor.

APPENDIX B
Sample Infrastructure Budget
for Part 7 of the Application

ACTION	TIMELINE	COST capital	COST operating	RESPONSIBILITY	POTENTIAL FUNDING SOURCE
Street and Transportation Improvements					
Reconstruct Highway 29	Medium Term Short term	$ 84	$ 1	Public Public	CIP, Developer, BID, Assessment District, CFD, Grants, Mitigation Fees
Improved bus rapid transit	Short term	TBD	TBD	Public	5 years operations TDA, Sales Tax, Developer
Investigate rail transit feasibility	Medium term	TBD	TBD	Public	5 years operations Developer, TDA, Sales Tax, Developer
Street trees/median creation	Short term	TBD	TBD	Public/Private	CIP, Developer, BID, Assessment District, CFD, Grants, Mitigation Fees
Construct new and replacement sidewalks along Highway 29	Short term	TBD	TBD	Public/Private	CIP, Developer, BID, Assessment District, CFD, Grants, Mitigation Fees
Bus Turnouts Transit Center	Short term Long Term	TBD $ 3	TBD	Public/Private	CIP, Developer, BID, Assessment District, CFD, Grants, Mitigation Fees
Separated Bicycle Paths along Highway 29 and across Highway 29	Short term	TBD	TBD	Public/Private	CIP, Developer, BID, Assessment District, CFD, Grants, Mitigation Fees
Traffic Calming through adjacent neighborhoods	Short term	TBD	TBD	Public/Private	CIP, Developer, BID, Assessment District, CFD, Grants, Mitigation Fees
Construct Bicycle/Pedestrian Bridge parallel to Highway 29 over railroad	Medium term	TBD	TBD	Public/Private	CIP, Developer, BID, Assessment District, CFD, Grants, Mitigation Fees
Purchase land, buildings & goodwill for structures located too close to Highway 29	Long term	TBD	TBD	Public/Private	CIP, Developer, BID, Assessment District, CFD, Grants, Mitigation Fees
Pedestrian overcrossings for Highway 29	Short term	$ 2	TBD	Public/Private	CIP, Developer, BID, Assessment District, CFD, Grants, Mitigation Fees

APPENDIX B
Sample Infrastructure Budget
for Part 7 of the Application

Construct park and ride lot	Short term	$	2		TBD Public/Private	CIP, Developer, BID, Assessment District, CFD, Grants, Mitigation Fees
Landscape parkway improvements	Short term		TBD		TBD Public/Private	CIP, Developer, BID, Assessment District, CFD, Grants, Mitigation Fees
Utility Improvements						
Stormwater improvements	All	$	16		Public/Private	Utility fees, Developer, etc.
Underground overhead utility wires	Medium term		TBD		TBD Public/Private	Utility fees, BID, Assessment District, CFD, Grants, Mitigation Fees.
Install recycled water main along Highway 29	Short term		TBD		TBD Public/Private	CIP, Developer, BID, Assessment District, CFD, Grants, Mitigation Fees
Provide Decorative Street lights	Medium term		TBD		TBD Public/Private	Utility fees, BID, Assessment District, CFD, Grants, Mitigation Fees.
Recreation and Parks						
New Neighborhood parks in conjunction with residenital development	Short term		TBD		TBD Public/Private	CIP, Park fees, Grants (Prop 84)
example Waterfront Linear Park and Path	Medium term	$	4	$	0 Public/Private	CIP, Park fees, Grants (Prop 84),
Community Amenities						
Construct new coordinated monument signs for businesses on Highway 29	Medium term		TBD		TBD Public/Private	Utility fees, BID, Assessment District, CFD, Grants, Mitigation Fees.
TOTAL ESTIMATED BUDGET		**$**	**111**	**$**	**1**	

Listed in order of priority
Short term 0-5 years; Medium term 5-10; Long term 10+
Costs in Millions, Operating Costs Annual (20 year)

RESOLUTION NO. 2009-133

AUTHORIZING SUBMITTAL OF A PRIORITY DEVELOPMENT AREA (PDA) APPLICATION FOR THE HIGHWAY 29 CORRIDOR AREA TO THE ASSOCIATION OF BAY AREA GOVERNMENT (ABAG) FOCUS PROGRAM

WHEREAS, the Association of Bay Area Governments and the Metropolitan Transportation Commission in coordination with the Bay Area Air Quality Management District and Bay Conservation and Development Commission (collectively, the "regional agencies") are undertaking a regional planning initiative called FOCUS; and

WHEREAS, FOCUS program goals support a future regional development pattern that is compact and connected; and

WHEREAS, the regional agencies seek local government partners to create a specific and shared concept of where growth can be accommodated (priority development area) and what areas need protection (priority conservation area) in the region; and

WHEREAS, a priority development area must meet all of the following criteria:

(a) within an existing community,
(b) near existing or planned fixed transit (or served by comparable bus service) and
(c) is planned, or is planning, for more housing; and

WHEREAS, local governments in the nine county San Francisco Bay Area are eligible to apply for designation of an area within their community as a priority development area; and

WHEREAS, the regional agencies are committed to securing incentives and providing technical assistance to designated priority development areas so that positive change can be achieved in communities working to advance focused growth.

WHEREAS, the City Council has considered all of the written and oral testimony presented in making its decision.

NOW THEREFORE BE IT RESOLVED, the City of American Canyon City Council authorizes staff to submit an application to the Association of Bay Area Governments (ABAG) to designate the Highway 29 Corridor within the City of American Canyon to be a Priority Development Area with the FOCUS program.

PASSED, APPROVED and **ADOPTED** by the City Council of the City of American Canyon at a regular meeting on November 17, 2009, by the following vote:

AYES:	Councilmembers Bennett, Coffey, West, Vice Mayor Callison and Mayor Garcia
NOES:	None
ABSTAIN:	None
ABSENT:	None

Leon Garcia

Leon Garcia, Mayor

ATTEST:

Sherry M Kelly

Sherry M. Kelly
Interim City Clerk

APPROVED AS TO FORM:

William D Ross

William D. Ross
City Attorney

E. Travel Behavior Study

(THIS PAGE INTENTIONALLY LEFT BLANK)

NAPA COUNTY TRAVEL BEHAVIOR STUDY

DRAFT SURVEY RESULTS AND DATA ANALYSIS REPORT

December 8, 2014

Prepared for:

NAPA COUNTY TRANSPORTATION AND PLANNING AGENCY

Prepared by:

FEHR & PEERS

100 Pringle Avenue, Suite 600

Walnut Creek, California 94596

(925) 930-7100

Ref: WC13-3032

Disclaimer: The data, analysis, and results presented herein are usable as-is for other purposes, but have been prepared for the sole purpose of Napa County travel evaluation. NCTPA and Fehr & Peers do not make any warranty, guarantee, certification or other representation with respect to the information contained herein if applied to any other project or for any other purpose without the prior written consent of both NCTPA and Fehr & Peers, which expressly denies any and all liability for damages or losses of any kind resulting from use of the information contained herein for any purposes other than this project. We do not accept any responsibility for damages, if any, that may result from decisions made or actions taken by any third parties based on its analysis. Any use that a third party makes of our analysis and opinions will be the sole responsibility of such third party.

TABLE OF CONTENTS

APPENDICES

LIST OF FIGURES

LIST OF TABLES

1. INTRODUCTION

The Napa County Transportation and Planning Agency (NCTPA) directed the Napa County Travel Behavior Study to gather information on the travel behavior of visitors, employees, residents, and students who make work and non-work trips in Napa County. Numerous studies have been conducted to gather information on visitors to Napa County but very little data has been collected on resident, employee, and student trips, which comprise a majority of the travel within Napa County. The resulting data is expected to provide the basis for multiple planning efforts by NCTPA and other planning agencies within Napa County. Such uses may include but are not limited to the refinement of the Napa-Solano Travel Demand Model (NSTDM) and the update of the Countywide Transportation Plan. The data is also expected to be used to help direct the expansion of transit and paratransit services in Napa County.

The traditional approach to gathering data on travel behavior is through the use of a survey as this type of data cannot be collected by the typical traffic count process. Data for trips that pass through the region is usually collected by a license plate survey while data for trips that start from or end inside the region is usually collected by a roadside, mail, or telephone survey. These traditional survey methods tend to be very costly and generally provide very small sample sizes. They are also prone to human error during the data collection process as well as from the survey responders who may misinterpret the questions.

In order to minimize the shortcomings of traditional approaches, Fehr & Peers evaluated various innovative data collection techniques as well as enhancements to traditional methods for use in this study. Pros and cons of each technique and method were identified as well as the ways in which multiple data sources could be combined to maximize the benefits from the data collection plan. Through previous and on-going project experience, the wide range of data collection techniques and methods was narrowed down to five to be used for the Napa County Travel Behavior Study, combining innovative data collection techniques with enhancements to traditional methods to offer an unprecedented look into travel behavior in Napa County. Results from the five data collection methods were then combined to provide a robust, comprehensive dataset, specific to Napa County and the NSTDM, which was then presented to NCTPA, Napa County, and the Community Advisory Committee (CAC) in an innovative and meaningful way.

STUDY APPROACH

The Napa County Travel Behavior Study utilized and combined the results of the five data collection methods described in **Table 1**, which provides a list of the methods along with a list of advantages and limitations of each.

TABLE 1
STUDY APPROACH

Method	Advantages	Limitations
Vehicle Classification Counts	• Very accurate and only way to directly measure total traffic volume passing through a count location. • Provides control total to refine data collected via other methods. • Can be used to compare to travel demand model roadway volume by class. • Relatively cheap data collection method.	• Does not provide the origin, destination, or purpose of the vehicle trip or any other trip making or demographic information.
Winery Regression Analysis	• Can use observed data at a few representative locations to predict data for the remaining locations, saving time and money. • Can be used to reveal causal relationships between independent and dependent variables. • Can be used to predict how a change in an independent variable will affect the dependent variable.	• Assumes the sample is representative of the population which may not be the case, especially with wineries. • Sample size is often determined by pragmatic considerations. In this case, a wineries willingness to participate was a big determinant. • Key quantitative variables do not always behave in a way that fits neatly into a statistical model.
License Plate Matching	• Provides information such as the number of vehicles that travel through the region, their entry and exit points, their travel time between points, and percent makeup of total traffic. • Provides data in a format more suitable for comparison and integration with travel demand models such as the NSTDM.	• Unable to provide information regarding trip purpose, frequency, starting or ending point, characteristics of travel or demographics. • Only captures trips that pass through a count location.
In-Person Winery, Vehicle Intercept, and Online Employer Surveys	• Provides detailed information regarding trip purpose, occupancy, frequency of travel, demographics, class of vehicle, and other travel characteristics. • Provides data in a format and at a level of disaggregation more suitable for comparison and integration with travel demand models such as the NSTDM.	• Depending on the response rate, may only provide detailed trip purpose, occupancy, and class of vehicle information for a percentage of observed trips. • Only captures trips that pass through at least one survey location. • Development and implementation of survey of a sufficient size to be statistically valid can be costly. • Prone to human error during the data collection process as well as from the survey responders who may misinterpret the questions.

Mobile Device Data	• Very large sample size able to provide information regarding all types of trips that occur in Napa County. • Provides origin-destination data in a format more suitable for comparison and integration with travel demand models such as the NSTDM. • Data can be queried, aggregated and disaggregated to match desired level of analysis. • Data collection method does not require set up time or human transcribing of observed field data which can potentially introduce error.	• Unable to directly measure information regarding trip purpose, frequency, characteristics of travel or demographics. However, much of this information can be inferred or supplemented with information from other sources. • Collection and aggregation of data can be costly but provides a much larger sample size than other methods.

2. VEHICLE CLASSIFICATION COUNTS

Vehicle classification counts play a pivotal role in any data collection or travel behavior study as they provide the total traffic volume by class of vehicle and desired time period at all survey data locations and can be used as a control total to refine the travel data collected from other methods.

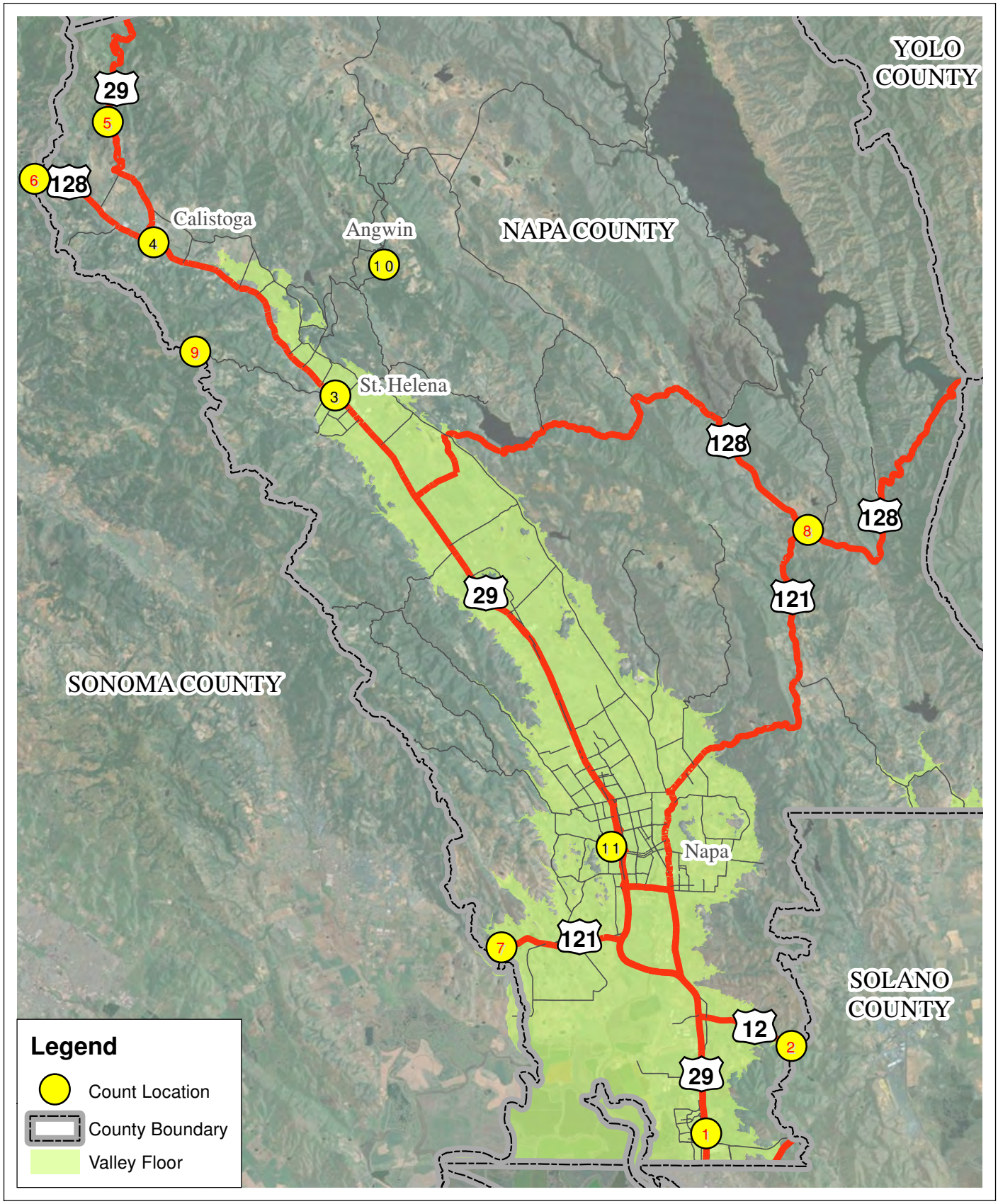
VEHICLE CLASSIFICATION COUNT DATA COLLECTION

MioVision coordinated, collected, and summarized the vehicle classification counts collected at 11 survey data locations over a 24-hour period on Friday, October 4, 2013. A Friday in October was selected in order to capture weekday commute trips along with winery and other visitor trips during the "crush" or peak winery visitation season.

The 11 survey data locations where vehicle classification counts were collected are listed below and shown on **Figure 1.** The locations include the seven major Napa County external gateways to capture all inter-regional travel and four locations within Napa County to capture a sample of local trips. The specific data collection locations were selected based on proximity to the region's boundary, safety, and logistics.

- Location 1: SR 29 – North of American Canyon Rd (external gateway)
- Location 2: SR 12 - Napa/Solano County Line (external gateway)
- Location 3: SR 29 – Southeast of Adams St in St. Helena
- Location 4: SR 29 – Southeast of SR 128 in Calistoga
- Location 5: SR 29 – Napa/Lake County Line (external gateway)
- Location 6: SR 128 – Sonoma/Napa County Line (external gateway)
- Location 7: SR 121 – Sonoma/Napa County Line (external gateway)
- Location 8: SR 128 - East of SR 121 (external gateway)
- Location 9: Spring Mountain Rd - Napa/Sonoma County Line (external gateway)
- Location 10: Howell Mountain Road - South of Cold Springs Road
- Location 11: First St - West of SR 29

The data was collected through the use of infrared video cameras in order to provide a classification of vehicles into passenger vehicle, medium truck, heavy truck, and bus classes over the entire 24-hour period. MioVision also utilized sophisticated computer software to tally the various classes of vehicles, reducing potential human error, man-hour cost, and data delivery time.



N

Not to Scale

FEHR & PEERS

VEHICLE CLASSIFICATION COUNT LOCATIONS
NAPA VALLEY TRAVEL BEHAVIOR STUDY

FIGURE 1

Upon delivery of the vehicle classification data, Fehr & Peers summarized the data by the vehicle classification categories listed above and the following time periods, providing additional stratification variables than are currently utilized by the NSTDM.

- Early-Morning (Midnight to 6:00 AM)
- AM Peak Period (6:00 to 10:00 AM)
- Mid-Day (10:00 AM to 3:00 PM)
- PM Peak Period (3:00 to 7:00 PM)
- Late Night (7:00 PM to Midnight)
- Daily (24-Hour)

The bidirectional daily vehicle count data was then compared to Caltrans 2011 bidirectional annual average daily traffic (AADT) data at nearby locations to check the reasonableness of the collected count data, an important step as this data will be used to weight the survey and mobile device data to the total population of travelers at each of the survey data locations.

VEHICLE CLASSIFICATION COUNT DATA SUMMARY

A summary of the bidirectional vehicle classification count data collected by MioVision is shown in **Table 2**. The traffic count sheets and detailed directional vehicle classification count data including time distribution graphs are provided in **Appendix A**.

As shown in **Table 2** and **Appendix A**, 181,330 total vehicles were observed (many vehicles were likely counted more than once) passing through the 11 vehicle classification count locations on Friday, October 4, 2013, approximately 10% higher than the Caltrans 2011 AADT data. This is an acceptable difference given the traffic counts were collected on a Friday during peak winery visitation season while the Caltrans volumes are intended to represent an average day from 2011. Additionally, of the 181,330 total observed vehicles approximately 23% and 28% were counted during the 4-hour AM and PM peak periods, respectively, while approximately 6% and 7% were counted during the AM (7 to 8 AM) and PM (5 to 6 PM) peak hours, respectively.

181,330 total vehicles were observed passing through the

11 vehicle classification count locations on Friday, October 4, 2013

TABLE 2
VEHICLE CLASSIFICATION COUNT DATA SUMMARY

#	Survey Data Location	Total Bidirectional Traffic Volume						
		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)	Daily	2011 Caltrans AADT
1	SR 29 – North of American Canyon Rd	3,607	11,058	16,384	13,618	8,211	52,878	43,000
2	SR 12 - Napa/Solano County Line	2,076	7,420	9,748	8,219	4,171	31,634	31,500
3	SR 29 – Southeast of Adams St in St. Helena	551	3,661	5,118	4,012	2,555	15,897	17,900
4	SR 29 – Southeast of SR 128 in Calistoga	394	3,080	4,122	3,957	1,523	13,076	12,500
5	SR 29 – Napa/Lake County Line	436	1,640	2,125	2,608	1,176	7,985	7,400
6	SR 128 – Sonoma/Napa County Line	58	503	706	726	170	2,163	2,550
7	SR 121 – Sonoma/Napa County Line	1,259	7,460	9,071	9,072	3,324	30,186	25,000
8	SR 128 - East of SR 121	27	215	309	503	69	1,123	4,550
9	Spring Mountain Rd - Napa/Sonoma County Line	5	184	262	266	50	767	420
10	Howell Mountain Road - South of Cold Springs Road	144	1,141	1,682	1,496	699	5,162	2,093
11	First St - West of SR 29	722	4,449	6,050	6,322	2,916	20,459	18,366
Total of All 11 Locations		**9,279**	**40,811**	**55,577**	**50,799**	**24,864**	**181,330**	**165,279**
% of Total of All 11 Locations		**5%**	**23%**	**31%**	**28%**	**14%**	**100%**	**--**

STATE ROUTE 12 JAMESON CANYON ROAD WIDENING PROJECT

On September 12, 2014 the State Route 12 Jameson Canyon Road Widening Project was completed. The project doubled the highway width from two to four lanes along the six-mile route from State Route 29 in Napa County to Red Top Road near Interstate 80 in Solano County. Traffic count data was originally collected on Friday, October 4, 2013, nearly one full year before the completion of the project. In order to determine potential shifts in traffic patterns after the completion of the project, traffic count data was collected at two of the same locations on Friday, October 24, 2014, more than one full month after the completion of the project. The data was analyzed and compared to Friday traffic count data collected at the same two locations in October 2013. **Table 3** summarizes the traffic count data and observed shifts in traffic patterns.

TABLE 3
STATE ROUTE 12 JAMESON CANYON ROAD WIDENING PROJECT COUNT DATA SUMMARY

#	Survey Data Location	Date of Collection	Total Bidirectional Traffic Volume					
			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)	Daily
1	SR 29 – North of American Canyon Rd	Friday, October 4, 2013	3,607	11,058	16,384	13,618	8,211	52,878
		Friday, October 24, 2014	3,633	10,335	14,582	12,920	6,831	48,301
		Absolute Change	26	-723	-1,802	-698	-1,380	-4,577
		Percent Change	1%	-7%	-11%	-5%	-17%	-9%
2	SR 12 - Napa/Solano County Line	Friday, October 4, 2013	2,076	7,420	9,748	8,219	4,171	31,634
		Friday, October 24, 2014	2,384	9,942	9,963	10,149	3,478	35,916
		Absolute Change	308	2,522	215	1,930	-693	4,282
		Percent Change	15%	34%	2%	23%	-17%	14%

As shown in **Table 3**, traffic volumes along SR 12 at the Napa/Solano County Line increase by approximately 4,300 daily vehicles (a 14% increase) and traffic volumes along SR 29 North of American Canyon Road decrease by approximately 4,600 vehicles (a 9% decrease), suggesting that roughly 4,000 vehicles shifted their traffic pattern.

3. WINERY REGRESSION ANALYSIS

Due to the unique and variable nature of wineries, the vehicle trip generation for the existing 434 winery parcels in Napa County was determined based on simple linear regression analysis, which relies on data collected at a sample of representative locations to predict data for the remaining locations. This method was selected due to the impracticality of and inability to collect driveway counts at all 434 winery parcels. The resulting regression formulas were used to estimate average Monday to Wednesday weekday, Thursday, Friday, Saturday, and Sunday daily vehicle trip generation for all 434 winery parcels in Napa County. The vehicle trip generation estimates were then used to refine the mobile device data as discussed in Chapter 6.

WINERY DRIVEWAY TRAFFIC COUNTS

TRAFFIC COUNTS WERE COLLECTED AT 22 EXISTING NAPA COUNTY WINERIES OVER A 7-DAY PERIOD FROM THURSDAY, OCTOBER 23, 2014 TO WEDNESDAY, OCTOBER 29, 2014.LINEAR REGRESSION ANALYSIS

Simple linear regression analysis was used to determine separate average Monday to Wednesday weekday, Thursday, Friday, Saturday, and Sunday regression formulas for the dependent variable (daily total vehicle trip generation) based on the independent variables (square footage, annual gallons produced, approved visitation, number of parking spots, number of employees, whether the winery is located on the valley floor, and whether the winery requires advanced appointments). Below is a summary of the limitations of the simple linear regression analysis approach that should be taken into consideration when using the resulting data.

- Very small sample size (22 wineries) for the population (434 winery parcels) due to the requirement that the winery must be willing to participate in the study.
- Very small sample of wineries likely results in a sample that is not entirely representative of the population.
- Limited key quantitative variables to choose from that likely do not behave in a way that fits neatly into a statistical model due to the unique and variable nature of wineries.

The first step in the simple linear regression analysis was to determine which, if any, of the independent variables are correlated. These variables need to be removed from the analysis to prevent multicollinearity (when one variable can be linearly predicted from the others with a non-trivial degree of accuracy), which can reduce the accuracy of the analysis. In this case, it was determined that square footage and approved visitation were both very closely correlated with annual gallons produced, and that annual gallons produced was a better predictor of vehicle trip generation. As a result, the square footage and approved visitation variables were removed from the analysis.

Additionally, the variables for number of parking spots and number of employees were removed as it was perceived they fluctuate in response to demand rather than serve as a predictor of demand.

Therefore, the following three independent variables were used in the simple linear regression analysis.

- Annual gallons produced (in thousands)
- Whether the winery requires advanced appointments (binary – yes or no)
- Whether the winery is located on the valley floor (binary – yes or no)

The data for the dependent and independent variables is summarized in **Table 4**. The resulting regression coefficients for the predictive regression formulas are shown in **Table 5.**

TABLE 4
VARIABLES FOR WINERY REGRESSION ANALYSIS

	Daily Total Vehicle Trip Generation (Dependent Variable)					Winery Data (Independent Variables)		
Winery	Average Monday to Wednesday	Thursday	Friday	Saturday	Sunday	Annual Gallons Produced (in thousands)	Requires Advanced Appointments (binary)	On the Valley Floor (binary)
Winery 1	92	118	112	21	13	450	1	0
Winery 2	76	68	74	50	51	40	1	1
Winery 3	53	80	58	19	7	59	1	0
Winery 4	69	266	295	244	191	500	1	1
Winery 5	75	101	87	202	54	20	1	1
Winery 6	113	194	196	198	117	340	1	1
Winery 7	92	91	97	14	15	10	1	1
Winery 8	48	47	59	23	7	12	1	1
Winery 9	84	96	102	63	33	36	1	1
Winery 10	178	227	237	203	158	180	1	1
Winery 11	250	267	287	196	128	180	1	1
Winery 12	42	31	60	9	0	9	1	0
Winery 13	103	101	171	109	79	32	1	0
Winery 14	89	97	72	40	10	49	1	1
Winery 15	24	16	18	6	5	20	1	0
Winery 16	286	345	431	646	357	144	0	1
Winery 17	110	66	100	84	52	155	0	1
Winery 18	209	309	366	339	252	1,260	0	1
Winery 19	868	1,208	1,352	1,518	1,084	3,000	0	1
Winery 20	377	531	651	675	351	210	0	1
Winery 21	197	177	356	324	220	360	0	1
Winery 22	166	188	243	355	170	81	0	1
Total	**3,600**	**4,624**	**5,424**	**5,338**	**3,354**			

TABLE 5
WINERY REGRESSION COEFFICIENTS

Independent Variable	Average Monday to Wednesday	Thursday	Friday	Saturday	Sunday
Constant	126	102	196	222	100
Annual gallons produced (thousands)	0.20	0.31	0.33	0.35	0.28
Advanced Appointments (binary)	-86	-68	-150	-229	-110
On the Valley Floor (binary)	40	69	59	83	49
R-Squared	0.79	0.82	0.82	0.79	0.86

As shown in **Table 5**, the predictive regression formulas include a constant, which suggests all wineries produce daily vehicle trips regardless of their other characteristics. The formulas also predict 0.20 to 0.35 daily vehicle trips are generated per thousand annual gallons of wine produced with a reduction of 68 to 229 daily vehicle trips if the winery requires an appointment and an increase of 40 to 83 daily vehicle trips if the winery is located on the valley floor. The results are intuitive as an increase in gallons produced, which is closely correlated with winery square footage and approved visitation, results in an increase in daily vehicle trip generation while requiring an appointment results in a decrease in vehicle trip generation and being located on the valley floor results in an increase.

In addition to checking the intuitiveness of the results, the model estimated total vehicle trip generation for all 22 wineries was compared to the observed vehicle trip generation (determined from the winery driveway traffic counts). The comparison along with the R-squared results (a statistical measure of how close the data are to the fitted regression line) is shown in **Table 6**. In general, the closer to one the R-Squared result is the better the model fits your data.

TABLE 6
WINERY REGRESSION RESULTS

Performance Measure	Average Monday to Wednesday	Thursday	Friday	Saturday	Sunday
Regression Model Total Vehicle Trip Generation	3,600	4,624	5,424	5,338	3,354
Observed/Counted Total Vehicle Trip Generation	3,600	4,624	5,424	5,338	3,354
Difference	0	0	0	0	0
% Difference	0%	0%	0%	0%	0%
R-Squared Results	0.79	0.82	0.82	0.79	0.86

As shown in **Table 6**, the regression formulas accurately predict daily vehicle trip generation on all five days with an R-Squared of approximately 79% to 82%. These results are considered reasonable given the relatively small sample size and unique and variable nature of wineries.

WINERY TRIP GENERATION

The regression formulas were then used to predict the vehicle trip generation of the 412 existing winery parcels for which driveway traffic counts were not collected. However, 40 of the wineries in the Napa County winery database were identified as having no public or appointment tasting. These wineries were considered to generate zero daily visitor trips since all 22 of the wineries from the representative sample offered tasting, indicating the sample was not representative of these 40 wineries.

The observed or predicted Thursday, Friday, and Saturday daily vehicle trip generation for each of the 434 winery parcels in Napa County is provided in **Appendix B**. A summary of the estimated total daily vehicle trip generation of all wineries in Napa County is presented in **Table 7**. Daily vehicle trip generation is only estimated for Thursday, Friday, and Saturday as the primary purpose for the data is the refinement of the personal automobile origin-destination trip tables described in Chapter 6, which only provide data for an average Monday to Thursday weekday, Friday, and Saturday.

TABLE 7
ESTIMATED TOTAL DAILY WINERY VEHICLE TRIP GENERATION

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

The daily vehicle trip generation data presented in **Appendix B** was then used to refine the mobile device data discussed in Chapter 6. Additionally, the regression coefficients and formulas can be used to predict how a change in an independent variable such as gallons of wine produced in a year will affect the daily total vehicle trip generation of the winery in the future, as well as serve as a way to estimate the daily total vehicle trip generation of a proposed winery.

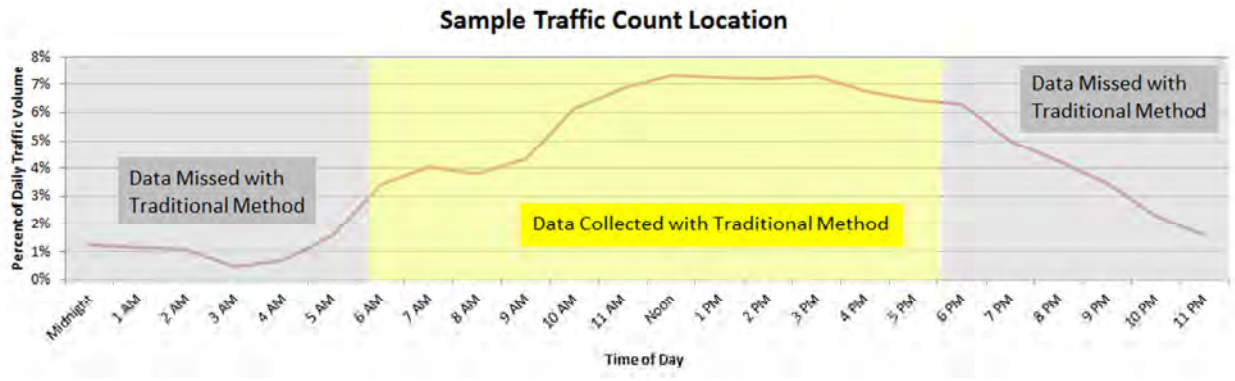
4. LICENSE PLATE MATCHING

License plate matching involves the positioning of cameras at multiple locations to record the license plate of passing vehicles – typically positioned at regional external gateways. The outcome of this method is a list of observed license plates with location and time information that can be used to generate vehicle trip tables for various inferred trip types by desired time period and location.

LICENSE PLATE DATA COLLECTION

For the license plate data collection effort, MioVision used the same cameras that were placed at the 11 vehicle classification count locations on Friday, October 4, 2013 (locations shown on **Figure 1** above). Seven of the 11 locations represented the major Napa County regional external gateways where inter-regional trips can enter and exit Napa County. The remaining four locations were located within Napa County and were selected with the intent of capturing a sample of trips with an origin and destination within Napa County (internal trips). License plate numbers collected as part of this effort were matched between locations and then used to create vehicle trip tables. Additionally, the observed travel direction, time of travel, and number of observations was used to stratify the data into separate vehicle trip tables representing the time periods described in Chapter 2 and the various trip types that typically occur.

The same infrared technology utilized by MioVision to collect vehicle classification counts over a 24-hour period also allowed license plate data to be collected over the entire 24-hour period (daytime and nighttime), capturing the roughly 30% of data points that typically fall outside the daylight hours as shown at a sample traffic count location below. MioVision also utilized the same sophisticated computer software to transcribe the individual license plates, reducing potential human error, man-hour cost, and data delivery time. The use of computer software rather than manual transcription was especially important for this study given the high speed of travel at the state highway locations where most of the data was collected.



LICENSE PLATE DATA SUMMARY

Upon delivery of the license plate data, Fehr & Peers summarized the data to determine the number of observed license plates and the number of properly transcribed license plates for each location. The data was then compared to the number of counted vehicles to ensure the reasonableness of the data. The properly transcribed license plate data at each location is summarized in **Table 8**.

TABLE 8
OBSERVED LICENSE PLATES BY LOCATION

#	Location	Counted Vehicles	Properly Transcribed Plates	% Properly Transcribed Plates
1	SR 29 – North of American Canyon Rd	52,878	43,913	83%
2	SR 12 - Napa/Solano County Line	31,634	26,828	85%
3	SR 29 – Southeast of Adams St in St. Helena	15,897	14,148	89%
4	SR 29 – Southeast of SR 128 in Calistoga	13,076	11,244	86%
5	SR 29 – Napa/Lake County Line	7,985	6,850	86%
6	SR 128 – Sonoma/Napa County Line	2,163	1,893	88%
7	SR 121 – Sonoma/Napa County Line	30,186	25,949	86%
8	SR 128 - East of SR 121	1,123	907	81%
9	Spring Mountain Rd - Napa/Sonoma County Line	767	715	93%
10	Howell Mountain Road - South of Cold Springs Road	5,162	4,701	91%
11	First St - West of SR 29	20,459	17,241	84%
Total of All 11 Locations		181,330	154,389	85%

As shown in **Table 8**, of the 181,330 vehicles observed passing through the 11 survey data locations, the sophisticated computer software was able to properly transcribe 154,389 license plate numbers (85% of observed vehicles), a reasonable percentage given the high speed of travel at the survey data locations, most of which were located along state highways.

Sophisticated computer software was able to properly transcribe

154,389 license plate numbers (85% of observed vehicles)

After summarizing the license plate data by location, the data was summarized by the time periods listed in Chapter 2. Additionally, the license plates were divided into passenger and commercial motor vehicle groups based on standard California license plate nomenclature. For instance, California passenger vehicle license plates utilize a "number-letter-l-l-n-n-n" format such as "3SAM123" while California commercial motor vehicles utilize a

"number-letter-n-n-n-n-n" format such as "5M32750". License plate numbers not fitting either category were assumed to be passenger vehicle license plates.

Each license plate number was then checked to see if it matched a license plate number at the same location later in the day or at a different survey location on the same day in order to infer the trip type. However, license plate matching at survey data locations does not provide information about the origin or destination of the trip, the trip purpose, or any demographic information. Therefore, each license plate observation could only be grouped into one of the following five inferred trip types. The information not provided by the license plate matching procedure was collected through the use of a license plate mail survey and extrapolated to the non-surveyed license plate observations, which is discussed in more detail in Chapter 5.

- Internal Trip – inferred if a license plate was observed at a location within Napa County and not earlier/later observed entering/leaving Napa County.
- Imported Trip – inferred if a license plate was observed entering Napa County and later observed leaving Napa County at the same survey data location.
- Exported Trip – inferred if a license plate was observed exiting Napa County and later observed entering Napa County at the same survey data location.
- One-Way Trip – inferred if a license plate was observed at a single external gateway location.
- Pass-Through Trip – inferred if a license plate was observed entering Napa County at one survey data location and later observed leaving Napa County at a different survey data location.

Additionally, the direction and time of travel (interval between observation points not the start time or end time of the trip) was used to infer additional information regarding the inferred trips. For instance, if a license plate was observed entering Napa County at 8 AM and later observed leaving Napa County at 5 PM at the same location, it can be inferred that this vehicle was an imported worker with an inbound trip in the AM peak period and an outbound trip in the PM peak period. If for instance the same trip was observed but the interval between observations was only one hour, it can be inferred that this vehicle was an imported non-worker entering Napa County for shopping, recreation, or something other than work.

The license plate matching data for passenger and commercial motor vehicles grouped by time period and inferred trip type for each of the 11 locations are presented in **Appendix C**. Providing this information by location allows for the identification of the composition of traffic at each location for a given time period. For instance, as shown in **Appendix C**, approximately 30% of vehicles on SR 29 north of American Canyon Road are imported work trips in the AM peak period while 8% of vehicles are passing through Napa County on their way to destinations outside Napa County.

A summary of passenger vehicle license plate matching data by time period and inferred trip type for only the seven external gateway locations is presented in **Table 9**. The four locations within Napa County were not included in this summary table because the information for internal trips when looking at the summation of all locations is misleading since the four locations are a small sample of roadway segments within Napa County.

However, the summation of all external gateway locations is appropriate since all major Napa County external gateways are included.

TABLE 9
PASSENGER VEHICLE LICENSE PLATE MATCHING DATA

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%

As shown in **Table 9**, approximately 9% of daily trips at Napa County external gateways are pass-through trips. The 9% pass through percentage was found to be consistent with the approximately 9% observed daily pass-through percentage from the mobile device data collection method (discussed in more detail in Chapter 6). Additionally, approximately 41% of daily trips are imported trips and 27% are exported trips.

9% of daily trips at Napa County external gateways are pass-through trips

41% of daily trips are imported trips and 27% are exported trips

Visitor Trips

Approximately 16% of daily trips were classified as "imported other" trips. These trips were inferred when a license plate was observed entering Napa County and later observed leaving Napa County at the same survey data location less than eight hours after entering. It was assumed that if the vehicle was observed eight or more hours later, it would likely be an imported worker returning home. But if the vehicle was observed leaving less than eight

hours later, the driver was likely visiting Napa County for a non-work or "other" purpose and returning home. Therefore, it was inferred that 16% of total daily trips into Napa County were "imported other" or "visitor" trips.

However, 23% of daily trips were also classified as "one-way" trips. These trips were inferred if a license plate was observed at a single external gateway location. While it can be assumed that a portion of this traffic is visitors to the county, it is difficult to quantify based solely on license plate matching as 15% of license plates were not properly transcribed. A one-way vehicle could have passed a survey location more than once but only had their license plate properly transcribed a single time, resulting in their trip being incorrectly classified as a one-way trip.

Therefore, to more accurately estimate daily "visitor" trips to Napa County, "one-way" trips were removed from the total trips and the percent "imported other" was recalculated. Upon recalculation, it was estimated that 21% of total daily trips into Napa County were "visitor" trips, a number four percentage points higher than the percentage of visitor trips from the vehicle intercept survey (discussed in more detail in Chapter 5). However, visitors to Napa County are likely underrepresented in the vehicle intercept survey as potential respondents who live or work in Napa County are generally considered to be more likely to complete the survey.

PASS-THROUGH ORIGIN-DESTINATION VEHICLE TRIP TABLES

The license plate matching data, organized by vehicle type, time period, and inferred trip type as described above, was then used to create origin-destination vehicle trip tables representing pass-through travel within Napa County. A total of 12 origin-destination vehicle trip tables were developed, one for each combination of time period and vehicle type.

Each individual vehicle trip table contains seven rows and seven columns, one for each of the seven external gateway locations where vehicles can enter and exit Napa County. The format of the trip tables allows them to easily be compared to external-to-external vehicle trip tables that can be produced by the NSTDM. The daily total pass-through trips for passenger and commercial motor vehicles (factored to account for license plates that were not properly transcribed) are shown in **Table 10** and **Table 11**, respectively. All 12 pass-through origin-destination vehicle trip tables resulting from the license plate matching effort are shown in **Appendix C**. Additionally, **Appendix C** provides average observed travel times between external gateway locations for trips with and without an intermediate stop.

TABLE 10
DAILY TOTAL PASS-THROUGH TRIPS FOR PASSENGER VEHICLES

Total: 10,590		Destination Survey Data Location						
		1-SR 12 North of AC-SB	2-SR 12 at Solano CL-EB	5-SR 29 at Lake CL-NB	6-SR 128 at Sonoma CL-NB	7-SR 121 at Sonoma CL-WB	8-SR 128 east of SR 121-EB	9-Spring Mountain-WB
Origin Survey Data Location	1-SR 12 North of AC-NB	--	816	217	5	1,344	5	0
	2-SR 12 at Solano CL-WB	794	--	128	5	2,751	39	10
	5-SR 29 at Lake CL-SB	147	89	--	12	31	2	0
	6-SR 128 at Sonoma CL-SB	2	0	5	--	0	2	0
	7-SR 121 at Sonoma CL-EB	1,262	2,801	27	2	--	24	10
	8-SR 128 east of SR 121-WB	5	17	0	0	17	--	2
	9-Spring Mountain-EB	10	5	0	0	2	2	--

TABLE 11
DAILY TOTAL PASS-THROUGH TRIPS FOR COMMERCIAL MOTOR VEHICLES

Total: 1,035		Destination Survey Data Location						
		1-SR 12 North of AC-SB	2-SR 12 at Solano CL-EB	5-SR 29 at Lake CL-NB	6-SR 128 at Sonoma CL-NB	7-SR 121 at Sonoma CL-WB	8-SR 128 east of SR 121-EB	9-Spring Mountain-WB
Origin Survey Data Location	1-SR 12 North of AC-NB	--	79	18	2	130	1	0
	2-SR 12 at Solano CL-WB	73	--	18	0	260	11	0
	5-SR 29 at Lake CL-SB	14	5	--	1	2	0	0
	6-SR 128 at Sonoma CL-SB	0	0	0	--	0	0	0
	7-SR 121 at Sonoma CL-EB	112	285	2	0	--	9	3
	8-SR 128 east of SR 121-WB	2	5	0	0	3	--	0
	9-Spring Mountain-EB	0	0	0	0	0	0	--

As shown in **Table 10** and **Table 11**, a vast majority (approximately 52%) of Napa County pass-through traffic travels between SR 121 at the Napa/Sonoma county line and SR 12 at the Napa/Solano county line.

5. SURVEYS

Three types of surveys were conducted as part of the Napa County Travel Behavior Study to supplement data previously collected through surveys such as the Visit Napa Survey and the California Household Travel Survey (CHTS). An in-person survey was conducted at 13 wineries in Napa County to gather more detailed information on the travel behavior and demographics of winery patrons. An online survey was provided to major employers in Napa County to gather travel behavior and commute data for local employees. A vehicle intercept mail survey was also conducted to gather travel behavior and origin-destination data for local residents and visitors to the region. The surveys provided detailed information on the trip making and travel characteristics of a sample of residents, visitors, winery patrons, students, and employees who live, work, and visit Napa County.

To increase the survey response rate, an incentive was provided if certain questions were answered and the survey returned by a specific date. Participants were entered into separate raffles (one for each survey) to win one of three cash prizes if they completely answered all questions designated as "required" on the survey within two weeks of receiving the survey.

IN-PERSON WINERY SURVEY

On Friday, October 4, 2013 15 surveyors comprised of local volunteers, NCTPA and Fehr & Peers staff conducted an in-person survey at 13 wineries in Napa County. One representative from a group of winery patrons was asked a total of 23 questions and their responses were transcribed on a paper copy of the survey. Copies of the survey were also available for winery patrons to take home, complete, and return using a self-addressed stamped envelope. The questions on the survey were aimed at gathering origin-destination, trip making, and demographic information of the winery patrons. The survey handout is provided in **Appendix D** along with a printout of the online version of the survey used to enter the data for analysis purposes.

A total of 172 surveys were completed with roughly 169 of respondents answering every question. The most common unanswered questions were in regards to education level and household income. 162 of the surveys were filled out by the surveyors while 10 were received in the mail.

The response rate for the survey was estimated at 50% of groups of winery patrons. The estimated response rate was drawn from anecdotal evidence obtained from speaking with the individual surveyors. For instance, at one winery the surveyor estimated that 83% of groups were surveyed while at another winery the surveyor estimated that 50% of groups were surveyed. It is important to note that although only 172 surveys were completed, the answers to the questions on each survey reflect the average answer for the group, the size of which is identified by Question 18 on the survey handout in **Appendix D**. Taking the average group size of approximately 2.8 into consideration it can be inferred that the 172 survey responses accounted for the trip making and demographic characteristics of 482 winery patrons.

172 surveys were completed with an estimated response rate of 50%

In-Person Winery Survey Response Data

The in-person winery survey responses to all 23 questions for all 172 completed surveys are provided in **Appendix D** along with a detailed summary of the results. Key takeaways from the in-person winery survey are presented below.

- 92% of groups were visitors to Napa County, only 6% of groups were full-time residents
- Only 21% of patrons were from the Bay Area, 10% of patrons were from outside the United States
- 35% of patrons started their day in Napa County, 23% of patrons started their day in San Francisco County
- 64% of patrons started their day from a hotel
- A higher percentage (45%) ended their day in Napa County, the same percent (23%) ended their day in San Francisco County
- Roughly the same percent (62%) of patrons ended their day in a hotel
- The average departure time for wineries was 10 AM and the average travel time was 74 minutes
- The average number of wineries groups planned to visit was 3.1. However, most groups did not know the names of the planned wineries or whether they would actually make it to all of them.
- 61% of groups visit Napa County wineries less than once a year
- Almost 70% of groups were first-time visitors to the winery they were surveyed at
- 52% of groups traveled by rental car, 36% of groups by personal auto
- Average party size was 2.8 persons
- 19% said public transit was a reasonable option but 0% utilized transit that day
- 58% said they would use transit if it was an option
- 80% of visitors were age 25 to 54
- 92% have an undergraduate college degree or higher
- Roughly 80% have an average household income over $100,000 a year, the median Bay Area average household income is around $75,000 a year

ONLINE EMPLOYER SURVEY

On October 25, 2013 an email with a description of the Napa County Travel Behavior Study and a link to an online employer survey was mailed to 100 employers with a total of approximately 20,000 employees in Napa County. The online survey included a total of 24 questions designed to gather travel behavior and commute data for local employees. A printout of the online version of the survey is provided in **Appendix D**.

A total of 1,444 surveys were completed with roughly 1,333 (92%) respondents answering every question. As with the winery survey, the most common unanswered questions were in regards to education level and household income. Responses were received from over 400 departments and companies (most respondents identified the department as well as the company they worked for). The most survey responses were received from Napa County (292 or 20%) followed by City of Napa (95 or 7%). The response rate for the survey was approximately 7%.

1,444 surveys were completed with a response rate of approximately 7%

Online Employer Survey Response Data

The online employer survey responses to all 24 questions for all 1,444 completed surveys are provided in **Appendix D** along with a detailed summary of the results. Key takeaways from the online employer survey are presented below.

- 71% of respondents live in Napa County
- 51% of respondents live in the City of Napa
- 56% of respondents work in the City of Napa
- 462 (32%) respondents live and work in the City of Napa
- The average home departure time was 7:50 AM
- The average travel time to work was 31 minutes (estimated by respondents)
- 34% make at least 1 intermediate stop on the way to work
- The most common stop on the way to work was school (168 or 35%), followed by coffee (126 or 26%)
- 61% of respondents use SR 29 to travel to work
- The average work departure time was 4:00 PM
- The average travel time home was 37 minutes (estimated by respondents)
- 30% make at least 1 intermediate stop on the way home
- The most common stop on the way home was shopping (150 or 35%), followed by school (22%)
- 55% of respondents use SR 29 to travel home from work (fewer than in the morning to work)
- 97% commute using their personal automobile more than half the time
- 20% carpool in one form or another
- 79% commute 5 days a week
- 88% do not primarily work from home
- 35% have flexible commute schedules that allow them to alter their commute time
- The average household size is 2.5 person and the average household has 2.2 vehicles
- 43% said they would use public transit if service was expanded and it became a reasonable option
- Similar age distribution to winery visitors but fewer in the 35 to 44 age bracket
- 62% have an undergraduate degree or higher (compared to 92% for winery patrons)
- Roughly 47% have an average household income over $100,000 a year (compared to 80% for winery patrons)

VEHICLE INTERCEPT MAIL SURVEY

A vehicle intercept mail survey involves the gathering of unique license plate listings which are then matched to a Department of Motor Vehicles (DMV) database of addresses of license plate owners (all of the license plate and address information was destroyed after use for this survey). Typically, short survey questionnaires are implemented by mailer and responses are entered online using a unique survey identification number. The respondent data can then be used to gather information about the origin and destination of the trip, the trip purpose, and the demographic characteristics of the driver and their household, data typically not provided by vehicle classification count data, license plate matching, or mobile device data.

Unique License Plate Listings

The properly transcribed license plate numbers provided by MioVision were the basis for developing a list of unique license plate listings to be sent to the DMV for a list of addresses of the license plate owners. A total of 85,531 unique license plate numbers were identified from the 154,389 properly transcribed license plate numbers at the 11 vehicle classification count locations. The 85,531 unique license plate numbers were then sent to the DMV to obtain a mailing address for each of the unique license plate listings.

85,531 unique license plate numbers were identified

Upon receipt of the mailing addresses from the DMV, they were reviewed in order to remove duplicate addresses, likely resulting from the observation of multiple vehicles from the same rental car company, incomplete addresses, out-of-state addresses, and addresses of businesses where the likelihood of the survey reaching the observed motorist was low. It was determined that approximately 5,000, or 6%, of the addresses associated with the 85,531 unique license plate numbers were duplicates.

The screened list of unique license plate listings and addresses was then sorted by the inferred trip types listed in Chapter 4 to ensure a proportionate amount of addresses associated with imported, exported, and one-way (both in and out) trips were selected to be surveyed (select pass-through trips were also surveyed), as well as by survey data location to ensure a proportionate amount of addresses associated with vehicles observed at each of the 11 survey data locations were selected for the survey. The sorting process resulted in 45 separate lists of addresses, from which a calculated number of randomly selected addresses were drawn, to which a license plate survey was mailed. To ensure the survey response data could not be tracked to an individual person or place of residence, an anonymous unique survey identification number was used to link the household address, license plate number, and survey response data, allowing all of the license plate and address information to be destroyed after use for the survey.

Mail Survey

In order to obtain information about the origins and destinations of the observed vehicle trips, as well as information regarding trip purpose, trip frequency, and demographic characteristics of the driver and their

household, a mail survey was conducted using a survey instrument reflecting the California Household Travel Survey (CHTS) questionnaire, input from NCTPA and the Community Advisory Committee (CAC), and addresses obtained from the DMV.

Survey Sample Size

The screened list of unique license plate listings and addresses, sorted by inferred trip type and survey data location, were used to draw a random sample of observed inter-regional vehicle trips to survey. The number of samples was determined by a calculation of the sample size needed to obtain a statistically significant sample of usable surveys based on the number of unique license plate listings, observed traffic volumes at individual survey data locations, and experience on survey response rates. A 95% overall confidence level and 10% confidence interval were used along with an assumed 8% response rate to determine the license plate survey sample size.

A separate sample size was calculated for each of the 11 survey data locations, resulting in a total calculated sample size of 7,863. However, 8,500 unique addresses were selected from the 45 sorted lists of unique addresses described above. A total of 8,250 addresses were randomly, and proportionately, selected from the individual lists of non-pass-through trips to increase the odds of receiving the desired 625 responses. An additional 250 addresses associated with pass-through trips were manually chosen if a longer than average travel time from entry to exit point was observed. This method was chosen for the pass-through trips over a random sampling due to the likelihood that the longer than average trip time was due to an intermediate stop, providing the opportunity to gather information related to diverted/pass-by through trips. The selected addresses were then reviewed a second time, in more detail, to ensure there were no duplicate or out-of-state addresses and that none of the addresses appeared to be that of businesses.

Survey Instrument

The online survey instrument was developed using SurveyMonkey to reflect the CHTS questionnaire along with input from NCTPA and the CAC, and contained questions including but not limited to: origin and destination of the trip, purpose of the trip, arrival and departure time, frequency, number of vehicles available in the household, number of passengers, household income, household size, age of driver, age of head of household, and education level.

For the questions regarding the origin and destination of the trip, the survey instrument allowed for the specification of an address, cross street, and/or name of the establishment to make it easier on the survey participants. Additionally, the questions regarding the purpose of the trip provided multiple choices that included standard trip purposes such as home-based work and home-based other, along with more unique trip purposes such as winery-based, with the trip purposes rephrased to be more understandable to the survey participants.

An online survey was used in an effort to increase the response rate, as the online version provided a convenient way for participants to complete the survey and utilized branched questions that reduced the survey length and response time. Fehr & Peers staff, acting as mock survey participants, was able to complete the online version of the survey in less than two minutes. An online version, while more work for the survey team to develop, also has

the added benefit of minimizing return postage costs, data entry and cleaning time, and post-processing time for the survey team.

The online survey instrument was then reviewed by NCTPA staff prior to the mailing of a postcard to potential survey participants. The postcard informed the recipient their vehicle had been observed at a specific time and place on the periphery of Napa County and provided a unique survey ID and web address for them to complete the online survey. The vehicle intercept mail survey postcard mailer is provided in **Appendix D** along with a printout of the online version of the survey.

8,500 survey postcards were mailed to randomly selected potential participants

A total of 183 surveys were completed with roughly 168 (92%) respondents answering every question. As with the other two surveys, the most common unanswered questions were in regards to education level and household income. The response rate for the survey was approximately 2.2%, a much lower response rate than anticipated. As described above, the desire for 625 responses (achieved by an 8% response rate) was based on the desire to obtain a statistically significant sample of usable surveys for each of the seven external gateways. Due to the lower than anticipated response rate, a statistically significant sample of usable surveys was only obtained for a population of all seven external gateways combined. The resulting confidence interval when working with a population based on all seven external gateways combined using a 95% confidence level was 7%.

183 surveys were completed with a response rate of approximately 2.2%

Vehicle Intercept Mail Survey Response Data

The vehicle intercept mail survey responses to all 24 questions for all 1,444 completed surveys are provided in **Appendix D** along with a detailed summary of the results. The number of vehicle intercept mail survey responses by survey data location is summarized in **Table 12**.

TABLE 12
VEHICLE INTERCEPT MAIL SURVEY RESPONSES BY SURVEY DATA LOCATION

Survey Data Location	License Plate Survey Responses	% of Total Responses
Highway 29 - Southeast of Adams St in St. Helena	28	15%
Highway 121 - at the Sonoma/Napa County Line	26	14%
Highway 12 - at the Napa/Solano County Line	25	14%
Highway 29 - at the Napa/Lake County Line	22	12%
First Street - West of SR 29	20	11%
Highway 29 - North of American Canyon Rd	17	9%
Howell Mountain Road - South of Cold Springs Road	16	9%
Highway 29 - Southeast of SR 128 in Calistoga	15	8%
Highway 128 - East of SR 121	7	4%
Highway 128 - at the Sonoma/Napa County Line	4	2%
Spring Mountain Road - at the Napa/Sonoma County Line	3	2%
Pass-Through Trips	0	0%
Total of All 11 Locations and Pass-Through Trips	**183**	**100%**

Key takeaways from the vehicle intercept mail survey are presented below.

- The highest number of surveys (28 or 15%) were from respondents who traveled through Highway 29 Southeast of Adams Street in St. Helena which comprised 9% of the total counted vehicles
- Only 9% of the surveys were from respondents who traveled through Highway 29 North of American Canyon Road which comprised 30% of the total counted vehicles
- 52% of respondents are full-time residents of Napa County, 26% are non-residents but employed in Napa County
- 17% of vehicle intercept survey respondents said they were visitors to Napa County. However, visitors to Napa County are likely underrepresented as potential respondents who live or work in Napa County are generally considered to be more likely to complete the survey.
- 60% of respondents started their trip in Napa County
- 26% of respondents who started their trips outside Napa County started their trip in Sonoma County, followed by Solano County with 24%, and Lake County with 15%
- External county of origin percentages very closely resemble mobile device data with the exception of Lake County which comprised only 1% of the cell phone data but 15% of the survey data (likely due to the older population which tend to have more time to complete surveys – according to http://www.city-data.com/county/Lake_County-CA.html the average age of Lake County residents is ten years more than the average for California)

- 80% of trips started at home, 13% at work
- 37% of trips ended in the City of Napa, 19% in the City of St. Helena, 7% in the City of Calistoga
- 40% of trips ended at work, 11% at shopping, 10% at visiting family/friends
- 66% of external trips were imported, consistent with license plate matching data which estimated 61%, and mobile device data which estimated 65%
- 34% of trips were home-based work trips, 40% were home-based other trips, and 26% were non-home-based trips, consistent with mobile device data (36%, 33%, 31%) and national averages (25%, 50%, 25%)
- Average departure time was 10:07 AM
- Average travel time for the singular trip in which the vehicle was making when it's license plate was observed was 57 minutes (estimated by respondents)
- 21% of trips were said to be made "less than one time per month", likely indicating visitor trips
- Average auto occupancy was 1.37 and 72% of vehicles were single occupant
- 62% said their trips could have been made with another mode of travel but since this was a vehicle intercept survey all 183 trips were made by automobile
- 53% of respondents said they would not be willing to use public transit
- 85% of respondents said they rarely or never use public transit
- Those that use transit said they predominately use it for recreational purposes which seems counterintuitive
- 67% were aware Napa County has a transit system that connects to the Ferry, BART, and Sonoma and Solano counties but only 23% had used it
- More respondents felt "safer bicycle infrastructure/conditions" would entice them to make their trip by bicycle
- 18% of respondents used van pools or car pools
- Average household size was 2.45 persons
- Average vehicles per household was 2.15
- The average age of respondents had a bias toward the older age group, likely due to older people generally having more time to complete surveys
- 65% of respondents have an undergraduate college degree or higher, compared to 92% for winery patrons
- Roughly 45% have an average household income over $100,000 a year, compared to 80% for winery patrons

TABLE 13
VEHICLE INTERCEPT MAIL SURVEY RESPONSE STATISITICS

Statistic	Possible Responses	Number of Responses	Percent of Responses	Percent of Observed License Plates from License Plate Matching
Internal Trips		79	43%	--
Trip Direction	Inbound Trip	58	56%	45%
	Outbound Trip	46	44%	45%
	Pass-Through	0	0%	9%
Time Period	Early AM (12 AM to 6 AM)	7	4%	3%
	AM Peak Period (6 AM to 10 AM)	70	38%	24%
	Mid-Day (10 AM to 3 PM)	54	30%	31%
	PM Peak Period (3 PM to 7 PM)	41	22%	29%
	Late Night (7 PM to 12 AM)	11	6%	12%
Trip Type	Imported Trip	44	42%	41%
	Exported Trip	28	27%	27%
	One-Way In	14	13%	12%
	One-Way Out	18	17%	11%
	Pass-Through	0	0%	9%

As shown in **Table 13**, the vehicle intercept mail survey response statistics generally match the total observed license plate data statistics from the license plate matching, implying that the sorting of the unique addresses into 45 separate lists was beneficial in obtaining completed surveys for auto trips that occurred with the various directions of travel, time periods, and trip types that occur in Napa County.

SURVEY DATA LIMITATIONS

As with all user-input surveys, certain data limitations exist that should be taken into consideration before working with the raw or analyzed data as these types of surveys are prone to human error during the data collection process as well as from the survey responders who may misinterpret the questions. Below are examples of user-input data that demonstrate potential user-input survey data limitations.

- A respondent indicated they were a full-time resident of Napa County but provided a home zip code in Fairfield – possible misunderstanding of the question or human error
- A respondent indicated it took them 45 minutes to travel from downtown San Francisco to a winery in Calistoga, a distance of approximately 72 miles – possible misconception of time or human error
- A respondent indicated they planned to visit 12 wineries – likely did not make it to all 12 wineries but we have no way of knowing

6. MOBILE DEVICE DATA

Mobile devices such as cell phones and GPS units (in cars, on phones, and handheld units) frequently communicate with the mobile network, both during use (on a call or sending/receiving text or data) and in idle mode. INRIX and StreetLight Data are able to collect and analyze this data while the device is in use to record the anonymous location (ensuring user privacy) and movement of mobile devices (and thus the population of mobile users) on the roadway network, both in real-time and historically, based on this mobile signaling data.

In order to infer the travel patterns and trip making characteristics of the mobile devices, such as the origin and destination of individual trips as well as the purpose of those trips, StreetLight Data obtained from INRIX movement and usage patterns over a 61-day period from September 1, 2013 to October 31, 2013 for the entire State of California in order to determine the "Home Zone" and the "Work Zone" for each mobile device. For instance, a "Home Zone" is designated if a particular device spends a majority of nighttime hours (i.e. 9 PM to 6 AM) at a specific location, whereas a "Work Zone" is designated if a particular device spends a majority of daytime hours (i.e. 8 AM to 5 PM) at a specific location over the 61-day period.

StreetLight Data then uses sophisticated algorithms to create trip distribution tables by first identifying mobile devices which were seen in a single zone multiple times over a specified time interval and subsequently seen in a different zone multiple times over a specified time interval. All of the sightings for the mobile device in a single zone over this specified time interval are then combined to create an "Origin-Destination Point". The "Origin-Destination Points" of each mobile device are then paired to create a table of trips with origin and destination coordinate points as well as the observed time period. Population and land use data from the NSTDM was also used during this effort to help determine the trip purpose of the StreetLight Data inferred trips.

STREETLIGHT DATA OVERALL STATISTICS

The table of trips provided by StreetLight Data was derived from 206,152 Napa County data samples. Of the 206,152 data samples, approximately 74,400 or 36% touched a Napa County external gateway, indicating an external trip. Additionally, approximately 6,700 or 9% of trips were observed passing through Napa County via Napa County external gateways.

206,152 Napa County data samples

36% of which were external trips and 9% of which were pass-through trips

As indicated above, approximately 45% of Napa County data samples touched one or more Napa County external gateways. The remaining 55% of trips had both their origin and their destination within Napa County, indicating an internal trip. This statistic is extremely useful and important as measuring the amount of internal trips within an area as large as a county would be almost impossible using traditional methods. Even the four other data collection methods used as part of this study are unable to accurately capture this information.

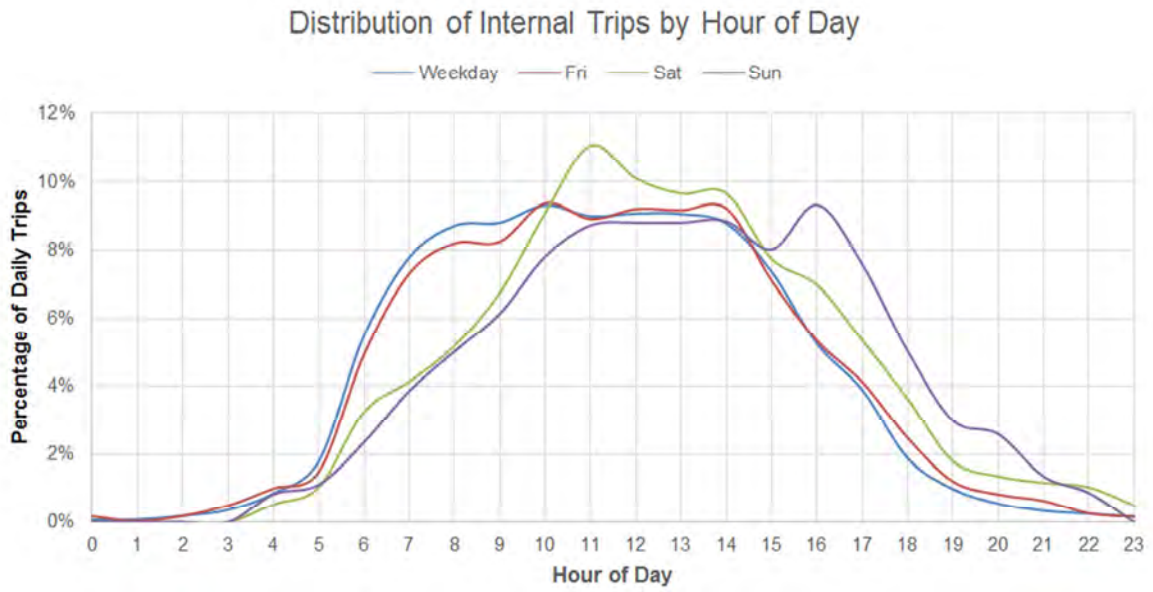
- Traffic counts – do not provide the origin and destination information necessary to differentiate internal from external or pass through trips
- Winery regression analysis – only provides trip generation information for wineries
- License plate matching – license plate collection was limited to four local survey data locations to capture a small sample of local trips, would need to capture license plate data at a majority of Napa County roadways to accurately differentiate internal from external or pass through trips (used primarily to capture external trip information as external gateways are usually limited and well-defined)
- Surveys – same limitation as license plate matching, data collected for an indeterminable percentage of local trips

Due to the limitations listed above, there is unfortunately no data source collected as part of this project to accurately compare the 55% internal trips calculation. However, information from a regional travel demand model such as the Metropolitan Transportation Commission (MTC) Travel Demand Model can be used for comparison purposes with the understanding that information from travel demand models is forecasted, not observed, using aggregate land use and roadway network information in combination with average trip making rates, trip distribution patterns, and time-of-day factors. This comparison is presented later in this chapter after the raw StreetLight Data has been refined based on data collected from the four other data collection sources.

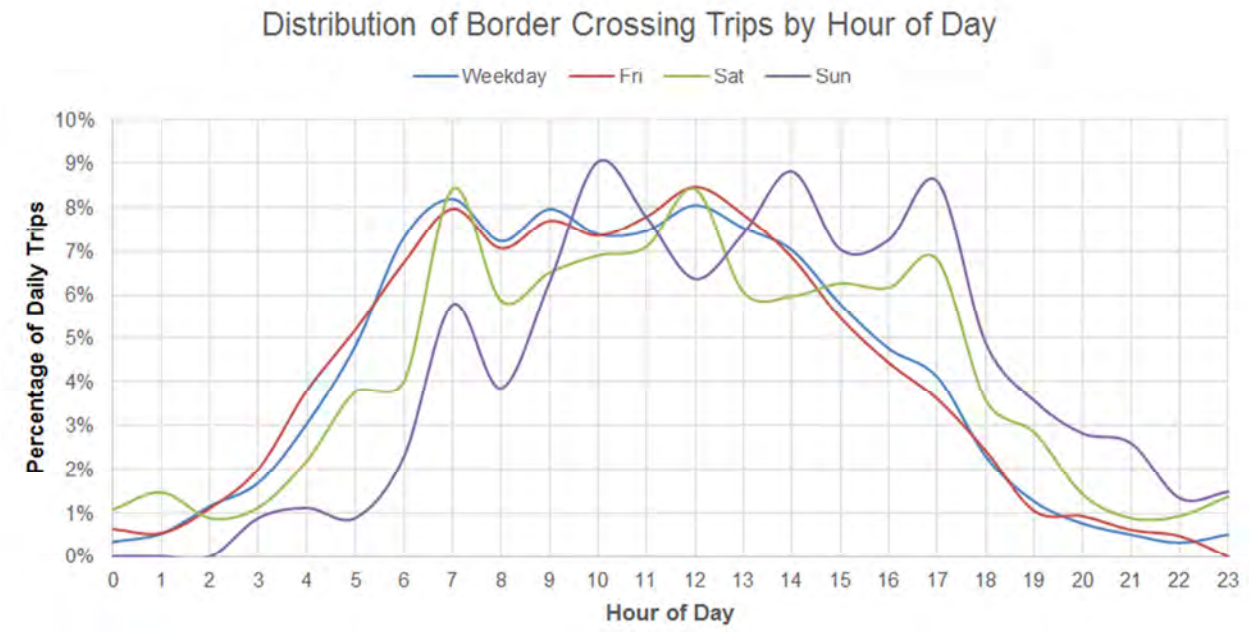
The remaining 55% were internal trips (measured no other way in this study)

"Hour of Day" and "Day of Year" Statistics

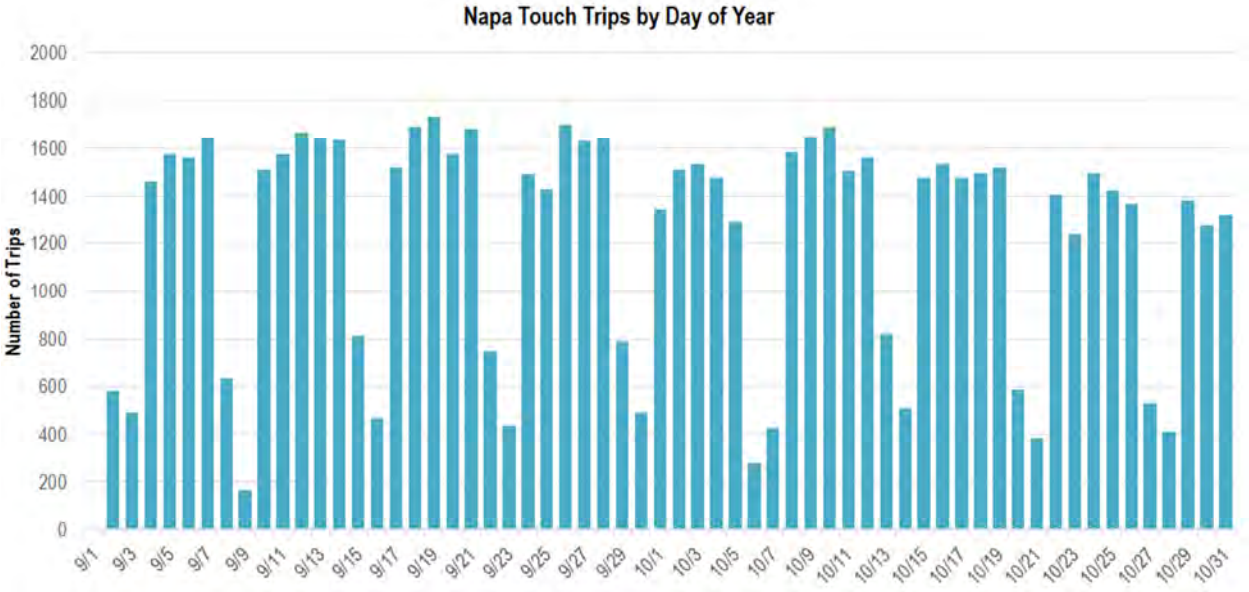
StreetLight Data also stratified their data samples by "hour of day" and "day of year" as shown on the charts below.



The above chart shows the percent of daily trips with their start and end point within Napa County by hour of day.



The above chart shows the percent of daily trips that passed through a Napa County external gateway by hour of day. For example, roughly 8% of weekday, Friday, and Saturday daily trips were observed at 7 AM.



The above chart shows the number of trips within Napa County for each day between September 1, 2013 and October 31, 2013.

STREETLIGHT DATA ORIGIN-DESTINATION DATA

After the "Origin-Destination Points" of each mobile device are calculated from the 206,152 Napa County data samples, they are paired to create a table of trips with origin and destination coordinate points by day of week, time of day, vehicle type (personal automobile and commercial vehicle), and trip type (internal and external). These trips are then "tagged" to a pre-determined geographic layer based on their origin and destination coordinate points.

For the Napa County Travel Behavior Study, the starting point was the NSTDM traffic analysis zone (TAZ) system to which all 434 wineries were added. Additional subdivisions were also made to ensure each middle school, high school, college, airport, and major employer were represented by their own TAZ. The final geographic layer included 658 TAZs with six external gateways and is shown on **Figure 2**. Population and land use data from the NSTDM was also used during this effort to help determine the trip purpose of the StreetLight Data observed trips.

The resulting origin-destination trip tables provide the number of trips for each TAZ to TAZ origin-destination pair for inter-regional (imported and exported trips only) as well as internal (both ends of the trip within Napa County) trips stratified as described below.

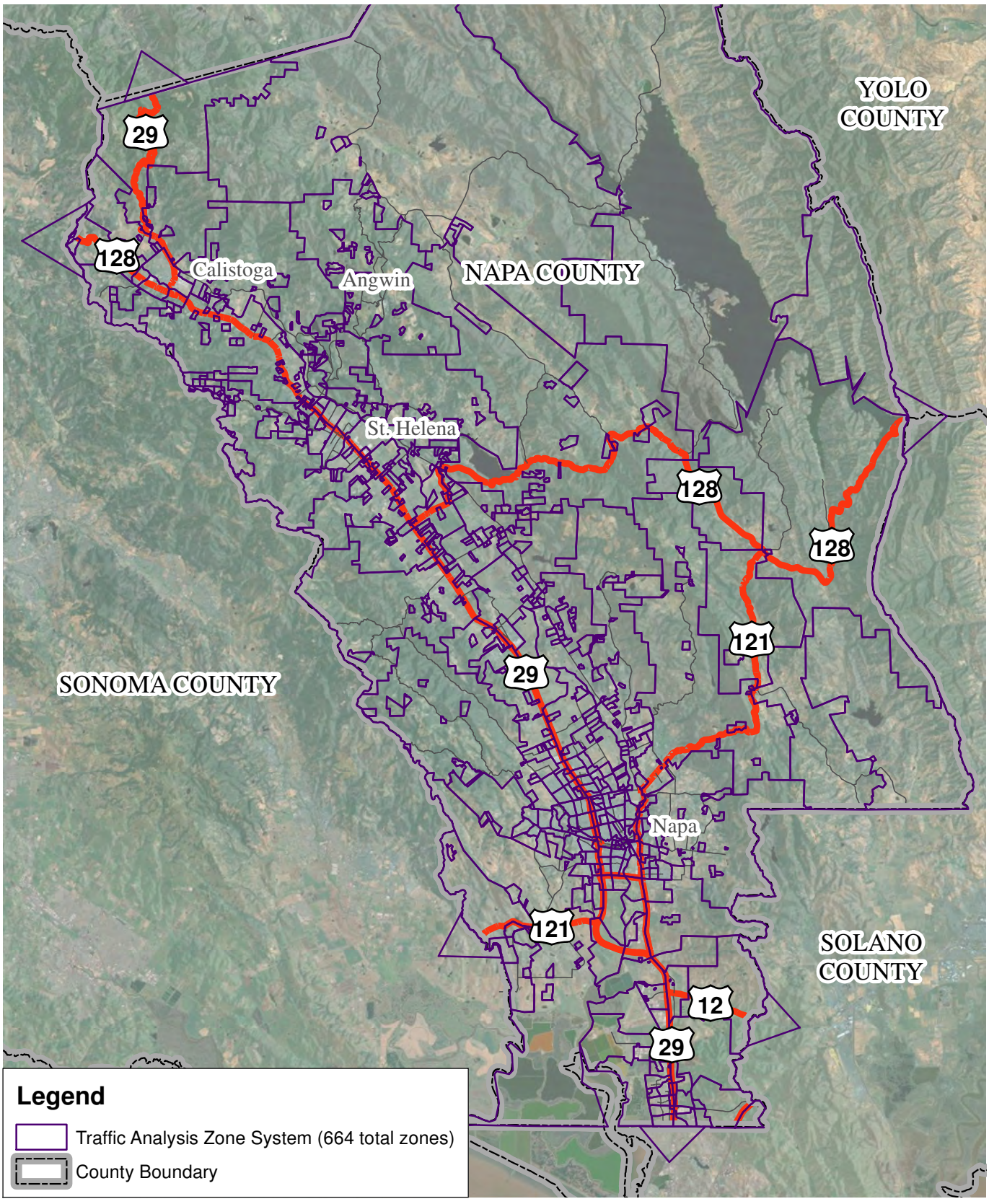
- Inferred trip purpose - 12 different purposes including internalized, home-based work, home-based other, non-home-based, school, airport, home to winery, external to winery, other to winery, home to external, other to external, external to work
- Time of day - same 6 from Chapter 2 including Early AM, AM Peak Period, Mid-Day, PM peak period, Late-Night, and Daily
- Vehicle type - personal automobile and commercial vehicles
- Day of week – 3 different categories including average Monday-Thursday weekday, Friday, and Saturday
- Trip type – internal trips, internal to external trips, external to internal trips

Relative Rather than Absolute Trips

Due to privacy concerns, the trip values in the origin-destination trip tables described above represent "relative" rather than "absolute" trips. In other words, the tables do not provide the total number of trips that occur on a daily basis within Napa County but provide the relative relationship of trips from each TAZ to every other TAZ. Therefore, data from the other four data collection methods was used to refine the origin-destination trip tables to represent a single day of absolute data as described below.

- Traffic counts – used to develop control totals to factor the relative trips in order to obtain absolute trips
- Winery regression analysis – used to develop factors to match calculated winery trip generation data
- License plate matching – used to help refine trip purpose and trip type
- Surveys – used to help further refine trip purpose and trip type, and to refine origin-destination pairs

The resulting trip tables represent a single meaningful dataset of all data collected as part of the Napa County Travel Behavior Study.



Not to Scale

FEHR & PEERS

MOBILE DEVICE DATA GEOGRAPHIC LAYER
NAPA VALLEY TRAVEL BEHAVIOR STUDY

FIGURE 2

Data from the other four data collection methods

was used to refine the origin-destination trip tables

Final Absolute Origin-Destination Trip Tables

The final absolute origin-destination trip tables for personal automobile and commercial vehicle trips for an average Monday-Thursday weekday, Friday, and Saturday are provided in tabular format in **Appendix E.** The data is provided in a format such that column "A" is the TAZ from which the trips originate and column "B" is the TAZ to which the trips terminate. The subsequent columns provide the number of trips for the origin-destination pair for the days of week and times of day described above.

The final absolute origin-destination trip tables for personal automobile trips are summarized in **Table 14**.

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	--	--	--	--

As shown in **Table 14**, approximately 345,000, 362,000, and 160,000 daily personal automobile vehicle trips were generated within Napa County on an average Monday to Thursday weekday, Friday, and Saturday, respectively, in September/October of 2013.

The final absolute origin-destination trip tables for commercial vehicle trips are summarized in **Table 15**.

TABLE 15
COMMERCIAL VEHICLE 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	16,922	17,649	5,206	100%	100%	100%
External Trips (including pass-through)	6,854	7,085	2,116	41%	40%	41%
External Trips from Vehicle Classification Counts	--	6,866	--	--	--	--
Difference	--	728	--	--	--	--

As shown in **Table 15**, approximately 16,900, 17,600, and 5,200 daily commercial vehicle trips were generated within Napa County on an average Monday to Thursday weekday, Friday, and Saturday, respectively, in September/October of 2013.

Comparison of Final Absolute Origin-Destination Trip Table Data to Data from Existing Travel Demand Models

Starting with the NSTDM TAZ system allows the final absolute origin-destination trip table data to be easily compared to trip tables generated by existing travel demand models such as the NSTDM, providing a substantial amount of observed travel data for base year calibration and validation purposes. It is important to note however that the mobile device trip tables do not represent person-level trip productions and attractions (P-A) similar to those produced in the early stages of traditional four-step travel demand models (i.e. trip generation and trip distribution). Instead, the mobile device trip tables represent vehicle trip origins and destinations (O-D) similar to those used during the trip assignment stage of traditional four-step travel demand models. The main difference is that cell values in a model's productions and attractions trip tables are non-directional, only indicating the magnitude of interaction between two TAZs, whereas the cell values in an origins and destinations trip table are directional, indicating the magnitude and direction of interaction between two TAZs.

Provides a substantial amount of observed travel data

for base year calibration and validation purposes

Since the final absolute origin-destination trip table data from the mobile device data collection will likely be used to help update, refine, calibrate, and validate the NSTDM, an attempt was made to compare total daily trips from the mobile device trip tables to total daily trips from the NSTDM. However, the current NSTDM does not have a daily component to compare the mobile device daily trip information provided in **Table 14** and **Table 15**.

Therefore, to ensure the total number of daily trips from the mobile device trip tables were reasonable, the total average Monday to Thursday weekday daily personal automobile and commercial vehicle trips from the final mobile device trip tables were compared to total daily trips with an origin or destination in Napa County from the 2010 Contra Costa Transportation Authority (CCTA) Model. The results of the comparison are shown in **Table 16** and indicate the observed daily mobile device total daily trip data very closely resemble forecasted weekday daily total daily trip data from the 2010 CCTA Model.

TABLE 16
COMPARISON OF DAILY MOBILE DEVICE DATA TO THE 2010 CCTA MODEL TRIP TABLES

Vehicle Type	Daily Mobile Device Trips	Daily 2010 CCTA Model Trips in Napa County
Personal Automobile	345,346	353,521
Commercial Vehicles	16,922	8,731
Total	362,268	362,252

Final Absolute Origin-Destination Trip Matrices

The origin-destination trip tables are provided in tabular format in **Appendix E** to reduce the size of the data and to display the data in a more easily understandable format. As described above the data is provided in a format such that column "A" is the TAZ from which the trips originate and column "B" is the TAZ to which the trips terminate. However, the trip tables generated by the NSTDM are in a matrix rather than tabular format. The matrix format is a rectangular array of numbers arranged in rows and columns with the first row and first column populated with each TAZ in the model. In order to compare the origin-destination trip tables to trip tables generated by the NSTDM the daily tabular trip tables were converted to matrix format. An example of the matrix format to which the tabular tables were converted is illustrated below with each model TAZ in the first row and column.

	1	2	3	4	5	6	7	8	9	10	11
1	194.41	6.78	–	20.35	6.78	6.78	27.13	6.78	47.47	6.78	6.78
2	33.91	–	–	13.56	–	–	6.78	–	–	6.78	6.78
3	–	6.78	–	–	–	6.78	33.91	–	–	0.00	–
4	137.90	–	–	97.21	–	0.00	27.13	–	–	6.78	33.91
5	6.78	–	–	–	–	–	–	–	–	–	–
6	13.56	–	–	0.00	–	13.56	6.78	–	0.00	13.56	6.78
7	47.47	13.56	20.35	13.56	6.78	6.78	20.35	–	20.35	–	13.56
8	–	–	–	–	–	–	–	–	–	6.78	–
9	13.56	6.78	–	27.13	–	–	0.00	–	20.35	47.47	131.12
10	40.69	6.78	–	20.35	–	–	103.99	–	20.35	6.78	13.56
11	13.56	13.56	–	6.78	–	20.35	20.35	–	–	6.78	83.64

The final absolute origin-destination trip matrices for daily personal automobile and commercial vehicle trips for an average Monday-Thursday weekday, Friday, and Saturday are provided in matrix format in **Appendix E.**

Conversion of the tabular format origin-destination trip tables to matrix format allows for comparison to trip tables generated by the NSTDM but also allows for the aggregation of data by desired geographic level. In the example below, the matrix data was aggregated to the city level to illustrate the flow of vehicles to and from the five major cities in Napa County. The results are summarized for an average Monday-Thursday weekday, Friday, and Saturday in **Table 17**, **Table 18**, and **Table 19**, respectively.

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

TABLE 18
DAILY FRIDAY VEHICLE TRIPS TO AND FROM THE FIVE MAJOR CITIES IN NAPA COUNTY

Total: 373,812		Destination Location							
		Calistoga	St. Helena	Yountville	Napa	American Canyon	Unincorporated County	Winery	External Gateway
Origin Location	Calistoga	3,117	385	31	459	61	1,746	756	824
	St. Helena	949	5,055	211	1,340	61	3,750	2,008	455
	Yountville	0	282	1,275	1,063	92	1,652	1,129	511
	Napa	287	1,006	1,070	62,456	3,427	21,513	4,308	15,923
	American Canyon	0	176	158	3,497	6,312	3,343	299	12,558
	Unincorporated County	1,826	4,368	1,318	19,383	3,763	42,853	13,633	22,239
	Winery	940	2,588	813	4,673	211	14,392	3,778	3,626
	External Gateway	1,707	795	622	16,634	13,630	20,513	4,403	11,559

TABLE 19
DAILY SATURDAY VEHICLE TRIPS TO AND FROM THE FIVE MAJOR CITIES IN NAPA COUNTY

Total: 373,812		Destination Location							
		Calistoga	St. Helena	Yountville	Napa	American Canyon	Unincorporated County	Winery	External Gateway
Origin Location	Calistoga	1,815	251	0	62	12	74	878	1,470
	St. Helena	265	2,037	37	564	25	160	1,779	1,255
	Yountville	0	40	609	552	12	69	561	608
	Napa	191	494	538	21,296	357	2,196	2,701	19,181
	American Canyon	12	13	39	347	2,071	365	157	8,732
	Unincorporated County	91	131	80	2,040	298	2,547	12,282	4,494
	Winery	411	2,844	588	2,883	238	12,145	3,438	4,472
	External Gateway	2,241	1,267	533	16,104	7,692	4,827	6,066	7,924

In the second example below, the matrix data was aggregated to the external gateway level to illustrate the flow of vehicles into Napa County from each of the six major external gateways. The results are summarized for an average Monday-Thursday weekday, Friday, and Saturday in **Table 20**, **Table 21**, and **Table 22**, respectively.

TABLE 20
DAILY AVERAGE WEEKDAY VEHICLE TRIPS INTO NAPA COUNTY FROM MAJOR EXTERNAL GATEWAYS

Total: 66,986		Destination Location								
		Calistoga	St. Helena	Yountville	Napa	American Canyon	Unincorporated County	Winery	External Gateway	Total
Origin Location	1-SR 29 North of AC	429	241	66	4,396	8,924	5,391	340	2,526	**22,314**
	2-SR 12 at Solano CL	1,055	283	77	5,312	1,572	5,078	612	3,947	**17,937**
	7-SR 121 at Sonoma CL	46	260	112	7,517	2,206	7,453	2,215	4,379	**24,188**
	8-SR 128 east of SR 121	0	0	0	8	0	140	103	49	**300**
	6-SR 128 at the Sonoma CL	135	49	15	185	70	337	624	9	**1,424**
	5-SR 29 at Lake CL	58	8	0	46	8	404	7	292	**824**
	Total	**1,723**	**841**	**270**	**17,464**	**12,780**	**18,803**	**3,902**	**11,203**	**66,986**

TABLE 21
DAILY FRIDAY VEHICLE TRIPS INTO NAPA COUNTY FROM MAJOR EXTERNAL GATEWAYS

Total: 69,863		Destination Location								
		Calistoga	St. Helena	Yountville	Napa	American Canyon	Unincorporated County	Winery	External Gateway	Total
Origin Location	1-SR 29 North of AC	309	217	116	4,359	9,311	5,952	471	2,606	**23,341**
	2-SR 12 at Solano CL	1,133	327	0	4,957	1,595	5,713	855	4,072	**18,652**
	7-SR 121 at Sonoma CL	37	144	507	7,032	2,686	7,687	2,703	4,519	**25,315**
	8-SR 128 east of SR 121	0	0	0	0	0	65	35	51	**150**
	6-SR 128 at the Sonoma CL	153	107	0	217	37	603	286	9	**1,412**
	5-SR 29 at Lake CL	75	0	0	70	0	493	53	302	**992**
	Total	**1,707**	**795**	**622**	**16,634**	**13,630**	**20,513**	**4,403**	**11,559**	**69,863**

TABLE 22
DAILY SATURDAY VEHICLE TRIPS INTO NAPA COUNTY FROM MAJOR EXTERNAL GATEWAYS

Total: 46,654		Destination Location								
		Calistoga	St. Helena	Yountville	Napa	American Canyon	Unincorporated County	Winery	External Gateway	Total
Origin Location	1-SR 29 North of AC	205	144	77	2,896	6,185	3,954	313	1,787	**15,561**
	2-SR 12 at Solano CL	752	217	0	3,293	1,059	3,795	568	2,792	**12,477**
	7-SR 121 at Sonoma CL	25	96	337	4,671	1,785	5,107	1,796	3,098	**16,912**
	8-SR 128 east of SR 121	0	0	0	0	0	43	23	35	**101**
	6-SR 128 at the Sonoma CL	101	71	0	144	25	400	190	6	**938**
	5-SR 29 at Lake CL	50	0	0	46	0	328	35	207	**665**
	Total	**1,134**	**528**	**413**	**11,050**	**9,054**	**13,626**	**2,925**	**7,924**	**46,654**

Inter-Regional Trips

For inter-regional trips, StreetLight data was able to provide the county of origin and destination for trips that started or ended outside of Napa County, which is typically very difficult to obtain but required for SB 375

compliance. They were also able to provide the specific external gateway the inter-regional trip passed through, a very important step in understanding Napa County inter-regional travel. The percent of inter-regional trips to/from Napa County by county and external gateway are provided in **Appendix E**.

Pass-Through Inter-Regional Trips

A comparison of final mobile device data pass-through inter-regional trips to pass-through inter-regional trips calculated based on license plate matching as discussed in Chapter 4 is presented in **Table 23** and indicate the final mobile device data very closely resemble Friday license plate matching from Chapter 4.

TABLE 23
COMPARISON OF PASS-THROUGH INTER-REGIONAL TRIPS

Vehicle Type	Mobile Device Data			Friday License Plate Matching Data
	Monday to Thursday	Friday	Saturday	
Personal Automobile	11,203	11,559	7,924	10,590
Commercial Vehicles	617	638	190	1,035
Total	11,820	12,197	8,114	11,625

SEASONAL VARIATION

According to VisitNapaValley.com research statistics, approximately 2.94 million people visited Napa County in 2012[1]. However, due to the distinct "growing" and "harvesting" seasons visitation can vary widely by month of the year. This seasonal variation can be observed and quantified by obtaining mobile device data for various months of the year. As part of the Napa County Travel Behavior Study, mobile device data was obtained for March and June of 2013 and compared to the mobile device data obtained for September/October of 2013. A summary of March 2013 and June 2013 trip data is provided in **Table 24** and **Table 25**, respectively, along with a comparison of average Monday to Thursday weekday, Friday, and Saturday trip data to Friday trip data from September/October 2013.

[1] http://www.visitnapavalley.com/research_statistics.htm

TABLE 24
MARCH 2013 SEASONAL VARIATION

Trip Purpose	March 2013 Trip Data			Comparison to Friday Trip Data from September/October 2013		
	Monday to Thursday Trips	Friday Trips	Saturday Trips	Monday to Thursday Change	Friday Change	Saturday Change
Total	317,181	329,164	153,414	-11%	-7%	-57%
Internalized	25,728	24,773	9,005	1%	-3%	-65%
Home-Based Work	58,581	61,044	10,300	-7%	-3%	-84%
Home-Based Other	56,130	56,353	15,549	-3%	-3%	-73%
Non Home-Based	48,309	51,663	6,207	-9%	-3%	-88%
Winery	29,454	33,537	47,469	-40%	-32%	-4%
Imported Trip	63,546	65,244	33,595	-6%	-4%	-51%
Exported Trip	35,433	36,549	31,290	-7%	-4%	-18%

TABLE 25
JUNE 2013 SEASONAL VARIATION

Trip Purpose	June 2013 Trip Data			Comparison to Friday Trip Data from September/October 2013		
	Monday to Thursday Trips	Friday Trips	Saturday Trips	Monday to Thursday Change	Friday Change	Saturday Change
Total	313,932	326,615	159,785	-12%	-8%	-55%
Internalized	23,076	22,219	8,076	-10%	-13%	-68%
Home-Based Work	52,542	54,751	9,238	-17%	-13%	-85%
Home-Based Other	50,343	50,544	13,946	-13%	-13%	-76%
Non Home-Based	43,329	46,337	5,567	-19%	-13%	-90%
Winery	36,384	41,428	51,989	-26%	-16%	5%
Imported Trip	69,504	71,361	36,745	2%	5%	-46%
Exported Trip	38,755	39,976	34,223	2%	5%	-10%

MAPPING OF THE FINAL MOBILE DEVICE ORIGIN-DESTINATION TRIP TABLES

As shown in **Table 14**, the mobile device data collection effort provided trip making characteristics for over 867,000 daily trips, which was then used to create 108 stratified origin-destination trip tables, each consisting of approximately 440,000 cells of trips. While this data had advantages over the other four data collection methods, such as having a very large sample size at a relatively low cost per sample and being less reliant on observed field data and user responses which can potentially introduce error, the method required a lot of inference and lacked the ability to directly obtain demographic characteristics. However, given that the data was aggregated to origin-destination trips tables consistent with the NSTDM TAZ system, demographic data can be inferred for observed trips based on census data or other available sources of demographic information.

Trip making characteristics for over 867,000 daily trips

Due to the overwhelming amount of data, it was imperative to develop an innovative and meaningful way to display the results.

Heat Maps

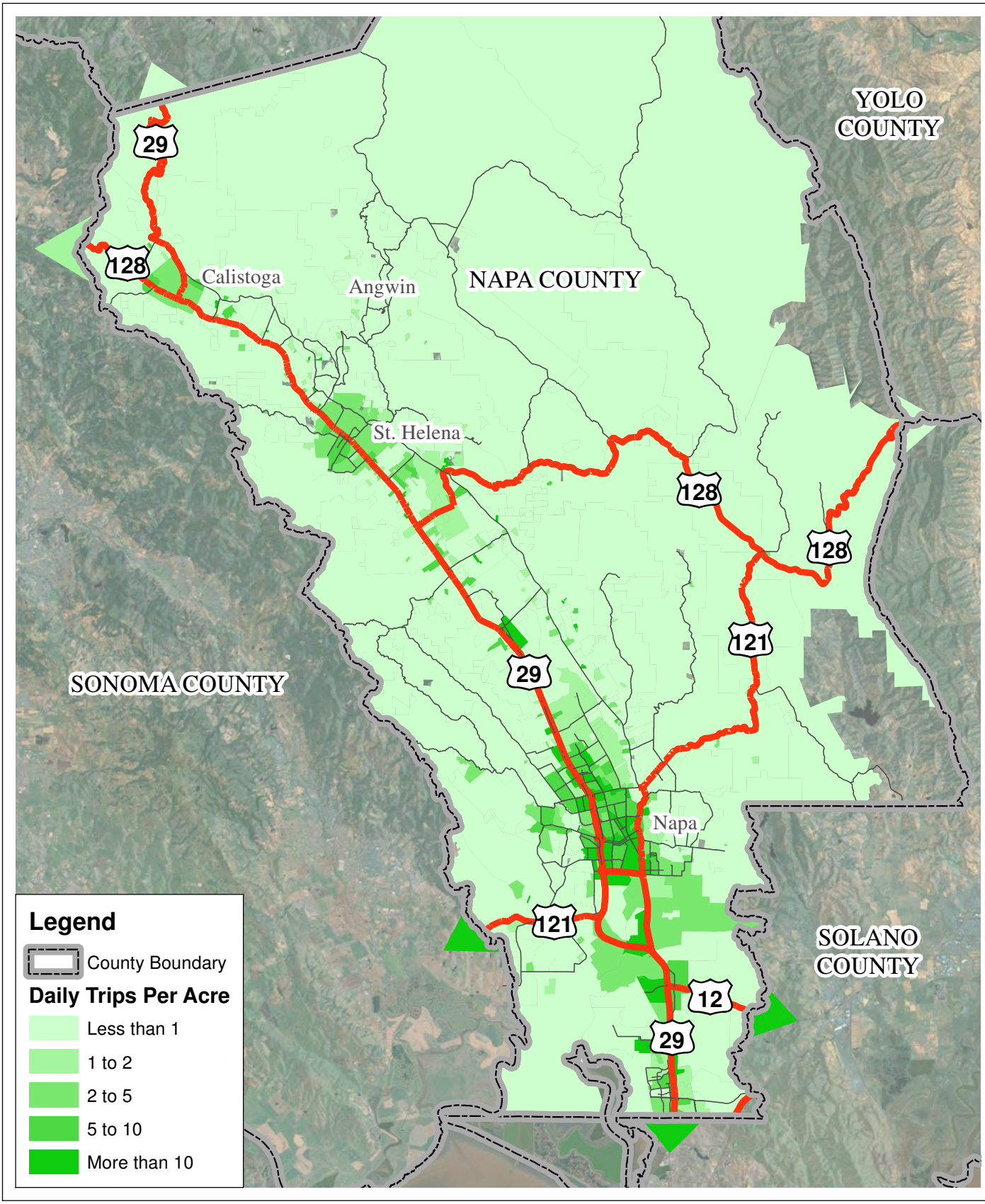
The trip origin and trip destination information from the mobile device data collection effort was used to create various heat maps showing the relative magnitude of trips generated by each TAZ. The relative magnitude of Friday daily trip origins is shown on **Figure 3**.

While heat maps provide an effective way to display the relative magnitude of trip generation, they are unable to display the directionality and overall pattern of the generated trips. Therefore, a series of desire line maps were also created to supplement this information.

County of Origin Maps

The trip origin and trip destination information from the mobile device data collection effort was also used to create county of origin maps for each of the six major external gateways locations. These maps show the percentage of total trips that passed through each external gateway by the county the observed inbound trip originated. For example, **Figures 4** illustrates that based on the mobile device data 44% of inbound trips on SR 29 North of American Canyon Road originated in Solano County while 18% originated in Contra Costa County. County of origin maps for each of the six major external gateway locations listed below are shown on **Figures 4 through 9**.

- Location 1: SR 29 – North of American Canyon Road
- Location 2: SR 12 - Napa/Solano County Line
- Location 7: SR 121 – Sonoma/Napa County Line
- Location 8: SR 128 - East of SR 121
- Location 6: SR 128 – Sonoma/Napa County Line
- Location 5: SR 29 – Napa/Lake County Line



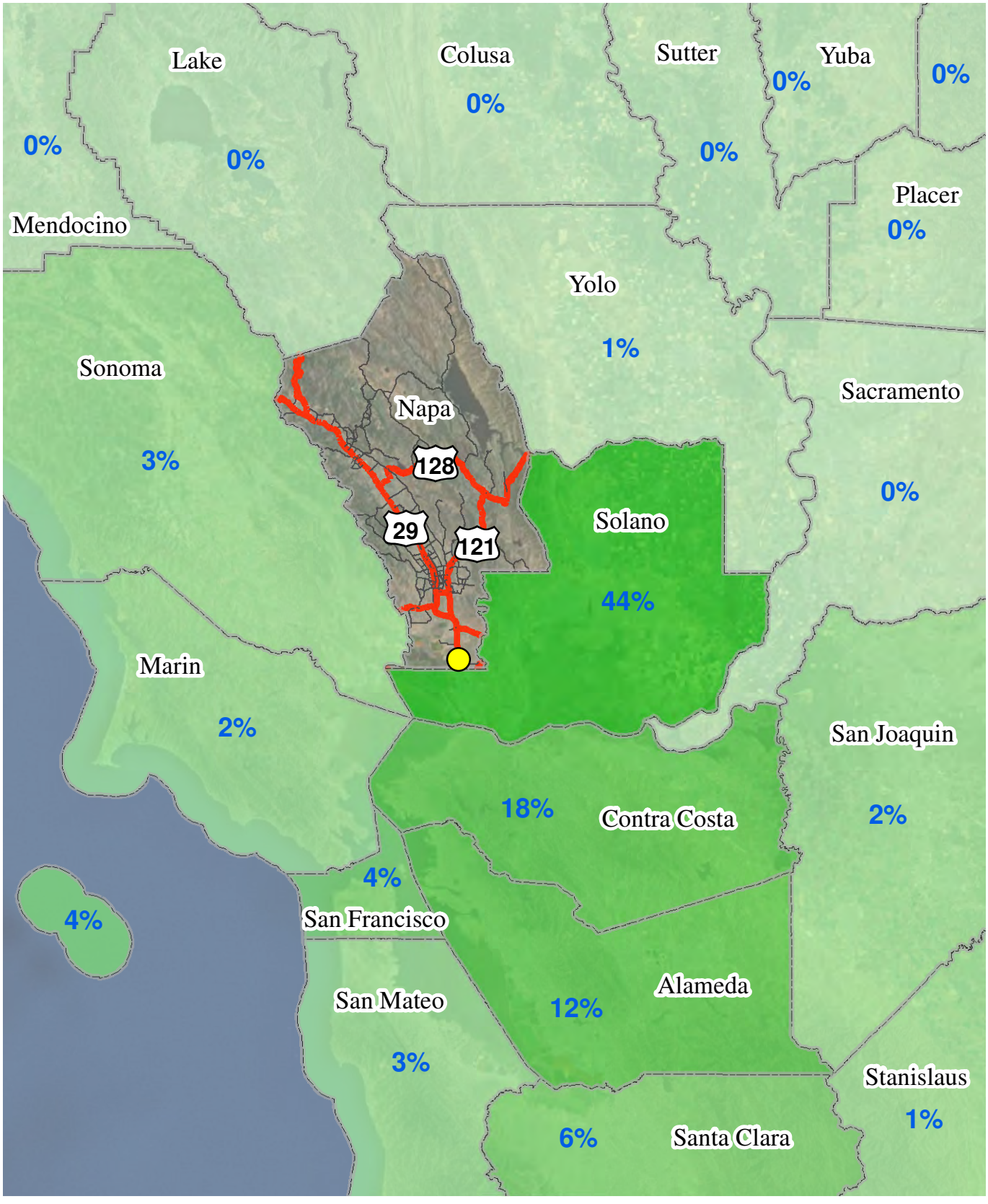
N

Not to Scale

FEHR & PEERS

HEAT MAP OF FRIDAY DAILY TRIP ORIGINS
NAPA VALLEY TRAVEL BEHAVIOR STUDY

FIGURE 3



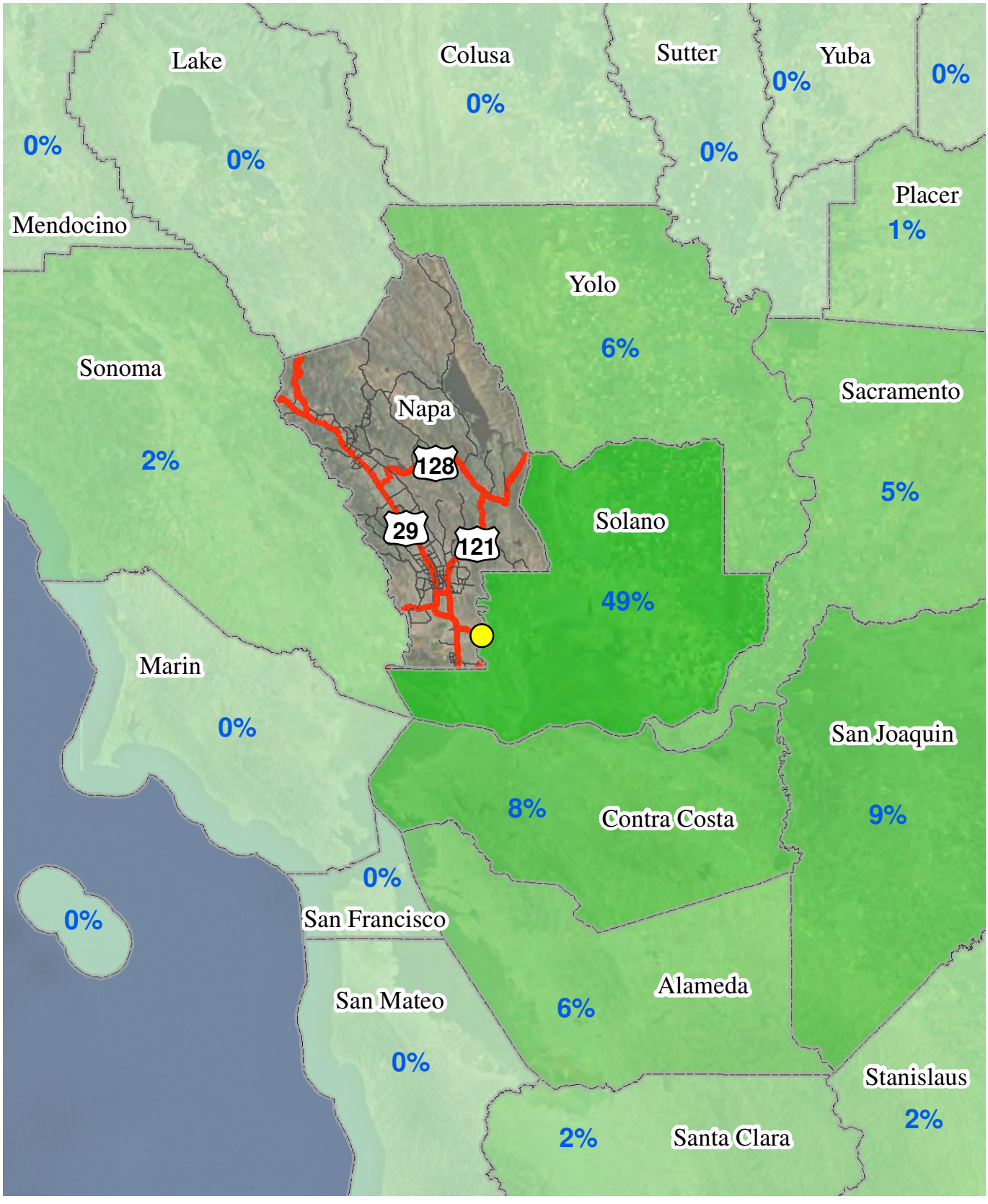
Not to Scale

COUNTY OF ORIGIN FOR TRIPS ON SR 29 NORTH OF AMERICAN CANYON ROAD

FEHR & PEERS

NAPA VALLEY TRAVEL BEHAVIOR STUDY

FIGURE 4



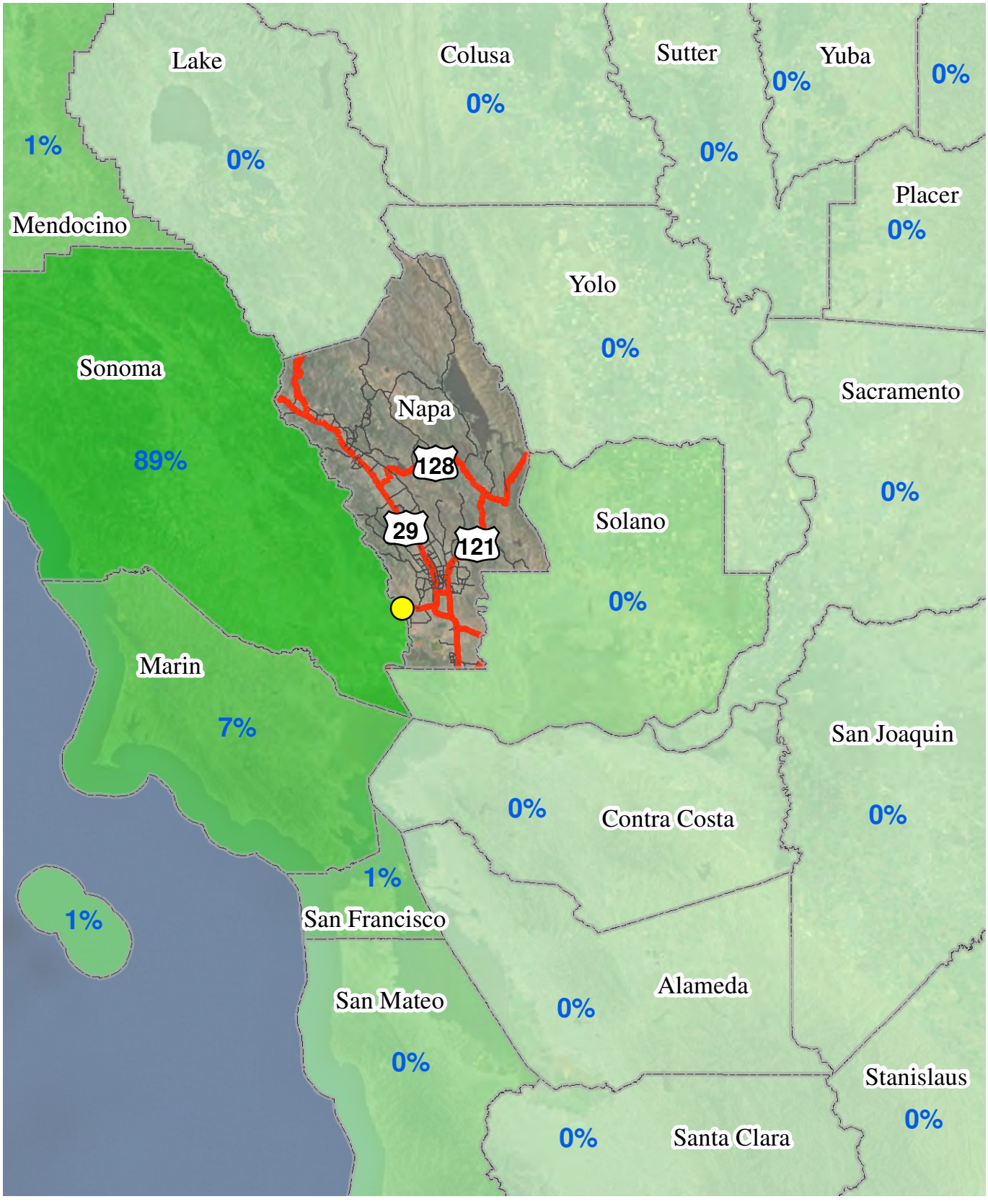
Not to Scale

COUNTY OF ORIGIN FOR TRIPS ON SR 12 AT THE NAPA/SOLANO COUNTY LINE

NAPA VALLEY TRAVEL BEHAVIOR STUDY

FIGURE 5

FEHR & PEERS



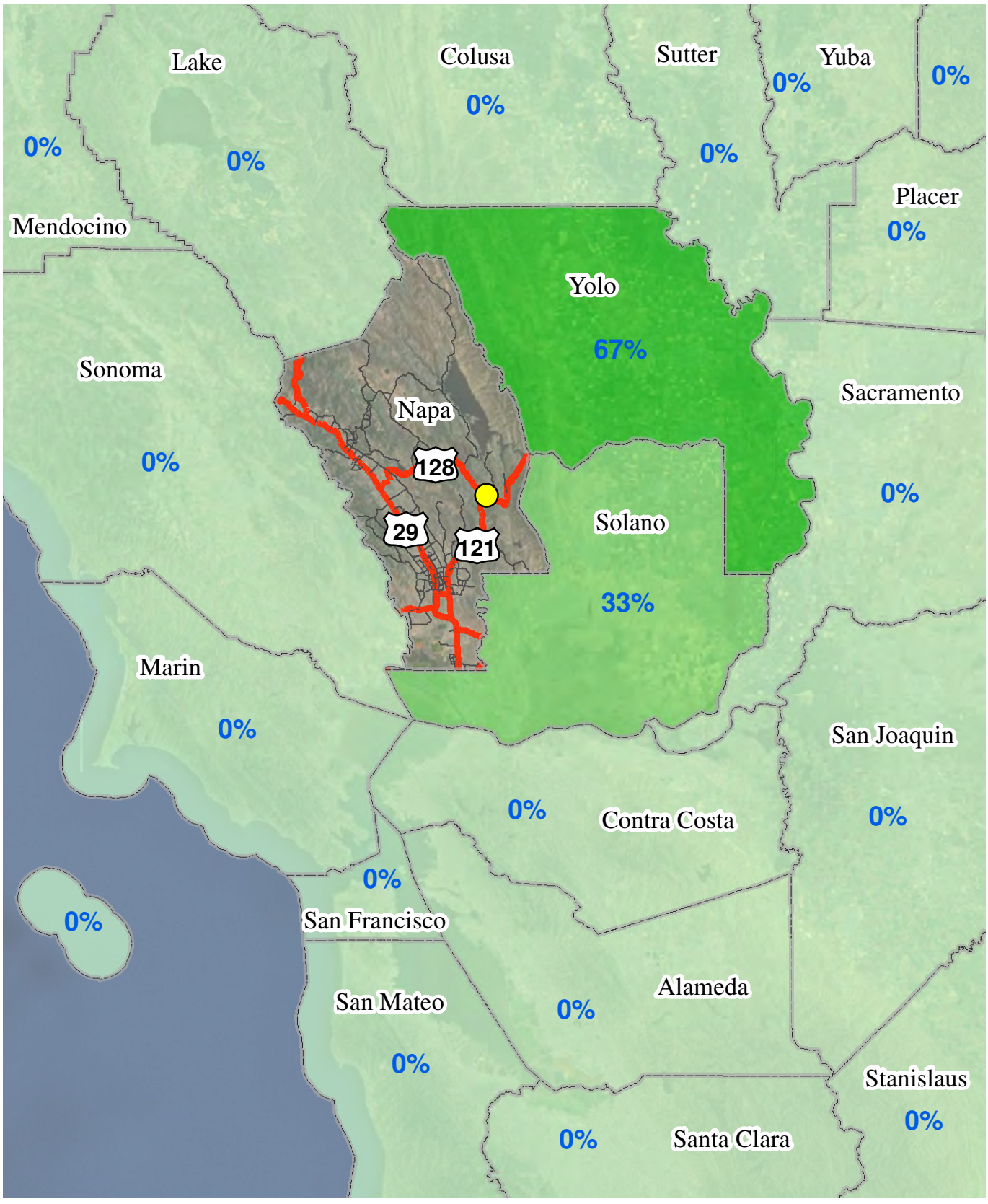
Not to Scale

COUNTY OF ORIGIN FOR TRIPS ON SR 121 AT THE NAPA/SONOMA COUNTY LINE

FEHR & PEERS

NAPA VALLEY TRAVEL BEHAVIOR STUDY

FIGURE 6

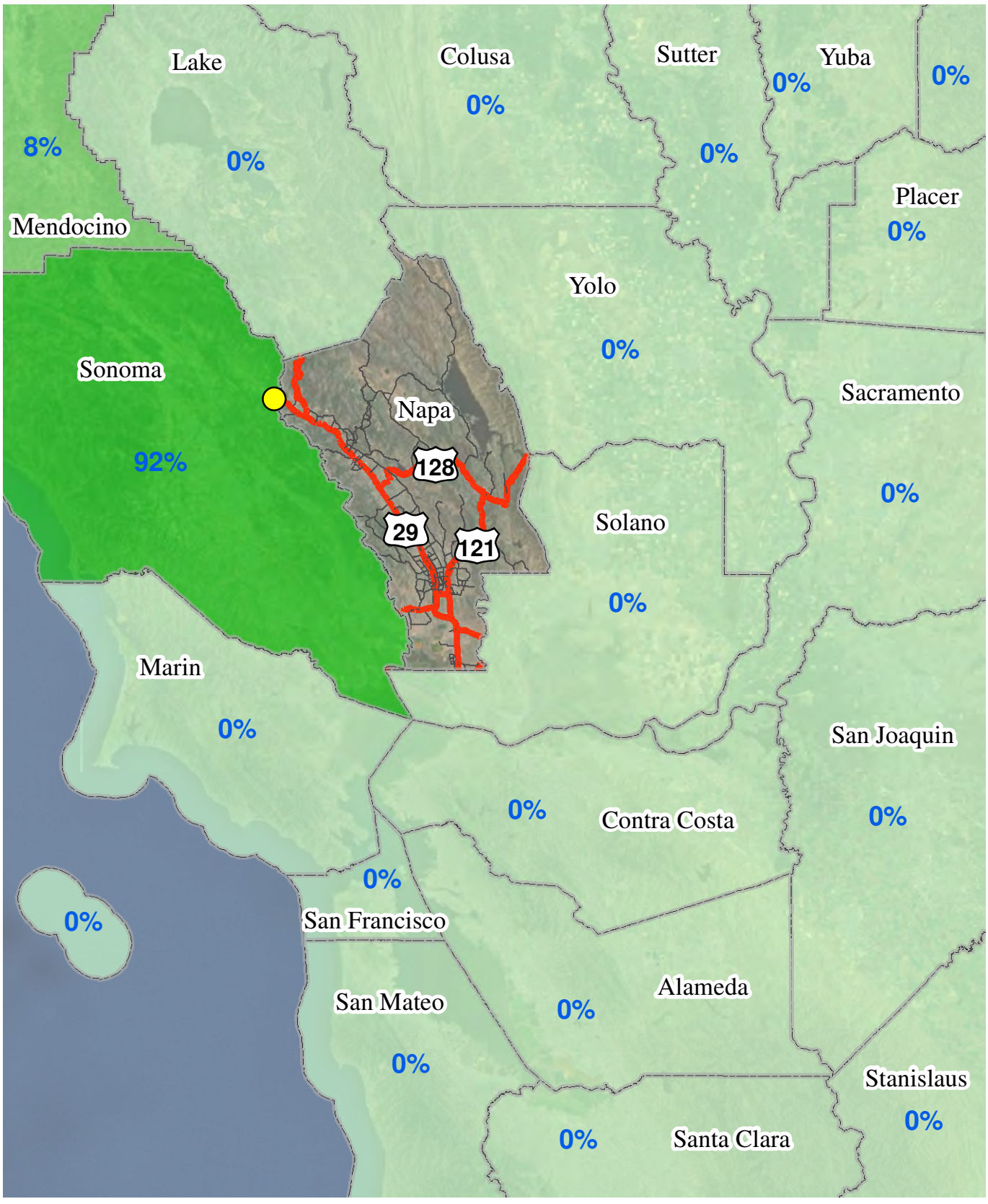


Not to Scale

FEHR & PEERS

COUNTY OF ORIGIN FOR TRIPS ON SR 128 EAST OF SR 121
NAPA VALLEY TRAVEL BEHAVIOR STUDY

FIGURE 7



N

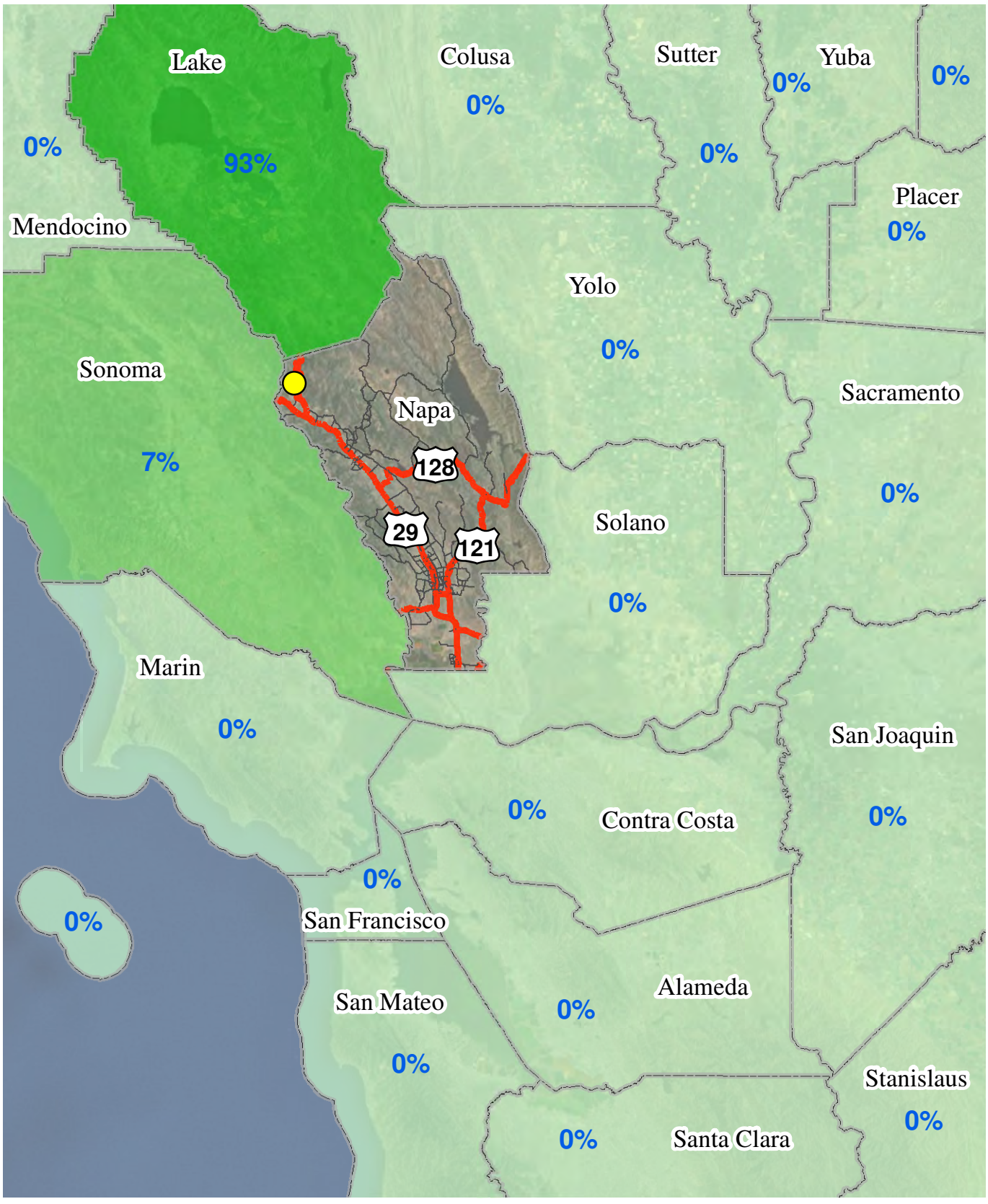
Not to Scale

COUNTY OF ORIGIN FOR TRIPS ON SR 128 AT THE NAPA/SONOMA COUNTY LINE

FEHR & PEERS

NAPA VALLEY TRAVEL BEHAVIOR STUDY

FIGURE 8



Not to Scale

COUNTY OF ORIGIN FOR TRIPS ON SR 29 AT THE NAPA/LAKE COUNTY LINE

NAPA VALLEY TRAVEL BEHAVIOR STUDY

FIGURE 9

FEHR & PEERS

7. CONCLUSIONS

SUMMARY OF STUDY APPROACH

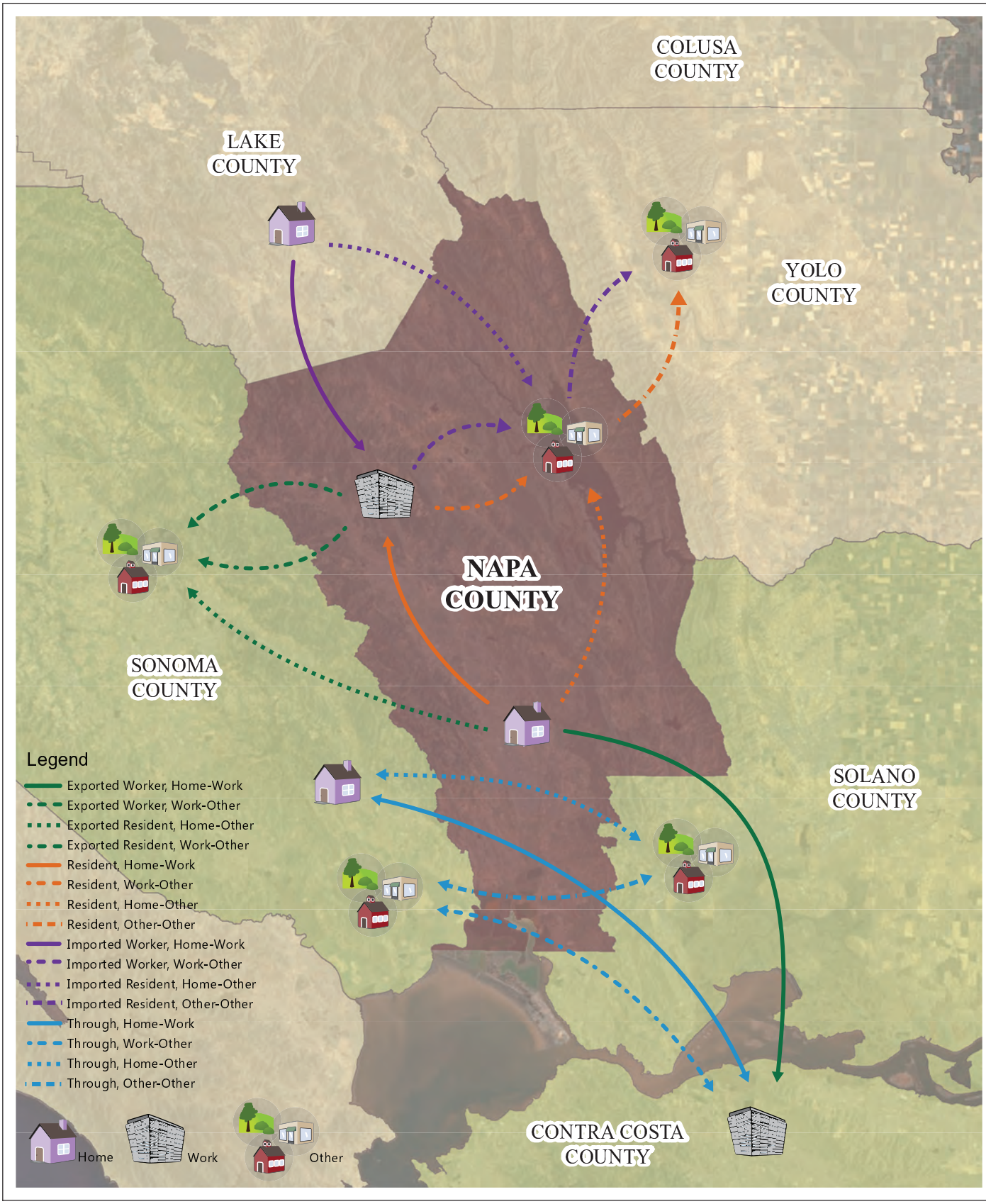
The vehicle classification count data collected as part of the Napa County Travel Behavior Study provided the total number of vehicles (by class and time period) passing through each of the Napa County regional external gateways and on four roadways within Napa County, providing a control total for other data collection methods but very little information about the travel characteristics or demographic information of the observed trips. Winery regression analysis was also performed to predict the total winery trip generation within Napa County, providing an additional control total for other data collection methods.

When coupled with license plate matching data, limited trip type information was inferred based on the number of observations, direction of travel, and time of day. For instance, the number of through trips was identified when license plates were observed at two different regional external gateways. Likewise, a rough estimate of exported trips was obtained when license plate numbers were observed leaving the region in the morning and returning through the same regional gateway in the late afternoon or evening. However, only limited information on inter-regional travel was obtained, while no information was obtained about trips that had their origin and destination within Napa County or about the demographic characteristics of the driver and their household.

In order to gather more detailed travel characteristics for all types of trips that occur within Napa County, three types of surveys were conducted. An in-person survey was conducted at 13 wineries in Napa County, an online survey was provided to major employers in Napa County, and a vehicle intercept mail survey was conducted. The surveys provided detailed information on the trip making and travel characteristics of a sample of residents, visitors, winery patrons, students, and employees who live, work, and visit Napa County. However, as discussed in Chapter 5, the surveys provided a limited amount of sample data at a very high cost with a high potential for error.

When combined, the four data collection methods provided valuable, but limited, information regarding the imported, exported, and through regional trip types illustrated on **Figure 10**, but provided limited information regarding the four types of internal resident trips. To supplement and compliment this data, mobile device data was obtained from INRIX and StreetLight Data, which provided information about all 16 regional trip types illustrated on **Figure 10**. While this data had advantages over the other four data collection methods, such as having a very large sample size at a relatively low cost per sample and being less reliant on observed field data and user responses which can potentially introduce error, the method required a lot of inference and lacked the ability to obtain demographic characteristics.

Therefore, data from all five data collection methods was used, with the data for each individual method being compiled into separate datasets for comparison with and integration into NSTDM. The resulting data was provided in a format nearly identical to trip tables from the NSTDM, and offered a substantial amount of real-life origin and destination-level travel data to supplement the CHTS for base year calibration and validation purposes.



Not to Scale

FEHR & PEERS

REGIONAL TRIP TYPES CAPTURED
NAPA VALLEY TRAVEL BEHAVIOR STUDY

FIGURE 10

CONCLUSIONS

The Napa County Travel Behavior Study provides NCTPA with several data sets. The resulting data will provide NCTPA and its member jurisdictions the basis for future planning efforts. Such uses may include but are not limited to the refinement of the Napa-Solano Travel Demand Model (NSTDM) and the update of the Countywide Transportation Plan. The data put forth in this study is to provide a data set for specific plans or projects that need baseline data. Data highlights that may be useful for future planning efforts include:

Vehicle Classification Counts

- Of the 181,330 total observed vehicles approximately 23% and 28% were counted during the 4 hour AM and PM peak periods, respectively, while approximately 6% and 7% were counted during the AM (7 to 8 AM) and PM (5 to 6 PM) peak hours, respectively.
- In the AM Peak Period (6 to 10 AM) 58% of total trips are inbound (including pass-through trips).
- In the PM Peak Period (3 to 7 PM) 56% of total trips are outbound (including pass-through trips).

Winery Regression Analysis

- The winery regression analysis estimated total daily vehicles trip generation of all wineries in Napa County is 52,245 for Thursday, 62,217 for Friday, and 54,713 for Saturday.

License Plate Matching

- Approximately 9% of daily trips at Napa County external gateways are pass-through trips.
- 41% of daily trips are imported trips and 27% are exported trips.
- 25% of traffic coming in to Napa County is imported work trips.
- 23% of traffic was one-way (it can be assumed that a portion of this traffic is visitors to the county but is difficult to quantify based solely on license plate matching).
- A vast majority (approximately 52%) of Napa County pass-through traffic travels between SR 121 at the Napa/Sonoma county line and SR 12 at the Napa/Solano county line. Approximately 22% and 28% of daily pass-through trips between these two locations occur during the AM (6 to 10 AM) and PM (3 PM to 7 PM) peak periods, respectively.
- In the AM Peak Period (6 to 10 AM) 56% of total trips are inbound (including pass-through trips), very closely matching the vehicle classification count data.
- In the PM Peak Period (3 to 7 PM) 56% of total trips are outbound (including pass-through trips), very closely matching the vehicle classification count data.

- It was estimated that 21% of total daily trips into Napa County were "visitor" trips, a number four percentage points higher than the percentage of visitor trips from the vehicle intercept survey. However, visitors to Napa County are likely underrepresented in the vehicle intercept survey as potential respondents who live or work in Napa County are generally considered to be more likely to complete the survey.

Surveys

- Only 21% of winery patrons were from the Bay Area, 10% of patrons were from outside the United States.
- 35% of winery patrons started their day in Napa County, 23% of patrons started their day in San Francisco County.
- 71% of employer survey respondents live in Napa County.
- 51% of employer survey respondents live in the City of Napa.
- 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 said they carpooled in one form or another.
- 35% of employee survey respondents said they have flexible schedules that allow them to alter their commute times.
- 43% of employee survey respondents said they would use public transit if services was expanded and it became a reasonable option.
- 97% of employee survey respondents use their personal automobile to commute more than half the time.
- 37% of vehicle intercept survey trips ended in the City of Napa, 19% in the city of St. Helena, and 7% in the city of Calistoga.
- 17% of vehicle intercept survey respondents said they were visitors to Napa County. However, visitors to Napa County are likely underrepresented as potential respondents who live or work in Napa County are generally considered to be more likely to complete the survey.
- 21% of vehicle intercept survey trips were said to be made "less than one time per month", likely indicating visitor trips, consistent with the license plate matching data.
- Sonoma , Solano, Lake, and Contra Costa are the counties where most trips are originating.

Mobile Device Data

- 55% of trips had both their origin and their destination within Napa County.
- 9% of trips were pass-through trips, consistent with the license plate matching data.
- Approximately 345,000, 362,000, and 160,000 daily personal automobile vehicle trips were generated within Napa County on an average Monday to Thursday weekday, Friday, and Saturday, respectively.
- Approximately 16,900, 17,600, and 5,200 daily commercial vehicle trips were generated within Napa County on an average Monday to Thursday weekday, Friday, and Saturday, respectively.

APPENDIX A:
VEHICLE CLASSIFICATION COUNTS

Appendix A - Vehicle Classification Counts Tabular Summary

1) SR 29 – North of American Canyon Rd	Northbound (Inbound)																							
		Hour																						
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	25,607	204	96	95	148	386	1,005	1,771	1,588	1,421	1,451	1,447	1,487	1,582	1,685	1,639	1,496	1,721	1,537	1,238	959	878	706	701	366
Medium	656	0	3	4	2	13	24	39	60	59	81	61	55	49	39	52	36	24	13	12	13	4	1	4	8
Heavy	580	4	6	1	6	17	24	51	53	39	52	74	31	63	39	34	24	17	12	12	3	8	6	2	2
Bus	75	0	0	0	0	0	1	2	4	5	7	11	4	3	7	2	9	5	2	7	1	1	3	0	1
'Pedal Bike (Road)'	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
'Motor Bike'	63	0	0	0	0	0	0	1	5	5	0	1	8	5	9	10	6	7	4	1	1	0	0	0	0
1) SR 29 – North of American Canyon Rd NB	**26,982**	**208**	**105**	**100**	**156**	**416**	**1,054**	**1,864**	**1,710**	**1,530**	**1,591**	**1,594**	**1,585**	**1,702**	**1,779**	**1,737**	**1,571**	**1,774**	**1,568**	**1,270**	**977**	**891**	**716**	**707**	**377**
Caltrans 2011 Two-Way AADT Count Divided by 2	21,500							AM Peak Period	*6,695*								PM Peak Period	*6,183*						

1) SR 29 – North of American Canyon Rd	Southbound (Outbound)																							
		Hour																						
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	24,560	316	164	106	153	241	496	771	983	1,119	1,154	1,254	1,328	1,496	1,542	1,780	1,792	1,747	1,774	1,856	1,275	925	807	845	636
Medium	578	1	1	1	0	11	23	31	25	42	46	64	47	54	57	33	29	44	32	16	10	7	3	1	0
Heavy	621	2	4	2	2	13	25	30	29	47	51	62	69	55	60	41	49	27	12	15	15	2	3	2	4
Bus	101	1	0	0	0	3	3	8	4	4	10	4	4	14	4	8	8	7	8	3	3	1	0	4	0
'Pedal Bike (Road)'	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
'Motor Bike'	37	0	0	0	0	0	0	3	0	3	4	4	2	2	3	0	6	6	4	0	0	0	0	0	0
1) SR 29 – North of American Canyon Rd SB	**25,899**	**320**	**169**	**109**	**155**	**268**	**547**	**843**	**1,041**	**1,215**	**1,265**	**1,388**	**1,450**	**1,622**	**1,667**	**1,862**	**1,884**	**1,831**	**1,830**	**1,890**	**1,303**	**935**	**813**	**852**	**640**
Caltrans 2011 Two-Way AADT Count Divided by 2	21,500							AM Peak Period	*4,364*								PM Peak Period	*7,435*						

2) SR 12 - Napa/Solano County Line	Westbound (Inbound)																							
		Hour																						
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	14,534	51	45	37	78	224	772	1,145	1,065	854	883	837	851	790	897	790	785	795	1,001	842	506	421	359	330	176
Medium	398	0	1	2	14	7	15	58	16	30	30	49	38	29	37	10	27	13	3	9	3	0	4	2	1
Heavy	774	5	4	6	5	18	46	64	66	69	89	91	77	77	46	15	8	22	21	16	16	3	4	4	2
Bus	24	0	1	0	0	0	3	3	1	3	1	1	1	2	1	2	0	2	0	1	0	0	1	0	1
'Pedal Bike (Road)'	5	0	0	1	0	0	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
'Motor Bike'	29	0	0	0	0	1	0	2	3	2	0	3	5	3	2	3	1	3	0	1	0	0	0	0	0
2) SR 12 - Napa/Solano County Line WB	**15,764**	**56**	**51**	**46**	**97**	**250**	**836**	**1,272**	**1,154**	**958**	**1,003**	**982**	**972**	**901**	**983**	**820**	**821**	**835**	**1,025**	**869**	**525**	**424**	**368**	**336**	**180**
Caltrans 2011 Two-Way AADT Count Divided by 2	15,750							AM Peak Period	*4,387*								PM Peak Period	*3,550*						

2) SR 12 - Napa/Solano County Line	Eastbound (Outbound)																							
		Hour																						
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	14,489	85	54	51	60	116	264	594	764	694	699	725	834	852	1,003	1,034	1,052	1,045	1,162	1,131	888	408	318	351	305
Medium	373	2	2	3	2	5	5	10	19	22	27	32	35	39	42	33	33	13	13	16	6	6	4	3	1
Heavy	939	10	6	9	19	28	20	35	29	62	72	73	117	97	69	72	47	48	50	31	19	16	2	7	1
Bus	24	0	0	0	0	0	0	1	0	0	0	1	1	1	4	3	5	3	1	2	0	0	0	2	0
'Pedal Bike (Road)'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
'Motor Bike'	50	0	0	0	0	0	0	0	4	2	2	4	4	4	5	7	6	4	5	2	0	1	0	0	0
2) SR 12 - Napa/Solano County Line EB	**15,875**	**97**	**62**	**63**	**81**	**149**	**289**	**640**	**816**	**780**	**800**	**835**	**991**	**993**	**1,123**	**1,149**	**1,143**	**1,113**	**1,231**	**1,182**	**913**	**431**	**324**	**363**	**307**
Caltrans 2011 Two-Way AADT Count Divided by 2	15,750							AM Peak Period	*3,036*								PM Peak Period	*4,669*						

3) SR 29 – Southeast of Adams St in St. Helena	Northbound (Not Gateway)																							
		Hour																						
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	7,759	47	38	20	13	35	89	354	486	477	478	491	457	475	485	473	500	457	504	426	337	310	350	273	184
Medium	255	0	0	1	4	5	16	16	25	17	27	29	27	21	19	17	11	9	3	2	1	1	4	0	0
Heavy	113	1	0	1	0	1	5	6	16	6	9	14	12	9	6	10	7	4	0	4	1	1	0	0	0
Bus	55	0	0	1	0	1	2	5	5	4	3	1	5	2	0	4	3	5	4	3	3	1	2	1	0
'Pedal Bike (Road)'	10	0	0	0	0	0	0	0	0	1	1	1	1	1	0	1	1	3	0	0	0	0	0	0	0
'Motor Bike'	15	0	0	0	0	0	0	1	0	0	2	1	3	1	3	1	2	1	0	0	0	0	0	0	0
3) SR 29 – Southeast of Adams St in St. Helena NB	**8,207**	**48**	**38**	**23**	**17**	**42**	**112**	**382**	**532**	**505**	**520**	**537**	**505**	**509**	**513**	**506**	**524**	**479**	**511**	**435**	**342**	**313**	**356**	**274**	**184**
Caltrans 2011 Two-Way AADT Count Divided by 2	8,950							AM Peak Period	*1,939*								PM Peak Period	*1,949*						

Appendix A - Vehicle Classification Counts Tabular Summary

3) SR 29 – Southeast of Adams St in St. Helena	Southbound (Not Gateway)																								
		Hour																							
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	7,266	50	15	14	14	36	117	270	444	448	425	457	434	511	498	472	445	462	581	506	375	224	161	161	146
Medium	238	0	0	0	2	4	8	20	28	21	17	19	31	23	13	16	12	7	7	3	5	1	0	1	0
Heavy	123	1	0	0	3	1	5	4	12	11	8	12	16	6	14	6	6	6	6	3	3	0	0	0	0
Bus	58	0	0	0	0	0	1	1	6	4	3	4	0	3	4	2	8	3	7	3	2	2	2	3	0
'Pedal Bike (Road)'	10	0	0	0	0	0	1	0	0	0	2	4	1	0	0	0	0	1	0	0	0	0	0	1	0
'Motor Bike'	15	0	0	0	0	0	0	1	1	0	0	1	1	3	3	3	2	0	0	0	0	0	0	0	0
3) SR 29 – Southeast of Adams St in St. Helena SB	**7,710**	**51**	**15**	**14**	**19**	**41**	**132**	**296**	**491**	**484**	**455**	**497**	**483**	**546**	**532**	**499**	**473**	**479**	**601**	**515**	**385**	**227**	**163**	**166**	**146**
Caltrans 2011 Two-Way AADT Count Divided by 2	8,950									AM Peak Period	*1,726*								PM Peak Period	*2,068*				

4) SR 29 – Southeast of SR 128 in Calistoga	Northbound (Not Gateway)																								
		Hour																							
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	6,305	32	22	15	4	13	45	119	204	295	291	303	352	418	428	478	618	678	660	405	243	192	193	161	136
Medium	206	1	0	0	1	3	3	10	27	9	8	23	25	22	14	16	10	15	6	4	2	0	4	0	3
Heavy	83	1	0	0	0	1	9	3	4	4	16	7	7	6	3	4	1	6	3	4	0	3	1	0	0
Bus	41	0	0	0	0	0	0	2	6	3	1	2	2	3	1	2	2	6	0	6	3	0	1	1	0
'Pedal Bike (Road)'	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
'Motor Bike'	9	0	0	0	0	0	0	0	0	0	1	1	0	2	0	2	0	2	1	0	0	0	0	0	0
4) SR 29 – Southeast of SR 128 in Calistoga NB	**6,646**	**34**	**22**	**15**	**5**	**17**	**57**	**134**	**242**	**311**	**317**	**336**	**386**	**451**	**446**	**502**	**631**	**707**	**671**	**419**	**248**	**195**	**199**	**162**	**139**
Caltrans 2011 Two-Way AADT Count Divided by 2	6,250									AM Peak Period	*1,004*								PM Peak Period	*2,428*				

4) SR 29 – Southeast of SR 128 in Calistoga	Southbound (Not Gateway)																								
		Hour																							
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	6,114	18	7	11	10	37	137	458	585	538	392	377	351	374	398	388	406	385	387	292	184	106	105	113	55
Medium	189	0	0	1	1	4	8	11	20	15	18	15	20	13	12	8	9	6	3	13	4	6	0	2	0
Heavy	75	1	1	0	2	4	1	3	7	9	6	5	10	4	4	2	6	1	2	3	3	1	0	0	0
Bus	42	0	0	0	0	0	1	3	6	1	4	1	1	2	3	2	6	5	3	3	0	0	0	1	0
'Pedal Bike (Road)'	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	2	0	0	0	0	0	0	0
'Motor Bike'	12	0	0	0	0	0	0	0	0	1	0	1	1	0	4	5	0	0	0	0	0	0	0	0	0
4) SR 29 – Southeast of SR 128 in Calistoga SB	**6,437**	**19**	**8**	**12**	**13**	**45**	**147**	**475**	**618**	**564**	**420**	**399**	**384**	**393**	**421**	**406**	**428**	**399**	**395**	**311**	**191**	**113**	**105**	**116**	**55**
Caltrans 2011 Two-Way AADT Count Divided by 2	6,250									AM Peak Period	*2,077*								PM Peak Period	*1,533*				

5) SR 29 – Napa/Lake County Line	Southbound (Inbound)																								
		Hour																							
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	3,571	14	11	13	22	82	142	328	366	302	242	232	207	210	190	182	196	196	182	101	104	74	85	49	41
Medium	81	0	1	0	3	0	3	2	3	7	7	0	4	6	4	7	7	10	5	10	1	0	1	0	0
Heavy	50	1	0	0	1	2	2	2	2	2	4	7	5	3	5	7	3	1	1	1	0	1	0	0	0
Bus	8	0	0	0	0	0	0	2	1	1	0	0	0	0	1	1	0	1	0	0	0	0	1	0	0
'Pedal Bike (Road)'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
'Motor Bike'	20	0	0	0	0	0	0	1	0	3	0	2	1	6	4	1	2	0	0	0	0	0	0	0	0
5) SR 29 – Napa/Lake County Line SB	**3,730**	**15**	**12**	**13**	**26**	**84**	**147**	**335**	**372**	**315**	**253**	**241**	**217**	**225**	**204**	**198**	**208**	**208**	**188**	**112**	**105**	**75**	**87**	**49**	**41**
Caltrans 2011 Two-Way AADT Count Divided by 2	3,700									AM Peak Period	*1,275*								PM Peak Period	*716*				

5) SR 29 – Napa/Lake County Line	Northbound (Outbound)																								
		Hour																							
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	4,096	38	24	12	5	14	26	53	76	80	119	137	162	186	218	286	370	499	566	420	261	168	161	146	69
Medium	84	0	0	0	1	0	3	4	9	5	2	5	4	4	4	3	6	9	1	11	11	0	1	1	0
Heavy	51	1	0	0	4	2	9	3	7	4	2	2	1	7	2	4	0	1	2	0	0	0	0	0	0
Bus	7	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	1	2	0	0	0	0	1	0
'Pedal Bike (Road)'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
'Motor Bike'	17	0	0	0	0	0	0	0	0	0	1	1	8	1	3	0	0	1	0	2	0	0	0	0	0
5) SR 29 – Napa/Lake County Line NB	**4,255**	**39**	**24**	**12**	**10**	**16**	**38**	**60**	**92**	**89**	**124**	**147**	**175**	**198**	**227**	**293**	**377**	**511**	**571**	**433**	**272**	**168**	**162**	**148**	**69**
Caltrans 2011 Two-Way AADT Count Divided by 2	3,700									AM Peak Period	*365*								PM Peak Period	*1,892*				

Appendix A - Vehicle Classification Counts Tabular Summary

6) SR 128 – Sonoma/Napa County Line	Southbound (Inbound)																								
		Hour																							
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	1,082	3	3	1	4	1	13	69	72	56	55	59	70	64	65	74	82	106	102	73	27	21	33	16	13
Medium	37	0	0	0	0	0	0	2	2	3	4	1	6	6	1	3	2	1	2	1	2	0	1	0	0
Heavy	5	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0
Bus	3	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
'Pedal Bike (Road)'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
'Motor Bike'	6	0	0	0	0	0	0	0	1	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	0
6) SR 128 – Sonoma/Napa County Line SB	**1,133**	**3**	**3**	**1**	**4**	**1**	**13**	**71**	**76**	**60**	**60**	**62**	**78**	**71**	**67**	**78**	**86**	**108**	**104**	**74**	**29**	**21**	**34**	**16**	**13**
Caltrans 2011 Two-Way AADT Count Divided by 2	1,275									AM Peak Period	*267*							PM Peak Period	*372*				

6) SR 128 – Sonoma/Napa County Line	Northbound (Outbound)																								
		Hour																							
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	991	3	4	1	5	3	16	43	68	58	58	64	48	50	83	85	95	110	96	45	21	12	4	9	10
Medium	27	0	0	0	0	0	0	2	3	0	3	4	3	3	4	0	1	3	0	0	0	1	0	0	0
Heavy	3	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Bus	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
'Pedal Bike (Road)'	5	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3	0	0	0	0	0	0	0
'Motor Bike'	7	0	0	0	0	0	0	0	0	0	0	0	1	0	2	2	1	0	1	0	0	0	0	0	0
6) SR 128 – Sonoma/Napa County Line NB	**1,035**	**3**	**4**	**1**	**5**	**3**	**17**	**45**	**72**	**58**	**61**	**68**	**53**	**54**	**89**	**87**	**99**	**116**	**98**	**45**	**21**	**13**	**4**	**9**	**10**
Caltrans 2011 Two-Way AADT Count Divided by 2	1,275									AM Peak Period	*236*							PM Peak Period	*358*				

7) SR 121 – Sonoma/Napa County Line	Westbound (Outbound)																								
		Hour																							
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	13,849	86	30	28	34	102	339	994	914	871	711	660	740	654	829	909	959	1,194	1,451	851	462	359	249	259	164
Medium	492	0	0	1	1	8	18	35	44	40	28	54	42	31	40	34	49	24	21	7	7	3	2	3	0
Heavy	302	4	0	1	0	3	21	35	15	20	30	34	24	19	16	16	35	17	2	2	5	2	0	0	1
Bus	44	0	0	0	1	0	1	1	1	4	4	5	1	0	2	3	7	8	1	3	1	1	0	0	0
'Pedal Bike (Road)'	3	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0
'Motor Bike'	44	0	0	0	0	0	0	1	4	2	4	0	3	4	1	9	4	11	1	0	0	0	0	0	0
7) SR 121 – Sonoma/Napa County Line WB	**14,734**	**90**	**30**	**30**	**36**	**113**	**379**	**1,066**	**978**	**937**	**778**	**753**	**810**	**709**	**888**	**972**	**1,054**	**1,254**	**1,476**	**863**	**475**	**365**	**251**	**262**	**165**
Caltrans 2011 Two-Way AADT Count Divided by 2	12,500									AM Peak Period	*3,759*							PM Peak Period	*4,647*				

7) SR 121 – Sonoma/Napa County Line	Eastbound (Inbound)																								
		Hour																							
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	14,601	72	57	29	51	91	230	588	1,084	970	826	815	854	840	981	1,085	1,175	1,133	1,068	919	586	363	282	303	199
Medium	458	0	0	0	1	9	10	25	33	28	37	52	44	38	37	36	29	22	18	4	6	1	5	8	15
Heavy	286	0	0	1	13	8	7	21	15	21	31	20	30	21	23	21	16	10	6	2	6	3	3	5	3
Bus	45	1	0	0	1	0	0	0	5	0	2	10	3	3	1	8	4	3	1	0	0	0	1	2	0
'Pedal Bike (Road)'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
'Motor Bike'	65	0	0	0	0	0	0	3	1	8	4	6	1	6	2	4	3	5	7	0	15	0	0	0	0
7) SR 121 – Sonoma/Napa County Line EB	**15,455**	**73**	**57**	**30**	**66**	**108**	**247**	**637**	**1,138**	**1,027**	**900**	**903**	**932**	**908**	**1,044**	**1,154**	**1,227**	**1,173**	**1,100**	**925**	**613**	**367**	**291**	**318**	**217**
Caltrans 2011 Two-Way AADT Count Divided by 2	12,500									AM Peak Period	*3,702*							PM Peak Period	*4,425*				

8) SR 128 - East of SR 121	Westbound (Inbound)																								
		Hour																							
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	413	3	1	0	0	0	10	38	38	30	23	20	18	21	24	33	37	24	34	20	17	8	7	4	3
Medium	5	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	0	0	0	0	0
Heavy	9	0	0	0	0	0	0	0	1	2	2	0	2	0	0	1	0	0	0	1	0	0	0	0	0
Bus	4	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0
'Pedal Bike (Road)'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
'Motor Bike'	14	0	0	0	0	0	0	0	0	0	0	8	2	0	2	1	1	0	0	0	0	0	0	0	0
8) SR 128 - East of SR 121 WB	**445**	**3**	**1**	**0**	**0**	**0**	**10**	**38**	**39**	**32**	**30**	**29**	**24**	**21**	**26**	**35**	**38**	**24**	**35**	**21**	**17**	**8**	**7**	**4**	**3**
Caltrans 2011 Two-Way AADT Count Divided by 2	2,275									AM Peak Period	*139*							PM Peak Period	*118*				

Appendix A - Vehicle Classification Counts Tabular Summary

8) SR 128 - East of SR 121	Eastbound (Outbound)																								
		Hour																							
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	637	0	0	1	0	4	7	14	18	18	14	23	22	32	29	50	104	139	91	41	9	6	7	6	2
Medium	9	0	0	0	0	0	0	0	0	2	0	1	3	1	1	0	0	0	1	0	0	0	0	0	0
Heavy	21	0	0	1	0	0	0	4	0	1	3	3	0	3	2	2	1	0	1	0	0	0	0	0	0
Bus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
'Pedal Bike (Road)'	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
'Motor Bike'	11	0	0	0	0	0	0	0	0	0	2	0	1	0	0	1	4	3	0	0	0	0	0	0	0
8) SR 128 - East of SR 121 EB	**680**	**0**	**0**	**2**	**0**	**4**	**7**	**18**	**18**	**21**	**19**	**27**	**27**	**36**	**32**	**53**	**110**	**142**	**93**	**41**	**9**	**6**	**7**	**6**	**2**
Caltrans 2011 Two-Way AADT Count Divided by 2	2,275									AM Peak Period	*76*							PM Peak Period	*386*					

9) Spring Mountain Rd - Napa/Sonoma County Line	Westbound (Outbound)																								
		Hour																							
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	377	0	0	0	0	0	0	11	15	33	17	26	24	26	26	20	39	50	38	20	12	5	7	5	3
Medium	12	1	0	0	1	0	0	0	0	1	1	2	0	1	0	0	2	1	0	1	0	0	0	0	1
Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bus	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
'Pedal Bike (Road)'	3	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0
'Motor Bike'	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9) Spring Mountain Rd - Napa/Sonoma County Line WB	**393**	**1**	**0**	**0**	**1**	**0**	**0**	**11**	**15**	**34**	**18**	**29**	**24**	**29**	**26**	**20**	**41**	**52**	**38**	**21**	**12**	**5**	**7**	**5**	**4**
Caltrans 2011 Two-Way AADT Count Divided by 2	210									AM Peak Period	*78*							PM Peak Period	*152*					

9) Spring Mountain Rd - Napa/Sonoma County Line	Eastbound (Inbound)																								
		Hour																							
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	359	0	0	0	1	1	1	25	36	18	24	19	27	34	19	29	38	31	31	8	8	4	2	1	2
Medium	14	0	0	0	0	0	0	1	0	1	1	2	1	1	1	0	3	2	1	0	0	0	0	0	0
Heavy	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Bus	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
'Pedal Bike (Road)'	3	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0
'Motor Bike'	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
9) Spring Mountain Rd - Napa/Sonoma County Line EB	**380**	**0**	**0**	**0**	**1**	**1**	**1**	**26**	**36**	**19**	**26**	**21**	**29**	**37**	**20**	**30**	**42**	**34**	**32**	**8**	**8**	**4**	**2**	**1**	**2**
Caltrans 2011 Two-Way AADT Count Divided by 2	210									AM Peak Period	*107*							PM Peak Period	*116*					

10) Howell Mountain Road - South of Cold Springs Road	Northbound (Not Gateway)																								
		Hour																							
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	2,504	23	12	6	2	1	20	95	109	110	92	99	131	139	160	161	191	240	221	195	160	101	96	81	59
Medium	43	0	0	0	0	1	0	3	4	6	3	2	5	4	6	1	4	2	1	0	0	0	1	0	0
Heavy	10	0	0	0	0	0	1	1	2	0	1	2	1	1	0	0	0	1	0	0	0	0	0	0	0
Bus	3	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
'Pedal Bike (Road)'	3	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
'Motor Bike'	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	1	0	0	0	0	0	0
10) Howell Mountain Road - South of Cold Springs Road NB	**2,569**	**23**	**12**	**6**	**2**	**2**	**22**	**99**	**116**	**116**	**97**	**104**	**138**	**144**	**166**	**163**	**196**	**247**	**223**	**195**	**160**	**101**	**97**	**81**	**59**
Caltrans 2011 Two-Way AADT Count Divided by 2	1,047									AM Peak Period	*428*							PM Peak Period	*861*					

10) Howell Mountain Road - South of Cold Springs Road	Southbound (Not Gateway)																								
		Hour																							
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	2,531	12	2	2	2	14	45	143	211	196	144	125	143	197	225	249	209	168	147	99	68	30	43	40	17
Medium	45	0	0	0	0	0	0	4	2	7	2	4	3	5	5	4	3	2	0	1	0	1	2	0	0
Heavy	12	0	0	0	0	0	0	0	1	1	1	4	1	1	1	1	0	0	1	0	0	0	0	0	0
Bus	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
'Pedal Bike (Road)'	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0
'Motor Bike'	6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	3	1	0	0	0	0	0	0	0
10) Howell Mountain Road - South of Cold Springs Road SB	**2,600**	**12**	**2**	**2**	**2**	**14**	**45**	**147**	**216**	**204**	**147**	**133**	**147**	**203**	**231**	**258**	**216**	**172**	**148**	**100**	**68**	**31**	**45**	**40**	**17**
Caltrans 2011 Two-Way AADT Count Divided by 2	1,047									AM Peak Period	*714*							PM Peak Period	*636*					

Appendix A - Vehicle Classification Counts Tabular Summary

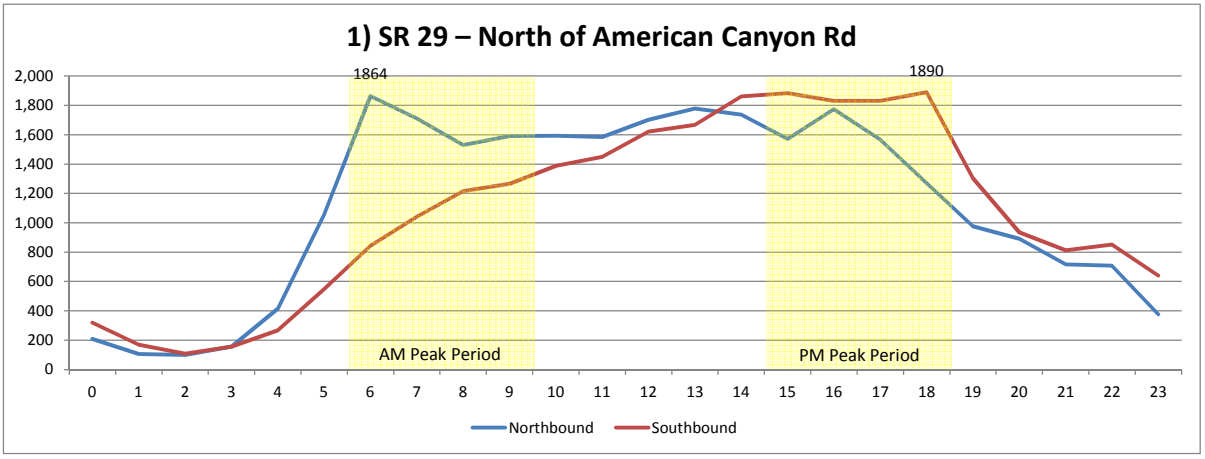
11) First St - West of SR 29		Westbound (Not Gateway)																						
		Hour																						
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	10,082	109	59	32	11	28	52	167	382	572	368	426	502	585	666	709	978	920	1,013	743	464	389	332	352	223
Medium	90	0	0	0	0	0	2	1	4	7	7	10	7	8	15	2	7	5	9	1	3	1	0	0	1
Heavy	19	0	0	0	0	1	0	2	2	2	1	3	2	2	3	0	0	0	0	0	0	0	1	0	0
Bus	28	0	0	0	0	0	0	1	4	1	2	5	1	0	2	2	6	2	2	0	0	0	0	0	0
'Pedal Bike (Road)'	14	0	0	0	0	0	1	0	1	2	1	1	0	2	0	0	0	1	3	1	0	0	1	0	0
'Motor Bike'	30	0	0	0	0	0	1	0	1	1	0	0	3	3	4	4	3	4	3	3	0	0	0	0	0
11) First St - West of SR 29 WB	**10,263**	**109**	**59**	**32**	**11**	**29**	**56**	**171**	**394**	**585**	**379**	**445**	**515**	**600**	**690**	**717**	**994**	**932**	**1,030**	**748**	**467**	**390**	**334**	**352**	**224**
Caltrans 2011 Two-Way AADT Count Divided by 2	9,183									AM Peak Period	*1,529*								PM Peak Period	*3,704*				

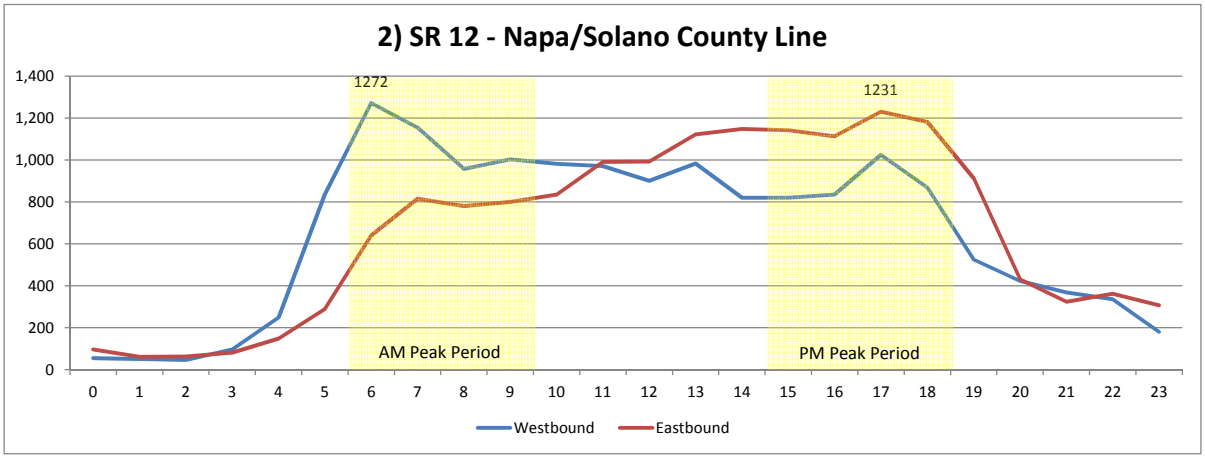
11) First St - West of SR 29		Eastbound (Not Gateway)																						
		Hour																						
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	10,040	30	24	15	22	97	234	448	845	941	646	573	572	606	587	665	769	656	622	542	399	277	219	153	98
Medium	112	0	0	0	1	0	3	1	6	6	10	10	12	16	9	12	8	4	8	3	1	1	0	1	0
Heavy	11	0	0	0	0	0	1	0	1	1	2	0	3	1	0	0	1	0	0	0	0	0	1	0	0
Bus	16	0	0	0	0	0	0	1	3	2	1	1	0	0	1	3	2	1	1	0	0	0	0	0	0
'Pedal Bike (Road)'	24	0	0	0	0	0	1	0	2	6	2	1	2	0	3	0	3	3	0	1	0	0	0	0	0
'Motor Bike'	31	0	0	0	0	0	0	2	4	2	2	1	6	5	0	3	4	2	0	0	0	0	0	0	0
11) First St - West of SR 29 EB	**10,234**	**30**	**24**	**15**	**23**	**97**	**239**	**452**	**861**	**958**	**663**	**586**	**595**	**628**	**600**	**683**	**787**	**666**	**631**	**546**	**400**	**278**	**220**	**154**	**98**
Caltrans 2011 Two-Way AADT Count Divided by 2	9,183									AM Peak Period	*2,934*								PM Peak Period	*2,630*				

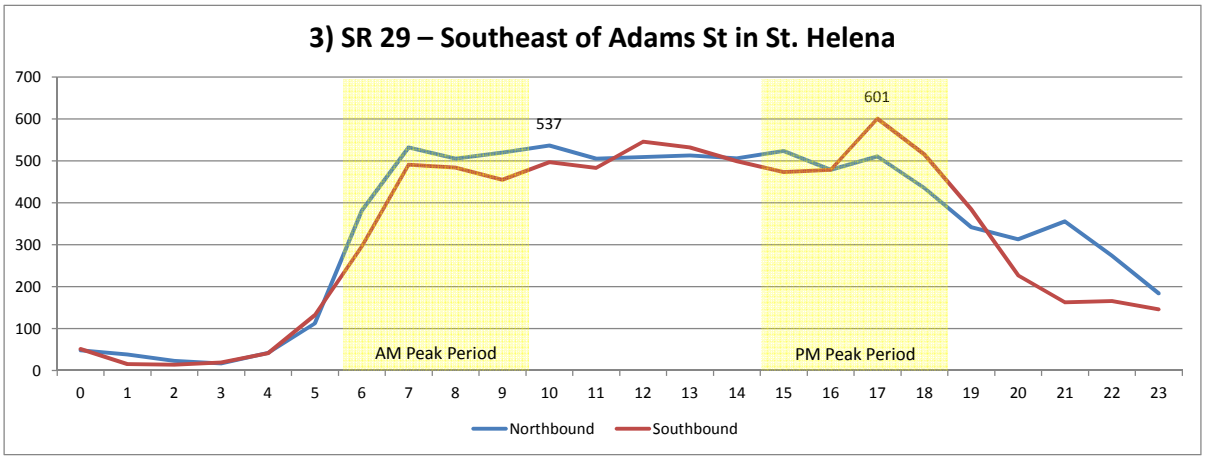
Total of all 11 Locations		All Directions																						
		Hour																						
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	171,767	1,196	668	489	639	1,526	4,060	8,498	10,353	10,101	9,112	9,169	9,614	10,142	11,038	11,591	12,336	12,756	13,268	10,773	7,365	5,281	4,526	4,359	2,907
Medium	4,402	5	8	13	34	70	141	275	330	328	361	439	414	374	360	287	288	216	148	114	75	33	33	26	30
Heavy	4,088	31	21	22	55	99	177	264	262	302	381	413	408	376	293	237	206	162	120	94	71	40	21	20	13
Bus	585	2	1	1	2	4	13	30	50	32	41	51	23	34	31	43	63	54	32	31	13	6	11	15	2
'Pedal Bike (Road)'	96	0	0	1	0	0	3	0	7	10	9	9	8	8	4	6	8	15	4	2	0	0	1	1	0
'Motor Bike'	488	0	0	0	0	1	1	15	25	29	22	35	53	46	48	58	49	53	27	9	16	1	0	0	0
Total	**181,426**	**1,234**	**698**	**526**	**730**	**1,700**	**4,395**	**9,082**	**11,027**	**10,802**	**9,926**	**10,116**	**10,520**	**10,980**	**11,774**	**12,222**	**12,950**	**13,256**	**13,599**	**11,023**	**7,540**	**5,361**	**4,592**	**4,421**	**2,952**
Total Vehicles	**181,330**	**1,234**	**698**	**525**	**730**	**1,700**	**4,392**	**9,082**	**11,020**	**10,792**	**9,917**	**10,107**	**10,512**	**10,972**	**11,770**	**12,216**	**12,942**	**13,241**	**13,595**	**11,021**	**7,540**	**5,361**	**4,591**	**4,420**	**2,952**
Caltrans 2011 Two-Way AADT Count	165,279					Early AM	*9,279*			AM Peak Period	#####				Mid-Day	#####			PM Peak Period	#####			Late night	#####
						% of Daily	*5%*			% of Daily	*23%*				% of Daily	*31%*			% of Daily	*28%*			% of Daily	*14%*
										AM Peak Hour	#####								PM Peak Hour	#####				
										AM Peak Hour	*7 AM*								PM Peak Hour	*5 PM*				
										% of Daily	6%								% of Daily	7%				

Total of all 7 Gateway Locations		All Directions																						
		Hour																						
Vehicle Type	Daily	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Car	119,166	875	489	374	561	1,265	3,321	6,444	7,087	6,524	6,276	6,318	6,672	6,837	7,591	7,996	8,220	8,790	9,133	7,565	5,135	3,652	3,027	3,025	1,989
Medium	3,224	4	8	11	25	53	101	209	214	240	269	327	284	262	267	211	224	166	111	87	59	22	22	22	26
Heavy	3,642	27	20	21	50	91	155	245	217	268	337	366	356	346	262	214	185	144	108	80	64	35	18	20	13
Bus	340	2	1	0	2	3	8	17	18	17	27	37	14	24	20	28	36	30	15	16	5	3	6	9	2
'Pedal Bike (Road)'	24	0	0	1	0	0	0	0	3	1	2	1	2	5	1	1	2	5	0	0	0	0	0	0	0
'Motor Bike'	364	0	0	0	0	1	0	11	18	25	17	30	39	32	34	38	34	40	22	6	16	1	0	0	0
Total	**126,760**	**908**	**518**	**407**	**638**	**1,413**	**3,585**	**6,926**	**7,557**	**7,075**	**6,928**	**7,079**	**7,367**	**7,506**	**8,175**	**8,488**	**8,701**	**9,175**	**9,389**	**7,754**	**5,279**	**3,713**	**3,073**	**3,076**	**2,030**
Total Vehicles	**126,736**	**908**	**518**	**406**	**638**	**1,413**	**3,585**	**6,926**	**7,554**	**7,074**	**6,926**	**7,078**	**7,365**	**7,501**	**8,174**	**8,487**	**8,699**	**9,170**	**9,389**	**7,754**	**5,279**	**3,713**	**3,073**	**3,076**	**2,030**
Caltrans 2011 Two-Way AADT Count	114,420					Early AM	*7,468*			AM Peak Period	#####				Mid-Day	#####			PM Peak Period	#####			Late night	#####
						% of Daily	*6%*			% of Daily	*22%*				% of Daily	*30%*			% of Daily	*28%*			% of Daily	*14%*
										AM Peak Hour	*7,554*								PM Peak Hour	*9,389*				
										AM Peak Hour	*7 AM*								PM Peak Hour	*5 PM*				
										% of Daily	6%								% of Daily	7%				

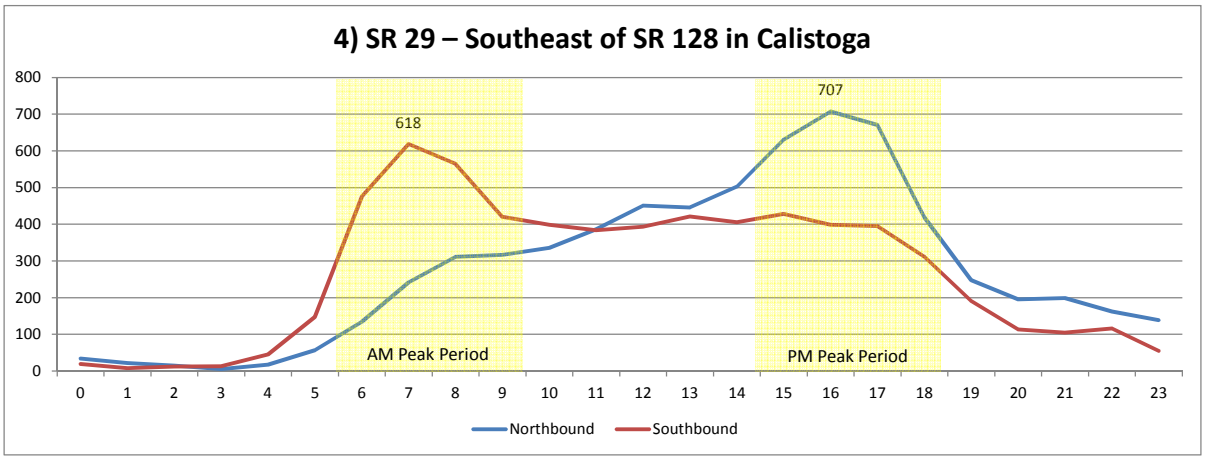
Appendix A - Vehicle Classification Counts Chart Summary

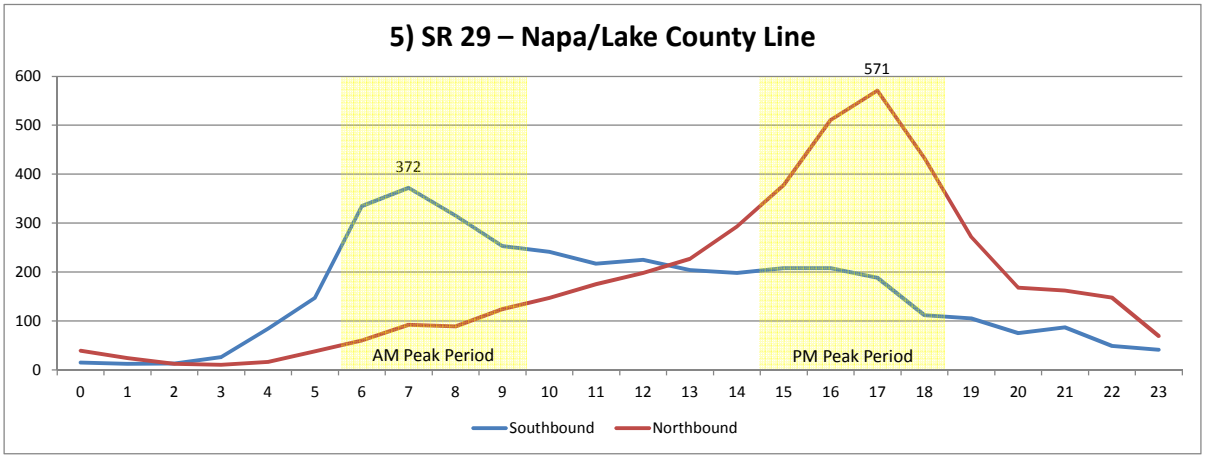


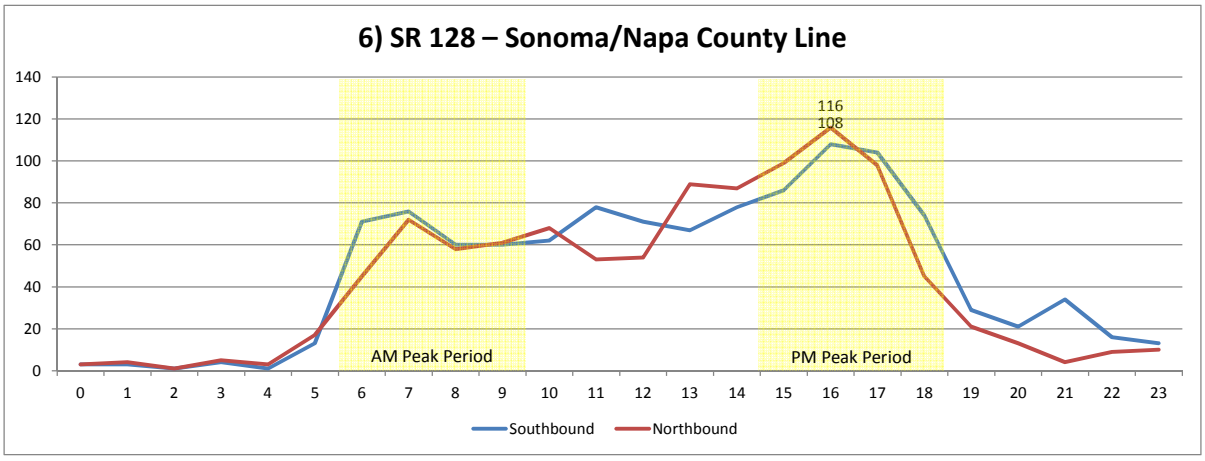




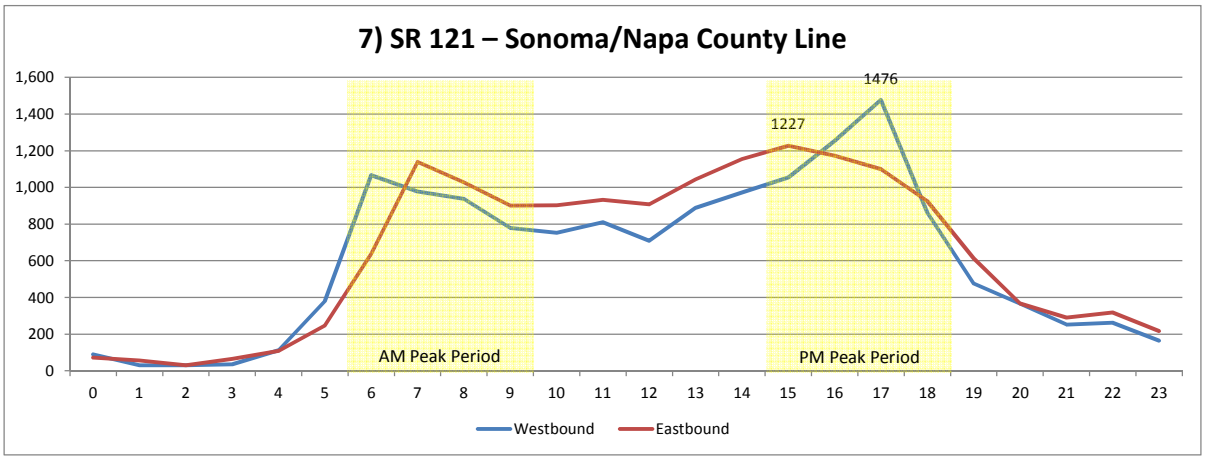
Appendix A - Vehicle Classification Counts Chart Summary

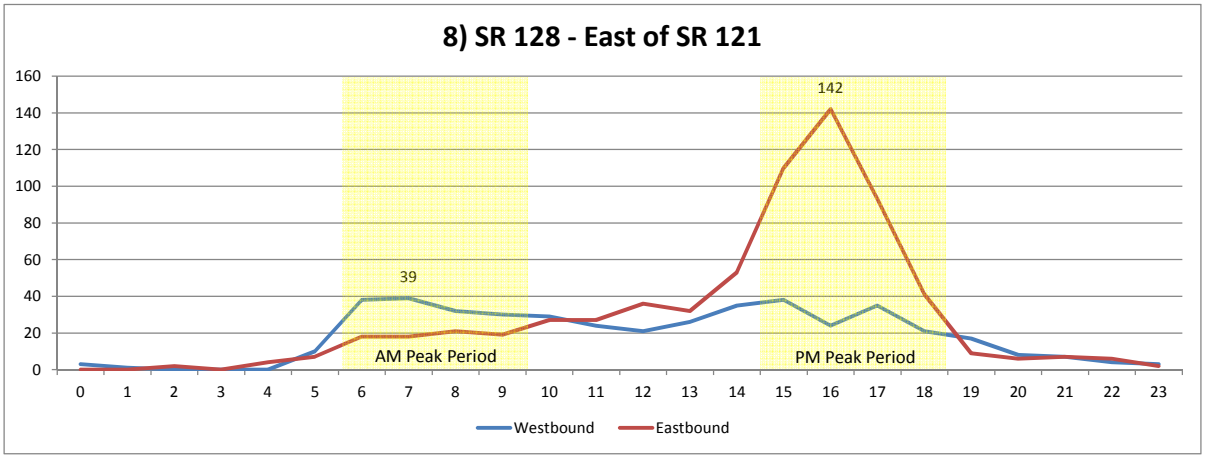


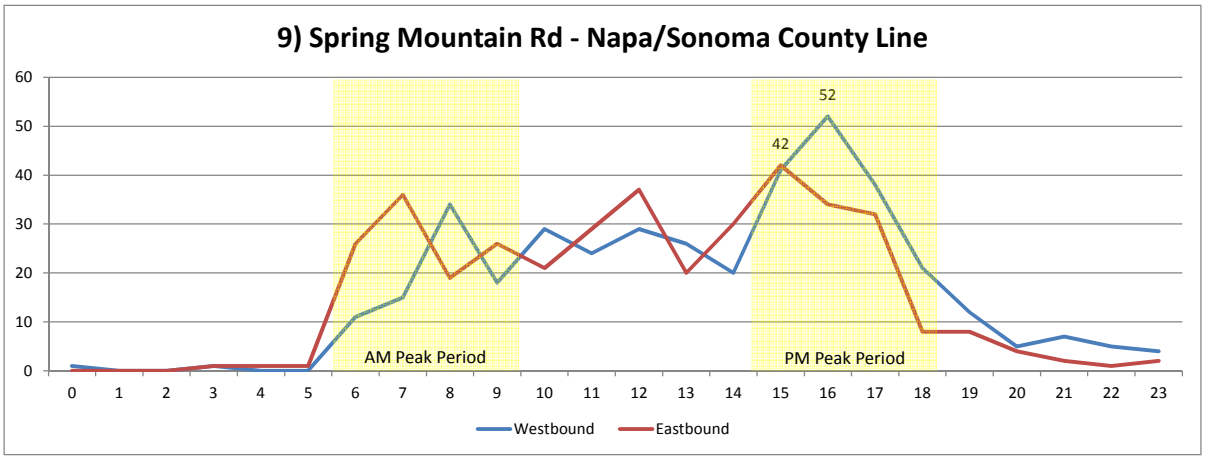




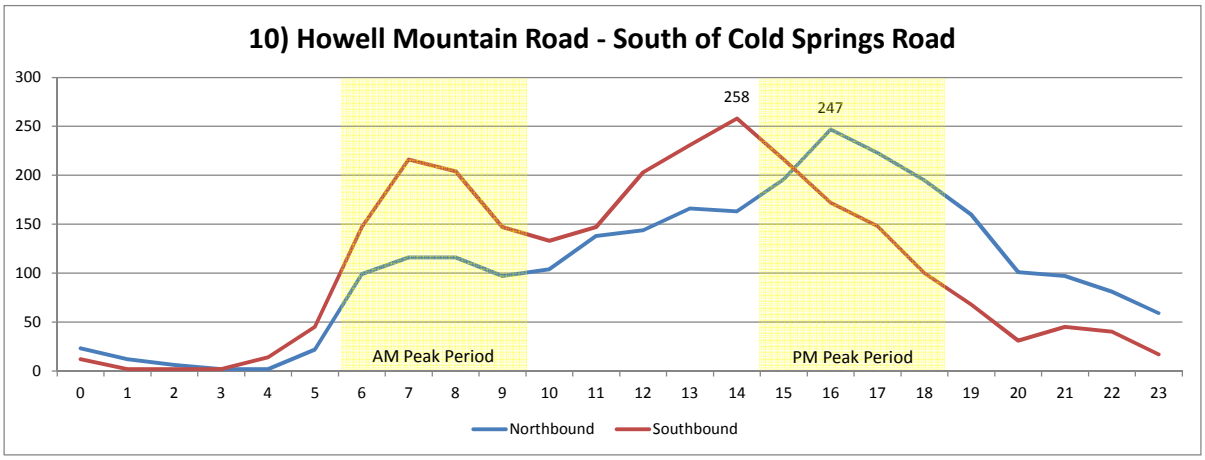
Appendix A - Vehicle Classification Counts Chart Summary

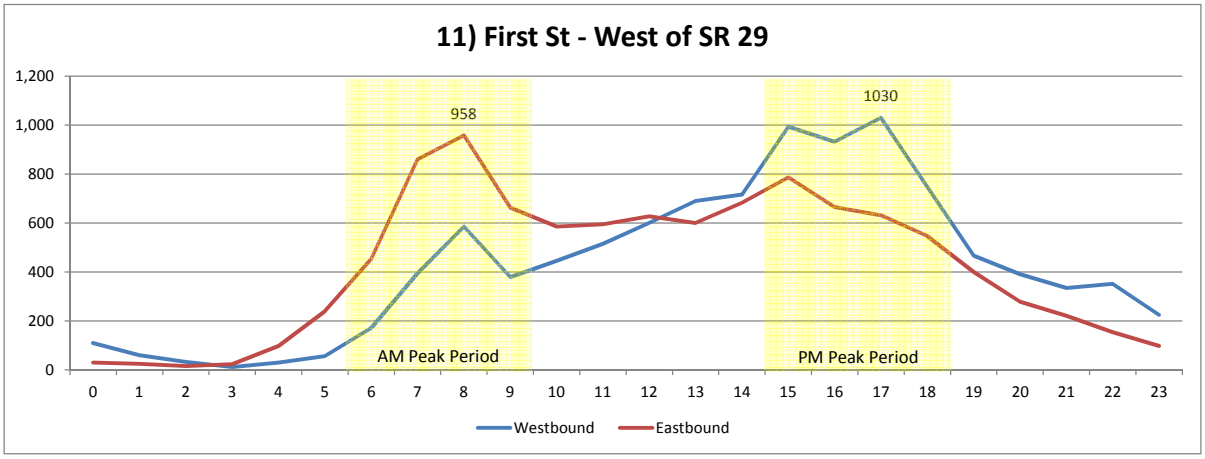


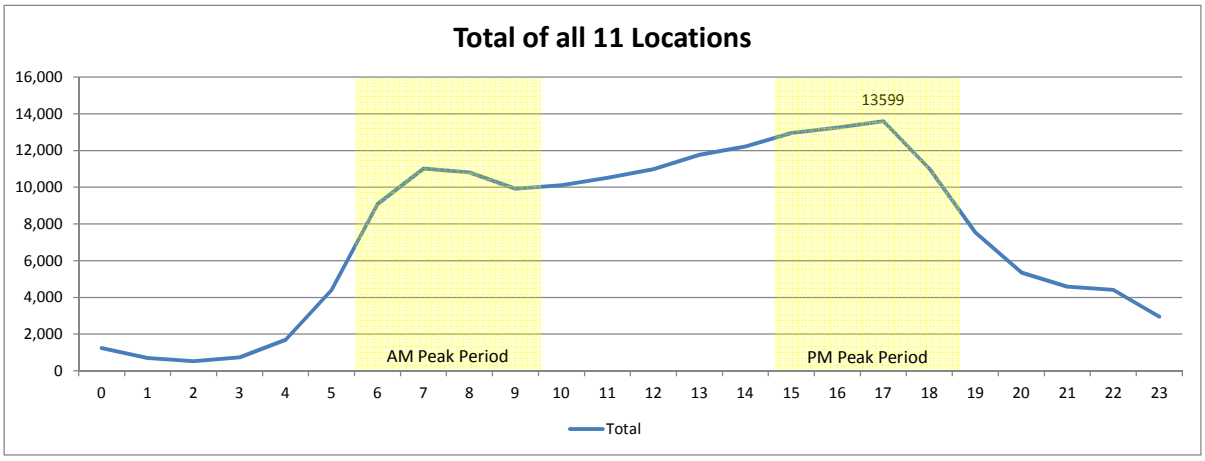




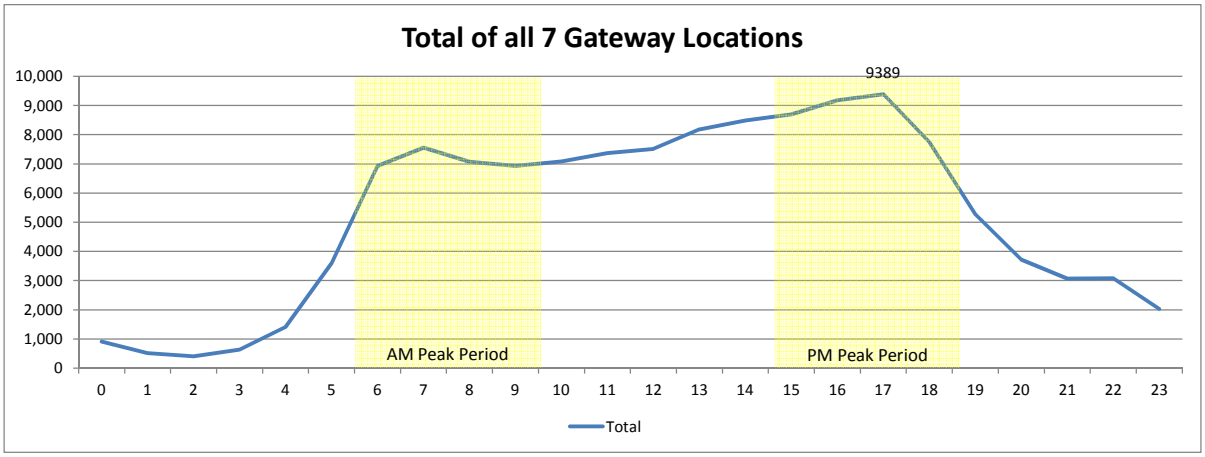
Appendix A - Vehicle Classification Counts Chart Summary







Appendix A - Vehicle Classification Counts Chart Summary



APPENDIX B:
WINERY REGRESSION ANALYSIS

Appendix B - Winery Regression Analysis Winery Trip Generation

Winery	Independent Variables			Estimated Daily Vehicle Trip Generation		
	Gallons (000s)	Type (Binary)	Location (Binary)	Thursday	Friday	Saturday
Winery 1	20	1	0	40	53	6
Winery 2	250	1	1	181	188	163
Winery 3	20	1	0	40	53	6
Winery 4	12	1	1	106	110	80
Winery 5	144	0	1	345	431	646
Winery 6	5	1	0	35	48	6
Winery 7	250	1	0	112	128	80
Winery 8	50	1	0	49	63	11
Winery 9	12	1	0	37	50	6
Winery 10	20	1	0	40	53	6
Winery 11	100	0	1	202	288	340
Winery 12	12	1	1	106	110	80
Winery 13	30	1	1	112	116	86
Winery 14	20	1	0	40	53	6
Winery 15	48	1	0	49	62	10
Winery 16	125	1	1	142	147	119
Winery 17	20	1	0	40	53	6
Winery 18	900	0	1	452	551	617
Winery 19	12	1	0	37	50	6
Winery 20	2.5	1	1	104	107	77
Winery 21	20	1	0	40	53	6
Winery 22	450	1	0	118	112	21
Winery 23	12.5	1	0	38	51	6
Winery 24	20	1	1	109	112	83
Winery 25	50	1	1	118	122	93
Winery 26	20	1	0	40	53	6
Winery 27	43000	0	1	1,208	1,352	1,518
Winery 28	1800	0	1	733	846	929
Winery 29	10	1	0	37	50	6
Winery 30	40	1	1	68	74	50
Winery 31	50	1	0	49	63	11
Winery 32	4005	0	1	1,208	1,352	1,518
Winery 33	315	1	1	201	209	185
Winery 34	1.5	1	0	34	47	6
Winery 35	30	1	1	112	116	86
Winery 36	100	0	1	202	288	340
Winery 37	12	1	1	106	110	80
Winery 38	10	1	1	106	109	79
Winery 39	225	0	1	241	329	383
Winery 40	60	1	1	121	125	97
Winery 41	20	1	0	40	53	6
Winery 42	14.4	1	0	38	51	6
Winery 43	20	1	0	40	53	6
Winery 44	50	1	0	49	63	11
Winery 45	8.5	1	0	36	49	6
Winery 46	50	1	0	49	63	11
Winery 47	70	1	0	55	69	18
Winery 48	75	1	1	126	130	102
Winery 49	30	1	0	43	56	6
Winery 50	20	1	0	40	53	6
Winery 51	59	1	0	80	58	19
Winery 52	500	1	1	266	295	244
Winery 53	25	1	0	41	55	6
Winery 54	1280	1	1	502	526	520
Winery 55	100	1	1	134	139	111
Winery 56	240	0	1	246	334	388
Winery 57	20	1	0	40	53	6
Winery 58	5	0	1	173	257	307
Winery 59	59	1	0	52	66	14
Winery 60	2.5	1	1	104	107	77
Winery 61	110	0	1	205	292	343
Winery 62	100	1	0	65	79	28
Winery 63	45	1	1	117	121	92
Winery 64	150	0	0	149	246	274
Winery 65	2728	0	1	1,023	1,151	1,251
Winery 66	48	0	1	186	271	322
Winery 67	24.5	1	0	41	54	6
Winery 68	5	1	1	104	107	78
Winery 69	20	1	1	109	112	83
Winery 70	128	0	0	142	238	267
Winery 71	48	0	0	117	212	239
Winery 72	15	1	0	38	51	6
Winery 73	145	0	1	216	303	355
Winery 74	20	1	1	109	112	83
Winery 75	10	1	0	37	50	6
Winery 76	20	1	0	40	53	6
Winery 77	16	1	0	39	52	6
Winery 78	60	0	1	190	275	326
Winery 79	350	0	1	280	370	426
Winery 80	200	0	0	164	262	292
Winery 81	20	1	0	40	53	6
Winery 82	10	1	1	106	109	79
Winery 83	28	1	0	42	56	6
Winery 84	30	1	0	43	56	6
Winery 85	20	1	1	101	87	202
Winery 86	30	0	1	180	265	315
Winery 87	155.048	0	0	66	100	84
Winery 88	340	1	1	194	196	198

Winery Regression Analysis Results

Coefficient	Thu	Fri	Sat
Intercept	102	196	222
Gallons (000s)	0.31	0.33	0.35
Type (Binary)	-68	-150	-229
Location (Binary)	69	59	83
R Square	0.82	0.82	0.79
Total	58,285	68,900	60,191

Appendix B - Winery Regression Analysis Winery Trip Generation

	Independent Variables			Estimated Daily Vehicle Trip Generation		
Winery	Gallons (000s)	Type (Binary)	Location (Binary)	Thursday	Friday	Saturday
Winery 89	20	1	0	40	53	6
Winery 90	10	1	1	91	97	14
Winery 91	15	1	0	38	51	6
Winery 92	100	0	1	202	288	340
Winery 93	30	1	0	43	56	6
Winery 94	50	1	1	118	122	93
Winery 95	38	1	1	115	118	89
Winery 96	48	1	1	118	122	93
Winery 97	20	1	1	109	112	83
Winery 98	1	1	1	103	106	76
Winery 99	8	1	0	36	49	6
Winery 100	10	1	0	37	50	6
Winery 101	20	1	0	40	53	6
Winery 102	10	1	0	37	50	6
Winery 103	432	0	1	306	397	455
Winery 104	1980	0	1	789	905	991
Winery 105	20	1	0	40	53	6
Winery 106	20	1	1	109	112	83
Winery 107	100	1	1	134	139	111
Winery 108	125	1	1	142	147	119
Winery 109	110	0	1	205	292	343
Winery 110	5	1	0	35	48	6
Winery 111	20	0	0	108	203	229
Winery 112	30	1	1	112	116	86
Winery 113	24	1	1	110	114	84
Winery 114	15	1	0	38	51	6
Winery 115	25	0	1	179	264	314
Winery 116	25	1	1	111	114	85
Winery 117	3	1	0	35	47	6
Winery 118	15	1	0	38	51	6
Winery 119	60	1	1	121	125	97
Winery 120	20	1	0	40	53	6
Winery 121	150	0	1	218	305	357
Winery 122	20	1	0	40	53	6
Winery 123	175	0	1	226	313	366
Winery 124	12.5	1	1	107	110	80
Winery 125	10	1	1	106	109	79
Winery 126	30	1	0	43	56	6
Winery 127	20	1	1	109	112	83
Winery 128	120	1	1	140	145	118
Winery 129	50	0	1	187	272	322
Winery 130	30	1	0	43	56	6
Winery 131	0.7	1	0	34	47	6
Winery 132	18	1	0	39	52	6
Winery 133	1200	0	1	546	649	721
Winery 134	564.5	0	1	347	441	501
Winery 135	50	1	1	118	122	93
Winery 136	60	0	1	190	275	326
Winery 137	20	1	1	109	112	83
Winery 138	240	1	1	178	185	159
Winery 139	10	1	1	106	109	79
Winery 140	12	1	1	47	59	23
Winery 141	20	1	0	40	53	6
Winery 142	20	1	1	109	112	83
Winery 143	15	1	0	38	51	6
Winery 144	600	1	1	290	303	284
Winery 145	30	1	1	112	116	86
Winery 146	7	1	1	105	108	78
Winery 147	20	1	0	40	53	6
Winery 148	250	1	1	181	188	163
Winery 149	15	1	0	38	51	6
Winery 150	2.4	1	1	103	107	77
Winery 151	20	1	1	109	112	83
Winery 152	200	1	1	165	171	145
Winery 153	19.2	1	0	40	53	6
Winery 154	50	1	1	118	122	93
Winery 155	20	1	0	40	53	6
Winery 156	1260	0	1	309	366	339
Winery 157	20	1	0	40	53	6
Winery 158	15	1	0	38	51	6
Winery 159	12	1	1	106	110	80
Winery 160	120	1	1	140	145	118
Winery 161	20	1	1	109	112	83
Winery 162	60	1	1	121	125	97
Winery 163	144	0	0	147	244	272
Winery 164	59	1	1	121	125	96
Winery 165	50	1	1	118	122	93
Winery 166	1000	0	0	414	524	569
Winery 167	10	1	0	37	50	6
Winery 168	30	1	1	112	116	86
Winery 169	150	1	1	150	155	128
Winery 170	20	1	1	109	112	83
Winery 171	20	1	1	109	112	83
Winery 172	30	1	0	43	56	6
Winery 173	20	1	0	40	53	6
Winery 174	60	1	1	121	125	97
Winery 175	30	1	1	112	116	86
Winery 176	13.2	1	1	107	110	81

Appendix B - Winery Regression Analysis Winery Trip Generation

	Independent Variables			Estimated Daily Vehicle Trip Generation		
Winery	Gallons (000s)	Type (Binary)	Location (Binary)	Thursday	Friday	Saturday
Winery 177	10	1	1	106	109	79
Winery 178	40	1	0	46	60	7
Winery 179	20	1	0	40	53	6
Winery 180	20	1	0	40	53	6
Winery 181	20	1	0	40	53	6
Winery 182	420	1	1	234	244	222
Winery 183	30	1	1	112	116	86
Winery 184	20	1	1	109	112	83
Winery 185	20	1	1	109	112	83
Winery 186	18	1	0	39	52	6
Winery 187	10	1	1	106	109	79
Winery 188	75	1	1	126	130	102
Winery 189	40	1	1	115	119	90
Winery 190	20	1	1	109	112	83
Winery 191	85	1	0	60	74	23
Winery 192	200	1	1	165	171	145
Winery 193	5	1	1	104	107	78
Winery 194	12	1	0	37	50	6
Winery 195	72	1	1	125	129	101
Winery 196	75	1	0	57	71	19
Winery 197	10	1	1	106	109	79
Winery 198	20	1	0	40	53	6
Winery 199	20	1	0	40	53	6
Winery 200	3	1	0	35	47	6
Winery 201	150	1	0	80	96	45
Winery 202	5	1	0	35	48	6
Winery 203	12	1	0	37	50	6
Winery 204	900	1	1	384	401	388
Winery 205	36	1	1	114	118	88
Winery 206	57	1	0	51	65	13
Winery 207	20	1	0	40	53	6
Winery 208	3	1	0	35	47	6
Winery 209	50	1	1	118	122	93
Winery 210	3.5	1	1	104	107	77
Winery 211	20	1	0	40	53	6
Winery 212	16	1	0	39	52	6
Winery 213	70	1	1	125	129	100
Winery 214	2000	0	1	795	912	998
Winery 215	150	1	1	150	155	128
Winery 216	8	1	0	36	49	6
Winery 217	36	1	1	96	102	63
Winery 218	20	1	0	40	53	6
Winery 219	20	1	1	109	112	83
Winery 220	20	1	1	109	112	83
Winery 221	300	0	1	265	354	409
Winery 222	20	1	1	109	112	83
Winery 223	5	1	0	35	48	6
Winery 224	8	1	1	105	108	79
Winery 225	8	1	0	36	49	6
Winery 226	50	1	1	118	122	93
Winery 227	50	1	0	49	63	11
Winery 228	96	1	1	133	137	109
Winery 229	48	1	1	118	122	93
Winery 230	190	0	1	230	318	371
Winery 231	0.8	1	0	34	47	6
Winery 232	20	0	1	177	262	312
Winery 233	10	1	1	106	109	79
Winery 234	300	0	1	265	354	409
Winery 235	15	1	0	38	51	6
Winery 236	50	0	1	187	272	322
Winery 237	100	0	1	202	288	340
Winery 238	20	1	1	109	112	83
Winery 239	100	0	0	133	229	257
Winery 240	6	1	0	35	48	6
Winery 241	10	1	0	37	50	6
Winery 242	850	0	1	436	535	600
Winery 243	36	1	0	45	58	6
Winery 244	48	1	1	118	122	93
Winery 245	4000	1	1	1,208	1,352	1,463
Winery 246	35	1	0	45	58	6
Winery 247	10	1	1	106	109	79
Winery 248	130	1	0	74	89	38
Winery 249	40	1	0	46	60	7
Winery 250	12	0	0	106	200	226
Winery 251	125	1	1	142	147	119
Winery 252	250	0	1	249	338	392
Winery 253	50	1	1	118	122	93
Winery 254	50	1	0	49	63	11
Winery 255	144	0	1	216	303	355
Winery 256	20	1	1	109	112	83
Winery 257	25	1	1	111	114	85
Winery 258	110	1	1	137	142	114
Winery 259	15	1	0	38	51	6
Winery 260	1.8	1	0	34	47	6
Winery 261	18	1	0	39	52	6
Winery 262	100	1	0	65	79	28
Winery 263	120	1	0	71	86	35
Winery 264	5	1	1	104	107	78

Appendix B - Winery Regression Analysis Winery Trip Generation

	Independent Variables			Estimated Daily Vehicle Trip Generation		
Winery	Gallons (000s)	Type (Binary)	Location (Binary)	Thursday	Friday	Saturday
Winery 265	35	1	1	114	117	88
Winery 266	16	1	0	39	52	6
Winery 267	13	1	1	107	110	80
Winery 268	156	1	1	151	157	130
Winery 269	20	1	1	109	112	83
Winery 270	120	1	1	140	145	118
Winery 271	20	1	1	109	112	83
Winery 272	4.8	1	0	35	48	6
Winery 273	20	1	0	40	53	6
Winery 274	5	1	1	104	107	78
Winery 275	12	1	0	37	50	6
Winery 276	16	1	1	108	111	81
Winery 277	20	1	1	109	112	83
Winery 278	300	0	1	265	354	409
Winery 279	25	0	1	179	264	314
Winery 280	12	1	0	37	50	6
Winery 281	20	0	0	108	203	229
Winery 282	12	1	0	37	50	6
Winery 283	75	1	0	57	71	19
Winery 284	8.5	0	1	174	258	308
Winery 285	50	1	0	49	63	11
Winery 286	85	0	1	198	284	334
Winery 287	20	1	1	109	112	83
Winery 288	180	1	1	227	237	203
Winery 289	20	1	1	109	112	83
Winery 290	750	0	1	405	502	565
Winery 291	20	1	1	109	112	83
Winery 292	25	1	1	111	114	85
Winery 293	20	1	0	40	53	6
Winery 294	18	1	0	39	52	6
Winery 295	15	1	1	107	111	81
Winery 296	20	1	1	109	112	83
Winery 297	5	1	0	35	48	6
Winery 298	20	1	1	109	112	83
Winery 299	10	1	0	37	50	6
Winery 300	250	1	1	181	188	163
Winery 301	5	1	0	35	48	6
Winery 302	40	1	1	115	119	90
Winery 303	25	1	0	41	55	6
Winery 304	30	1	0	43	56	6
Winery 305	50	1	0	49	63	11
Winery 306	340	1	1	209	217	194
Winery 307	3000	0	1	1,208	1,352	1,518
Winery 308	60	1	0	52	66	14
Winery 309	65	0	1	191	277	327
Winery 310	15	1	1	107	111	81
Winery 311	20	1	1	109	112	83
Winery 312	15	1	0	38	51	6
Winery 313	35	1	0	45	58	6
Winery 314	30	1	0	43	56	6
Winery 315	450	1	1	243	253	232
Winery 316	880	1	1	377	394	381
Winery 317	20	1	0	40	53	6
Winery 318	1250	1	1	493	516	509
Winery 319	100	1	1	134	139	111
Winery 320	12	1	1	106	110	80
Winery 321	75	1	1	126	130	102
Winery 322	5	1	0	35	48	6
Winery 323	35	0	1	182	267	317
Winery 324	640	0	1	371	466	527
Winery 325	8	1	1	105	108	79
Winery 326	15	1	0	38	51	6
Winery 327	135	1	1	145	150	123
Winery 328	30	1	1	112	116	86
Winery 329	96	0	1	201	287	338
Winery 330	20	1	0	40	53	6
Winery 331	10	1	1	106	109	79
Winery 332	180	1	0	267	287	196
Winery 333	20	1	0	40	53	6
Winery 334	10	1	0	37	50	6
Winery 335	20	1	1	109	112	83
Winery 336	20	1	0	40	53	6
Winery 337	24	1	0	41	54	6
Winery 338	50	0	1	187	272	322
Winery 339	1	1	0	34	47	6
Winery 340	10	1	1	106	109	79
Winery 341	200	1	1	165	171	145
Winery 342	0.6	1	0	34	47	6
Winery 343	40	1	1	115	119	90
Winery 344	50	1	0	49	63	11
Winery 345	20	0	1	177	262	312
Winery 346	210	0	1	531	651	675
Winery 347	200	1	1	165	171	145
Winery 348	360	0	1	177	356	324
Winery 349	5	1	1	104	107	78
Winery 350	2.377	1	0	34	47	6
Winery 351	15	1	0	38	51	6
Winery 352	7.5	1	0	36	49	6

Appendix B - Winery Regression Analysis Winery Trip Generation

	Independent Variables			Estimated Daily Vehicle Trip Generation		
Winery	Gallons (000s)	Type (Binary)	Location (Binary)	Thursday	Friday	Saturday
Winery 353	18	1	0	39	52	6
Winery 354	30	1	0	43	56	6
Winery 355	20	1	1	109	112	83
Winery 356	150	1	0	80	96	45
Winery 357	40	1	1	115	119	90
Winery 358	60	1	1	121	125	97
Winery 359	0	1	1	103	106	76
Winery 360	48	1	0	49	62	10
Winery 361	20	1	0	40	53	6
Winery 362	72	0	1	193	279	330
Winery 363	450	0	1	312	403	461
Winery 364	36	1	1	114	118	88
Winery 365	330	0	1	274	364	419
Winery 366	60	1	1	121	125	97
Winery 367	315	1	1	201	209	185
Winery 368	2.09	1	0	34	47	6
Winery 369	30	1	1	112	116	86
Winery 370	20	1	1	109	112	83
Winery 371	59.999	1	1	121	125	97
Winery 372	12	1	0	37	50	6
Winery 373	1500	0	1	639	748	825
Winery 374	20	1	1	109	112	83
Winery 375	8.7	1	0	31	60	9
Winery 376	15	1	0	38	51	6
Winery 377	2.5	1	0	34	47	6
Winery 378	22.5	1	1	110	113	84
Winery 379	12	1	0	37	50	6
Winery 380	600	1	1	290	303	284
Winery 381	200	0	1	233	321	374
Winery 382	3247	1	1	1,117	1,171	1,202
Winery 383	42.5	1	1	116	120	91
Winery 384	5	1	0	35	48	6
Winery 385	5	1	0	35	48	6
Winery 386	360	1	0	146	165	118
Winery 387	12520	1	1	1,208	1,352	1,518
Winery 388	20	1	0	40	53	6
Winery 389	30	1	1	112	116	86
Winery 390	48	1	0	49	62	10
Winery 391	500	0	1	327	420	478
Winery 392	20	1	1	109	112	83
Winery 393	100	0	1	202	288	340
Winery 394	60	1	1	121	125	97
Winery 395	3.5	1	1	104	107	77
Winery 396	2.4	1	1	103	107	77
Winery 397	65	1	0	54	68	16
Winery 398	250	1	1	181	188	163
Winery 399	20	1	0	40	53	6
Winery 400	62.5	1	0	53	67	15
Winery 401	15	1	0	38	51	6
Winery 402	81.48	0	0	188	243	355
Winery 403	22.5	1	0	41	54	6
Winery 404	8	1	1	105	108	79
Winery 405	20	1	0	40	53	6
Winery 406	32	1	0	101	171	109
Winery 407	850	0	1	436	535	600
Winery 408	250	0	0	180	278	309
Winery 409	50	1	0	49	63	11
Winery 410	6	1	1	105	108	78
Winery 411	20	1	1	109	112	83
Winery 412	48	1	1	118	122	93
Winery 413	10	1	0	37	50	6
Winery 414	48.5	1	1	97	72	40
Winery 415	20	1	0	16	18	6
Winery 416	24	1	0	41	54	6
Winery 417	20	1	0	40	53	6
Winery 418	30	1	0	43	56	6
Winery 419	30	1	0	43	56	6
Winery 420	20	0	1	177	262	312
Winery 421	20	1	0	40	53	6
Winery 422	20	1	1	109	112	83
Winery 423	125	0	1	210	297	348
Winery 424	20	1	1	109	112	83
Winery 425	310	1	1	200	207	183
Winery 426	20	1	1	109	112	83
Winery 427	335	1	1	207	216	192
Winery 428	20	1	0	40	53	6
Winery 429	12.5	1	0	38	51	6
Winery 430	19	1	1	109	112	83
Winery 431	20	1	0	40	53	6
Winery 432	5	1	0	35	48	6
Winery 433	70	1	1	125	129	100
Winery 434	50	1	1	118	122	93

APPENDIX C:
LICENSE PLATE MATCHING

Appendix C - License Plate Matching Auto Pass-Through Trips by Time of Day

XX Trips Early AM	1-SB	2-EB	5-NB	6-NB	7-WB	8-EB	9-WB
1-NB	0	10	1	1	65	0	0
2-WB	30	0	0	0	54	2	0
5-SB	2	2	0	0	0	0	0
6-SB	0	0	0	0	0	0	0
7-EB	7	17	0	0	0	0	0
8-WB	0	0	0	0	0	0	0
9-EB	0	0	0	0	0	0	0

XX Trips AM Peak	1-SB	2-EB	5-NB	6-NB	7-WB	8-EB	9-WB
1-NB	0	143	9	1	201	1	0
2-WB	118	0	8	0	251	6	0
5-SB	14	7	0	2	1	1	0
6-SB	1	0	1	0	0	0	0
7-EB	118	250	2	1	0	0	1
8-WB	0	4	0	0	2	0	0
9-EB	0	0	0	0	0	0	0

XX Trips Mid-Day	1-SB	2-EB	5-NB	6-NB	7-WB	8-EB	9-WB
1-NB	0	126	46	0	171	0	0
2-WB	126	0	26	2	397	7	1
5-SB	25	14	0	1	10	0	0
6-SB	0	0	1	0	0	0	0
7-EB	190	392	3	0	0	5	1
8-WB	1	3	0	0	5	0	1
9-EB	3	2	0	0	1	1	0

XX Trips PM Peak	1-SB	2-EB	5-NB	6-NB	7-WB	8-EB	9-WB
1-NB	0	48	24	0	82	0	0
2-WB	45	0	16	0	287	1	2
5-SB	11	10	0	2	1	0	0
6-SB	0	0	0	0	0	1	0
7-EB	155	349	6	0	0	5	0
8-WB	1	0	0	0	0	0	0
9-EB	0	0	0	0	0	0	0

XX Trips Late Night	1-SB	2-EB	5-NB	6-NB	7-WB	8-EB	9-WB
1-NB	0	11	10	0	38	1	0
2-WB	10	0	3	0	151	0	1
5-SB	9	4	0	0	1	0	0
6-SB	0	0	0	0	0	0	0
7-EB	53	153	0	0	0	0	2
8-WB	0	0	0	0	0	0	0
9-EB	1	0	0	0	0	0	0

Appendix C - License Plate Matching Truck Pass-Through Trips by Time of Day

XX Trips Early AM	1-SB	2-EB	5-NB	6-NB	7-WB	8-EB	9-WB
1-NB	0	4	0	0	9	0	0
2-WB	8	0	0	0	27	5	0
5-SB	1	0	0	0	0	0	0
6-SB	0	0	0	0	0	0	0
7-EB	2	10	0	0	0	0	0
8-WB	0	1	0	0	0	0	0
9-EB	0	0	0	0	0	0	0

XX Trips AM Peak	1-SB	2-EB	5-NB	6-NB	7-WB	8-EB	9-WB
1-NB	0	35	1	1	64	1	0
2-WB	29	0	3	0	88	5	0
5-SB	4	5	0	1	0	0	0
6-SB	0	0	0	0	0	0	0
7-EB	17	65	1	0	0	0	0
8-WB	1	1	0	0	3	0	0
9-EB	0	0	0	0	0	0	0

XX Trips Mid-Day	1-SB	2-EB	5-NB	6-NB	7-WB	8-EB	9-WB
1-NB	0	32	8	1	35	0	0
2-WB	32	0	6	0	69	1	0
5-SB	5	0	0	0	1	0	0
6-SB	0	0	0	0	0	0	0
7-EB	51	94	1	0	0	4	1
8-WB	1	2	0	0	0	0	0
9-EB	0	0	0	0	0	0	0

XX Trips PM Peak	1-SB	2-EB	5-NB	6-NB	7-WB	8-EB	9-WB
1-NB	0	6	7	0	20	0	0
2-WB	2	0	7	0	52	0	0
5-SB	2	0	0	0	1	0	0
6-SB	0	0	0	0	0	0	0
7-EB	34	87	0	0	0	5	2
8-WB	0	1	0	0	0	0	0
9-EB	0	0	0	0	0	0	0

XX Trips Late Night	1-SB	2-EB	5-NB	6-NB	7-WB	8-EB	9-WB
1-NB	0	2	2	0	2	0	0
2-WB	2	0	2	0	24	0	0
5-SB	2	0	0	0	0	0	0
6-SB	0	0	0	0	0	0	0
7-EB	8	29	0	0	0	0	0
8-WB	0	0	0	0	0	0	0
9-EB	0	0	0	0	0	0	0

Appendix C - License Plate Matching for Location 1: SR 29 North of American Canyon Road

License Plate Matching - Auto Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	0%	0%	0%	0%	0%	0%
	Internal Other	0%	0%	0%	0%	0%	0%
	Internal Unknown	0%	0%	0%	0%	0%	0%
Inbound	One-Way In	14%	12%	13%	13%	13%	18%
	Imported Work In	12%	38%	30%	9%	3%	1%
	Imported Other In	13%	7%	11%	17%	11%	10%
	Exported Work In	7%	0%	0%	5%	12%	15%
	Exported Other In	4%	1%	2%	6%	4%	6%
Outbound	One-Way Out	13%	9%	11%	14%	14%	13%
	Imported Work Out	12%	0%	0%	7%	24%	19%
	Imported Other Out	10%	1%	6%	13%	10%	13%
	Exported Work Out	6%	17%	15%	5%	2%	0%
	Exported Other Out	5%	3%	4%	6%	4%	3%
Pass-Through	XX	4%	9%	5%	4%	3%	2%
	XX with Stop	1%	2%	3%	1%	0%	0%
Internal Total		0%	0%	0%	0%	0%	0%
Inbound Total		49%	58%	55%	49%	43%	49%
Outbound Total		46%	31%	36%	45%	53%	49%
Pass-Through Total		5%	11%	8%	5%	3%	2%
Total		100%	3%	22%	33%	27%	14%
Internal Total		0%	0%	0%	0%	0%	0%
Imported Work		23%	38%	30%	16%	27%	20%
Imported Other		23%	8%	17%	30%	21%	23%
Exported Work		13%	17%	15%	10%	14%	15%
Exported Other		9%	4%	5%	12%	8%	9%
One-Way Total		27%	21%	24%	27%	27%	31%
Pass-Through Total		5%	11%	8%	5%	3%	2%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 1: SR 29 North of American Canyon Road

License Plate Matching - Truck Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	0%	0%	0%	0%	0%	0%
	Internal Other	0%	0%	0%	0%	0%	0%
	Internal Unknown	0%	0%	0%	0%	0%	0%
Inbound	One-Way In	14%	10%	14%	14%	13%	12%
	Imported Work In	11%	35%	25%	5%	3%	1%
	Imported Other In	13%	5%	14%	15%	9%	12%
	Exported Work In	8%	0%	0%	6%	16%	20%
	Exported Other In	5%	0%	3%	7%	4%	6%
Outbound	One-Way Out	11%	13%	9%	11%	11%	13%
	Imported Work Out	11%	0%	0%	9%	27%	17%
	Imported Other Out	10%	0%	6%	15%	9%	14%
	Exported Work Out	7%	29%	14%	4%	2%	0%
	Exported Other Out	5%	0%	4%	7%	2%	3%
Pass-Through	XX	5%	4%	7%	5%	4%	2%
	XX with Stop	2%	2%	4%	1%	0%	0%
Internal Total		0%	0%	0%	0%	0%	0%
Inbound Total		49%	50%	57%	47%	44%	50%
Outbound Total		44%	43%	33%	46%	51%	47%
Pass-Through Total		6%	6%	10%	6%	4%	2%
Total		100%	5%	27%	35%	24%	8%
Internal Total		0%	0%	0%	0%	0%	0%
Imported Work		22%	35%	25%	14%	30%	18%
Imported Other		23%	5%	20%	30%	17%	26%
Exported Work		15%	29%	15%	10%	18%	20%
Exported Other		9%	0%	7%	14%	6%	9%
One-Way Total		24%	23%	23%	25%	25%	25%
Pass-Through Total		6%	6%	10%	6%	4%	2%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 2: SR 12 at the Napa/Solano County Line

License Plate Matching - Auto Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	0%	0%	0%	0%	0%	0%
	Internal Other	0%	0%	0%	0%	0%	0%
	Internal Unknown	0%	0%	0%	0%	0%	0%
Inbound	One-Way In	12%	14%	11%	12%	13%	15%
	Imported Work In	14%	42%	32%	11%	4%	2%
	Imported Other In	7%	4%	8%	10%	6%	5%
	Exported Work In	8%	0%	0%	6%	15%	18%
	Exported Other In	3%	0%	1%	5%	2%	5%
Outbound	One-Way Out	11%	5%	9%	12%	12%	11%
	Imported Work Out	14%	0%	0%	9%	28%	25%
	Imported Other Out	5%	0%	3%	7%	4%	5%
	Exported Work Out	8%	14%	19%	6%	3%	1%
	Exported Other Out	4%	1%	3%	6%	2%	3%
Pass-Through	XX	12%	12%	10%	14%	12%	11%
	XX with Stop	2%	8%	4%	3%	1%	0%
Internal Total		0%	0%	0%	0%	0%	0%
Inbound Total		45%	60%	52%	44%	39%	44%
Outbound Total		40%	20%	34%	40%	48%	44%
Pass-Through Total		14%	20%	14%	16%	12%	11%
Total		100%	4%	25%	31%	26%	13%
Internal Total		0%	0%	0%	0%	0%	0%
Imported Work		28%	42%	33%	20%	31%	26%
Imported Other		12%	4%	10%	17%	10%	10%
Exported Work		16%	14%	19%	12%	17%	19%
Exported Other		7%	1%	4%	11%	5%	7%
One-Way Total		23%	19%	20%	23%	24%	26%
Pass-Through Total		14%	20%	14%	16%	12%	11%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 2: SR 12 at the Napa/Solano County Line

License Plate Matching - Truck Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	0%	1%	0%	0%	0%	0%
	Internal Other	0%	0%	0%	0%	0%	0%
	Internal Unknown	0%	0%	0%	0%	0%	0%
Inbound	One-Way In	13%	14%	15%	10%	13%	11%
	Imported Work In	12%	36%	26%	5%	3%	1%
	Imported Other In	10%	9%	10%	14%	6%	6%
	Exported Work In	7%	0%	0%	5%	17%	20%
	Exported Other In	3%	0%	1%	5%	2%	7%
Outbound	One-Way Out	10%	4%	5%	13%	12%	12%
	Imported Work Out	11%	0%	0%	14%	23%	20%
	Imported Other Out	6%	1%	3%	10%	5%	4%
	Exported Work Out	8%	13%	16%	5%	2%	1%
	Exported Other Out	4%	1%	5%	5%	3%	5%
Pass-Through	XX	13%	16%	14%	11%	11%	14%
	XX with Stop	2%	5%	5%	2%	0%	0%
Internal Total		0%	1%	1%	0%	0%	0%
Inbound Total		46%	59%	52%	40%	41%	44%
Outbound Total		39%	19%	28%	46%	47%	41%
Pass-Through Total		15%	21%	19%	13%	12%	14%
Total		100%	8%	28%	34%	22%	8%
Internal Total		0%	1%	1%	0%	0%	0%
Imported Work		24%	36%	26%	19%	26%	21%
Imported Other		16%	10%	13%	24%	11%	9%
Exported Work		15%	13%	16%	10%	20%	21%
Exported Other		7%	1%	6%	11%	5%	12%
One-Way Total		22%	18%	19%	23%	26%	23%
Pass-Through Total		15%	21%	19%	13%	12%	14%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 3: SR 29 Southeast of Adams St in St. Helena

License Plate Matching - Auto Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	28%	30%	30%	19%	31%	36%
	Internal Other	37%	32%	34%	44%	35%	34%
	Internal Unknown	21%	23%	24%	19%	19%	22%
Inbound	One-Way In	0%	0%	0%	0%	0%	0%
	Imported Work In	0%	0%	0%	0%	0%	0%
	Imported Other In	0%	0%	0%	0%	0%	0%
	Exported Work In	1%	0%	0%	0%	2%	2%
	Exported Other In	0%	0%	0%	0%	0%	0%
Outbound	One-Way Out	0%	2%	0%	0%	0%	1%
	Imported Work Out	0%	0%	0%	0%	0%	0%
	Imported Other Out	0%	0%	0%	0%	0%	0%
	Exported Work Out	3%	7%	5%	5%	1%	0%
	Exported Other Out	9%	5%	7%	12%	11%	4%
Pass-Through	XX	0%	0%	0%	0%	0%	0%
	XX with Stop	0%	0%	0%	0%	0%	0%
Internal Total		86%	86%	89%	82%	85%	92%
Inbound Total		1%	0%	0%	1%	2%	2%
Outbound Total		13%	14%	11%	17%	13%	5%
Pass-Through Total		0%	0%	0%	0%	0%	0%
Total		100%	1%	23%	31%	28%	16%
Internal Total		86%	86%	89%	82%	85%	92%
Imported Work		0%	0%	0%	0%	0%	0%
Imported Other		0%	0%	0%	0%	0%	0%
Exported Work		4%	7%	5%	5%	3%	2%
Exported Other		9%	5%	7%	12%	11%	5%
One-Way Total		0%	2%	0%	0%	0%	1%
Pass-Through Total		0%	0%	0%	0%	0%	0%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 3: SR 29 Southeast of Adams St in St. Helena

License Plate Matching - Truck Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	24%	17%	21%	21%	33%	29%
	Internal Other	44%	63%	47%	43%	38%	42%
	Internal Unknown	22%	9%	24%	25%	19%	20%
Inbound	One-Way In	0%	0%	0%	0%	0%	0%
	Imported Work In	0%	0%	0%	0%	0%	0%
	Imported Other In	0%	0%	0%	0%	0%	0%
	Exported Work In	1%	0%	0%	1%	0%	4%
	Exported Other In	0%	0%	0%	0%	1%	0%
Outbound	One-Way Out	0%	0%	0%	0%	0%	1%
	Imported Work Out	0%	0%	0%	0%	0%	0%
	Imported Other Out	0%	0%	0%	0%	0%	0%
	Exported Work Out	2%	6%	4%	2%	0%	0%
	Exported Other Out	7%	6%	5%	8%	8%	3%
Pass-Through	XX	0%	0%	0%	0%	0%	0%
	XX with Stop	0%	0%	0%	0%	0%	0%
Internal Total		90%	89%	91%	89%	90%	91%
Inbound Total		1%	0%	0%	1%	1%	4%
Outbound Total		9%	11%	9%	10%	9%	4%
Pass-Through Total		0%	0%	0%	0%	0%	0%
Total		100%	3%	36%	34%	21%	6%
Internal Total		90%	89%	91%	89%	90%	91%
Imported Work		0%	0%	0%	0%	0%	0%
Imported Other		0%	0%	0%	0%	0%	0%
Exported Work		3%	6%	4%	3%	0%	4%
Exported Other		7%	6%	5%	8%	9%	3%
One-Way Total		0%	0%	0%	0%	0%	1%
Pass-Through Total		0%	0%	0%	0%	0%	0%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 4: SR 29 Southeast of SR 128 in Calistoga

License Plate Matching - Auto Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	34%	33%	38%	24%	40%	34%
	Internal Other	44%	58%	42%	50%	38%	48%
	Internal Unknown	9%	6%	10%	9%	9%	9%
Inbound	One-Way In	0%	0%	0%	0%	0%	0%
	Imported Work In	0%	0%	0%	0%	0%	0%
	Imported Other In	0%	0%	0%	0%	0%	0%
	Exported Work In	1%	0%	0%	1%	1%	0%
	Exported Other In	0%	0%	0%	0%	0%	0%
Outbound	One-Way Out	1%	0%	1%	2%	1%	1%
	Imported Work Out	0%	0%	0%	0%	0%	0%
	Imported Other Out	0%	0%	0%	0%	0%	0%
	Exported Work Out	2%	2%	4%	4%	1%	0%
	Exported Other Out	8%	2%	5%	10%	9%	7%
Pass-Through	XX	0%	0%	0%	0%	0%	0%
	XX with Stop	0%	0%	0%	0%	0%	0%
Internal Total		87%	96%	90%	83%	87%	92%
Inbound Total		1%	0%	1%	1%	2%	1%
Outbound Total		12%	4%	10%	16%	11%	8%
Pass-Through Total		0%	0%	0%	0%	0%	0%
Total		100%	1%	26%	31%	32%	9%
Internal Total		87%	96%	90%	83%	87%	92%
Imported Work		0%	0%	0%	0%	0%	0%
Imported Other		0%	0%	0%	0%	0%	0%
Exported Work		3%	2%	4%	4%	2%	0%
Exported Other		8%	2%	5%	10%	9%	7%
One-Way Total		1%	0%	1%	2%	1%	1%
Pass-Through Total		0%	0%	0%	0%	0%	0%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 4: SR 29 Southeast of SR 128 in Calistoga

License Plate Matching - Truck Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	31%	27%	31%	23%	45%	17%
	Internal Other	44%	54%	45%	54%	28%	55%
	Internal Unknown	12%	14%	13%	9%	13%	13%
Inbound	One-Way In	0%	0%	0%	0%	0%	0%
	Imported Work In	0%	0%	0%	0%	0%	0%
	Imported Other In	0%	0%	0%	0%	0%	0%
	Exported Work In	1%	0%	0%	1%	2%	2%
	Exported Other In	0%	0%	0%	0%	0%	0%
Outbound	One-Way Out	1%	3%	1%	1%	1%	4%
	Imported Work Out	0%	0%	0%	0%	0%	0%
	Imported Other Out	0%	0%	0%	0%	0%	0%
	Exported Work Out	2%	3%	4%	2%	0%	0%
	Exported Other Out	8%	0%	7%	10%	10%	9%
Pass-Through	XX	0%	0%	0%	0%	0%	0%
	XX with Stop	0%	0%	0%	0%	0%	0%
Internal Total		87%	95%	89%	86%	87%	85%
Inbound Total		1%	0%	0%	1%	3%	2%
Outbound Total		12%	5%	11%	14%	11%	13%
Pass-Through Total		0%	0%	0%	0%	0%	0%
Total		100%	3%	33%	33%	26%	4%
Internal Total		87%	95%	89%	86%	87%	85%
Imported Work		0%	0%	0%	0%	0%	0%
Imported Other		0%	0%	0%	0%	0%	0%
Exported Work		3%	3%	4%	3%	2%	2%
Exported Other		9%	0%	7%	10%	10%	9%
One-Way Total		1%	3%	1%	1%	1%	4%
Pass-Through Total		0%	0%	0%	0%	0%	0%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 5: SR 29 at the Napa/Lake County Line

License Plate Matching - Auto Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	0%	0%	0%	0%	0%	0%
	Internal Other	0%	0%	0%	0%	0%	0%
	Internal Unknown	0%	0%	0%	0%	0%	0%
Inbound	One-Way In	13%	6%	10%	18%	10%	15%
	Imported Work In	19%	47%	51%	17%	3%	1%
	Imported Other In	9%	20%	13%	12%	5%	4%
	Exported Work In	5%	0%	0%	3%	9%	13%
	Exported Other In	2%	0%	1%	3%	2%	4%
Outbound	One-Way Out	15%	5%	5%	15%	22%	23%
	Imported Work Out	18%	0%	0%	10%	35%	30%
	Imported Other Out	4%	0%	1%	5%	5%	4%
	Exported Work Out	5%	11%	9%	6%	2%	1%
	Exported Other Out	3%	2%	3%	4%	3%	1%
Pass-Through	XX	5%	9%	6%	6%	3%	5%
	XX with Stop	1%	2%	2%	1%	0%	0%
Internal Total		0%	0%	0%	0%	0%	0%
Inbound Total		49%	73%	75%	53%	29%	36%
Outbound Total		45%	17%	17%	40%	67%	58%
Pass-Through Total		6%	11%	8%	8%	3%	5%
Total		100%	2%	24%	28%	35%	11%
Internal Total		0%	0%	0%	0%	0%	0%
Imported Work		37%	47%	51%	27%	38%	31%
Imported Other		13%	20%	14%	17%	10%	8%
Exported Work		10%	11%	9%	9%	11%	13%
Exported Other		5%	2%	4%	6%	5%	5%
One-Way Total		28%	11%	15%	33%	32%	38%
Pass-Through Total		6%	11%	8%	8%	3%	5%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 5: SR 29 at the Napa/Lake County Line

License Plate Matching - Truck Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	0%	0%	0%	0%	0%	0%
	Internal Other	0%	0%	0%	0%	0%	0%
	Internal Unknown	0%	0%	0%	0%	0%	0%
Inbound	One-Way In	12%	13%	9%	16%	10%	16%
	Imported Work In	17%	41%	45%	12%	3%	1%
	Imported Other In	10%	16%	19%	8%	5%	1%
	Exported Work In	5%	0%	0%	5%	9%	10%
	Exported Other In	3%	0%	1%	3%	2%	9%
Outbound	One-Way Out	20%	3%	6%	20%	30%	22%
	Imported Work Out	16%	0%	0%	14%	29%	24%
	Imported Other Out	4%	0%	2%	6%	4%	4%
	Exported Work Out	5%	13%	9%	7%	2%	0%
	Exported Other Out	3%	0%	1%	4%	3%	6%
Pass-Through	XX	5%	16%	6%	4%	3%	6%
	XX with Stop	0%	0%	1%	0%	0%	0%
Internal Total		0%	0%	0%	0%	0%	0%
Inbound Total		47%	69%	74%	44%	29%	38%
Outbound Total		48%	16%	19%	51%	68%	56%
Pass-Through Total		5%	16%	7%	4%	3%	6%
Total		100%	4%	26%	26%	35%	9%
Internal Total		0%	0%	0%	0%	0%	0%
Imported Work		33%	41%	45%	25%	32%	25%
Imported Other		14%	16%	21%	15%	9%	6%
Exported Work		11%	13%	9%	13%	11%	10%
Exported Other		5%	0%	2%	7%	5%	15%
One-Way Total		32%	16%	16%	36%	40%	38%
Pass-Through Total		5%	16%	7%	4%	3%	6%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 6: SR 128 at the Napa/Sonoma County Line

License Plate Matching - Auto Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	0%	0%	0%	0%	0%	0%
	Internal Other	5%	0%	6%	8%	3%	6%
	Internal Unknown	3%	0%	1%	4%	3%	0%
Inbound	One-Way In	8%	17%	4%	9%	9%	13%
	Imported Work In	10%	0%	25%	6%	1%	0%
	Imported Other In	4%	0%	2%	8%	3%	0%
	Exported Work In	7%	0%	0%	2%	14%	29%
	Exported Other In	4%	0%	5%	3%	4%	3%
Outbound	One-Way Out	5%	0%	5%	5%	5%	6%
	Imported Work Out	9%	0%	0%	5%	20%	10%
	Imported Other Out	3%	0%	1%	5%	2%	3%
	Exported Work Out	5%	17%	9%	6%	2%	0%
	Exported Other Out	36%	67%	40%	38%	32%	29%
Pass-Through	XX	0%	0%	0%	1%	1%	0%
	XX with Stop	1%	0%	1%	1%	1%	0%
Internal Total		8%	0%	7%	12%	6%	6%
Inbound Total		32%	17%	37%	28%	30%	45%
Outbound Total		58%	83%	55%	58%	62%	48%
Pass-Through Total		1%	0%	1%	2%	2%	0%
Total		100%	1%	29%	31%	34%	6%
Internal Total		8%	0%	7%	12%	6%	6%
Imported Work		19%	0%	25%	12%	21%	10%
Imported Other		6%	0%	3%	12%	5%	3%
Exported Work		12%	17%	9%	8%	17%	29%
Exported Other		40%	67%	45%	41%	36%	32%
One-Way Total		13%	17%	9%	13%	14%	19%
Pass-Through Total		1%	0%	1%	2%	2%	0%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 6: SR 128 at the Napa/Sonoma County Line

License Plate Matching - Truck Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	0%	0%	0%	0%	2%	0%
	Internal Other	4%	0%	3%	6%	3%	0%
	Internal Unknown	1%	0%	1%	0%	3%	0%
Inbound	One-Way In	6%	40%	5%	8%	3%	13%
	Imported Work In	13%	40%	30%	5%	2%	0%
	Imported Other In	6%	0%	11%	9%	0%	0%
	Exported Work In	8%	0%	0%	8%	16%	38%
	Exported Other In	4%	0%	4%	5%	3%	13%
Outbound	One-Way Out	4%	0%	4%	5%	3%	0%
	Imported Work Out	13%	0%	0%	6%	36%	25%
	Imported Other Out	6%	0%	4%	14%	2%	0%
	Exported Work Out	5%	0%	9%	2%	3%	13%
	Exported Other Out	27%	20%	26%	33%	25%	0%
Pass-Through	XX	1%	0%	1%	2%	0%	0%
	XX with Stop	0%	0%	1%	0%	0%	0%
Internal Total		5%	0%	4%	6%	8%	0%
Inbound Total		38%	80%	50%	33%	23%	63%
Outbound Total		55%	20%	43%	59%	69%	38%
Pass-Through Total		1%	0%	3%	2%	0%	0%
Total		100%	2%	35%	30%	29%	4%
Internal Total		5%	0%	4%	6%	8%	0%
Imported Work		26%	40%	30%	11%	38%	25%
Imported Other		12%	0%	14%	23%	2%	0%
Exported Work		13%	0%	9%	9%	19%	50%
Exported Other		31%	20%	30%	38%	28%	13%
One-Way Total		10%	40%	9%	12%	6%	13%
Pass-Through Total		1%	0%	3%	2%	0%	0%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 7: SR 121 at the Napa/Sonoma County Line

License Plate Matching - Auto Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	0%	0%	0%	0%	0%	0%
	Internal Other	0%	0%	0%	0%	0%	0%
	Internal Unknown	0%	0%	0%	0%	0%	0%
Inbound	One-Way In	9%	7%	5%	10%	10%	14%
	Imported Work In	13%	26%	32%	10%	4%	2%
	Imported Other In	8%	4%	7%	13%	6%	4%
	Exported Work In	10%	0%	0%	8%	18%	22%
	Exported Other In	3%	0%	2%	4%	3%	3%
Outbound	One-Way Out	8%	5%	7%	8%	8%	8%
	Imported Work Out	12%	0%	0%	7%	25%	19%
	Imported Other Out	6%	1%	3%	8%	6%	7%
	Exported Work Out	11%	43%	27%	7%	3%	1%
	Exported Other Out	4%	2%	4%	5%	3%	2%
Pass-Through	XX	14%	9%	10%	17%	14%	17%
	XX with Stop	1%	2%	2%	2%	1%	0%
Internal Total		0%	1%	0%	0%	0%	0%
Inbound Total		44%	37%	46%	45%	41%	46%
Outbound Total		40%	52%	41%	36%	45%	36%
Pass-Through Total		15%	11%	12%	19%	14%	18%
Total		100%	2%	27%	28%	32%	11%
Internal Total		0%	1%	0%	0%	0%	0%
Imported Work		25%	26%	32%	16%	29%	22%
Imported Other		14%	5%	10%	21%	12%	11%
Exported Work		21%	43%	27%	15%	21%	23%
Exported Other		7%	2%	6%	9%	6%	5%
One-Way Total		17%	13%	13%	19%	18%	22%
Pass-Through Total		15%	11%	12%	19%	14%	18%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 7: SR 121 at the Napa/Sonoma County Line

License Plate Matching - Truck Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	0%	1%	0%	0%	0%	0%
	Internal Other	0%	0%	0%	0%	0%	0%
	Internal Unknown	0%	0%	0%	0%	0%	0%
Inbound	One-Way In	9%	2%	5%	11%	10%	13%
	Imported Work In	11%	25%	25%	4%	4%	1%
	Imported Other In	8%	6%	9%	12%	4%	6%
	Exported Work In	11%	0%	0%	9%	23%	22%
	Exported Other In	4%	0%	2%	7%	3%	3%
Outbound	One-Way Out	8%	7%	8%	8%	7%	6%
	Imported Work Out	9%	0%	0%	7%	21%	14%
	Imported Other Out	6%	1%	4%	9%	5%	8%
	Exported Work Out	12%	40%	29%	4%	2%	1%
	Exported Other Out	5%	2%	6%	7%	2%	3%
Pass-Through	XX	16%	15%	10%	20%	18%	23%
	XX with Stop	1%	0%	1%	1%	0%	0%
Internal Total		0%	1%	1%	0%	0%	0%
Inbound Total		43%	33%	41%	43%	44%	45%
Outbound Total		40%	51%	47%	35%	37%	32%
Pass-Through Total		17%	15%	11%	21%	19%	23%
Total		100%	3%	31%	30%	29%	7%
Internal Total		0%	1%	1%	0%	0%	0%
Imported Work		20%	25%	25%	12%	25%	15%
Imported Other		15%	7%	13%	21%	10%	14%
Exported Work		23%	40%	29%	13%	24%	23%
Exported Other		9%	2%	8%	14%	5%	6%
One-Way Total		16%	10%	13%	19%	17%	19%
Pass-Through Total		17%	15%	11%	21%	19%	23%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 8: SR 128 East of SR 121

License Plate Matching - Auto Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	0%	0%	0%	0%	0%	0%
	Internal Other	1%	0%	0%	2%	0%	0%
	Internal Unknown	0%	0%	0%	0%	0%	0%
Inbound	One-Way In	18%	20%	20%	18%	15%	24%
	Imported Work In	9%	40%	24%	5%	0%	0%
	Imported Other In	8%	20%	9%	6%	8%	6%
	Exported Work In	8%	0%	0%	4%	18%	18%
	Exported Other In	3%	0%	3%	2%	3%	6%
Outbound	One-Way Out	22%	0%	15%	23%	26%	24%
	Imported Work Out	9%	0%	0%	10%	14%	6%
	Imported Other Out	3%	0%	0%	4%	3%	18%
	Exported Work Out	8%	20%	18%	8%	2%	0%
	Exported Other Out	4%	0%	1%	3%	8%	0%
Pass-Through	XX	5%	0%	7%	10%	1%	0%
	XX with Stop	2%	0%	3%	3%	1%	0%
Internal Total		1%	0%	0%	2%	0%	0%
Inbound Total		46%	80%	57%	36%	44%	53%
Outbound Total		46%	20%	34%	49%	54%	47%
Pass-Through Total		8%	0%	9%	13%	2%	0%
Total		100%	2%	25%	34%	33%	6%
Internal Total		1%	0%	0%	2%	0%	0%
Imported Work		17%	40%	24%	15%	14%	6%
Imported Other		11%	20%	9%	10%	11%	24%
Exported Work		16%	20%	18%	12%	20%	18%
Exported Other		7%	0%	4%	5%	11%	6%
One-Way Total		40%	20%	35%	42%	41%	47%
Pass-Through Total		8%	0%	9%	13%	2%	0%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 8: SR 128 East of SR 121

License Plate Matching - Truck Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	0%	0%	0%	0%	0%	0%
	Internal Other	0%	0%	0%	0%	0%	0%
	Internal Unknown	0%	0%	0%	0%	0%	0%
Inbound	One-Way In	17%	0%	19%	18%	17%	22%
	Imported Work In	12%	40%	28%	13%	0%	0%
	Imported Other In	6%	20%	7%	10%	2%	0%
	Exported Work In	8%	0%	0%	5%	12%	44%
	Exported Other In	4%	0%	2%	8%	3%	11%
Outbound	One-Way Out	15%	20%	9%	10%	25%	0%
	Imported Work Out	13%	0%	0%	8%	25%	22%
	Imported Other Out	4%	0%	0%	10%	5%	0%
	Exported Work Out	9%	0%	16%	10%	5%	0%
	Exported Other Out	4%	0%	5%	3%	5%	0%
Pass-Through	XX	4%	0%	12%	0%	2%	0%
	XX with Stop	3%	20%	2%	8%	0%	0%
Internal Total		0%	0%	0%	0%	0%	0%
Inbound Total		48%	60%	56%	53%	33%	78%
Outbound Total		45%	20%	30%	40%	65%	22%
Pass-Through Total		7%	20%	14%	8%	2%	0%
Total		100%	3%	27%	25%	38%	6%
Internal Total		0%	0%	0%	0%	0%	0%
Imported Work		25%	40%	28%	20%	25%	22%
Imported Other		10%	20%	7%	20%	7%	0%
Exported Work		17%	0%	16%	15%	17%	44%
Exported Other		8%	0%	7%	10%	8%	11%
One-Way Total		32%	20%	28%	28%	42%	22%
Pass-Through Total		7%	20%	14%	8%	2%	0%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 9: Spring Mountain Rd at the Napa/Sonoma County Line

License Plate Matching - Auto Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	0%	--	0%	1%	0%	0%
	Internal Other	1%	--	2%	1%	0%	0%
	Internal Unknown	0%	--	0%	0%	0%	0%
Inbound	One-Way In	7%	--	6%	6%	8%	10%
	Imported Work In	17%	--	43%	13%	4%	10%
	Imported Other In	16%	--	16%	17%	14%	30%
	Exported Work In	9%	--	0%	5%	18%	10%
	Exported Other In	10%	--	2%	13%	13%	0%
Outbound	One-Way Out	4%	--	3%	3%	4%	10%
	Imported Work Out	9%	--	0%	4%	19%	20%
	Imported Other Out	3%	--	3%	4%	3%	0%
	Exported Work Out	9%	--	22%	5%	4%	0%
	Exported Other Out	12%	--	3%	18%	14%	0%
Pass-Through	XX	2%	--	0%	3%	0%	10%
	XX with Stop	2%	--	0%	5%	0%	0%
Internal Total		1%	--	2%	2%	0%	0%
Inbound Total		58%	--	67%	54%	56%	60%
Outbound Total		37%	--	32%	35%	44%	30%
Pass-Through Total		3%	--	0%	9%	0%	10%
Total		100%	0%	24%	36%	37%	4%
Internal Total		1%	--	2%	2%	0%	0%
Imported Work		26%	--	43%	17%	23%	30%
Imported Other		19%	--	19%	21%	17%	30%
Exported Work		17%	--	22%	11%	22%	10%
Exported Other		22%	--	5%	31%	26%	0%
One-Way Total		11%	--	10%	10%	13%	20%
Pass-Through Total		3%	--	0%	9%	0%	10%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 9: Spring Mountain Rd at the Napa/Sonoma County Line

License Plate Matching - Truck Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	0%	0%	0%	0%	0%	--
	Internal Other	0%	0%	0%	0%	0%	--
	Internal Unknown	0%	0%	0%	0%	0%	--
Inbound	One-Way In	7%	0%	6%	10%	6%	--
	Imported Work In	23%	0%	52%	14%	6%	--
	Imported Other In	20%	100%	23%	24%	11%	--
	Exported Work In	9%	0%	0%	0%	25%	--
	Exported Other In	3%	0%	3%	7%	0%	--
Outbound	One-Way Out	3%	0%	3%	3%	3%	--
	Imported Work Out	14%	0%	0%	21%	22%	--
	Imported Other Out	6%	0%	0%	7%	11%	--
	Exported Work Out	10%	0%	10%	3%	17%	--
	Exported Other Out	4%	0%	3%	10%	0%	--
Pass-Through	XX	0%	0%	0%	0%	0%	--
	XX with Stop	0%	0%	0%	0%	0%	--
Internal Total		0%	0%	0%	0%	0%	--
Inbound Total		62%	100%	84%	55%	47%	--
Outbound Total		38%	0%	16%	45%	53%	--
Pass-Through Total		0%	0%	0%	0%	0%	--
Total		100%	1%	32%	30%	37%	0%
Internal Total		0%	0%	0%	0%	0%	--
Imported Work		37%	0%	52%	34%	28%	--
Imported Other		26%	100%	23%	31%	22%	--
Exported Work		20%	0%	10%	3%	42%	--
Exported Other		7%	0%	6%	17%	0%	--
One-Way Total		10%	0%	10%	14%	8%	--
Pass-Through Total		0%	0%	0%	0%	0%	--

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 10: Howell Mountain Rd South of Cold Springs Rd

License Plate Matching - Auto Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	36%	37%	43%	27%	39%	36%
	Internal Other	45%	33%	39%	53%	42%	42%
	Internal Unknown	10%	11%	9%	10%	11%	16%
Inbound	One-Way In	0%	0%	0%	0%	0%	0%
	Imported Work In	0%	0%	0%	0%	0%	0%
	Imported Other In	0%	0%	0%	0%	0%	1%
	Exported Work In	1%	0%	0%	0%	1%	2%
	Exported Other In	0%	0%	0%	0%	0%	0%
Outbound	One-Way Out	0%	0%	0%	0%	0%	0%
	Imported Work Out	0%	0%	0%	0%	0%	0%
	Imported Other Out	0%	0%	0%	0%	0%	0%
	Exported Work Out	2%	0%	5%	2%	1%	0%
	Exported Other Out	6%	19%	4%	8%	5%	4%
Pass-Through	XX	0%	0%	0%	0%	0%	0%
	XX with Stop	0%	0%	0%	0%	0%	0%
Internal Total		91%	81%	91%	89%	92%	94%
Inbound Total		1%	0%	0%	0%	1%	2%
Outbound Total		8%	19%	9%	10%	6%	4%
Pass-Through Total		0%	0%	0%	0%	0%	0%
Total		100%	1%	26%	35%	28%	10%
Internal Total		91%	81%	91%	89%	92%	94%
Imported Work		0%	0%	0%	0%	0%	0%
Imported Other		0%	0%	0%	0%	0%	1%
Exported Work		3%	0%	5%	2%	2%	2%
Exported Other		6%	19%	4%	8%	5%	4%
One-Way Total		0%	0%	0%	0%	0%	0%
Pass-Through Total		0%	0%	0%	0%	0%	0%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 10: Howell Mountain Rd South of Cold Springs Rd

License Plate Matching - Truck Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	39%	43%	39%	30%	47%	56%
	Internal Other	45%	57%	47%	53%	34%	26%
	Internal Unknown	11%	0%	8%	11%	14%	11%
Inbound	One-Way In	0%	0%	0%	0%	0%	0%
	Imported Work In	0%	0%	0%	0%	0%	0%
	Imported Other In	0%	0%	0%	0%	0%	0%
	Exported Work In	1%	0%	0%	1%	0%	7%
	Exported Other In	0%	0%	0%	0%	0%	0%
Outbound	One-Way Out	0%	0%	0%	0%	0%	0%
	Imported Work Out	0%	0%	0%	0%	0%	0%
	Imported Other Out	0%	0%	0%	0%	0%	0%
	Exported Work Out	1%	0%	1%	2%	1%	0%
	Exported Other Out	3%	0%	5%	3%	3%	0%
Pass-Through	XX	0%	0%	0%	0%	0%	0%
	XX with Stop	0%	0%	0%	0%	0%	0%
Internal Total		95%	100%	95%	94%	96%	93%
Inbound Total		1%	0%	0%	1%	0%	7%
Outbound Total		5%	0%	5%	5%	4%	0%
Pass-Through Total		0%	0%	0%	0%	0%	0%
Total		100%	2%	35%	33%	24%	6%
Internal Total		95%	100%	95%	94%	96%	93%
Imported Work		0%	0%	0%	0%	0%	0%
Imported Other		0%	0%	0%	0%	0%	0%
Exported Work		2%	0%	1%	3%	1%	7%
Exported Other		3%	0%	5%	3%	3%	0%
One-Way Total		0%	0%	0%	0%	0%	0%
Pass-Through Total		0%	0%	0%	0%	0%	0%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 11: First St West of SR 29

License Plate Matching - Auto Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	27%	33%	29%	20%	31%	31%
	Internal Other	43%	27%	40%	49%	39%	41%
	Internal Unknown	19%	23%	17%	19%	21%	20%
Inbound	One-Way In	0%	0%	0%	0%	0%	0%
	Imported Work In	0%	0%	0%	0%	0%	1%
	Imported Other In	0%	0%	0%	0%	0%	0%
	Exported Work In	1%	0%	0%	1%	2%	2%
	Exported Other In	0%	0%	0%	0%	0%	0%
Outbound	One-Way Out	0%	0%	0%	0%	0%	0%
	Imported Work Out	0%	0%	0%	0%	0%	0%
	Imported Other Out	0%	0%	0%	0%	0%	0%
	Exported Work Out	2%	5%	3%	2%	1%	0%
	Exported Other Out	8%	13%	10%	9%	5%	5%
Pass-Through	XX	0%	0%	0%	0%	0%	0%
	XX with Stop	0%	0%	0%	0%	0%	0%
Internal Total		89%	83%	86%	88%	91%	92%
Inbound Total		1%	0%	0%	1%	2%	3%
Outbound Total		10%	17%	14%	11%	6%	5%
Pass-Through Total		0%	0%	0%	0%	0%	0%
Total		100%	1%	28%	32%	28%	10%
Internal Total		89%	83%	86%	88%	91%	92%
Imported Work		0%	0%	0%	0%	0%	1%
Imported Other		0%	0%	0%	0%	0%	0%
Exported Work		3%	5%	3%	3%	3%	2%
Exported Other		8%	13%	10%	9%	5%	5%
One-Way Total		0%	0%	0%	0%	0%	0%
Pass-Through Total		0%	0%	0%	0%	0%	0%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

Appendix C - License Plate Matching for Location 11: First St West of SR 29

License Plate Matching - Truck Trips		Time Period					
Trip Type		Daily	Early AM	AM Peak	Mid-Day	PM Peak	Late Night
Internal	Internal Work	23%	29%	26%	15%	27%	31%
	Internal Other	44%	29%	38%	52%	42%	39%
	Internal Unknown	23%	14%	24%	21%	25%	23%
Inbound	One-Way In	0%	0%	0%	0%	0%	0%
	Imported Work In	0%	0%	0%	0%	0%	0%
	Imported Other In	0%	0%	0%	0%	0%	0%
	Exported Work In	1%	0%	0%	1%	1%	1%
	Exported Other In	0%	0%	0%	0%	0%	0%
Outbound	One-Way Out	0%	0%	0%	0%	0%	0%
	Imported Work Out	0%	0%	0%	0%	0%	0%
	Imported Other Out	0%	0%	0%	0%	0%	0%
	Exported Work Out	2%	7%	3%	3%	0%	0%
	Exported Other Out	8%	21%	9%	10%	5%	6%
Pass-Through	XX	0%	0%	0%	0%	0%	0%
	XX with Stop	0%	0%	0%	0%	0%	0%
Internal Total		90%	71%	88%	87%	94%	93%
Inbound Total		1%	0%	0%	1%	1%	1%
Outbound Total		10%	29%	12%	12%	5%	6%
Pass-Through Total		0%	0%	0%	0%	0%	0%
Total		100%	1%	28%	35%	28%	7%
Internal Total		90%	71%	88%	87%	94%	93%
Imported Work		0%	0%	0%	0%	0%	0%
Imported Other		0%	0%	0%	0%	0%	0%
Exported Work		3%	7%	3%	3%	2%	1%
Exported Other		8%	21%	9%	10%	5%	6%
One-Way Total		0%	0%	0%	0%	0%	0%
Pass-Through Total		0%	0%	0%	0%	0%	0%

Note: License plate matching does not provide a true O-D pattern because it is based on locations where vehicles are observed rather than start or end points. It can however provide an XX O-D pattern for gateway locations. It can also provide inferred trip type for the region as well as individual intercept locations.

APPENDIX D:
SURVEYS

Napa County Transportation Planning Agency

Win 1 of 3 Visa Prepaid Gift Cards ($250, $100, $100)

Napa County Travel Survey

Help Improve Travel in Napa County

Survey ID: _____

Winery Name: _____

Napa County Transportation and Planning Agency (NCTPA) is conducting a travel survey which is a joint project with Napa County and the first step in developing a comprehensive Countywide Transportation Plan. This study will allow us to better understand how travelers move inside Napa County, including visitors. Most standard transportation data sources focus on the daily commute travel because this is generally when the system is most congested. In Napa, with nearly 3 million visitors per year, understanding the movements of visitors within the county is of critical importance to understand traffic patterns and transportation demand. This study will make use of several different sources of information including traffic counts, mailed surveys, cell phone location data, and intercept interviews at 30 wineries throughout the county. Fehr & Peers is conducting this study on behalf of NCTPA and Napa County. Please help us improve travel in Napa County.

Please simply fill out the survey below and mail it using the enclosed prepaid envelope.

1. Are you a resident, worker, or visitor of Napa County?
   - ☐ Full-time resident
   - ☐ Part-time resident
   - ☐ Non-resident but employed in the region
   - ☐ Visitor

2. Where were you immediately before visiting wineries today? (Starting location) (**Required**)
   - Address: _____
   - OR Cross Streets: _____
   - Business Name (Optional): _____
   - City: _____

3. Which of the following categories best describes this location? (Select **Only one** category) (**Required**)
   - ☐ Home
   - ☐ Work
   - ☐ School
   - ☐ Shopping
   - ☐ Winery
   - ☐ Hotel
   - ☐ Visiting friends/family
   - ☐ Personal business
   - ☐ Household errands
   - ☐ Leisure/entertainment
   - ☐ Medical Appointment

4. Where will you go immediately after visiting wineries today? (Ending location) (**Required**)
   - Address: _____
   - OR Cross Streets: _____
   - Business Name (Optional): _____
   - City: _____

5. Which of the following categories best describes this location? (Select **Only one** category) (**Required**)
   - ☐ Home
   - ☐ Work
   - ☐ School
   - ☐ Shopping
   - ☐ Winery
   - ☐ Hotel
   - ☐ Visiting friends/family
   - ☐ Personal business
   - ☐ Household errands
   - ☐ Leisure/entertainment
   - ☐ Medical Appointment

6. What time did you leave your starting location? (Enter time and circle am or pm)
   - Time: _____ am / pm

7. What was your total travel time to the first winery you visited today?
   - Time in Minutes: _____

8. How many total wineries or tasting rooms do you plan to visit today? (Include this winery)
   - Total Wineries: _____
   - Which wineries? (In order if known)

9. How often do you visit wineries in Napa?
   - ☐ Less than once a year
   - ☐ 1 to 3 times a year
   - ☐ More than 3 times a year

PLEASE CONTINUE SURVEY ON THE BACK OF THIS PAGE.

10. Did you make an appointment to visit here? yes / no

    If so, how far in advance did you make the appointment?
    - ☐ Within the last hour
    - ☐ One day ahead
    - ☐ More than one day ahead

11. How did you make the appointment?
    - ☐ On the phone
    - ☐ Online
    - ☐ In person
    - ☐ Hotel/concierge
    - ☐ Limo/tour company

12. How likely are you to visit a winery that requires advance appointments for wine tasting?
    - ☐ Very likely
    - ☐ Likely
    - ☐ Unlikely
    - ☐ Very unlikely

13. Did the business hours of this winery affect your decision to visit this winery? yes / no

14. Are you a member of this winery's wine club? yes / no

15. Have you been to this winery before? yes / no

    If so, was it for
    - ☐ Wine tasting
    - ☐ Wine tasting with food pairing
    - ☐ Special event

16. Which method of transportation did you utilize to get to this winery? (**Required**)
    - ☐ Personal automobile
    - ☐ Rental Car
    - ☐ Taxi
    - ☐ Limousine/wine tour vehicle
    - ☐ Hotel shuttle or courtesy vehicle
    - ☐ Walking
    - ☐ Bicycling
    - ☐ Public transit

17. What is your home zip/postal code? (**Required**)

    _____

18. How many persons are in your party? (Include yourself) (**Required**)

    ☐ 1 ☐ 2 ☐ 3 ☐ 4 or more

19. Of those, how many are household members? (Include yourself) (**Required**)

    ☐ 1 ☐ 2 ☐ 3 ☐ 4 or more

20. Could you have reasonably visited this winery with any of these modes of transportation?
    - ☐ Walking
    - ☐ Bicycling
    - ☐ Public transit or shuttle service

    If public transit or shuttle service was provided to this winery, would you use it? yes / no

21. What is the average age of your party?
    - ☐ under 21 years of age
    - ☐ 21 to 24 years of age
    - ☐ 25 to 34 years of age
    - ☐ 35 to 44 years of age
    - ☐ 45 to 54 years of age
    - ☐ 55 to 64 years of age
    - ☐ 65 to 74 years of age
    - ☐ 75 to 84 years of age
    - ☐ 85 years of age or older

22. What is the average level of education for your party?
    - ☐ 12th grade or less
    - ☐ High school graduate
    - ☐ Some college credit
    - ☐ Associate or technical school degree
    - ☐ Bachelor's or undergraduate degree
    - ☐ Graduate degree
    - ☐ Other:_____

23. What is the average household income for your party?
    - ☐ Less than $15,000 per year
    - ☐ $15,000 to $24,999 per year
    - ☐ $25,000 to $34,999 per year
    - ☐ $35,000 to $49,999 per year
    - ☐ $50,000 to $74,999 per year
    - ☐ $75,000 to $99,999 per year
    - ☐ $100,000 to $149,999 per year
    - ☐ $150,000 to $199,999 per year
    - ☐ $200,000 per year or more

If you would like to be entered in the drawing to win one of three Visa prepaid gift cards, please provide your name, email address and/or contact phone number:

Name: _____
Email: _____
Phone: _____

Eligibility: To be eligible to win, all required responses must be completed and legible. Three winners will be chosen on October 18th, 2013 and will be notified by telephone or email. Winners will have 5 business days to claim their prize - until 5 p.m. PST on Friday, October 25th, 2013.

For questions, please email k.johnson@fehrandpeers.com or call (925) 930-7100

Appendix D - In-Person Winery Survey Summary of Results

Napa Winery Travel Survey Results

General Statistics

172 responses
169 out of 172 answered almost every question

Winery	Survey Responses
Winery 1	54
Winery 2	25
Winery 3	17
Winery 4	14
Winery 5	13
Winery 6	10
Winery 7	10
Winery 8	8
Winery 9	7
Winery 10	7
Winery 11	4
Winery 12	2
Winery 13	1

Response Rate

Varied by winery but estimated to be around 50%
At one winery we had an 83% response rate
At another winery we had a 50% response rate

Visitor Type	Survey Responses	%
Full-time resident	11	6%
Part-time resident	2	1%
Non-resident but employed in the region	0	0%
Visitor	159	92%

92% of groups were visitors of Napa County

Where do you live?	Count	%
Alameda County	5	3%
Contra Costa County	5	3%
Napa County	11	6%
San Francisco County	5	3%
San Mateo County	2	1%
Santa Clara County	7	4%
Solano County	1	1%
Bay Area	36	21%
Other USA	110	64%
Outside USA	17	10%
Unspecified	9	5%

Only 21% of visitors were from the Bay Area
and 10% were from outside the USA

Start Location Statistics

Very few provided address or cross street information
Can map by City instead

Start City	Count	%
Napa	39	23%
San Francisco	39	23%
St. Helena	10	6%
Calistoga	8	5%
Fairfield	6	3%
San Jose	6	3%
Sonoma	6	3%
Outside State	6	3%
Petaluma	4	2%
Los Angeles	3	2%
Sacramento	3	2%
Walnut Creek	3	2%
Yountville	3	2%
Davis	2	1%
Fremont	2	1%
Healdsburg	2	1%
Kenwood	2	1%
Palo Alto	2	1%
Pleasanton	2	1%
San Ramon	2	1%
South San Francisco	2	1%
Vallejo	2	1%
American Canyon	1	1%
Brentwood	1	1%
Castro Valley	1	1%
Daly City	1	1%
Danville	1	1%
Emeryville	1	1%
Folsom	1	1%
Los Altos Hills	1	1%
Manteca	1	1%
Menlo Park	1	1%
Newport Beach	1	1%
Oakland	1	1%
Porterville	1	1%
Richmond	1	1%
Santa Clara	1	1%
Santa Rosa	1	1%
South Lake Tahoe	1	1%
Suisun City	1	1%

Start County	Count	%
Napa County	61	35%
San Francisco County	39	23%
Sonoma County	15	9%
Santa Clara County	10	6%
Solano County	9	5%
Alameda County	7	4%
Contra Costa County	7	4%
Outside State	6	3%
Los Angeles County	4	2%
Sacramento County	4	2%
San Mateo County	4	2%
Yolo County	2	1%
El Dorado County	1	1%
Orange County	1	1%
San Joaquin County	1	1%
Tulare County	1	1%

Most start their day in Napa or San Francisco
Only 35% start their day in Napa County

Start Location	Count	%
Hotel	110	64%
Home	49	28%
Visiting friends/family	6	3%
Work	2	1%
Winery	2	1%
Leisure/entertainment	2	1%
Personal business	1	1%
School	0	0%
Shopping	0	0%
Household errands	0	0%
Medical appointment	0	0%

64% started their day from a hotel

End Location Statistics

Very few provided address or cross street information
Can map by City instead

End City	Count	%
Napa	53	31%
San Francisco	39	23%
St. Helena	10	6%
Calistoga	8	5%
Fairfield	6	3%
Yountville	6	3%
Sacramento	4	2%
San Jose	4	2%
Sonoma	4	2%
Vallejo	3	2%
Walnut Creek	3	2%
Fremont	2	1%
Healdsburg	2	1%
Petaluma	2	1%
Pleasanton	2	1%
San Ramon	2	1%
Outside State	2	1%
American Canyon	1	1%
Benicia	1	1%
Berkeley	1	1%
Brentwood	1	1%
Cloverdale	1	1%
Danville	1	1%
Davis	1	1%
Emeryville	1	1%
Green Valley	1	1%
Kenwood	1	1%
South Lake Tahoe	1	1%
Lakeport	1	1%
Newport Beach	1	1%
Oakland	1	1%
Palo Alto	1	1%
Richmond	1	1%
San Mateo	1	1%
Santa Rosa	1	1%
South San Francisco	1	1%
Suisun City	1	1%

End County	Count	%
Napa County	78	45%
San Francisco County	39	23%
Solano County	12	7%
Sonoma County	11	6%
Alameda County	7	4%
Contra Costa County	7	4%
Santa Clara County	5	3%
Sacramento County	4	2%
Outside State	2	1%
San Mateo County	2	1%
El Dorado County	1	1%
Los Angeles County	1	1%
Orange County	1	1%
Yolo County	1	1%
Lake County	1	1%

Most end their day in Napa or San Francisco
Only 45% (higher than start) end their day in Napa County

End Location	Count	%
Hotel	107	62%
Home	41	24%
Visiting friends/family	8	5%
Leisure/entertainment	6	3%
Shopping	4	2%
Winery	4	2%
Personal business	2	1%
Work	0	0%
School	0	0%
Household errands	0	0%
Medical appointment	0	0%

62% end their day at a hotel (same as start)

Travel & Frequency

Average Departure Time
10:14 AM

Average Travel Time (Minutes)
74

Average Number of Wineries Planned to Visit
3.1

Very few specified the other wineries they visited.
Most did not know and a lot of these were guesses
or planned and may not have happened

How often do you visit wineries in Napa?	Count	%
Less than once a year	103	61%
1 to 3 times a year	41	24%
More than 3 times a year	24	14%

More than half the groups (61%) infrequently visit Napa wineries

Make an appointment?	Count	%
No	109	65%
Yes - Within the last hour	10	6%
Yes - One day ahead	4	2%
Yes - More than one day ahead	45	27%

How did you make the appointment?	Count	%
On the phone	33	56%
Online	20	34%
In person	2	3%
Hotel/concierge	3	5%
Limo/tour company	1	2%

How likely to visit winery requiring appointment?	Count	%
Very likely	48	28%
Likely	53	31%
Unlikely	31	18%
Very unlikely	37	22%

88% said the business
hours did NOT affect
their decision

89% were NOT members
of the wine club

Have you been to this winery before?	Count	%
No	117	69%
Yes - Wine tasting	48	28%
Yes - Wine tasting with food pairing	1	1%
Yes - Special event	3	2%

Almost 70% were first-time visitors to the winery

Transportation & Demographics

Which method of transportation did you use?	Count	%
Rental car	89	52%
Personal automobile	62	36%
Limousine/wine tour vehicle	18	10%
Bicycling	2	1%
Taxi	1	1%
Hotel shuttle or courtesy vehicle	0	0%
Walking	0	0%
Public transit	0	0%

52% traveled by rental car, only 36% by personal auto

Average party size is 2.8 persons
Of those, about 1.9 (68%) are household members

19% said public transit or shuttle was a reasonable option
but 0% used public transit (10% used limo our wine tour though)

58% said they would use
transit if it was an option

Average Age	Count	%
under 21 years of age	1	1%
21 to 24 years of age	2	1%
25 to 34 years of age	37	23%
35 to 44 years of age	47	29%
45 to 54 years of age	45	27%
55 to 64 years of age	24	15%
65 to 74 years of age	8	5%
75 to 84 years of age	0	0%
85 years of age or older	0	0%

80% of visitors wre age 25 to 54

Average Level of Education	Count	Percent
12th grade or less	0	0%
High school graduate	1	1%
Some college credit	6	4%
Associate or technical school degree	4	2%
Bachelor's or undergraduate degree	87	53%
Graduate degree	64	39%
Other	1	1%

92% have an undergraduate college degree or highe

Average Household Income	Count	%
Less than $15,000 per year	1	1%
$15,000 to $24,999 per year	1	1%
$25,000 to $34,999 per year	0	0%
$35,000 to $49,999 per year	2	1%
$50,000 to $74,999 per year	8	6%
$75,000 to $99,999 per year	15	11%
$100,000 to $149,999 per year	42	30%
$150,000 to $199,999 per year	21	15%
$200,000 per year or more	49	35%

Roughly 80% have an average household income over $100,000 a year
Median US household income is around $50,000
Median California household income is around $60,000
Median Bay Area household income is around $75,000

Napa County Employer Travel Survey

Help Improve Travel in Napa County

Your information will not be shared.

1) Where do you live? (Home location)

Address

Or Cross Streets (name both streets)

*2) Home City (Required):

*3) Where do you work? (Work location) (Required)

Business name

Address

Or Cross Streets (name both streets)

*4) Work City (Required):

*Response required for eligibility of one of three $100 prepaid Visa Gift Cards.

Help Improve Travel in Napa County

5) What time do you typically leave your home for work?

HH MM AM/PM

Time :

6) Please describe any intermediate stops you typically make on your way to work.

Stop 1 Purpose (school, coffee, etc.):

Stop 1 Location (cross streets or business name):

Stop 2 Purpose (school, coffee, etc.):

Stop 2 Location (cross streets or business name):

Stop 3 Purpose (school, coffee, etc.):

Stop 3 Location (cross streets or business name):

7) What is your typical travel time to work (including any intermediate stops)?

Time in Minutes

8) Please list (in order if possible) the major roadways you travel to get to work including roadways used for typical intermediate stops (e.g., State Route 29).

Help Improve Travel in Napa County

9) What time do you typically leave work for home?

	HH	MM	AM/PM
Time		:	

10) Please describe any intermediate stops you typically make on your way home.

Stop 1 Purpose (school, coffee, etc.):

Stop 1 Location (cross streets or business name):

Stop 2 Purpose (school, coffee, etc.):

Stop 2 Location (cross streets or business name):

Stop 3 Purpose (school, coffee, etc.):

Stop 3 Location (cross streets or business name):

11) What is your typical travel time home (including any intermediate stops)?

Time in Minutes

12) Please list (in order if possible) the major roadways you travel to get home including roadways used for typical intermediate stops (if different than to work).

Help Improve Travel in Napa County

13) How many days in a typical week do you commute to/from your work location?

◯ 0 ◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7

Napa County Employer Travel Survey

***14) What percent of the time do you use the following modes of transportation to commute to/from your work location? (Should add up to 100) (Required)**

Personal automobile	
Walking	
Bicycling	
Public transit or shuttle service	
Car pool/van pool	

15) How many days in a typical week do you work from home?

◯ 0 ◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7

16) Do you have flexible work hours that allow you to alter your commute times?

◯ Yes

◯ No

17) Is your typical work week Monday to Friday?

◯ Yes

◯ No

*Response required for eligibility of one of three $100 prepaid Visa Gift Cards.

Help Improve Travel in Napa County

18) Can you reasonably travel to work using any of these modes of transportation? (Select ALL that apply)

☐ Walking

☐ Bicycling

☐ Public transit or shuttle service

☐ Car pool/van pool

19) If public transit or a shuttle service was expanded and became a reasonable option for your work trip, would you be willing to use it?

◯ Yes

◯ No

Napa County Employer Travel Survey

20) If yes, please describe the changes necessary to make public transit or a shuttle service a reasonable option for your work trip.

Help Improve Travel in Napa County

***21) Please answer the following questions: (Required)**

	1	2	3	4 or more
What is typically the highest number of passengers in your vehicle on your way to/from work? (Include yourself)	◯	◯	◯	◯
How many people are in your household? (Include yourself)	◯	◯	◯	◯
How many vehicles are available to your household?	◯	◯	◯	◯

22) What is your age?

23) What is your highest level of education?

Other (please specify)

24) What is your annual household income?

*Response required for eligibility of one of three $100 prepaid Visa Gift Cards.

Help Improve Travel in Napa County

Thank you for participating! To be entered to win one of three $100 prepaid Visa gift cards, please provide your name and email (or phone number):

Name

Email

Phone

Appendix D - Online Employer Survey Summary of Results

Napa Employer Travel Survey Results

General Statistics

1,444 responses
1,333 (92%) answered almost evey questior

Responses from almost 400 employers
Some are duplicates due to departments, etc
Largest responder was County of Napa (292 or 20%
Followed by City of Napa (95 or 7%)

Home and Work Location

Live City	Count	%
Napa	742	51%
St. Helena	83	6%
Vallejo	65	5%
American Canyon	63	4%
Fairfield	54	4%
Angwin	47	3%
santa rosa	47	3%
Calistoga	46	3%
Vacaville	39	3%
Sonoma	36	2%
Yountville	27	2%
Petaluma	20	1%
Benicia	16	1%
Suisun City	14	1%
Hidden Valley Lake	12	1%
Novato	8	1%
San Francisco	8	1%
Rohnert Park	7	0%
Cotati	6	0%
Pope Valley	6	0%
Sacramento	6	0%
Healdsburg	5	0%
Concord	4	0%
Glen Ellen	4	0%
Martinez	4	0%
San Rafael	4	0%
Kelseyville	3	0%
middletown	3	0%
Oakland	3	0%
Oakville	3	0%
Walnut Creek	3	0%
winters	3	0%
Woodland	3	0%
Unspecified	2	0%
Albany	2	0%
Berkeley	2	0%
Danville	2	0%
Deer Park	2	0%
El Cerrito	2	0%
rodeo	2	0%
Rutherford	2	0%
Sebastopol	2	0%
Windsor	2	0%
Alameda	1	0%
Atlanta, GA	1	0%
Bethel Island	1	0%
Brentwood	1	0%
Burlingame	1	0%
Cazadero	1	0%
Chico	1	0%
Clearlake Oaks	1	0%
Cobb	1	0%
Cordelia	1	0%
Crockett	1	0%
Elk Grove	1	0%
Galt	1	0%
Hayward	1	0%
La quinta	1	0%
Lafayette	1	0%
Lake Forest	1	0%
Loch Lomond	1	0%
Lower Lake	1	0%
mill valley	1	0%
Orangevale	1	0%
Pinole	1	0%
Redding	1	0%
Riverbank	1	0%
Ryde	1	0%
San Anselmo	1	0%
san lorenzo	1	0%
San Pablo	1	0%
Stockton	1	0%
west sacramento	1	0%

Live County	Count	%
Napa County	1021	71%
Solano County	189	13%
Sonoma County	130	9%
Contra Costa County	22	2%
Lake County	22	2%
Marin County	14	1%
Alameda County	10	1%
Sacramento County	10	1%
San Francisco County	8	1%
Yolo County	7	0%
Unspecified	2	0%
Butte County	1	0%
Los Angeles County	1	0%
Orange County	1	0%
Outside California	1	0%
Riverside County	1	0%
San Joaquin County	1	0%
San Mateo County	1	0%
Shasta County	1	0%
Stanislaus County	1	0%

51% live in City of Napa and 71% live in Napa County

Work City	Count	%
Napa	808	56%
St. Helena	208	14%
Yountville	110	8%
Rutherford	90	6%
Calistoga	84	6%
american canyon	60	4%
Angwin	48	3%
Oakville	23	2%
Unspecified	7	0%
Healdsburg	1	0%
Lodi	1	0%
Redding	1	0%
Santa Rosa	1	0%
Sonoma	1	0%
unincorpirated napa	1	0%

56% of respondents work in the City of Napa

"To Work" Statistics

Average Home Departure Time
7:50 AM

Average Travel Time to Work (Minutes)
31

Way to Work Intermediate Stops
485 (34%) make at least 1 stop
142 (10%) make at least 2 stops
56 (4%) make 3 or more stops

Most Common Stop Purposes
Coffee - 126 (26%)
Schoool - 168 (35%)
Gas - 26 (5%)

66% make no stops on the way to work

To Work Route	Count	%
SR 29	829	61%
Silverado Trail	344	25%
Soscol Ave	173	13%
I-80	168	12%
1st St	127	9%
SR 121	125	9%
SR 12	119	9%
Imola Ave	108	8%
Trancas St	91	7%
Lincoln Ave	87	6%
SR 128	41	3%
Howell Mountain Rd	35	3%
Spring Mountain Rd	32	2%
SR 221	27	2%

61% of surveyed commuters use SR 29 to get to Work

"Return Home" Statistics

Average Work Departure Time
4:00 PM

Average Travel Time to Home (Minutes)
37

Way Home Intermediate Stops
426 (30%) make at least 1 stop
131 (9%) make at least 2 stops
52 (4%) make 3 or more stops

Most Common Stop Purposes
Coffee - 7 (2%)
Schoool - 92 (22%)
Gas - 25 (6%)
Gym - 41 (10%)
Shopping - 150 (35%)

70% make no stops on the way home
compared to 66% on the way to work

To Home Route	Count	%	Change
SR 29	619	55%	-6%
Silverado Trail	269	24%	-1%
Soscol Ave	152	13%	1%
I-80	136	12%	0%
1st St	98	9%	-1%
SR 121	102	9%	0%
SR 12	79	7%	-2%
Imola Ave	83	7%	-1%
Trancas St	104	9%	3%
Lincoln Ave	73	6%	0%
SR 128	26	2%	-1%
Howell Mountain Rd	27	2%	0%
Spring Mountain Rd	18	2%	-1%
SR 221	17	2%	0%

55% of surveyed commuters use SR 29 to go Home

Transportation

Mode Split	>90% of the Time		>50% of the Time	
Personal automobile	1,220	92%	1,283	97%
Walking	11	0.8%	20	1.5%
Bicycling	8	0.6%	17	1.3%
Public transit or shut	5	0.4%	14	1.1%
Car pool/van pool	6	0.5%	20	1.5%

97% commute using their personal automobile more than half the time

20% carpool in one form or another

Typical Commute Week	Count	%
0 Days	20	2%
1 Day	5	0%
2 Days	34	3%
3 Days	52	4%
4 Days	114	9%
5 Days	1046	79%
6 Days	43	3%
7 Days	8	1%

79% commute 5 days a week

Work from Home	Count	%
0 Days	1175	88%
1 Day	67	5%
2 Days	36	3%
3 Days	12	1%
4 Days	4	0%
5 Days	26	2%
6 Days	2	0%
7 Days	11	1%

88% do not work from home

35% have flexible work hours that allow
them to alter their commute time

79% have a typical work week

Can you reasonably commute using these modes of transportation?

Walking	Bicycling	Public Transit	Car Pool
165	297	242	327
12%	22%	18%	25%

But 86% say they use their personal automobile 100% of the time

43% said they would use public transit if service was
expanded and became a reasonable optio

Responders listed a lot of great ideas for changes to make
public transit a reasonable optior
Proximity to home, more frequent headways,
and late-night service are mentioned the mos

Demographics

Average household size is 2.5 persons

Average household has 2.2 vehicles

Average Age	Count	%
18 to 24 years of age	38	3%
25 to 34 years of age	301	23%
35 to 44 years of age	289	22%
45 to 54 years of age	373	28%
55 to 64 years of age	272	21%
65 to 74 years of age	34	3%
75 to 84 years of age	2	0%
85 years of age or older	0	0%

Similar age distribution to winery visitors,
Fewer in the 35 to 44 age bracket (22% vs. 29% for wineries

Average Level of Education	Count	Percent
12th grade or less	10	1%
High school graduate	53	4%
Some college credit	252	19%
Associate or technical school degree	165	12%
Bachelor's or undergraduate degree	530	40%
Graduate degree	286	22%
Other	6	0%

62% have an undergraduate college degree or higher
(compared to 92% for winery visitors)

Average Household Income	Count	%
Less than $15,000 per year	10	1%
$15,000 to $24,999 per yea	14	1%
$25,000 to $34,999 per yea	43	4%
$35,000 to $49,999 per yea	99	8%
$50,000 to $74,999 per yea	245	20%
$75,000 to $99,999 per yea	233	19%
$100,000 to $149,999 per yea	320	26%
$150,000 to $199,999 per yea	154	13%
$200,000 per year or more	106	9%

Roughly 47% have an average household income over $100,000 a yea
(compared to 80% for winery visitors)
Median US household income is around $50,00
Median California household income is around $60,00
Median Bay Area household income is around $75,00

BLEED

KEEP CLEAR OF CRITICAL ART

SAFE ZONE

NCTPA Napa County Transportation Planning Agency

Win 1 of 3 Visa Prepaid Gift Cards ($250, $100, $100)

Napa County Travel Survey

Help Improve Travel in Napa County

Napa County Transportation and Planning Agency (NCTPA) is conducting a travel survey which is a joint project with Napa County and the first step in developing a comprehensive Countywide Transportation Plan. This study will allow us to better understand how travelers move inside Napa County, including visitors. Most standard transportation data sources focus on the daily commute travel because this is generally when the system is most congested. In Napa, with nearly 3 million visitors per year, understanding the movements of visitors within the county is of critical importance to understand traffic patterns and transportation demand. This study will make use of several different sources of information including traffic counts, mailed surveys, cell phone location data, and intercept interviews at wineries throughout the county. Fehr & Peers is conducting this study on behalf of NCTPA and Napa County. You have been invited to participate because a vehicle registered to your address traveled in the region on Friday, November 15, 2013.

Your Unique Survey ID: >>Survey ID<< **Date and Time:** >>Date and Time<<

Location Surveyed: >>Location 1<<

>>Location 2<<

Take the survey online or on your smart phone at:

www.surveymonkey.com/s/NapaTravelSurvey

For questions, please email Kevin Johnson at kjohnson@fehrandpeers.com or call (925) 930-7100

Napa County Travel Survey

Help Improve Travel in Napa County

Your information will not be shared.

***1. Unique Survey ID (Required)**

You can find your Unique Survey ID near the bottom of the mailer.

2. At the time of travel were you a resident, worker, student, or visitor of Napa County?

*Response required for eligibility of one of three prepaid Visa Gift Cards ($250, $100, $100).

Help Improve Travel in Napa County

***3. Where did you begin this auto trip? (Starting location) (Required)**

Address

Or Cross Streets (name both streets)

Business name (optional)

***4. City:**

***5. Where did you come from for this auto trip? Which of the following categories best describes this location? (Required)**

*Response required for eligibility of one of three prepaid Visa Gift Cards ($250, $100, $100).

Help Improve Travel in Napa County

***6. Where did you end this auto trip? (Ending location) (Required)**

Address

Or Cross Streets (name both streets)

Business name (optional)

***7. City:**

Napa County Travel Survey

***8. Where did you go on this auto trip? Which of the following categories best describes this location? (Required)**

*Response required for eligibility of one of three prepaid Visa Gift Cards ($250, $100, $100).

Help Improve Travel in Napa County

9. What time did you begin this auto trip?

	HH	MM	AM/PM
Time		:	

10. What was your total travel time for this auto trip (Starting Location to Ending Location)?

Time in Minutes

11. How often do you make this trip?

***12. Please answer the following questions: (Required)**

	1	2	3	4 or more
How many passengers were in the vehicle at the time of the auto trip? (Include yourself)	◯	◯	◯	◯
Of those, how many were household members? (Include yourself)	◯	◯	◯	◯
How many people are in your household? (Include yourself)	◯	◯	◯	◯
How many vehicles are available to your household?	◯	◯	◯	◯

*Response required for eligibility of one of three prepaid Visa Gift Cards ($250, $100, $100).

Help Improve Travel in Napa County

Napa County Travel Survey

13. Could this trip have been made with other modes of transportation? If so, which modes? (Select ALL that apply)

- [ ] No Other Modes
- [ ] Walking
- [ ] Bicycling
- [ ] Public transit, shuttle, limo, or taxi
- [ ] Van pool/car pool
- [ ] Don't know

14. If public transit or shuttle service was expanded to these areas, would you be willing to make this trip using public transit or a shuttle?

- ◯ Yes
- ◯ No

15. Do you use public transit systems (bus, ferry, light rail)? How often?

16. If yes, for what purposes? (Select ALL that apply)

- [ ] Work
- [ ] School
- [ ] Shopping or Dining
- [ ] Recreational
- [ ] Other

Help Improve Travel in Napa County

17. Were you aware that Napa County has a transit system that connects to the Ferry, BART, Sonoma County and Solano County?

- ◯ Yes
- ◯ No

18. If yes, have you ever used public transit to get to/from Napa County to other locations in the Bay Area or Lake County?

- ◯ Yes
- ◯ No

Napa County Travel Survey

19. What would entice you to consider public transit on your next trip to Napa County? (Select ALL that apply)

- [ ] Service frequency where buses would operate at least every 15 minutes apart to Ferry or BART
- [ ] Service frequency where buses would operate at least every 15 minutes in/around Napa
- [ ] Late night service
- [ ] Rail Service
- [ ] Intercity shuttle service

20. What would entice you to make this trip by bicycle?

- [ ] Safer bicycle infrastructure/conditions
- [ ] Better road quality
- [ ] Dedicated bicycle lanes
- [ ] Separated bicycle path
- [ ] This trip is not feasible to make on bike

21. Do you use van pools or car pools?

- ◯ Yes
- ◯ No

Help Improve Travel in Napa County

22. What is your age?

23. What is your highest level of education?

Other (please specify)

24. What is your annual household income?

Help Improve Travel in Napa County

Napa County Travel Survey

25. Thank you for participating! To be entered to win one of three prepaid Visa gift cards ($250, $100, $100), please provide your name and email (or phone number):

Name	
Email	
Phone	

*Response required for eligibility of one of three prepaid Visa Gift Cards ($250, $100, $100).

Appendix D - Vehicle Intercept Mail Survey Summary of Results

Napa Vehicle Intercept Mail Survey Results

General Statistics

183 responses
168 answered almost every questior

Population (# of unique License Plates	85,531
Survey's Mailed	8,500
Responses needed for 95% confidence leve and 10% confidence interval at each of the 11 survey location	625
Response Rate	2.2%

Due to the low response rate the responses are only statistical
valid looking **at all locations together** rather than individual location

Confidence Interval for **all locations together** using a 95% confidence level: 7%

Vehicle Intercept Location	Count	%
Highway 29 - Southeast of Adams St in St. Helen	28	15%
Highway 121 - at the Sonoma/Napa County Line	26	14%
Highway 12 - at the Napa/Solano County Line	25	14%
Highway 29 - at the Napa/Lake County Line	22	12%
First Street - West of SR 2(	20	11%
Highway 29 - North of American Canyon R	17	9%
Howell Mountain Road - South of Cold Springs Roa	16	9%
Highway 29 - Southeast of SR 128 in Calistog	15	8%
Highway 128 - East of SR 12	7	4%
Highway 128 - at the Sonoma/Napa County Line	4	2%
Spring Mountain Road - at the Napa/Sonoma County Line	3	2%

Only 17 responses for SR 29 North of American Canyon R
which is the location with the most observed vehicles (30% of total observed vehicle

Classification	Count	%
Full-time resident	97	52%
Part-time resident	2	1%
Non-resident but employed in the regior	49	26%
Student	3	2%
Visitor	31	17%

More than half the respondents are full-time residents of Napa County

Start Information

Start City	Count	%
Napa	57	31%
St. Helena	18	10%
calistoga	14	8%
Angwin	9	5%
Santa Rosa	7	4%
Sonoma	6	3%
Vallejo	6	3%
Hidden Valley Lake	5	3%
Suisun City	4	2%
Yountville	4	2%
American Canyon	3	2%
Fairfield	3	2%
Kelseyville	3	2%
Novato	3	2%
Sacramento	3	2%
Dixon	2	1%
middletown	2	1%
Petaluma	2	1%
Pope Valley	2	1%
San Francisco	2	1%
Vacaville	2	1%
Alamo	1	1%
Benicia	1	1%
Chico	1	1%
Citrus Heights	1	1%
clearlake	1	1%
Cotati	1	1%
davis	1	1%
Glendale	1	1%
Grass Valley	1	1%
healdsburg	1	1%
Martinez	1	1%
mckinleyville	1	1%
Mill valley	1	1%
Oakland	1	1%
Oakville	1	1%
Pinole	1	1%
Pleasant Hil	1	1%
Rancho Cordova	1	1%
Redwood City	1	1%
richmond	1	1%
Rocklin	1	1%
Rohnert Park	1	1%
Rutherford	1	1%
Santa Clara	1	1%
Sebastopol	1	1%
Woodbridge	1	1%

Start County	Count	%	From Cell Data
Napa County	109	--	--
Sonoma County	19	26%	32%
Solano County	18	24%	30%
Lake County	11	15%	1%
Contra Costa County	5	7%	9%
Marin County	4	5%	3%
Sacramento County	4	5%	3%
San Francisco County	2	3%	2%
Alameda County	1	1%	5%
Butte County	1	1%	0%
Humboldt County	1	1%	0%
Los Angeles County	1	1%	0%
Nevada County	1	1%	0%
Placer County	1	1%	1%
Sacramento	1	1%	1%
San Joaquin County	1	1%	4%
San Mateo County	1	1%	1%
Santa Clara County	1	1%	2%
Yolo County	1	1%	2%

County of origin very closely resembles the cell phone dat
Can only compare for external trips because we collecte
counts at all external gateways but only a few internal locatior

Likely need to redistribute Lake County to Sonoma and Solano

Can map the starting address and/or cross street

Where did you come from?	Count	%
Home	147	80%
Work	23	13%
Personal business	4	2%
Shopping	3	2%
Work business	2	1%
School	1	1%
Hotel	1	1%
Visiting friends/famil	1	1%
Household errands	1	1%
Winery	0	0%
Leisure/entertainmen	0	0%
Medical appointment	0	0%

End Information

End City	Count	%
Napa	66	37%
St. Helena	34	19%
calistoga	12	7%
Santa Rosa	12	7%
Angwin	9	5%
American Canyon	5	3%
Yountville	4	2%
fairfield	3	2%
Petaluma	3	2%
Vallejo	3	2%
Clearlake	2	1%
Hidden Valley Lake	2	1%
Novato	2	1%
Rutherford	2	1%
san rafael	2	1%
Belmont	1	1%
Citrus Heights	1	1%
davis	1	1%
Ft. Bragg	1	1%
Kelseyville	1	1%
Los Gatos	1	1%
Lower Lake	1	1%
Martinez	1	1%
oakville	1	1%
Point Arena	1	1%
Pt Reyes Statior	1	1%
Rio vista	1	1%
Rohnert Park	1	1%
Sacramento	1	1%
San Francisco	1	1%
Sonoma	1	1%

End County	Count	%
Napa County	133	--
Sonoma County	17	39%
Solano County	7	16%
Lake County	6	14%
Marin County	5	11%
Mendocino County	2	5%
Sacramento County	2	5%
Contra Costa County	1	2%
San Francisco County	1	2%
San Mateo County	1	2%
Santa Clara County	1	2%
Yolo County	1	2%

Can map the ending address and/or cross street

Where did you end at?	Count	%
Work	71	40%
Shopping	20	11%
Visiting friends/famil	18	10%
Home	16	9%
School	9	5%
Work business	9	5%
Winery	8	5%
Leisure/entertainmen	8	5%
Personal business	6	3%
Medical appointment	5	3%
Household errands	4	2%
Hotel	3	2%

Trip Information

Imposed vs. Exported Trips	Mail Survey	LP Matching	Cell Data
% of External Trips Exporte	34%	39%	35%
% of External Trips Importec	66%	61%	65%

Trip Purpose	Mail Survey	National Avgs	Cell Data
HBW	34%	25%	36%
HBO	40%	50%	33%
NHB	26%	25%	31%

Average Departure Time
10:07 AM

Average Travel Time (Minutes)
57

How Often?	Count	%
Less than 1 time per month	35	21%
1 to 3 times per month	31	19%
1 to 3 times per week	26	16%
4 or more times per week	74	45%

21% of trips were "less than 1 time per month" which could be tourists (17% were visito

Average Auto Occupancy
1.37

72% were single occupant trips

Average # of Household Members in Automobile
1.30

94% of occupants were household members

Other Mode Information

62% of respondents said their trip could have been made with another mor
but all 183 trips were made by automobil

53% said they would not be willing to use public trans

85% said they rarely or never use public trans

Those that use transit predominantly use it for recreational purpose

67% were aware Napa County has a transit syster
that connects to the Ferry, BART, and Sonoma an
Solano Counties

However, only 23% have used i

In general, the choices regarding "what would entice you to use public transit" were equally selec

More people felt "safer bicycle infrastructure/conditions" would entice them to make their trip by bicy

18% use van pools or car pools

Demographic Information

Average Household Size
2.45

Average Vehicles Per Household
2.15

Average Age	Count	%
18 to 24 years of age	2	1%
25 to 34 years of age	21	13%
35 to 44 years of age	30	18%
45 to 54 years of age	36	21%
55 to 64 years of age	51	30%
65 to 74 years of age	19	11%
75 to 84 years of age	8	5%
85 years of age or olde	1	1%

Bias towards older age group who likely have more time to fill out the surv

Average Level of Education	Count	Percent
12th grade or less	2	1%
High school graduate	8	5%
Some college credit	26	15%
Associate or technical school degree	21	12%
Bachelor's or undergraduate degree	62	36%
Graduate degree	49	29%
Other	0	0%

65% have an undergraduate college degree or highe
(compared to 92% for winery visitors

Average Household Income	Count	%
Less than $15,000 per yea	4	3%
$15,000 to $24,999 per yea	1	1%
$25,000 to $34,999 per yea	7	4%
$35,000 to $49,999 per yea	15	9%
$50,000 to $74,999 per yea	33	21%
$75,000 to $99,999 per yea	27	17%
$100,000 to $149,999 per yea	37	23%
$150,000 to $199,999 per yea	15	9%
$200,000 per year or more	20	13%

Roughly 45% have an average household income over $100,000 a yea
(compared to 80% for winery visitors
Median income appears to be above $75,00(
Median US household income is around $50,00(
Median California household income is around $60,00
Median Bay Area household income is around $75,00(

APPENDIX E:
MOBILE DEVICE DATA

Appendix E - Mobile Device Data County of Origin for External Trips

County Name	Friday Trips	Friday % of Trips	From Vehicle Intercept Survey
Sonoma	40,973	35%	26%
Solano	32,765	28%	24%
Contra Costa	9,740	8%	7%
Alameda	6,810	6%	1%
Marin	3,642	3%	5%
San Joaquin	3,543	3%	1%
San Benito	3,535	3%	
Santa Clara	2,891	3%	1%
San Francisco	2,505	2%	3%
Yolo	1,986	2%	1%
Sacramento	1,424	1%	5%
Lake	1,392	1%	15%
San Mateo	1,329	1%	1%
Stanislaus	1,137	1%	
Mendocino	779	1%	1%
Merced	510	0%	
Placer	503	0%	
El Dorado	54	0%	
Sutter	54	0%	
Total	**115,574**	**100%**	**91%**

F. Public Comments

(THIS PAGE INTENTIONALLY LEFT BLANK)

NAPA COUNTY FARM BUREAU

811 Jefferson Street Napa, California 94559 Telephone 707-224-5403 Fax 707-224-7836

July 14, 2015

Napa County Transportation and Planning Agency
John F Dunbar, Chair of the Board of Directors
625 Burnell St.
Napa, California 94559

RE: Comments on draft Napa Countywide Transportation Plan – Vision 2040

Dear Chairperson Dunbar & NCTPA Board Members,

Napa County Farm Bureau represents over 750 local farmers and ranchers, including individuals involved in production agriculture and non-farm members who support our mission of promoting and protecting agriculture in Napa County. We thank you for the opportunity to participate in the Citizen's Advisory Committee (CAC) for the Countywide Transportation Plan and submit these comments for your consideration.

Farm Bureau acknowledges the excellent work done to date and supports the six stated goals of the plan. But we do find it difficult to comment on the vision for 2040, as there's no written draft plan that prioritizes the goals and provides a clear strategy and investment plan to guide our efforts to maintain and improve our transportation system. The deep lists of constrained and unconstrained projects and programs quantify a $1.9 billion need. And the twelve White Papers provide valuable info on the individual topics related to various aspects of transportation planning. But they do not present a comprehensive vision and strategic plan.

While the project & program lists are necessary parts of the plan, they should not be the "driving force". With a projected deficit of over $800,000,000 to fund the projects & programs submitted by the 5 cities and the county, it becomes even more important to strategize an effective and efficient use of the $1 billion in revenue that is available.

Further, the transportation modeling results comparing the 2010 PM peak level of service and the 2040 PM peak level of service **indicates traffic by 2040 will be a little worse in several key corridors, after spending a projected $1 billion.** That's not a positive or sustainable outlook. The plan thus far lacks vision and a comprehensive planning approach that judges & prioritizes the planned transportation projects/programs based on their ability to improve the transportation network in the next several decades.

Farm Bureau did not sign the CAC comment letter, as we felt the committee did not have enough time for a thorough review of the funding information and projects' impacts. In particular, we feel it is premature to determine five specific large-impact recommendations and place rail as the highest priority, without understanding rail's cost and efficiency compared to bus and other transportation alternatives. We also do not agree with or understand the CAC's rating system used in ranking the traffic mitigation scenarios.

We strongly agree with the CAC's point that it's essential to strategize and build on NCTPA's vision of "an attractive, flexible, fully integrated transportation system, with a broad range of options and modes, enabling individuals and goods to move throughout the county in an efficient manner."

We understand the difficulties in dealing with the extreme funding shortfalls and deferred maintenance and capacity improvement needs for our county's roads, pedestrian/bike routes and transit systems. We recommend further efforts to develop a more refined and strategic approach to improving our transportation network, meeting the community's needs and minimizing the energy and other resources required to move people and goods.

Sincerely,

Norma Tofanelli
President

cc: Kate Miller, NCTPA Executive Director
NCFB Board of Directors

John F Dunbar, Chair of the Board of Directors
Napa County Transportation and Planning Agency
625 Burnell St, Napa, California 94559

June 18, 2015

Subject: Recommendations of the Vision 2040 Citizens Advisory Committee

The Citizen's Advisory Committee (CAC) appreciates the thoughtful research provided in the Vision 2040 Goals and associated Issue Papers prepared by NCTPA staff. We recommend the Board reaffirm the vision expressed in "Napa's Transportation Future", NCTPA's strategic plan adopted in 2009:

> *For Napa County in 2035 we envision an attractive, flexible, fully integrated transportation system, with a broad range of options and modes, enabling individuals and goods to move throughout the county in an efficient manner.*

For the Vision 2040 Plan, we recommend building on this vision by creating clearly focused strategic directions to guide future decisions, funding and projects.

The CAC has identified five strategic recommendations after reviewing the twelve issue papers and the Vision 2040 project and program lists. In developing these recommendations, we reviewed the study sections of the NCTPA draft report and created scenarios for each. We ranked scenarios based on their potential impact on traffic as small (<1 percent), medium (1 to 10 percent) or large (>10 percent). Our analysis is summarized in the attached table.

We recommend NCTPA adopt the five large-impact recommendations listed in the table, specifically:

1). Remove Barriers for Rail Transit

Support a local passenger-rail corridor connecting the Vallejo Ferry Terminal with St. Helena. Partner with SMART and the Capitol Corridor to connect Napa County to Marin, Solano and Sonoma Counties via American Canyon. Rail will support local resident populations and new developments such as Napa Pipe while further supporting tourism and commuters. Rail Transit offers one of only two high-impact (>10 percent) traffic mitigation scenarios. NCTPA should move with urgency to support and help fund any practical public or private effort that can develop this key transportation asset.

2). Build Infrastructure for Active Transportation

Focus efforts on the two most densely populated areas, building bicycle and pedestrian infrastructure in American Canyon and the City of Napa to provide a viable alternative to cars for short trips in these areas. Support the bicycle master plans adopted by each city and back each city's pedestrian master plan once established.

3. New Park-and-Rides Lots and Local Shuttles

Insert park and ride lots in each city along Highway 29. Connect these hubs with community shuttle loops that access local wineries. Provide an affordable alternative to a limousine that supports tourism and provides a viable transportation option to the visitors tasting our great wines.

4. Invite and Advocate for New Technology

Napa has an opportunity to welcome new technologies and develop reputation as “tech-friendly”. NCTPA can play a key role in this initiative, they can:

- Be an outspoken advocate for innovation in transportation
- Develop relationships and invite technology companies to pilot their products in Napa
- Champion policies that remove barriers and create a favorable environment for technology

For example, NCTPA has tremendous opportunity with regard to autonomous-vehicle transportation for people and freight. Driverless Car technology is the second high-impact (>10 percent) scenario we see developing by 2040. While the technology is not yet ready for widespread deployment, NCTPA could position Napa as an early adopter for driverless cars by inviting companies, such as Google, to test their products here; creating partnerships that allow companies to invest in our infrastructure and prepare for the future. Consider subsidies, hiring a driverless car coordinator, and other initiatives so Napa County becomes a destination for technology companies and individuals seeking their first experience with driverless cars. Proactive involvement with autonomous-vehicle transportation will create an informed planning culture within NCTPA, so decisions about highway infrastructure, transit, accessibility, and parking are made with regard for radically changed conditions.

5. Connect to Affordable Housing

Since housing and transportation issues are closely intertwined, continue advocating for housing and participating in the conversation. As new developments are constructed, commit to multi-modal transportation options that connect new housing projects, especially. Napa Pipe, to the existing system.

We also examined the list of projects and programs contained in the Vision 2040 plan. The current prioritization of projects shows that NCTPA is on the right track, as seen in the attached pie charts. Specifically, the constrained project and program lists show approximately 50 percent of proposed projects are Vehicle, while Transit comprises 33 percent and Active Transportation 17 percent. As individual projects are funded, we recommend that NCTPA staff regularly update these pie charts to ensure that actual project and program funding adheres to this distribution of investments and that each class of projects advances in parallel (in contrast with a roads-first approach).

Sincerely,

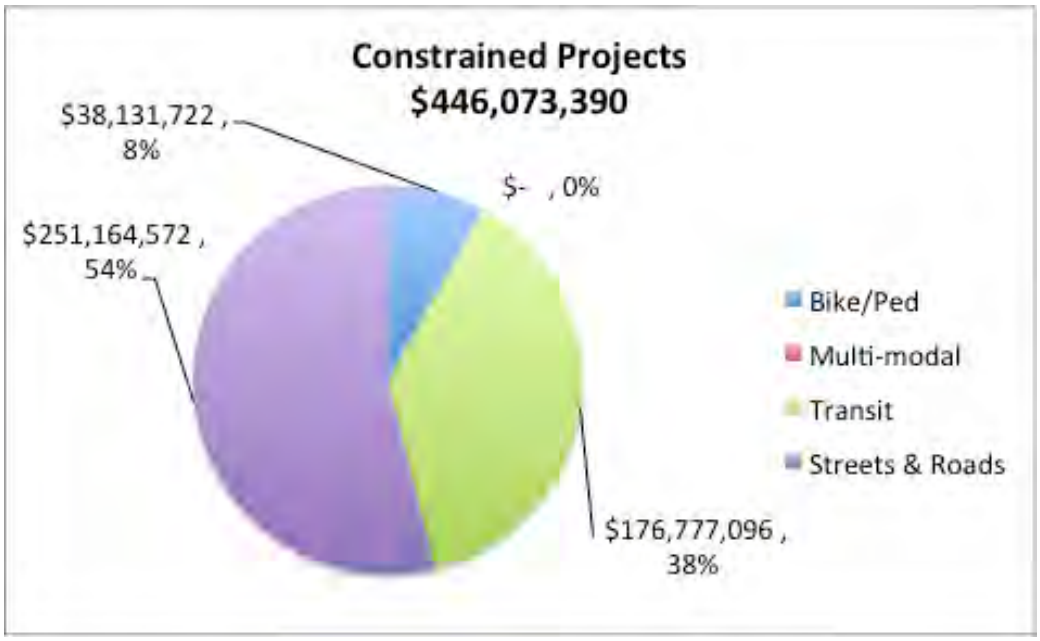
Members of the Vision 2040 Citizens Advisory Committee

Michael Baldini	Jeri Gill	Joseph Meck	Kathy Robinson	Nancy Tamarisk
Joice Beatty	Catherine Heywood	Mike Miller	Bria Schlottman	Gary Woodruff
Leisa Bush	Elzbieta Hyde	Melissa Redezno	Genji Schmeder	
Dieter Deiss	Joel King	Patrino	Julie Seiger	
James Feczko	Chuck McMinn	Louis Penning	Russell Sweeden	

Ranking of Traffic Mitigation Scenarios

Study Chapters	Scenario	Potential Impact to Traffic	Potential Impact to Environ.	Potential Impact to Health	Potential Impact to Community	Potential Impact to Budgets
Mode Shift & TDM	Some people shift out of cars (e.g. shuttles) & to other times	2	1	2	2	-1
Travel Behavior	More people commute over time	-2	-2	-1	-2	-2
Land Use	More people live closer to their jobs	2	2	1	2	-1
Communities of Concern	Service increases for our neediest	1	1	1	1	-1
Transportation Funding	More funding becomes available	0	0	0	0	2
Environmental Issues	ABAG requirements mandate changes	-2	2	2	2	-2
Transportation & Health	More opportunities for active transportation are created esp. intracity	2	1	2	2	-1
Traffic Operations	Use data to improve traffic flow	1	1	1	1	-1
Emerging Technologies	Driverless Cars become real	3	3	2	3	-1
Rail	Rail corridor use happens	3	2	1	3	-2
Napa Economy: Jobs & Housing	Jobs continue to grow	-2	-2	-1	-2	-2
Napa Economy: Goods Movement	Goods movement impacted by traffic	-1	-1	-1	-1	-1


Constrained Projects and Programs
$1,538,252,263
$279,756,722 , 18%
$- , 0%
$813,780,045 , 53%
$444,715,496 , 29%
Bike/Ped
Multi-modal
Transit
Streets & Roads


Constrained Projects
$446,073,390
$38,131,722 , 8%
$- , 0%
$251,164,572 , 54%
$176,777,096 , 38%
Bike/Ped
Multi-modal
Transit
Streets & Roads


Total Programs
1,072,178,873
$241,625,000 , 23%
$- , 0%
$562,615,473 , 52%
$267,938,400 , 25%
Bike/Ped
Multi-modal
Transit
Streets & Roads

Countywide Plan: Vision 2040 Public Comment Matrix

	COMMENTER	QUESTION/COMMENT	*RESPONSE*
1.	Napa County Farm Bureau	No clear vision or priorities and performance measure that lead to clear direction and investments for the future	***NCTPA staff agrees that the Plan should have a clear vision and goals and objectives that are measurable. NCTPA staff believes that the draft Plan is a step towards this direction by creating a list of objectives that support the goals and evaluating how the projects/programs meet the objectives. NCTPA staff is committed to refining this process and strengthening its planning focus in future plans***
2.	Napa County Farm Bureau	Preliminary modeling results do not show improvements to the network in 2040.	***NCTPA has removed the modeling results because many projects included in the Plan did not lend themselves well to modeling because of mode type, size and project location (off highway system). When specific projects have been modeled in past, like the SR 29 corridor projects, results have shown improvements in level of service. The modeling results have prompted discussion between NCTPA and the jurisdictions that a Napa-specific model (currently we're using a Solano/Napa model) be developed to help inform project decisions in the future.***
3.	Beth Kahiga, Napa Valley Support Services	Goal #1 does not adequately reflect all disabled populations and specifically it does not include members of the community with cognitive disabilities. I strongly encourage as the Executive Director of Napa Valley Support Services (and believe my fellow PCC members would also be in agreement), that serves all types of individuals with disabilities, that the goal be rewritten to read: Serve the transportation needs of the entire community regardless of age, income or ability.	***NCTPA staff strongly agrees with this comment and has proposed modifying the goal to read: "Serve the transportation needs of the entire community regardless of age, income or ability."***

	COMMENTER	QUESTION/COMMENT	*RESPONSE*
4.	Vision 2040 Citizens Advisory Committee/ Napa County Farm Bureau	Reaffirm the vision expressed in the previous countywide plan "Napa's Transportation Future" stating, "For Napa County in 2035 we envision an attractive, flexible, fully integrated transprotation system, with broad range options and modes, enabling individuals and goods to move throughout the county in an efficient manner.	***NCTPA staff agrees having a clear vision for a transportation plan is helpful in directing staff in how to best move forward especially when faced with limited resources.***
5.	Vision 2040 Citizens Advisory Committee	Remove barriers for Rail Transit	***NCTPA staff agrees that rail could be implemented to move people and goods in some capacity but as mentioned in the Plan further study is needed. Past studies have shown there is not enough projected ridership to sustain a north/south passenger rail line from Vallejo to St. Helena. The Solano Rail Facilities Plan Update completed by STA in July 2015 concluded that private sector venture primarily focused on recreation activities for visitors would be best suited in Napa County instead of a publically-financed system focused on commuters. A private sector-led effort would minimize a costly public investment while still providing public passenger service in the long-term. The plan outlines next steps for Napa County jurisdictions to undertake a study focused on ridership demand, rail road infrastructure and passenger operation and thereby removing some political rail transit barriers. Staff further believes that in conjunction with studying a north/south rail alignment that additional consideration for an east/west alignment may also be useful which could build on studies already completed by the Sonoma Marin Area Rapid Transit and the Solano Transportation Authority. Consideration of freight movement will be included in future rail study.***
6.	Vision 2040 Citizens Advisory Committee	Build Infrastructure for Active Transportation	***The Countywide Plan supports alternative infrastructure and investments. It also identifies many mode shift and travel demand strategies to encourage alternative modes. Many projects and programs recommended in the Plan support active transportation.***

	COMMENTER	QUESTION/COMMENT	*RESPONSE*
7.	Vision 2040 Citizens Advisory Committee	Build new Park-and-Ride Lots and Local Shuttles	***NCTPA currently owns three park and ride lots, including the Soscol Gateway Transit Center and has plans to implement an Express Bus Study to build out necessary infrastructure primarily focused on the Highway 29 corridor. The City of American Canyon just completed a fourth park and ride lot. Express Bus and park and ride lot expansion is also identified in the Plan as a priority project on the constrained list.***
8.	Vision 2040 Citizens Advisory Committee	Invite and Advocate for New Technology	***The Plan highlights supporting emerging technologies in transportation as a way to meet the goals of the Plan; especially with the operation of the transit system and highway system. A number of recommended projects have been included in the draft plan.***
9.	Vision 2040 Citizens Advisory Committee	Connect to Affordable Housing	***The Plan identifies affordable housing and the need to coordinate transportation and land use as one of the solutions to reducing congestion. The Plan further references strategies to promote affordable housing identified in the Affordable Housing Multi Year Action Plan completed by the County of Napa and the cities of American Canyon and Napa, and reaffirms NCTPA's commitment to focus funding for projects in the County's two Priority Development Areas located in the City of American Canyon and the City of Napa.***

PHOTO CREDITS

Cover © Carl Costas
Exec Summary © Carl Costas
p 1 Ⓒ Jim G., Flickr, CC BY 2.0
p 5-6 © Carl Costas
p 7 Ⓒ Jitze Couperus, Flickr, CC BY 2.0
p 9–10 © Carl Costas
p 11, 14, 18–20 © NCTPA
p 21–22 © Carl Costas
p 23 Ⓒ U.S. Army Corps of Engineers, CC BY 2.0
p 26 Ⓒ Chad H, Flickr, CC By 2.0
p 27 © Carl Costas
p 28 U.S. Army Corps of Engineers, CC BY 2.0
p 45 © Carl Costas
p 53 © Carl Costas
p 57 © Napa
p 65 © Napa
p 66 © Napa
p 67 © Carl Costas
p 68 Ⓒ Torba K Hooper, Flickr, CC BY 2.0
p 70 © NCTPA
p 71 Ⓒ George Kelly, Flickr, CC BY-ND 2.0
p 72 Ⓒ Lauraat, Wikimedia Commons, CC BY-SA 3.0
p 79–80 © Carl Costas
p 83 © Carl Costas
p 85 © Doug Harting
p 86 © Carl Costas
p 90 Ⓒ Bev Sykes, Flickr, CC BY 2.0
p 94 © Carl Costas
p 95 © Driving for Quality Care
p 98 © Carl Costas
p 101 Chris Chen, Flickr, CC BY-ND 2.0
p 102 Ⓒ Grand Canyon National Park, Flickr, CC BY 2.0
p 103 Ⓒ Michael Patrick, Flickr, CC BY-NC-ND 2.0
p 104 Ⓒ National Incident Liason Officer, Flickr, CC BY 2.0
p 107 © Carl Costas
p 108 © Mynav
p 109 © Studio Roosegaarde
p 110 © Google
p 111 © Uber
p 113 © Carl Costas
p 118 © Carl Costas
p 119 Ⓒ Ken Teegardin, Flickr, CC BY-SA 2.0
p 125 © Napa