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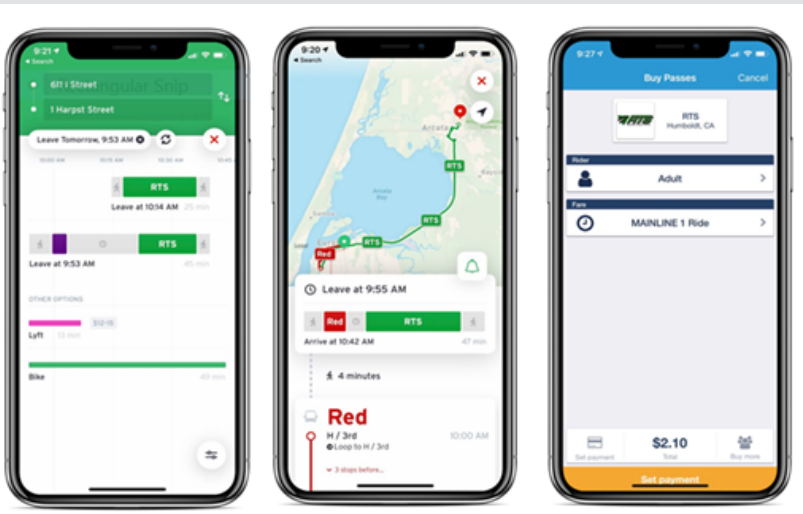

Mobility-on-Demand Strategic Development Plan
Draft - Final Report

Submitted to Humboldt County Association Of Governments
by IBI Group

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Table of Contents

EXECUTIVE SUMMARY

The Humboldt County Association of Governments (HCAOG), the designated Regional Transportation Planning Agency (RTPA) in Humboldt County, is developing a *Mobility on Demand (MoD) Strategic Development Plan* with an overarching goal of "providing affordable and accessible mobility solutions for all travelers." As articulated by HCAOG, the agency "seeks to set a plan for optimizing technology-enabled mobility-on-demand transportation options in Humboldt County." In short, the Strategic Plan's overall purpose is to assist the HCAOG in determining the best courses of action to increase multimodal mobility and accessibility in Humboldt County, especially for public transportation and transit, bicycling, walking, rideshare, and other modes separate from single-occupancy vehicle travel.

Mobility on demand is an innovative, user-focused approach which leverages mobility services, integrated transit networks, and real-time data to give users an easier and smoother experience traveling from origin to destination. The Strategic Development Plan will ultimately facilitate expanding mobility options for all travelers and users of Humboldt's transportation network.

This report presents a strategic direction for Humboldt County to advance "***integrated, connected, and equitable technology-enabled mobility options"*** and potential pilot projects.

Community Demographic Profile: The demographic profile for Humboldt County serves to identify trends that may impact future demand and the potential market for mobility services. In particular, this profile focuses on communities with unmet transit and mobility needs. Understanding demographic characteristics is critical in determining levels of mobility dependency and beneficial in developing successful services tailored to the specialized mobility needs of the community.

The demographic profile demonstrates that Humboldt County has had a stable population of 135,000 people. The largest grouping of people is between 20 to 34 years old, and the fastest growing sector of the population is the over-65 age bracket. The majority of residents are white, followed by Hispanic/Latino and Asian residents. Both Hispanic and Asian communities are growing while the number of white residents is slightly declining. The number of households has been stable at 54,000 households and the median income is $44,000, below the statewide average of $67,000. Most households own at least one vehicle, reflected by commute types as over 70% of households drive alone for their commute.

For unmet needs in the county, there are relatively high percentages of people with disabilities, people living in poverty, and people over 65. There are lower percentages of people without access to a vehicle.

Survey Research: The *Mobility on Demand (MoD) Strategic Plan* is based on meaningful stakeholder engagement and visioning, as well as an astute assessment of how well new technology and business models may serve the County. In response to the former, an important component of the work plan included the design and administration of a community survey.

The community survey was developed to solicit feedback regarding mobility needs, existing transit services and usage, connectivity, areas for improvement, and gauge interest in possible alternate

mobility services in general and the type of transit service enhancements and next-generation mobility solutions specifically. This chapter documents community survey results. Understanding community desires is important in advancing the *Mobility on Demand Strategic Plan* and tailoring solutions to community needs.

Survey results informs on current modes of transportation used, thoughts on current transit services, and desired enhancement for transit/mobility services.

In general, most respondents had the ability to drive, and the private auto was the primary mode of transportation used.

Primary reasons cited for not using transit included:

- The length of time to get to destinations (takes too long);
- Transit doesn't go close enough to destination (or origin); and
- Transit's hours of service – earlier and later weekday service.

In short, the survey results informed on the need for mobility solutions (MoD strategies) that are more competitive with the private auto in terms of travel time and convenience and the need to provide connectivity to transit services (first-last mile). Similarly, Personal Mobility on Demand (PMoD) strategies may be used to provide needed mobility for days of week, hours of day and/or locations (geographic) where trip (and population) densities may not justify fixed route transit services (i.e., unable to attain performance standards/metrics).

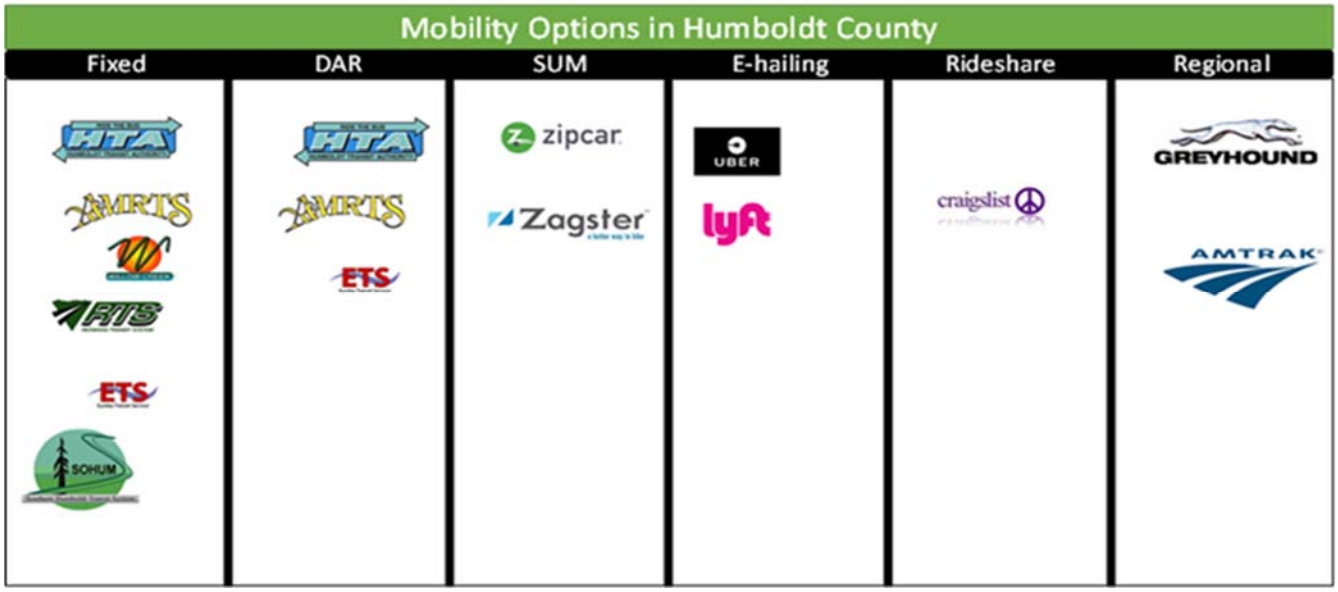
Further, there is an opportunity to incorporate active transportation solutions such as (e.g., bicycle) in mobility enhancements.

Existing Conditions and Unmet Needs: In order to effectively advance MoD operational and technologic solutions, it is important to understand the existing transit/mobility landscape in general, and travelers' unmet needs, specifically. Understanding mobility needs will guide the implementation of improved customer- focused transportation and mobility options, with an eye on reducing trips in the car-centric environment.

Current mobility options in Humboldt County, which are illustrated below, are defined as follows:

- Fixed: *Fixed Route Transit* - covers a service corridor with a set of fixed stops and schedules.
- DAR: *Dial-a-Ride* - an origin-to-destination advanced reservation transportation service for seniors and persons with disabilities.
- SUM: *Shared Urban Mobility* - refers to the shared used of a vehicle that allows users to access transportation services on an as-needed basis.
- E-hailing: Process of ordering a car, taxi, or any other form of transportation pick up via virtual devices: computer or mobile device.
- Rideshare: An arrangement in which a passenger travels in a private vehicle driven by its owner, for free or for a fee, especially as arranged by means of a website or app.
- Regional: Bus and/or rail services typically providing long-distance (and inter-jurisdictional) public transportation.

Below is a discussion of local and regional public transit services, as well as active transportation and other ride-share services.



Previous "Unmet Transit Needs" Reports: The California State Transportation Development Act requires planning agencies to annually identify unmet transit needs of the jurisdiction, and if those unmet needs are 'reasonable to meet'. The purpose of requiring planning agencies to determine unmet needs is to adequately allocate funding to agencies through the Local Transportation Fund (LTF) and the State Transit Assistance (STA) Fund. A synthesis of previous identified unmet transit needs reports of past fiscal years (2016/17 through 2019/20) is presented in Table ES-1.

Table ES-1: Previously Identified Unmet Transit Needs

	Unmet Needs Reasonable to Meet	Unmet Needs Reasonable to Meet (but lacks sufficient funds)	Either not unmet, or unreasonable to meet
FY 2019-2020	- A southwest Eureka stop in between Broadway & McCullen and Herrick & Elk River Road - Blue Lake Saturday service	- N/A	- Transit service to Samoa and Ferndale - ETS late night service - Bike racks on bus - Coordinating Willow Creek's Route with RTS on first A.M. run - A permanent Willow Creek stop at Valley West - Bus cleanliness/ safety

	Unmet Needs Reasonable to Meet	Unmet Needs Reasonable to Meet (but lacks sufficient funds)	Either not unmet, or unreasonable to meet
			- Expanded transit for UTN hearings
FY 2018-2019	- N/A	- Late-night weekday service on the RTS	- N/A
FY 2017-2018	- N/A	- N/A	- N/A
FY 2016-2017	- N/A	- N/A	- N/A
FY 2015-2016	- New service to Tish Non-Village - New service on Old Arcata Road	- N/A	- N/A

Summary of Unmet Transit Needs: Users of the transportation system in Humboldt County have identified a range of short comings together with opportunities for more personal choice and flexibility in mobility. While advancing transit and active transportation networks, there remain several unmet needs that can be addressed by leveraging next generation operating and technology solutions. Below is a summary of what stakeholders have said are their unmet transit needs.

<u>Transit</u>

Unmet transit needs:

- It takes too long to get to destinations (by bus).
- Transit doesn't go close enough to potential users' destination or origin.
- Transit's hours of service are not early enough or late enough on weekdays.
- Transfers are required or not convenient
- Transit service is not frequent enough
- The lack of a Countywide transit mobile app hinders potential users' ability to receive real-time information and/or pay fares

Potential solutions to meet transit needs:

- Consider express buses that skip low-usage stops. Consider dedicated bus lanes in higher density areas.
- Transit connectivity (distance to/from transit bus stops) that may be alleviated through first-last mile mobility solutions.
- Consider expanding transit service hours.

- Consider adjusting (or restructuring) some of the bus routes that may result in faster travel times.
- Consider increasing the number of buses and service frequency.
- Consider creating a county-wide mobility app that allows users to locate buses and schedules in real-time as well as allow users to pay fares online without cash or a card.
- Facilitate growth of ride-hailing companies (generate business opportunities through partnerships in the provision of supplemental dial-a-ride service, first-last mile transit connectivity services, etc.).

Active Transportation & Ride-Share Services

Unmet Bicycle, Bike Share, and Ride-Share Needs:

- Lack of bicycle parking in public places and at businesses.
- Lack of bicycle infrastructure in key locations, locally and regionally.
- Lack of ride-share drivers (especially outside the Eureka and Arcata urbanized areas).

Potential Solutions to meet bicycle, bike share, and ride-share needs:

- Facilitate expanded bicycle parking at public places. This may include incorporating bicycle parking in land use and development agreements, the provision of secure bicycle lockers at transit hubs, etc.
- Consider expanding upon the current bicycle network, preferably with Class I and Class IV bikeways where applicable, throughout Humboldt County.
- Consider facilitating growth for bike share opportunities. This may include a robust education/marketing/communication strategy, and enhanced integration with transit operations and service delivery (bike racks on buses, an app providing real-time availability of bike rack capacity, etc.).

Mobility on Demand Innovative Practices: As the mobility landscape continues to evolve, connected travelers, continued advancements in transportation technologies, and private sector involvement present unprecedented opportunities for improving public transportation. In recent years, concepts such as microtransit and mobility-on-demand have helped agencies fill first and last mile gaps by developing and integrating unconventional modes into their services, engaging the private sector in the form of transportation network companies (TNCs), car-share, bike-share and other modes as alternative to private vehicles. However, while transit agencies continue to experiment with new business models, new suppliers, and new technologies, there remain challenges related to providing cost-effective, efficient, and equitable service to all people.

Mobility on Demand (MoD) is an innovative user-focused approach which leverages mobility services, integrated transit networks, and real-time data, to give users an easier and smoother traveling experience from origin to destination.

Mobility on Demand may expand customer travel opportunities and offer customers spontaneity of travel. The service model may be enabled by private companies (such as Uber, Lyft, taxis, private microtransit), or the agency, and used to facilitate first-mile/last-mile solutions, paratransit, and travel within low-density zones where it is not economically feasible to provide conventional transit service. Further, MoD may be used as an offering for same day specialized/paratransit and rural transit services.

Available under separate cover is a Technical Memorandum providing for a comprehensive presentation of MoD Innovative Practices.

Guiding Principles and Evaluation Criteria: In collaboration with the project management team, Figure ES-1 presents an evaluation of a series of preferred *Service Alternatives* and *Mobility Technologies*. The evaluation considers impact or compliance with prescribed *Guiding Principles* and *Evaluation Criteria* and illustrates: Positive (+), Neutral (0), or Negative (-).

Figure ES-1: Strategies Evaluation Matrix

	Guiding Principles				Evaluation Criteria											
MoD Strategies	Reduce GHG Emissions	Increase Transit Effectiveness	Contribute to Regional Economic Development	Equitable Access	Effectiveness - population served & ridership potential	Economy - total cost of service	Efficiency - cost per trip, per veh. Hour	Reduce Vehicle Miles Traveled (VMTs) Per Capita/SOV	Level of Service	Quality of Service (User's experience)	Socio-economic factors	Civil Rights Implications	Organizational - operational flexibility, control, accountability	Ease of Implementation	Technical Risk	Political Risk
SERVICE ALTERNATIVES																
On-Demand Transit	–	+	+	+	+	+	+	–	+	+	+	+	+	+	–	–
Vehicle Sharing / Micro-Mobiility (motorized)	+	+	+	+	+	+	+	+	+	+	+	0	–	+	–	–
Modern Hitch-Hiking	0	+	+	+	+	+	+	+	+	+	–	0	–	+	+	–
Community Ridesharing	+	–	+	+	+	+	+	+	+	+	+	+	0	+	+	–
Volunteer Driver Program	0	–	+	+	–	+	+	+	+	+	+	+	0	+	+	+
Active Transportation - Vehicle Sharing (bicycles, e-scooters)	+	+	+	+	+	+	+	+	+	+	+	0	+	+	+	+
MOBILITY TECHNOLOGIES																
Trip Discovery (trip planning)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	–	–
Trip Booking (e-Hailing)	+	+	+	+	+	+	+	0	+	+	+	+	+	+	–	–
Cashless (mobile) Payments	0	+	+	+	+	+	+	0	+	+	0	+	+	+	–	–

Legend

+	Positive / Somewhat Positive
0	Neutral / No Significant Change or Impact
–	Negative / Somewhat Negative

***A Way Forward* – Potential Pilot Projects:** Chapter 7 presents discussion of strategic direction for potential pilot projects/implementation alternatives (Section 7.1 - Opportunities) and an evaluation of same within prescribed evaluation criteria. The evaluation criteria (and *Guiding Principles*) were presented in Chapter 6. The evaluation of potential pilot projects and a

preferred approach for proceeding with potential pilot projects is presented in Section 7.2, *A Way Forward*.

The development of implementation alternatives has been informed by outcomes from profiles of existing conditions (transit/mobility services), community demographic profile, identified unmet needs, survey research and stakeholder consultation, and the research of innovative MoD practices.

The following presents a summary of opportunities (locations and MoD Applications) based on identified unmet need and/or latent demand.

Unmet Need / Latent Demand	**Locations or Services Identified (comment received)**	***MoD* Application(s)**
Address Unserved or Underserved Areas	Service to/from Southern Humboldt to Eureka/Arcata	HTA's updated Southern Humboldt Intercity is serving this need.
	Service to Manila (Samoa)	Low-priority need due to low density (insufficient to support regularly scheduled service). **Potential for PMoD[1] – demand-response, payment for service consumed.**
	Old Arcata Road between Eureka-Arcata: Freshwater, Bayside, Jacoby Creek	*Pilot project continues.* Prepared Evaluation Report and recommendations.
Lifeline to remote rural areas	Hoopa Valley, Orick, Weitchpec	Low-priority due to current low demand. Demand may be served by local services including Klamath Trinity Non-Emergency Transportation (KTNeT).
Address Service When It's Needed (trip densities may not justify regularly scheduled service)		
Later evening	Fixed route and dial-a-ride services in Eureka and Arcata	**Potential for PMoD – demand-response, payment for service consumed.**
Sunday (weekend service)		

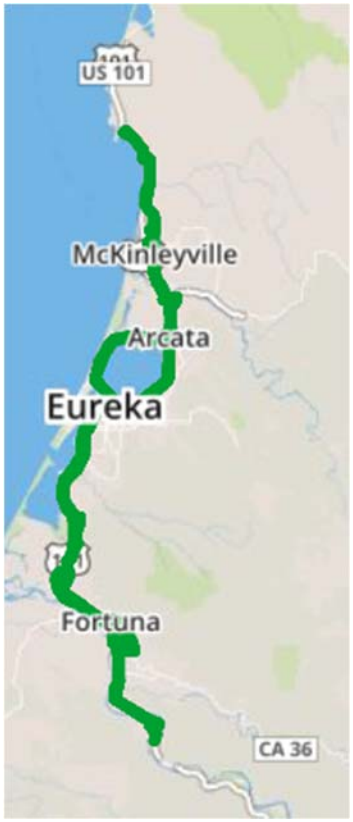
[1] PMoD - *Personal Mobility on Demand*: Service description includes service provided by sedans, minivans, taxis, transportation network companies (TNCs), in an on-demand (next vehicle available) and/or advanced booked mode.

Unmet Need / Latent Demand	Locations or Services Identified (comment received)	*MoD* Application(s)
Address Service for Most Vulnerable Customers		
Enhancing trips for elderly/ disabled for health/medical appointments	Add more dial-a-ride service vehicles to reduce long wait times	**Potential for PMoD – demand-response, payment for service consumed.**
Unmet Need / Latent Demand	**Locations or Services Identified (comment received)**	***MoD* Application(s)**
Facilitate access to & use of, mainline (fixed-route) transit.	Proximity to fixed-route transit services	Service Delivery: **Potential for PMoD – provision of first/last mile/connectivity to transit. Demand-response, payment for service consumed.**
		Operations: Information dissemination (available transportation/mobility options and trip planning), travel/ mobility training (for those unfamiliar with 'how to use' transit).
Increase Ridership on Good-Performing Routes		
Streamline RTS (reduce travel times)	Reduce / minimize remote stops that have low / lowest ridership and high / highest time requirements / impact running time.	**Potential for PMoD – provision of first/last mile/connectivity to transit. Demand-response, payment for service consumed**
Increased frequency on RTS	Provide express intercity route (north-south)	Streamline RTS/shorten trunk.

Consideration of near-term pilot projects includes the following three service alternatives:

1. On-Demand Transit (Personal Mobility on Demand – PMoD);
2. Modern Hitch-Hiking; and
3. Active Transportation (facilitating expansion of bike share program)

On-Demand Transit – Connectivity to RTS: The Redwood Transit System (RTS) offers service between Scotia, Fortuna, Loleta, Fields Landing, Eureka, Arcata, McKinleyville, Westhaven, and Trinidad seven days per week. RTS provides more than 600,000 passenger-trips per year.



With an eye on streamlining the RTS route alignment, reduce the travel time (total route run time), and increase service frequency, two complementary strategies are presented: (1) Eliminate three deviations from the current route alignment (Fortuna, Manila, and the Arcata-Eureka airport in McKinleyville); and (2) Short-turn the route at both the north and south ends of the alignment.

It is imperative that prior to advancing any modifications to RTS routing, additional discussions take place with Fortuna city officials. Further, it is important to discuss any opportunity to expand the mandate of the city's demand responsive transportation to include the general public and to provide scheduled feeder service to RTS bus stops. For example, RTS bus stops at the Fortuna Park and Ride lot in the south and 11th and N Street in the north.

A near-term opportunity for a pilot project may be for the city to enable the general public to use the city's demand responsive transportation service. Through the use of incentives (i.e., use of fare policy to influence travel behavior) and a robust marketing and communications strategy followed by service monitoring and evaluation, determine the effectiveness of the service (operating in a hybrid mode) to meet resident's mobility needs including first/last mile connectivity.

It is important to note that Fortuna has been supportive of examining alternate scenarios and advancing discussions.

Modern hitch-hiking is typically an administrative model whereby a public sector entity may assume responsibility for the procurement and deployment of an app-based service matching drivers and passengers.

Active Transportation (facilitating expansion of bike share program): Potential solutions to meet bicycle and bike share needs:

- Facilitate expanded bicycle parking at public places. This may include incorporating bicycle parking in land use and development agreements, providing secure bicycle lockers at transit hubs, etc.
- Consider expanding upon the current bicycle network, preferably with Class I and Class IV bikeways where applicable, throughout Humboldt County.
- Consider facilitating the re-introduction of a bike share program. Notwithstanding Zagster ceasing operations in the County, presumably because it was not financially viable, *facilitating* may include a robust education/marketing/communication strategy, and enhanced integration with transit operations and service delivery (bike racks on buses, an app providing real-time

availability of bike rack capacity, etc.). Facilitating a bike share program would not include subsidizing the deployment or operation.

Pilot Project – A Framework for Monitoring and Evaluation: Important to the deployment of potential pilot PMoD services is that of developing a framework for service monitoring and evaluation. The following table presents key performance indicators (KPIs) reflecting service effectiveness, efficiency, quality, and impact. Of note, these KPIs go beyond reflecting typical measures of monitoring transit performance and include 'impact'. While less quantifiable, it is important to document net impacts on access to employment, education and/or health care services. Such impacts may range from the ability to attract and retain employees, people gaining employment, improved health outcomes, etc. These net benefits will have corresponding financial benefits to employers, the health care community, etc.

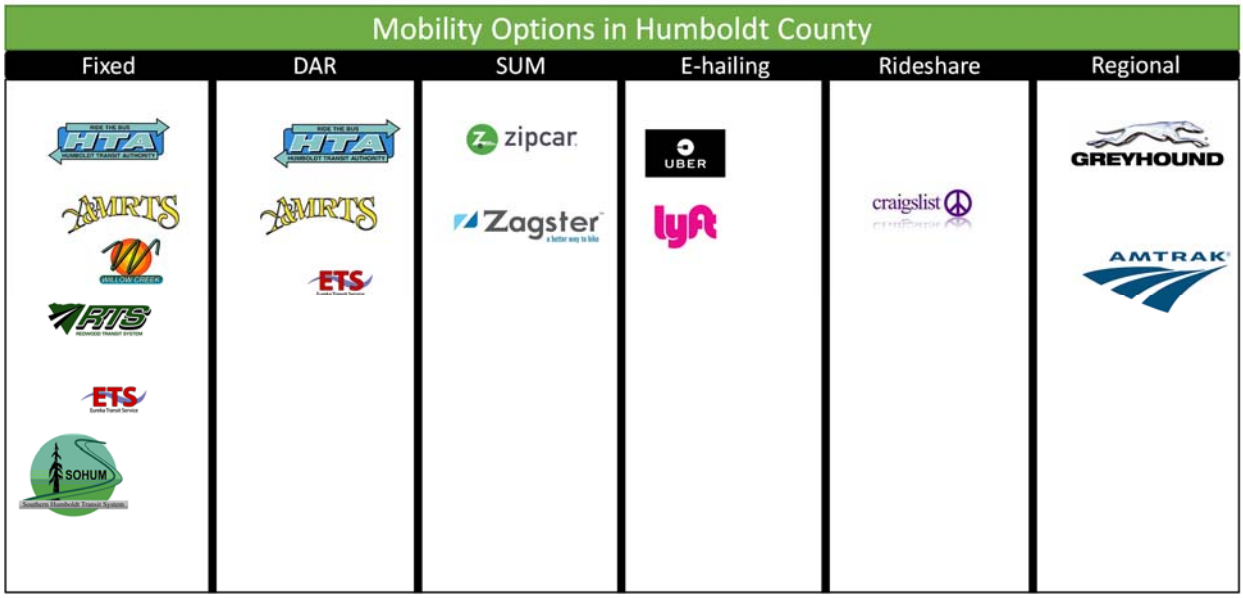
CATEGORY	KEY PERFORMANCE INDICATORS (KPI)	
Effectiveness	Total ridership Trips per hour	
Efficiency	Total cost Budget variance Cost per trip	Subsidy per trip Revenue/cost ratio
Quality	Average trip time Average miles per trip Average wait time	Complaints per 100 rides Brand awareness
Impact	Net ridership change Access to employment, education, medical appointments Financial impacts and benefits to employers, hospitals, etc.	

INTRODUCTION

The Humboldt County Association of Governments (HCAOG), the designated Regional Transportation Planning Agency (RTPA) in Humboldt County, is developing a *Mobility on Demand (MoD) Strategic Development Plan* with an overarching goal of "providing affordable and accessible mobility solutions for all travelers." As articulated by HCAOG, the agency "seeks to set a plan for optimizing technology-enabled mobility-on-demand transportation options in Humboldt County." In short, the Strategic Plan's overall purpose is to assist the HCAOG in determining the best courses of action to increase multimodal mobility and accessibility in Humboldt County, especially for public transportation and transit, bicycling, walking, rideshare, and other modes separate from single-occupancy vehicle travel.

Mobility on demand is an innovative, user-focused approach which leverages mobility services, integrated transit networks, and real-time data to give users an easier and smoother experience traveling from origin to destination. The Strategic Development Plan will ultimately facilitate expanding mobility options for all travelers and users of Humboldt's transportation network.

There exist various types of mobility options available to travelers within the County for their specific travel needs including fixed route transit, dial-a-ride (DAR), shared-use mobility (SUM), e-hailing, rideshare and regional transit services as shown in the diagram below.



Notwithstanding the range of mobility options currently available, gaps, issues and unmet needs persist, including the following:

- Lack of an integrated mobility platform for customers to search travel options;
- Geographic and time gaps in the existing service leaving customers to choose non-transit options;

- Limited or no options for short distance trips leaving customers relying on single occupancy vehicles (SOVs);
- Dial-a-ride being the only option for both short and long-distance trips to common destinations (shopping, healthcare, recreational, commercial) not served by fixed-route transit; and
- Lack of first/last mile connectivity options that may promote use of fixed route transit.

Consumer preferences and expectations for personal mobility are changing. Transit customers want:

- ***Schedule information in real time.***
- ***Direct point-to-point travel.***
- ***Convenient "first mile-last mile" options integrated into transit trips.***
- ***Ability to hail a ride and make same-day reservations.***

Some of the above issues can be resolved through facilitating coordination among currently available options. However, for gaps in services, agencies may have to consider options such as flex service or microtransit through creative partnerships if existing services cannot be modified or expanded. We understand there are some options recommended for service improvements in the Transit Development Plan (TDP) adopted in 2017 but implementation may take some time. However, availability of emerging mobility platforms from Via, Transloc, Routematch and others present unique opportunities for transit agencies such as the Humboldt Transit Authority (HTA), to fill gaps in their service areas without expanding their service.

With an eye on addressing mobility management goals for the county this MoD Strategic Development Plan considered partnering with other service providers. While the concept is not new and agencies have attempted this in the past through USDOT Mobility Service for All American (MSAA) initiative, abundance of integrated mobility platforms, always-connected travelers and interest of private sector presents unique opportunities. Challenges and concerns related to equity and accessibility remain and hence, a careful consideration of all options for all types of customers is required.

Based on a general understanding of emerging mobility paradigm in the transportation industry and beyond, this plan reflects the following major themes:

Cost-Effective Service Planning with Consideration of Appropriate Mobility Options: Customer mobility needs vary by community, age group, time of day, day of week, car ownership status and many other factors. These mobility needs may include local access to goods services and activities within the immediate study areas; access to higher order medical, retail, entertainment, recreational and public service attractions in neighboring cities and beyond; access to regional transportation; and access to service employment opportunities (especially for entry level or part time employees).

There is an opportunity to reduce the number of short distance trips currently being mostly taken by single occupancy vehicles with attractive shared use mobility options. While a plethora of mobility options are available today, sustainability is a big concern. It is important to recognize underlying cost of launching, operating and maintain mobility platforms and services so options provided to customers are sustainable in the long term.

Focus on Customer Travel Needs and Patterns: Understanding who customers are and what they want is perhaps the most critical aspect of a potential service redesign. Peer experience among demand-response transit providers suggest ways to respond to changing demographics, growing demand for travel to diverse destinations, and a shift away from groups travel to congregate meal sites and other group settings. It is also pertinent that younger people think differently about personal mobility than do their parents and grandparents. Younger people are especially receptive to Uber and Lyft among a growing industry of TNC and smart cab providers using fully accessible small vehicles.

While younger population prefers on-demand transportation, rural communities continue to struggle with meeting the needs of senior and elderly population. Humboldt is similar to other communities in that regard as its senior population is expected to grow from current 20% to roughly 35% over the next twenty years. Hence equity and accessibility continue to be a concern that should be part of every mobility alternatives discussion.

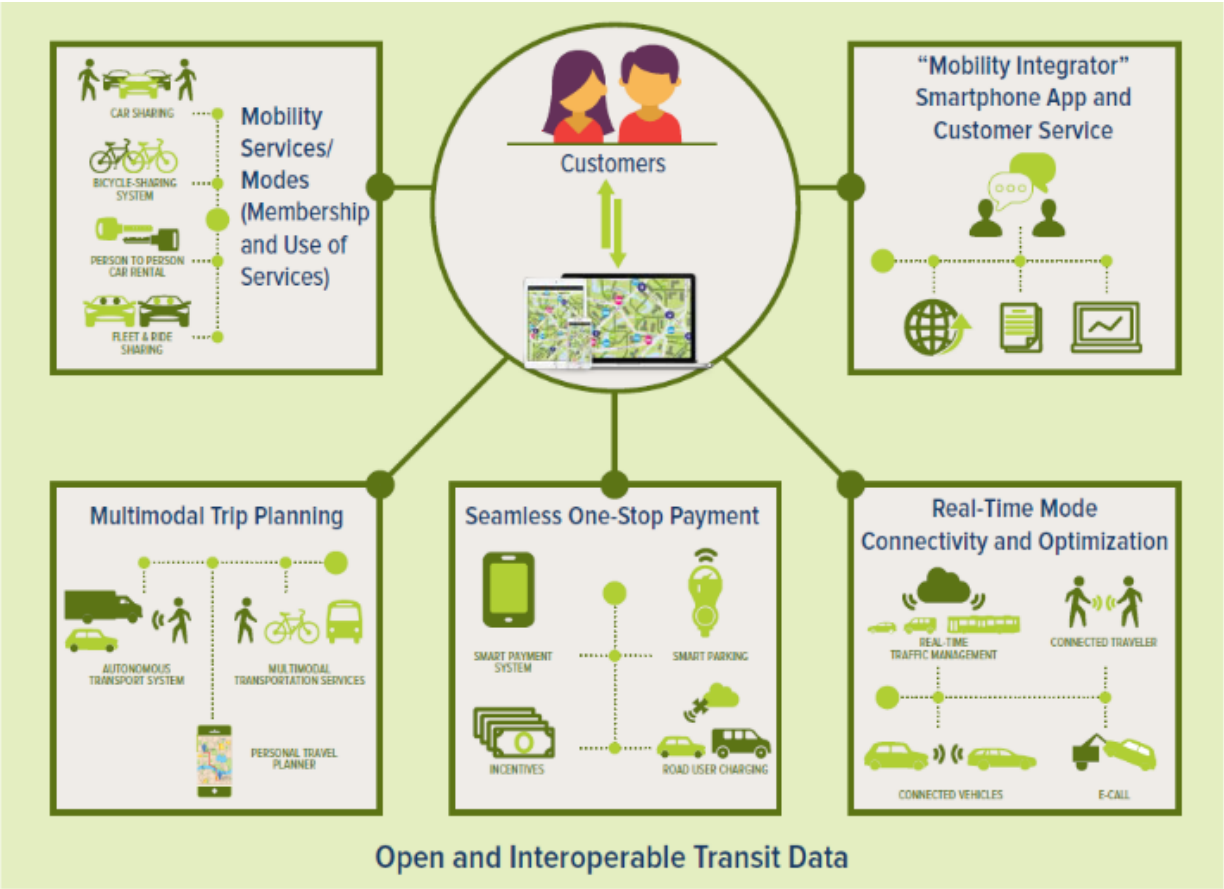
Community Engagement for Adoption of Mobility Options: An effective community engagement plan is necessary to convince customers to use new or improved mobility services. This Plan reflects input received from HCAOG and their project partners including their Board of Directors, Technical Advisory Committee (TAC), the Service Coordination Committee (SCC) and the Social Service Transportation Advisory Council (SSTAC).

Role of a strong integrated mobility solutions platform: Agencies in the Humboldt County currently use the following technologies:

- Routematch Software for dial-a-ride (DAR) trip management that may involve activities such as eligibility management, trip booking, manifest management, billing and reporting. HTA, who currently coordinates DAR is in the process of adding additional modules such as automated trip notification, app-based booking and automated fare collection.
- Swiftly for tracking of fixed-route vehicles and communicating real-time information to customers
- Token Transit for mobile payment.

All of these tools and technologies address individual aspects of the mobility eco-system currently present in the Humboldt County. However, they do not provide an integrated platform for customers who may need a mix of modes, often in coordination with modes available from private providers such as TNCs, taxis and others. To fill the service gaps, HCAOG has taken this initiative to explore MoD alternatives that allow providing all mobility options at customer finger trips through a single app or platform. These allow customers to discover, book and pay for their trips even if those require transferring between services provided by other operators. One key obstacle for such platforms continues to be lack of open data standards beyond GTFS and GTFS-flex.

Core functionalities of an open and interoperable transit data platform are illustrated below.



Public Private Partnership: As is often the case, funding is hard to come by in the transit industry. This is expected to be further compounded in a post-COVID-19 environment. A mix of federal, state and local funds that are often based on formula can rarely meet the funding needs for deploying innovative solutions. Agencies are ***"not funded to fail."*** However, recent years have seen interest from the private sector in getting engaged in emerging mobility service solutions. Also, these private players are realizing the importance of coordinating with transit agencies who are in the best position to meet the travel needs of masses but lack first and last mile connectivity options. Even transportation network companies (TNCs) who are often blamed for recent declining ridership trends, primarily in urban areas, have shown interest in partnering with agencies as we have seen examples in throughout California, and many other communities. However, a P3 approach built on principles of long-term sustainability is desired so agencies are not part of failed experiments such as Bridj.

Public transportation continues to be the key component of daily mobility needs of travelers, even with an evolving mobility landscape that is now dominated by modes such as shared use modes and TNCs in some service areas. It connects people to goods, services and activities that support social well-being and quality of life. Public transit can also support more general community planning goals, such as land use, economic development, social justice or environmental goals.

1.1 Plan Organization

This report presents a strategic direction for Humboldt County to advance "***integrated, connected, and equitable technology-enabled mobility options"*** and potential pilot projects.

The Mobility on Demand Strategic Development Plan is presented in seven chapters, which are described below.

This* Mobility on Demand Strategic Development Plan *is an opportunity for a fresh look mobility in Humboldt County in context of delivery innovations made possible by advancing communications and vehicle location technologies.

CHAPTER 2 – COMMUNITY DEMOGRAPHIC PROFILE: provides an overview of the Humboldt County study area including key community and demographic characteristics.

CHAPTER 3 – SURVEY RESEARCH: provides a summary of community survey research efforts.

CHAPTER 4 – EXISTING CONDITIONS AND UNMET NEEDS: profiles existing fixed-route and paratransit services and summarizes unmet needs.

CHAPTER 5 – MoD INNOVATIVE PRACTICES: profiles new and emerging next-generation (innovations) mobility operations, service delivery and technologies.

CHAPTER 6 – GUIDING PRINCIPLES AND EVALUATION FRAMEWORK: presented to shepherd the development and advancement of MoD strategies and potential pilot projects.

CHAPTER 7 – *A WAY FORWARD* – POTENTIAL PILOT PROJECTS: presents discussion of strategic direction for potential pilot projects/implementation alternatives (Section 7.1 - Opportunities) and an evaluation of same within prescribed evaluation criteria.

APPENDICES:

A. Community Survey Instrument

B. Old Arcata Road (OAR) Evaluation Report

2.0 COMMUNITY DEMOGRAPHIC PROFILE

This chapter presents an analysis of the demographic profile for Humboldt County that will serve to identify trends that may impact future demand and the potential market for mobility services. In particular, this profile focuses on communities with unmet transit and mobility needs. Understanding demographic characteristics is critical in determining levels of mobility dependency and beneficial in developing successful services tailored to the specialized mobility needs of the community.

This memo uses data taken from the U.S Census American Community Survey (ACS) 5-year estimates.

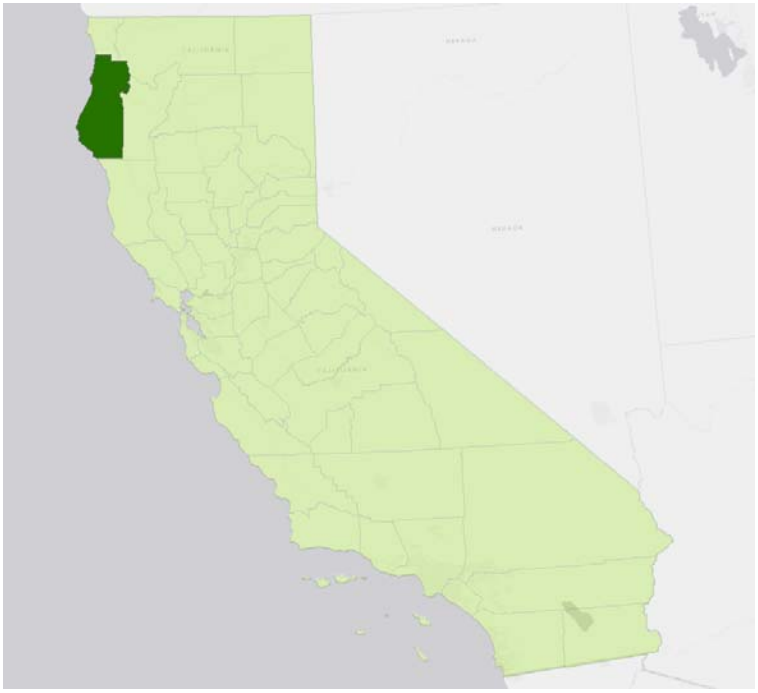
Presented herein are:

- Section 2.1: Community Demographic Profile;
- Section 2.2: Transit Dependent Populations; and
- Section 2.3: Conclusions.

2.1 Community Demographic Profile

Humboldt County is located in Northwest California, 270 miles north of San Francisco (Figure 2.1). The County totals 4,052 square miles and is home to 135,490 people. The key metrics reviewed from U.S. Census American Community Service (ACS) include population growth, age, race/ethnicity, number of households, median household income, vehicles per household, and transportation mode choice.

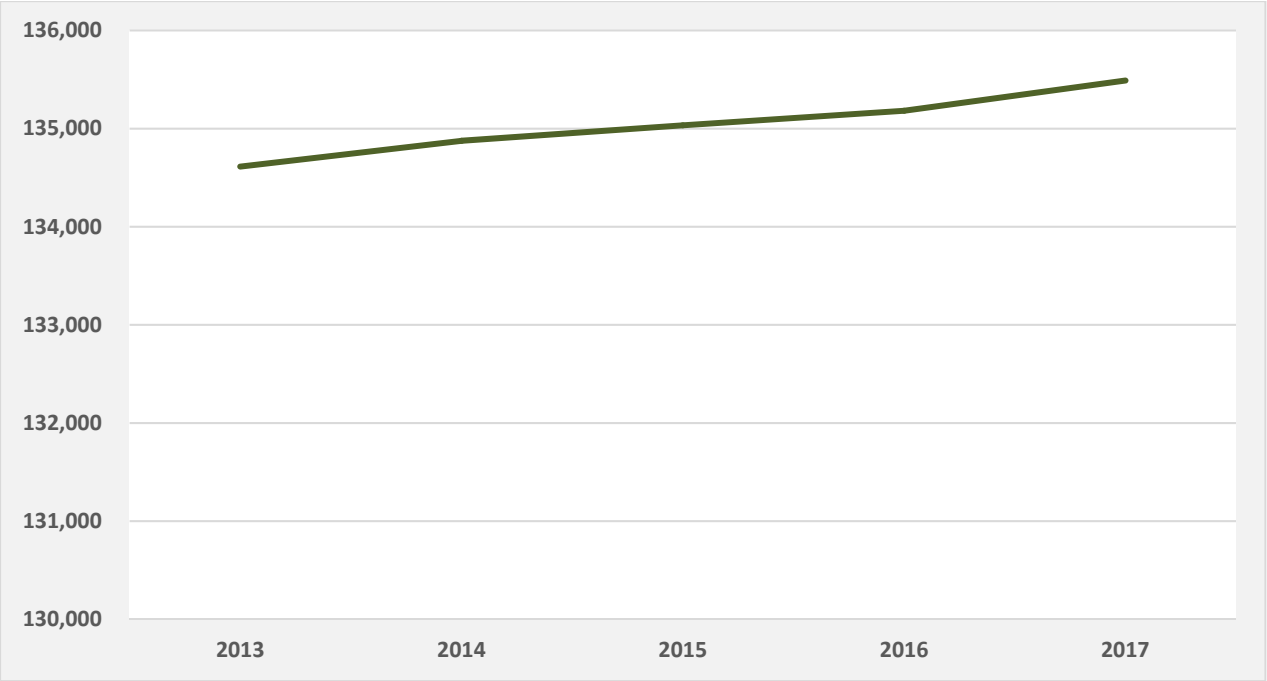
Figure 2.1: Humboldt County Location



2.1.1 Population Change

The population of Humboldt County is 135,490 (2017). The population has been fairly steady since 2013, experiencing a slight increase of 877 people, a 1% population change. Figure 2.2 illustrates this population change from 2013 to 2017.

Figure 2.2: Humboldt County Population Change (2013-2017)

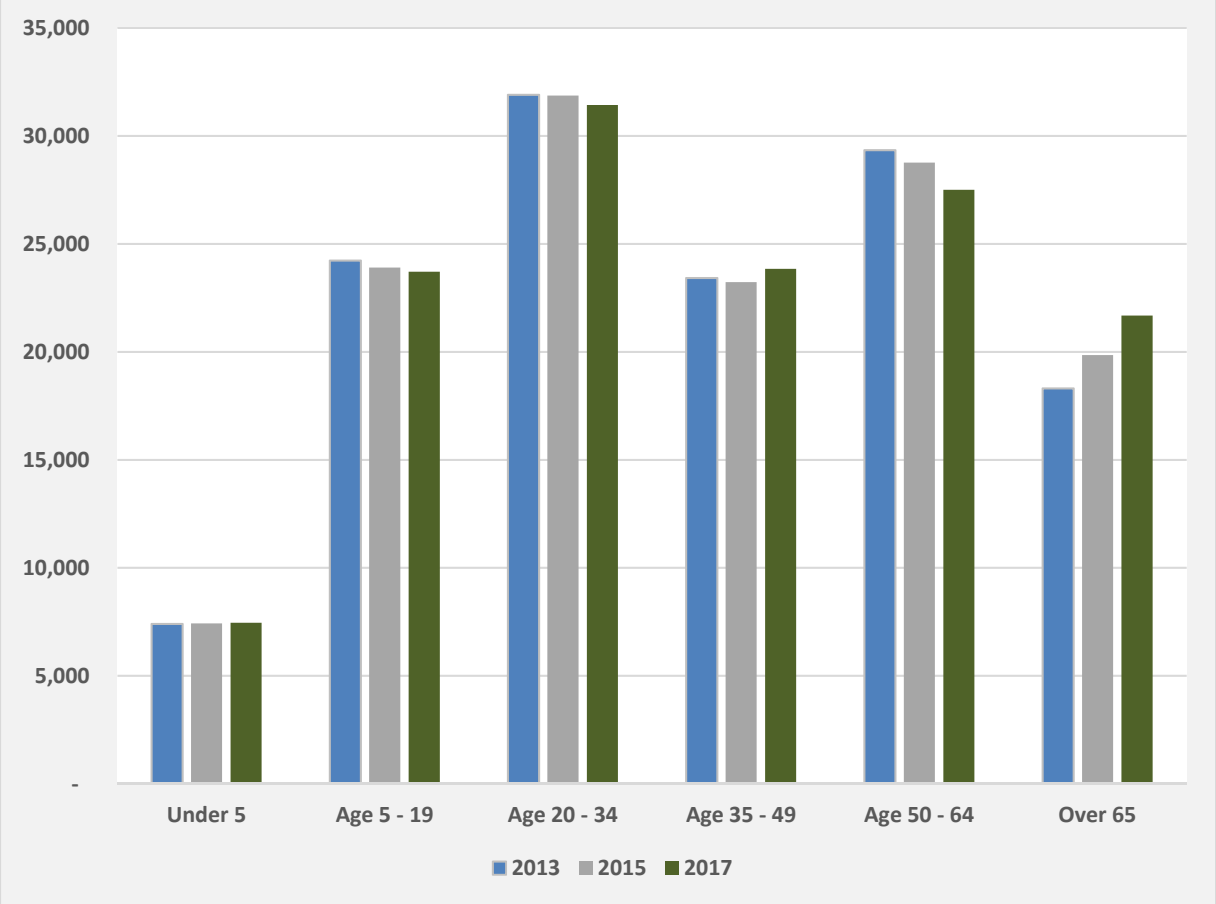


2.1.2 Age

Age is a critical factor in determining transit dependency, which is the population of people for whom mobility may be limited, either by access to private automobiles or the ability to drive independently. Typically, transit dependent age groups include the elderly (those over 65 years of age), and youth (those under the age of 18). Humboldt County Association of Governments (HCAOG) highlights older citizens as transit dependent in the *Unmet Transit Needs Report of Findings for FY18-19*.

The age bracket with the highest population is those 20 to 34 years old with numbers holding fairly steady since 2013. The age group that has seen the largest increase in age has been those who are over 65, increasing by 18% from 18,000 to 21,500 between 2013 and 2017. Figure 2.3 illustrates population by age from the years 2013, 2015, and 2017.

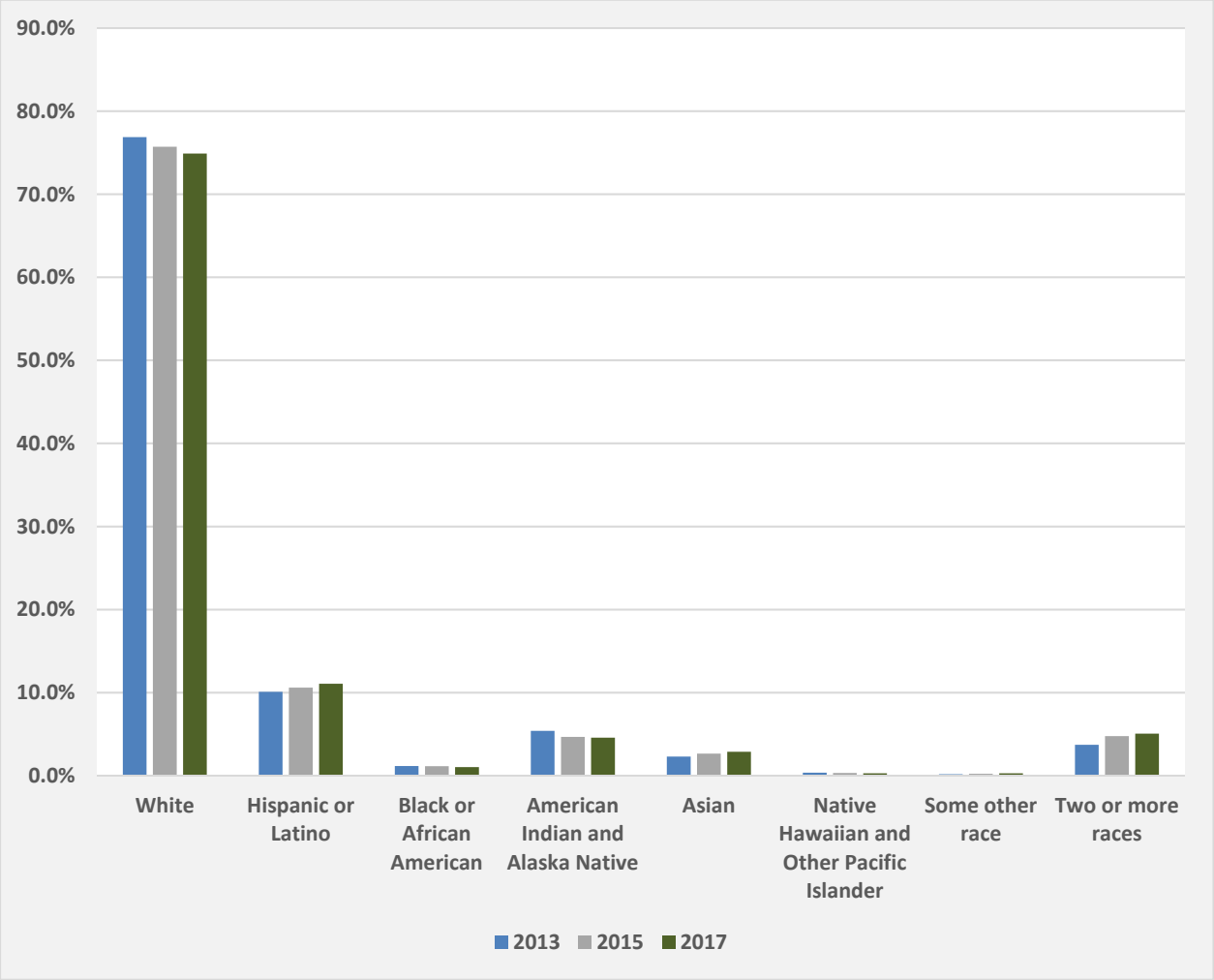
Figure 2.3: Humboldt County Population by Age (2013, 2015, 2017)



2.1.3 Race and Ethnicity

Humboldt County is a majority white community, (75% in 2017) despite a slight decline as a percentage of the total population, from 77% to 75% between 2013 and 2017. Hispanic or Latino communities are the next largest ethnic group at 11% of the total population, followed by Native American (American Indian and Alaska native) communities which make up 5% of the total population. Figure 2.4 shows the race and ethnicity of Humboldt County is 2013, 2015, and 2017.

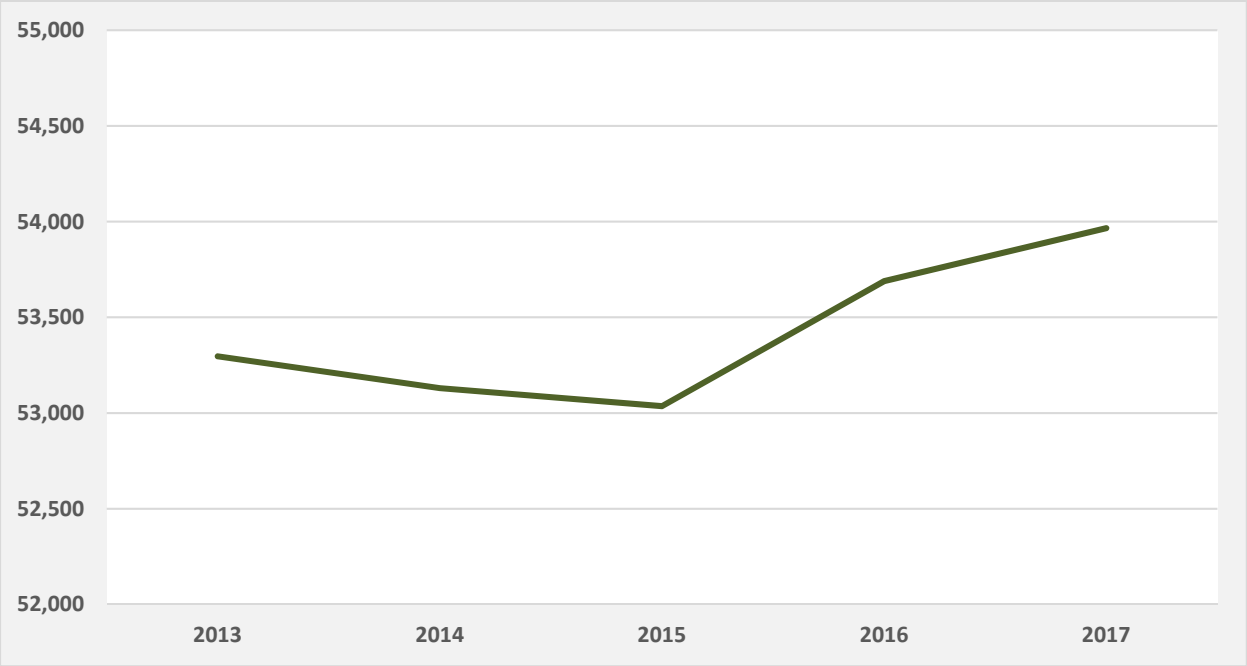
Figure 2.4: Humboldt County Ethnicity (2013, 2015, 2017)



2.1.4 Number of Households

As presented in Figure 2.5, the number of households in Humboldt County is almost 54,000. This number has increased from a recent low of 53,000 in 2015. Overall, there has been limited increase in households in Humboldt County since 2013, similar to the limited increase in population over that same period.

Figure 2.5: Humboldt County Households (2013-2017)

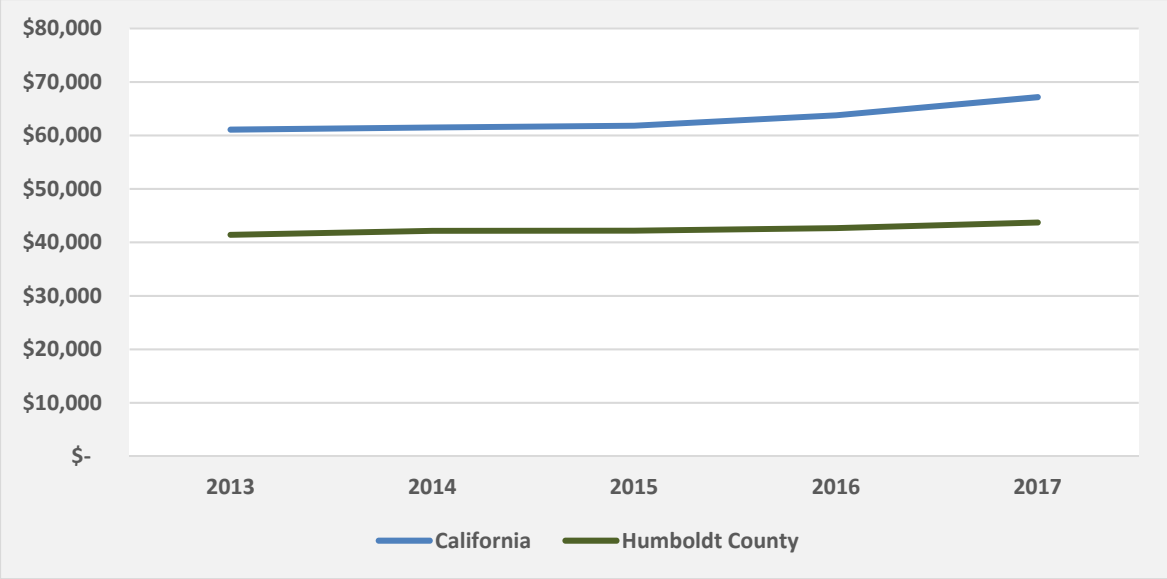


2.1.5 Median Household Income

The ability to afford private transportation and vehicles impacts an individual's propensity to use public transportation. Typically, those who lack access to private transportation are more dependent on alternative modes of transportation.

As illustrated in Figure 2.6, median household income in Humboldt county has increased steadily from 2013 to 2017, increasing by 6% ($2,300). Over the same period of time, median household income for the State of California has increased 10% ($6,100). Overall, Humboldt County has a lower median income than the State of California by over $20,000.

Figure 2.6: Median Household Income (2013-2017)

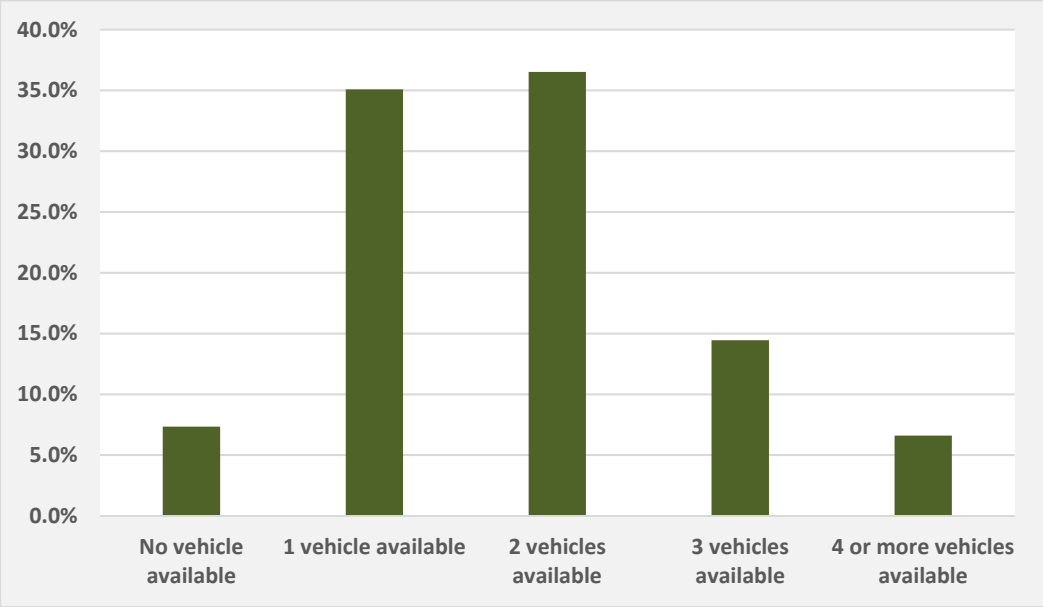


2.1.6 Vehicles per household

Transit dependency is often correlated with access to private transportation and automobiles. Those with limited or no access to private transportation are typically more dependent on public transportation as their primary mode of travel.

As presented in Figure 2.7, 36% of households have two vehicles available, 35% have one vehicle available, and 14% have three vehicles available. 7% of households do not have access to a vehicle.

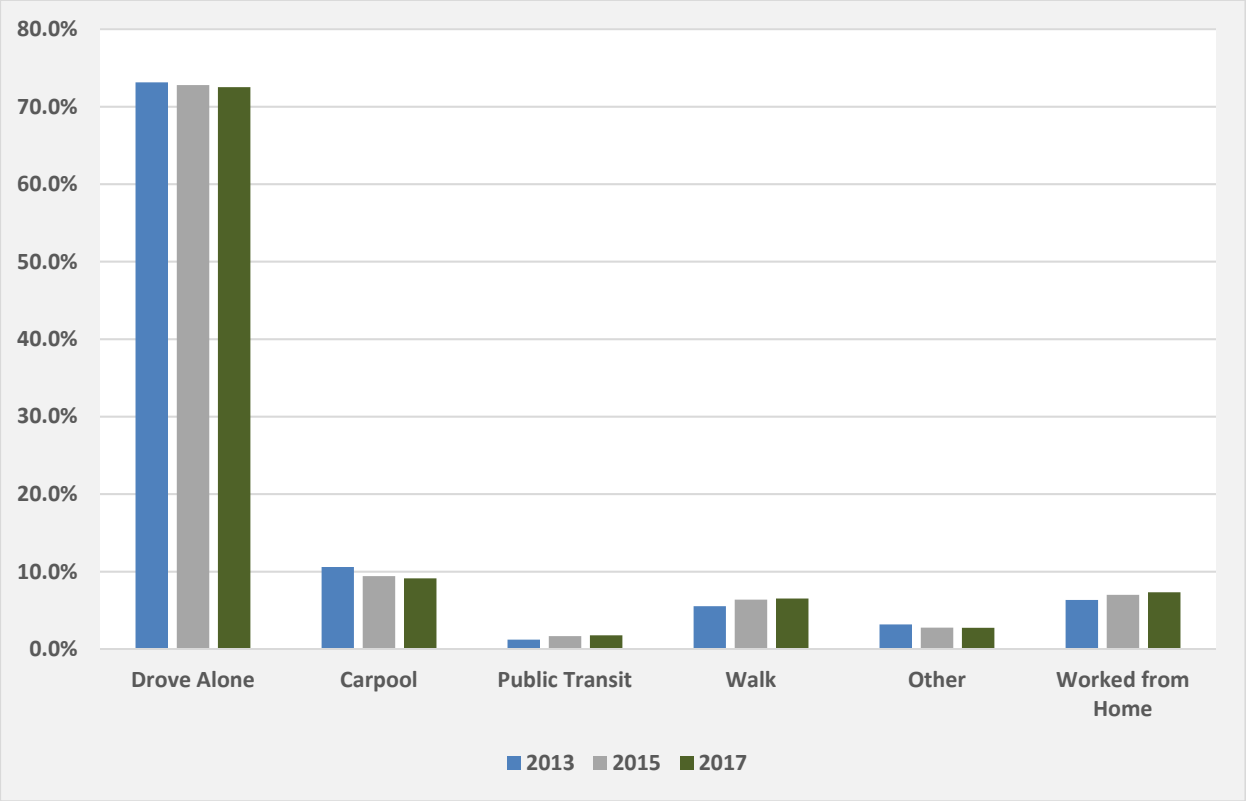
Figure 2.7: Vehicle Ownership (2017)



2.1.7 Journey to Work

In Humboldt County, the majority of the community drives alone to work (72.5%), although this has declined slightly from 2013 (73.1%). Over the same period there has been a slight increase in those using public transit (1.2% in 2013 to 1.8% in 2017). The largest increases in mode choice to get to work have been those who walk (5.5% in 2013 to 6.5% in 2017), and those who work from home (6.3% in 2013 to 7.3% in 2017). This data is presented in Figure 2.8.

Figure 2.8: Journey to Work (2013, 2015, 2017)



2.2 Transit Dependent Populations

Annually, HCAOG must complete an unmet transit needs assessment as part of the responsibility as a Regional Transportation Planning Agency. This assessment identifies the following groups with a greater propensity to be transit dependent:

- Those unable to operate a vehicle and those without a vehicle (Carless individuals)
- Older citizens (over 65)
- People with disabilities
- People of limited means (People living below the poverty line)

For the unmet needs portion of this memorandum, data for each transit dependent group was analyzed at the census tract level. Data was obtained from the U.S. Census American Community Survey (ACS) 5 year estimate for 2017 and analyzed in ArcGIS.

Population Without Access to a Vehicle

Overall, Humboldt County has a low percentage of residents without access to a vehicle. The census tracts with the highest percentage of population with no car are Census Tracts 2,5, and 1 (Eureka, 10.9%, 10.7%, 8.6% and Census Tract 109.01 (Fortuna, 7.1%). The following Census tracts have no residents without access to a vehicle: Census Tracts 104 and 105.1 (McKinleyville), Census Tract 9400 (Hoopa Reservation), and Census Tract 115 (Miranda). Figure 2.9 illustrates the distribution of the population without access to a vehicle across Humboldt County.

Population Over 65

As discussed in the section above, Humboldt County is aging and the portion of the population over 65 is growing at the fastest rate. Census Tract 115 (Miranda) has the highest percentage of over 65's (26.3%), followed by Census Tract 102 (Orick, 25.4%), and Census Tract 106 (Freshwater, 24.7%). The areas with the lowest percentage of population over 65 are Census Tract 10 (Arcata, 8.6%), Census Tract 1 (Eureka, 9.6%), and Census Tract 9400 (Hoopa Reservation, 10.2%). Figure 2.10 illustrates the distribution of the population over 65 across Humboldt County.

Population with Disabilities

The area of Humboldt County with the highest percentage of people with disabilities is Census Tract 1 (Eureka, 27.3%), followed by Census Tract 109.01 (Fortuna, 22.7%), and Census Tract 101.02 (Willow Creek, 22.1%). The areas of Humboldt County with the lowest percentage of people with disabilities are Census Tract 10 (Arcata, 8.8%), Census Tract 104 (Feldbrook, 9.3%), and Census Tract 9 (Arcata and Indianola, 9.9%). Figure 2.11 illustrates the distribution of the population with disabilities across Humboldt County.

Population Living in Poverty

The area of Humboldt County with the highest percentage of people living in poverty is Census Tract 9400 (Hoopa Reservation, 41.5%). This is followed by Census Tracts 10 and 11.01(Arcata, 37.7%, 36%). The areas of Humboldt County with the lowest percentage of people living in poverty are Census Tract 106 (Freshwater, 8.3%), Census Tract 109.02 (Dinsmore, 9.7%), and Census Tract 104 (Feldbrook, 10.1%). Figure 2.12 illustrates the distribution of the population living in poverty across Humboldt County.

Figure 2.9: Humboldt County Population Without Access to a Vehicle

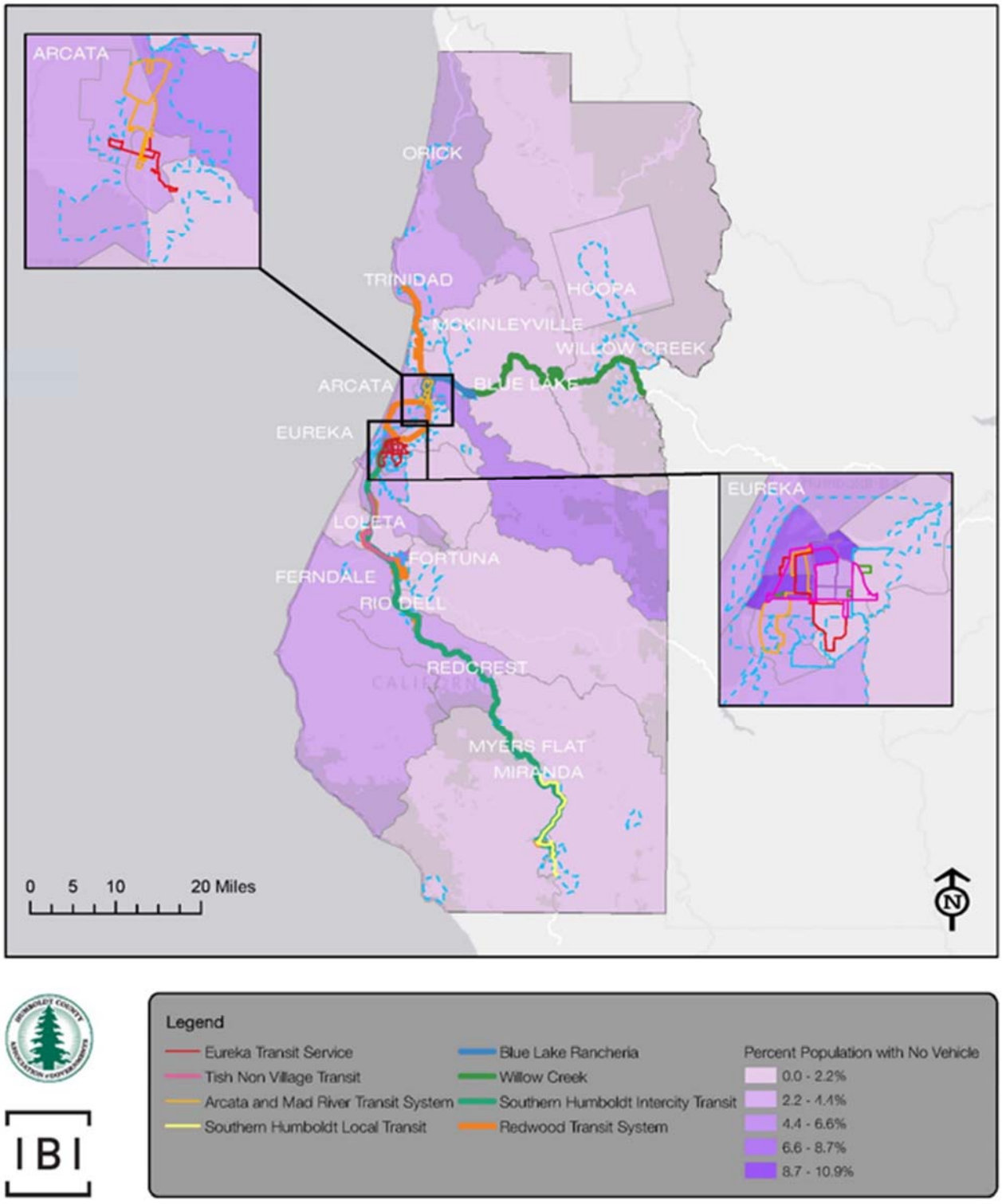


Figure 2.10: Humboldt County Population Over 65 Years Old

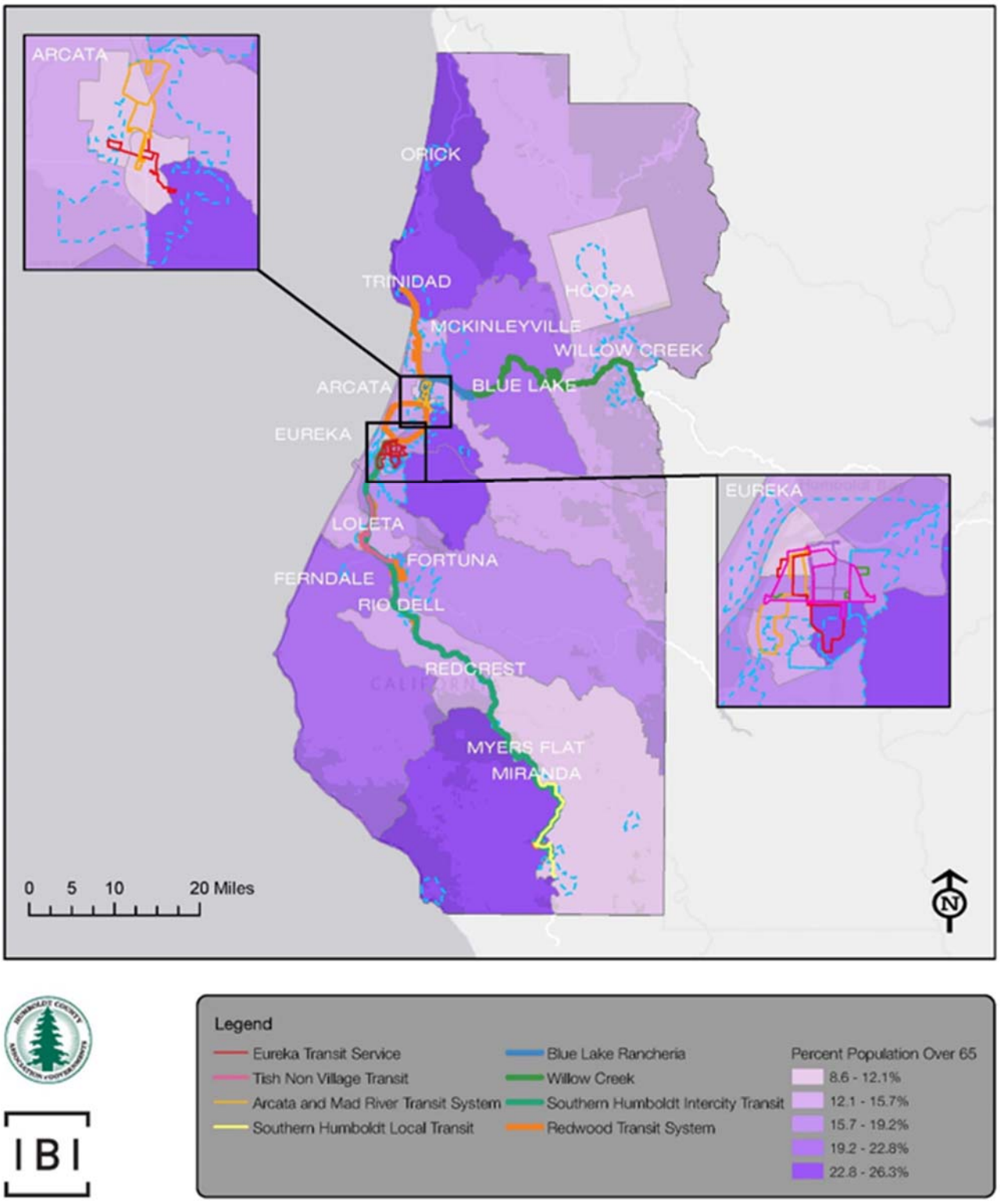


Figure 2.11: Humboldt County Population with a Disability

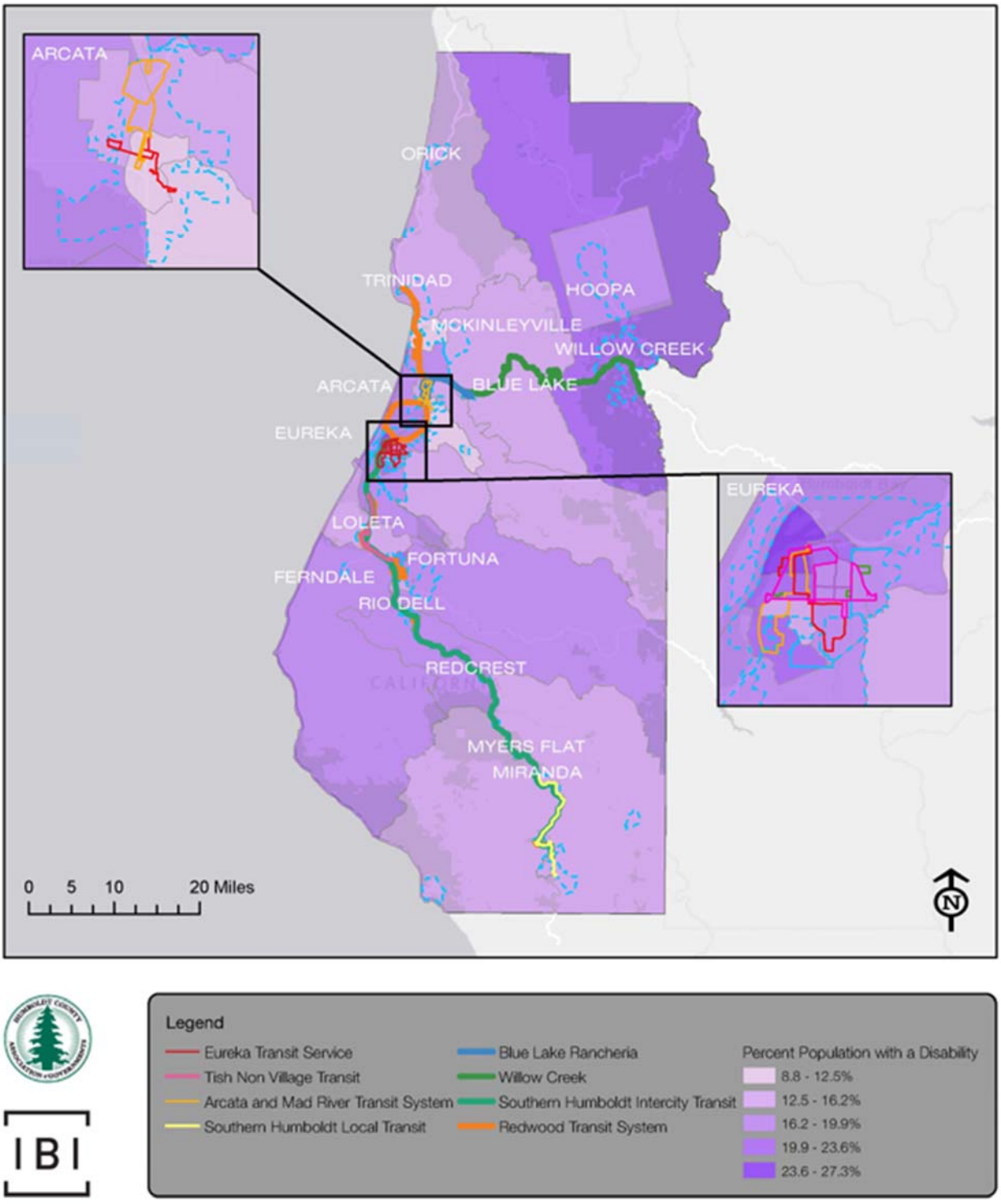
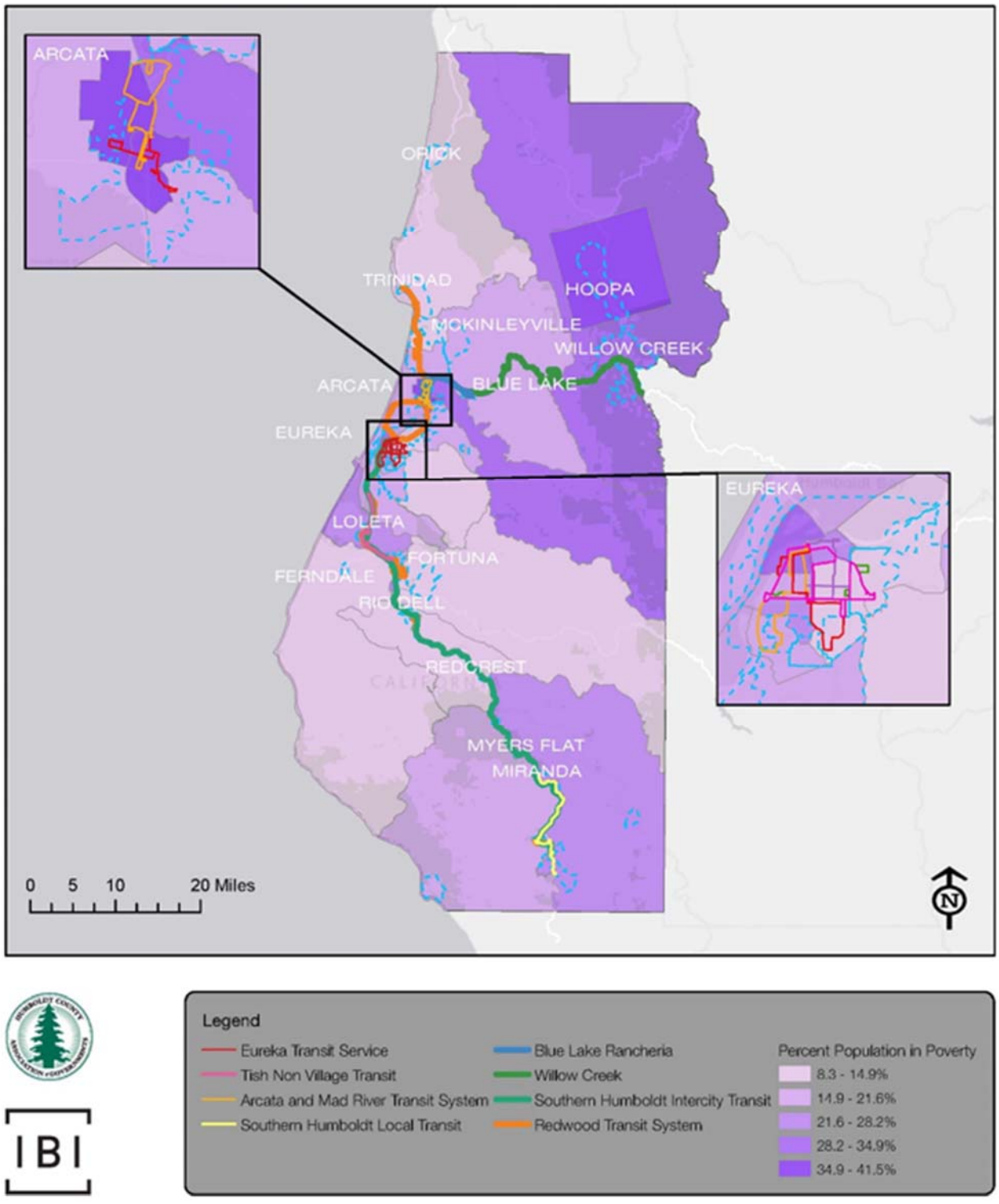


Figure 2.12: Humboldt County Population Living in Poverty



2.3 Summary

The demographic profile of Humboldt County demonstrates that Humboldt County has had a stable population of 135,000 people. The largest grouping of people is between 20 to 34 years old, and the fastest growing sector of the population is the over-65 age bracket. The majority of residents are white, followed by Hispanic/Latino and Asian residents. Both Hispanic and Asian communities are growing while the number of white residents is slightly declining. The number of households has been stable at 54,000 households and the median income is $44,000, below the statewide average of $67,000. Most households own at least one vehicle, reflected by commute types as over 70% of households drive alone for their commute.

For unmet needs in the county, there are relatively high percentages of people with disabilities, people living in poverty, and people over 65. There are lower percentages of people without access to a vehicle.

3.0 SURVEY RESEARCH

3.1 Context/ Methodology

The *Mobility on Demand (MoD) Strategic Plan* is based on meaningful stakeholder engagement and visioning, as well as an astute assessment of how well new technology and business models may serve the County. In response to the former, an important component of the work plan included the design and administration of a community survey.

The community survey was developed to solicit feedback regarding mobility needs, existing transit services and usage, connectivity, areas for improvement, and gauge interest in possible alternate mobility services in general and the type of transit service enhancements and next-generation mobility solutions specifically. This chapter documents community survey results. Understanding community desires is important in advancing the *Mobility on Demand Strategic Plan* and tailoring solutions to community needs.

A copy of the survey instrument is presented in Appendix A. The community survey was conducted on the on-line survey platform *SurveyMonkey.com*. The on-line survey was posted in both English and Spanish, through a link from HCAOG's home page. Paper copies of the survey were made available at select locations in the County. The first survey response was recorded on April 16, 2019. The survey was closed on June 5, 2019. There was a total of 97 responses, 96 of which were completed on the English version of the survey.

The survey contained 10 questions. Four questions were related to the respondents use of mobility/transit services, a qualitative assessment of existing transit services including those that use and for those that do not use – why not? And a question on the type of mobility/transit enhancements or improvements that may be desirable. The other six questions were to better identify the place of residence and socio-economic characteristics of respondents. At the end of the survey, respondents had the opportunity to enter their name, email, and phone number for a chance to win a $35 gift certificate from a local shop or restaurant. The "enter-for-your-chance-to-win" opportunity was included to increase survey responses. Respondents were also able to include open-ended comments at the end of the survey.

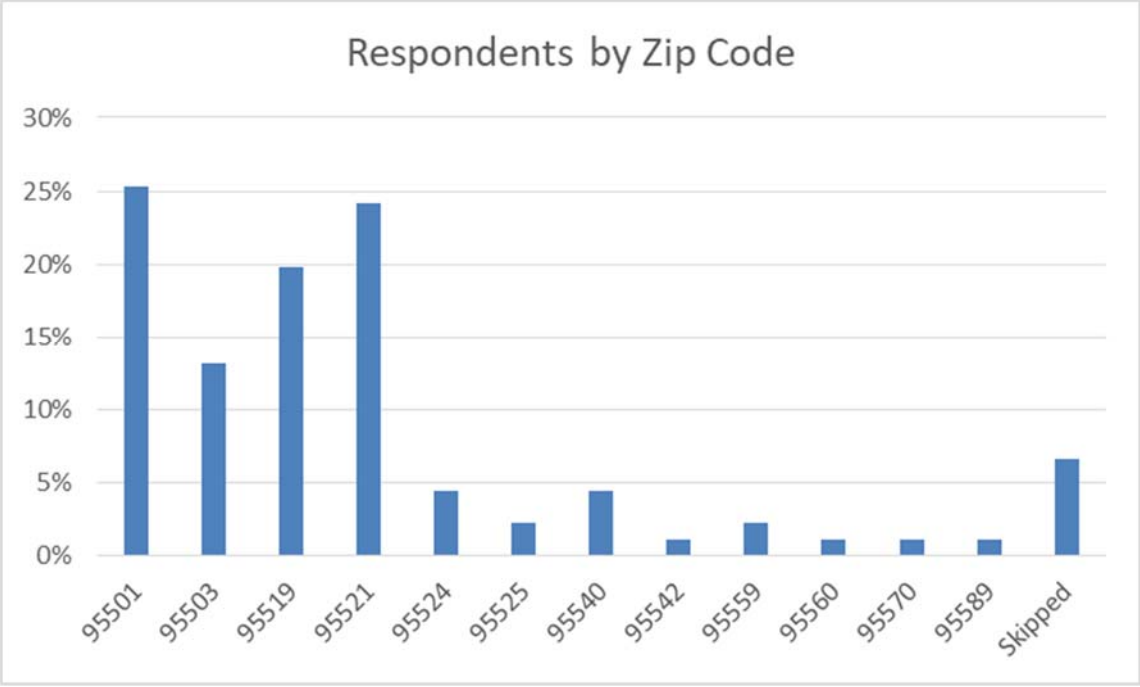
The introductory heading for the survey reads:

> **Humboldt County *Mobility on Demand* Survey**
> **We Need Your Input!**
> **Enter for your chance to win a local $35 gift certificate**
> To best meet the transportation and mobility needs of residents and visitors to our County, the Humboldt County Association of Governments (HCAOG) is developing a shared vision for what "mobility on demand" can look like in Humboldt County. This survey is one way for you to provide input about current transit services, areas for improvement, and what new mobility options or technologies you would use, such as ride hailing (e.g. Uber, Lyft), bikeshare (e.g. Zagster), carshare, micro-transit, smart phone apps for payments, etc.
>
> What you have to say is important in helping to make improvements and plan for the future. Thank you for your participation.
>
> PLEASE TELL US ABOUT YOUR USE OF TRANSIT AND YOUR TRAVEL PATTERNS.

3.2 Survey Results

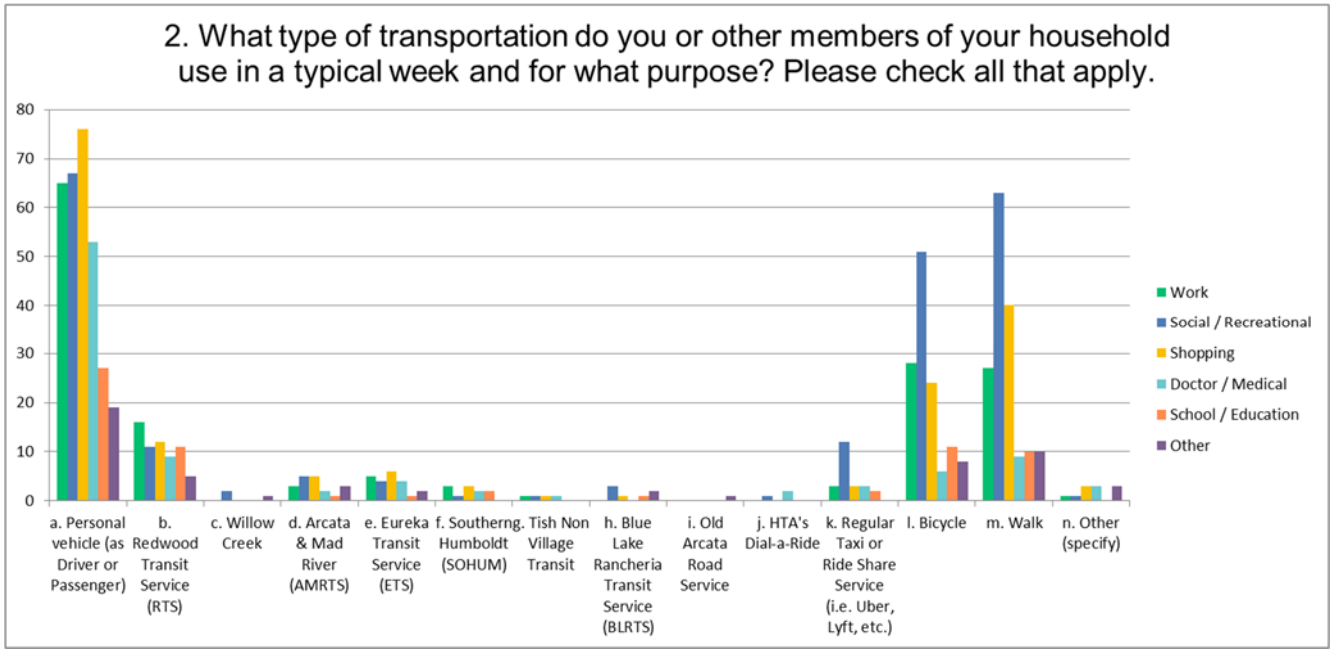
The results of the survey are presented below. The survey question is presented followed by a discussion of survey results and a table displaying recorded responses.

Question 1: What is the Zip Code where you live (residence)?



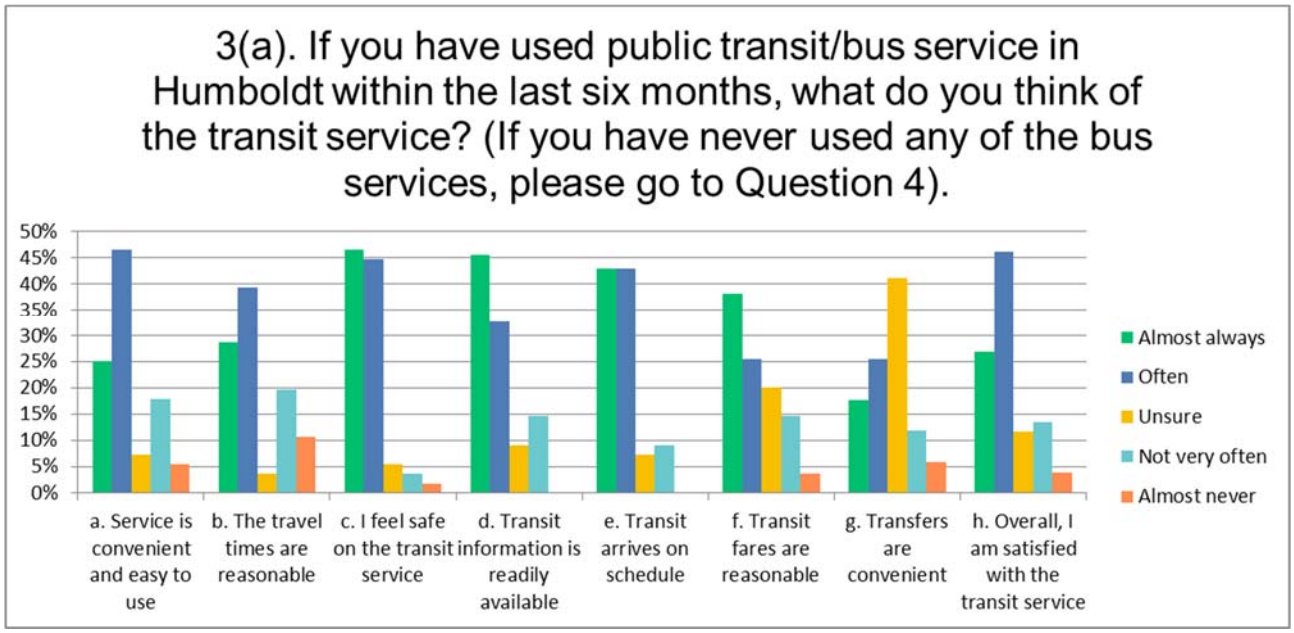
This question was left as a short answer question (not multiple choice). For Question 1, 91 out of the 97 respondents answered this question. Most respondents (82%) come from Zip Codes 95501 (Eureka), 95503 (Eureka), 95519 (McKinleyville), and 95521 (Arcata). A smaller portion of respondents (18%) come from other zip codes in Humboldt County.

Question 2: What type of transportation do you or other members of your household use in a typical week and for what purpose?



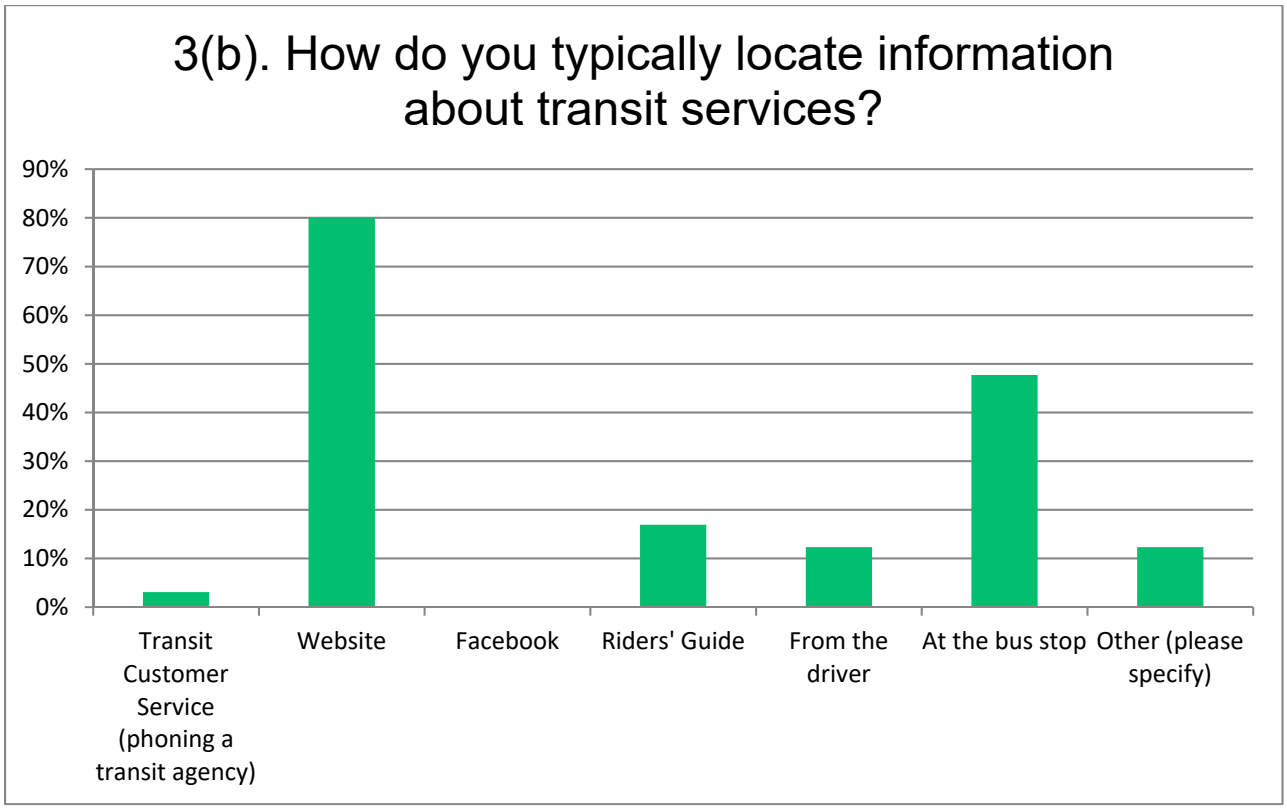
This question was presented as a matrix. The columns of the matrix represented trip purpose, such as work or shopping. The rows represented transportation type, such as personal vehicle, transit, or ride share. Respondents could check multiple boxes in the matrix. All 97 participants answered this question. As shown in the figure, most respondents mainly use a personal vehicle, with the highest trip purposes being shopping, recreation, and commuting. The next highest trip type for commuters is bicycling and walking. The most popular Humboldt Transit services used on a weekly basis is the Redwood Transit Service (RTS) followed by the Arcata and Mad River Transit System (AMRTS) and the Eureka Transit System (ETS). Respondents were also allowed to mark 'Other' if they had a trip purpose or trip mode different than any of the options presented. A couple respondents entered Fortuna Transit as a service they take weekly. Other trip purposes included, meetings, caregiving, banking, library, coffee. One respondent entered carpool as a separate mode type.

Question 3(a): If you have used public transit/bus in Humboldt within the last six months, what do you think of the transit service?



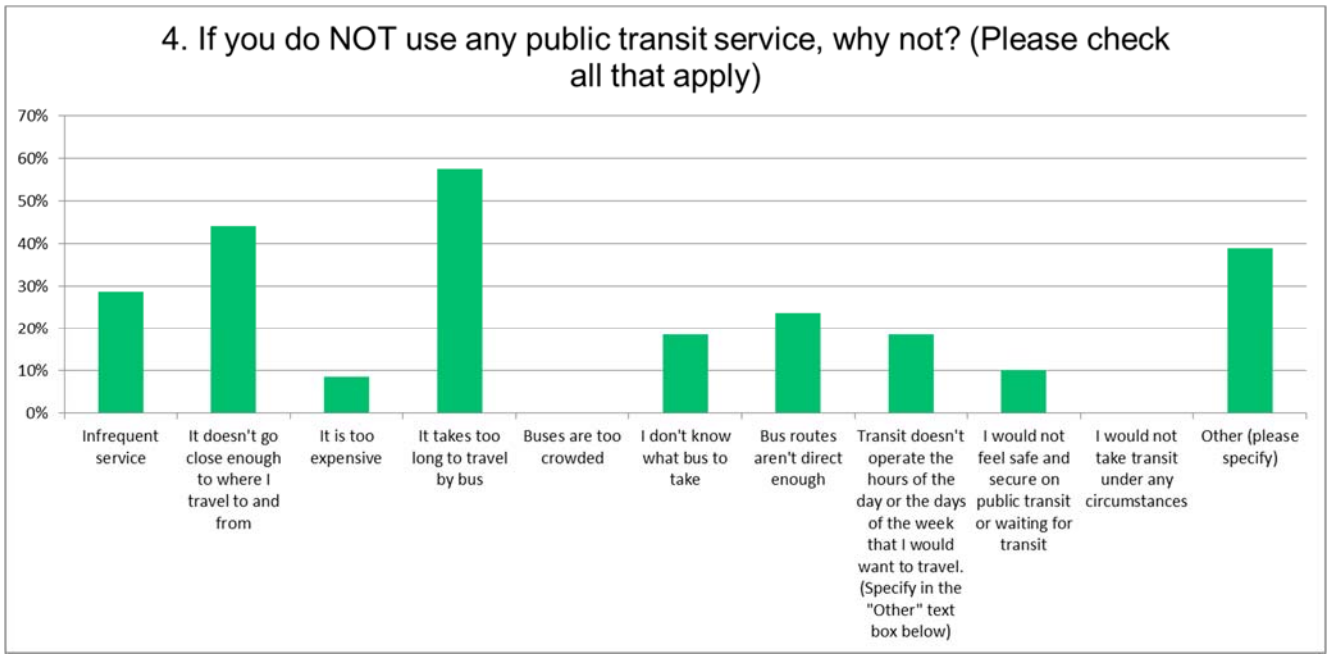
This question was presented as a single answer matrix for each row. Because respondents can only choose one response for each row, data was collected as percentages. 57 respondents answered this question, while 40 did not answer. The columns represented personal preference. The rows represented statements regarding transit service. For the statement, "*Service is convenient and easy to use*", a large portion of respondents believe that this is true "*often"* or "*almost always"*. For the statement, "*Travel times are reasonable*", again, a large portion of respondents chose "*often"* or "*almost always"*. However, a smaller but significant portion of respondents chose "*not very often"* or "*almost never"* for travel times being reasonable. Close to 90% of respondents indicated they felt safe on transit. A marginally less percentage of respondents believe transit info is readily available, that transit arrives on schedule, and transit fares are reasonable. Most respondents are "*unsure"* if transfers are convenient. In general, most respondents are "*almost always"* or "*often"* satisfied with the transit services in Humboldt.

Question 3(b): How do you typically locate information about transit services?



This question was presented as multiple answer multiple choice. 65 out of 97 respondents answered this question. Most respondents receive transit service information on-line (HTA website). Nearly 50% of respondents receive their transit information at the bus stop. Fewer respondents receive information from transit customer service, a rider's guide, or from the driver. No respondents use Facebook to receive transit information. For those who chose "*other*", responses included Google Maps and the transit app (HTA's trip planner functionality on-line powered by Google Maps).

Question 4: If you do NOT use any public transit service, why not?

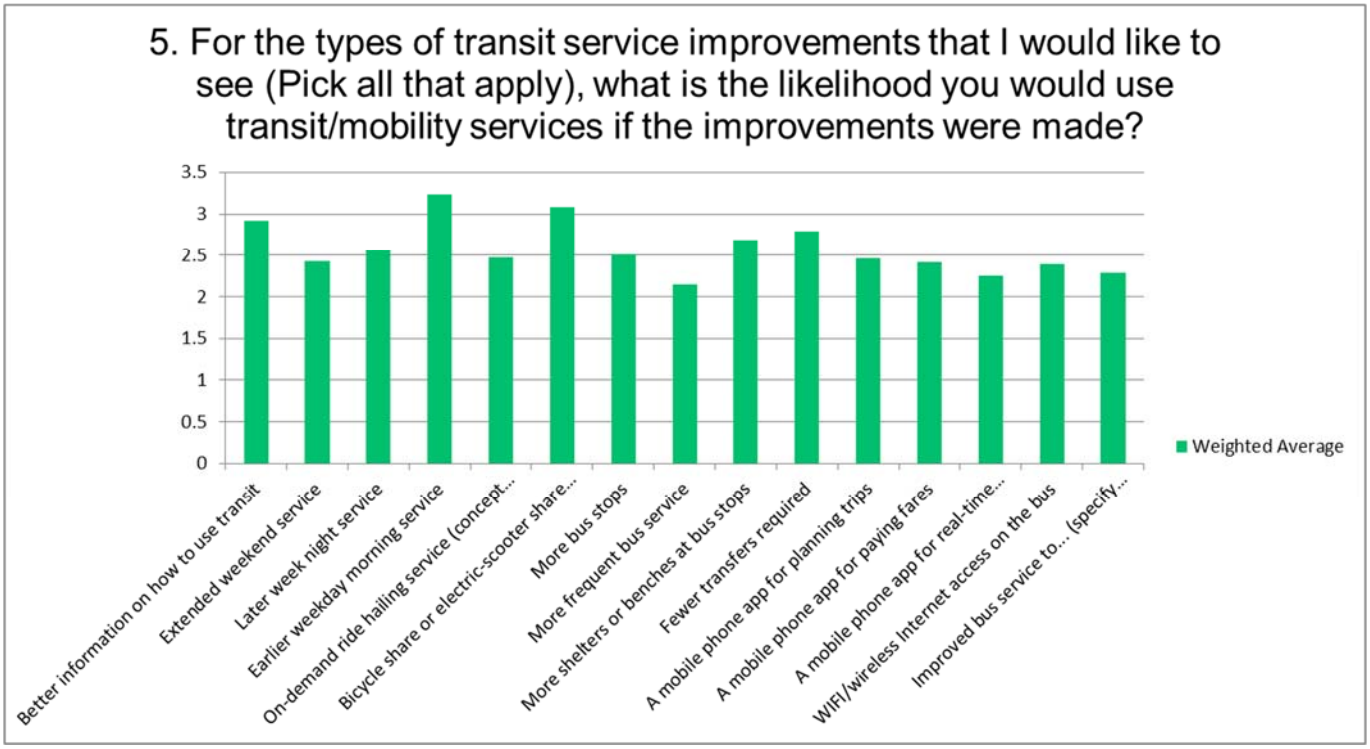


This question requested respondents to "check all that apply". Fifty-nine out of 97 respondents answered this question. More than 50% of respondents said they do not take public transit noting "*It takes too long to travel by bus"*. The next highest reason for not using public transit is that "*It doesn't go close enough to where I travel to and from"*, speaking to potential opportunity to address first/last mile connectivity. The third most popular reason for not using public transit was "*Other".* The responses for "*other"* are presented in the chart below. The responses are unedited.

Number	Responses Noted for "Other"
1	weekends - to church and back, up north or south to go hiking....
2	not sure I will get space on bike rack
3	I have always had my own vehicle and have and have only needed public transportation a few times.
4	Weekends & Late Nights
5	Use own vehicle more often
6	Need car for work
7	I have kids that I have to get to school and daycare before I go to work, the bus would take to long and does not stop close to my home.
8	I live in Bayside
9	McKinleyville late evenings and overall weekend service

Number	Responses Noted for "Other"
10	I prefer to ride my bicycle or drive my own motor vehicle so I'm not beholden to somebody else's schedule. It really comes down to selfishness; I can, therefore I will.
11	Have access to private, dependable vehicle
12	I have to plan to take transit (where are the stops, what time do I need to leave), but I don't have to plan for walk/bike/personal vehicle/TNC
13	I have to plan my day around the bus if I want to take it. This is inconvenient.
14	I can usually just ride my bike.
15	Last bus leaves Scotia at 3pm or so. I need to stay at work until 4:30.
16	I typically have things I need to transport, including my dog, and that's not doable on a bus.
17	I don't know enough about how to ride it around town. I have only ever taken the bus form Eureka to HSU. Lack of accessible information, e.g. Instagram or Facebook posts or ads saying "Did you know that you can take the bus from X to Y in 10 minutes for Z dollars? A map showing inner-city destinations and travel times easily locatable on the website would be good too. More bike racks on buses.
18	I commute daily by bicycle, it's faster and easier than transit, plus I enjoy the exercise (even in the rain!)
19	Increased risk of contracting influenza/colds/illness on crowded buses. Bus is slower than biking to most of the places I want to go, and biking keeps me healthy.

Question 5: For the types of transit service improvements that I would like to see, what is the likelihood you would use transit/ mobility services if the improvements were made?

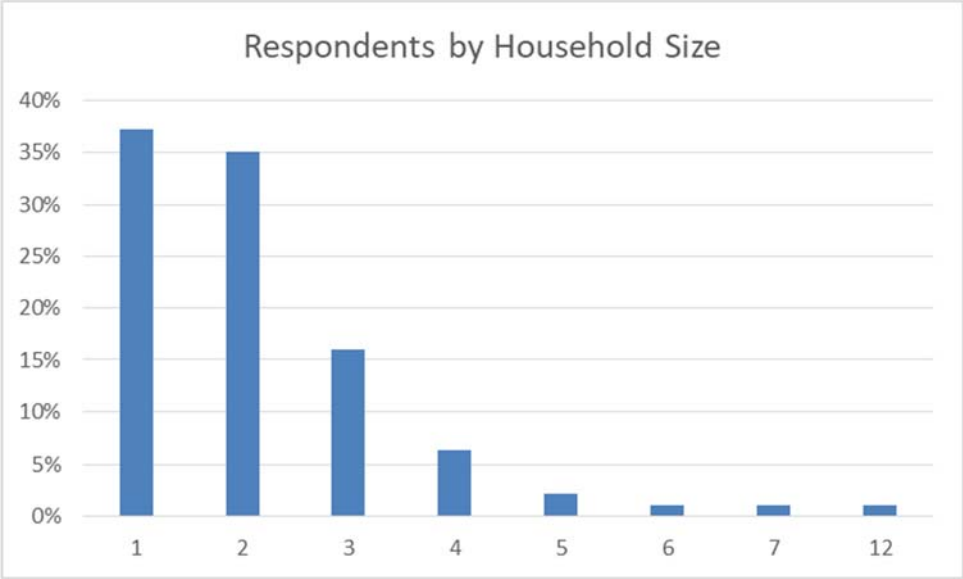


This question was presented as a single answer matrix. The columns ranged from "*would certainly use*", to "*would not make a difference*". The rows represented a wide range of potential transit improvements, such as "*more bus stops*" or "*fewer transfers required*". 91 out of the 97 respondents answered this question. The results in the table are shown as a weighted average. This means all responses were averaged against each other to determine a single likelihood figure. Those who answer "*would certainly use*" would cast a response as a 4. Those who answer "*would likely use*"' or "*might use*" would enter a 3 or 2, respectively. Those who answer "*not very likely to use*" or "*would not make a difference*" reflect a weighted average of 1 or 0, respectively.

The responses with the highest weighted average amongst all potential improvements include earlier weekday morning service and a bicycle share or electric scooter share program, both above a score of 3. Other high-ranking improvements were: "*better information on using transit", "later weeknight service", "more bus stop shelters"*, and "*fewer transfers required"*. Marginally fewer desirable improvements are "*more frequent bus service"*, and a "*mobile phone app"*.

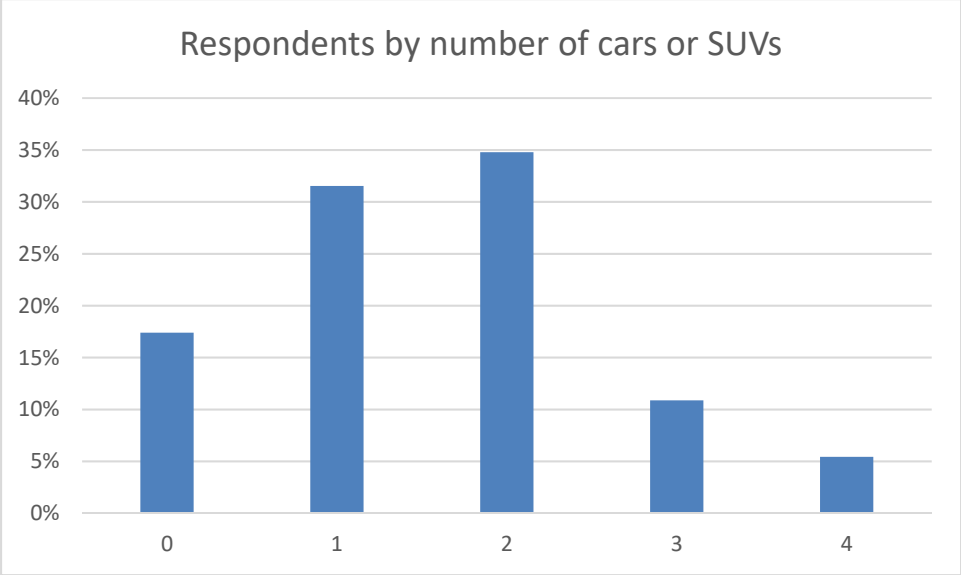
The remainder of the questions were asked to garner a demographic/socio-economic profile of survey respondents. Answering these questions was optional (and included "*Prefer not to answer*" for income and age.

Question 6: How many people live in your household?



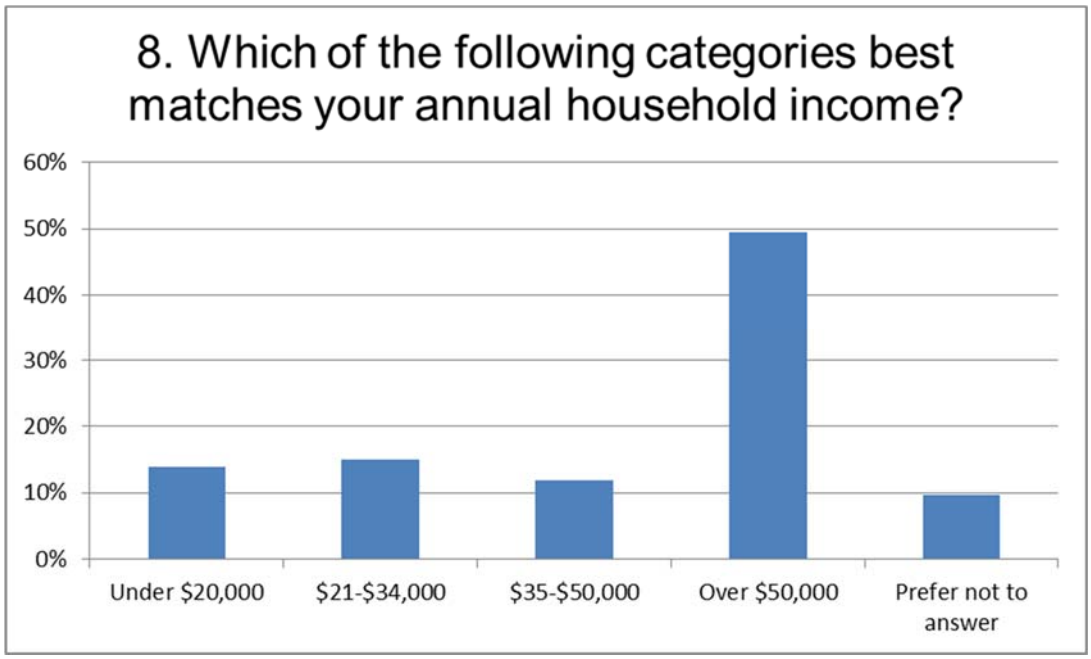
94of 97 respondents answered this question. Most respondents (72%) live alone or with one other person. A fewer number of respondents (22%) reside in a household of 3 or 4 people. Other household sizes include 5, 6, 7, and 12 members.

Question 7: How many cars or SUVs?



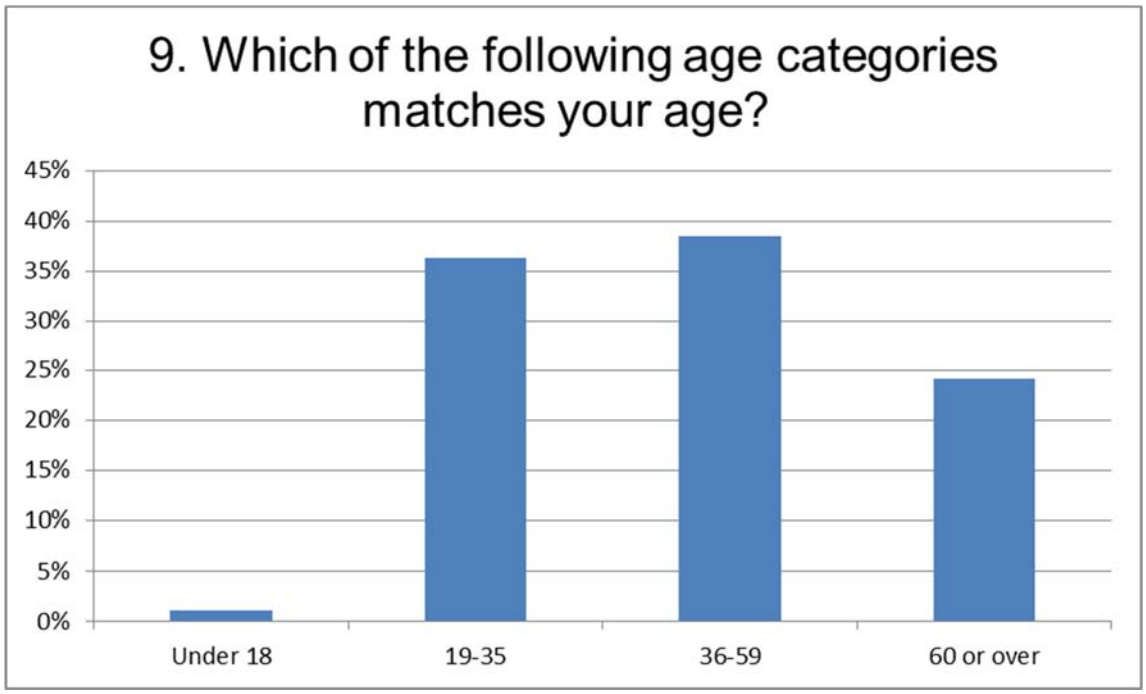
This question was an open response. 92 of 97 respondents answered this question. Most respondents (35%) have two vehicles per household. A similar number of respondents (32%) have one vehicle per household. 17% of respondents do not have a vehicle. Vehicle ownership (or access to a vehicle) is an important indicator for one's propensity to use transit or alternate mobility solution. 16% of respondents reside in a household with 3 or 4 cars.

Question 8: Which of the following categories best matches your annual household income?



This question was multiple choice. 13 respondents chose not to answer this question. Nearly 50% of respondents have a household income over $50,000. Respondents with a household income under $50,000 were evenly split between "*under $20,000*" (14%), "$*20,000 to $34,000*" (15%), and "$*35,000 to $50,000*" (12%).

Question 9: Which of the following age categories matches your age?



This question was multiple choice. 91 out of 97 respondents answered this question. Most respondents (38%) were 36 to 59 years of age. The next largest cohort (36%) was 19 to 35 years of age. 24% of respondents were over 60 years of age. Only one respondent was 18 years of age or younger.

Additional Comments

The following are comments written by respondents at the end of the survey. 24 of the 97 respondents left a comment. The comments shown are unedited.

Comment Number	Comment
1	You're wonderful!! I would not have an interesting life without the ride and talking with the drivers. Thank you!
2	Fortuna Bus Service has a very good bus service. The drivers are very kind and helping people with their bags. I thank God that we have a bus service in our city.
3	More weekend and late-night services please!
4	The bus schedules are missing at some sites especially in Eureka, better bus stop weather cover, the ones that are up now are useless if it's raining, windy, and/or both. Seats in booths, Arcata bus stops are often dirty, trash, weirdos hanging out, drunks, cigarettes where it says no smoking, people yelling, crazy people, especially at Arcata trains. It's hard to wait for a bus there because there is so much drunks, smoking and yelling sometimes.
5	Elders who have the greatest transportation needs will not likely access this on-line survey.
6	It is very hard to get to Central Ave to catch a bus in McKinleyville. Elders need a ride to the bus stops currently.
7	My son uses public transportation only and I hear / experience how difficult (impossible) it is for him to get to work at night and the weekends, and inconvenient and expensive, for him, otherwise.
8	ADA
9	As I age, I will need to give up my car and will have increased need for mass transit
10	More services needed with aging and disabilities
11	Thanks for all you do.
12	I would like for there to be multi-modal opportunities and connections between Eureka/Arcata besides vehicles as a mode of transportation.
13	I can't drive right now and looked into using the bus, but I can't get to a bus stop. Also, I'm on Old Arcata Rd and am not so organized that I can call the day before or know exactly when I'd need to return. Ideally on demand would not have a different definition for disabled people. Some rural transit services coordinate with ride hailing companies. It would also be great to have an

Comment Number	Comment
	express route between Eureka, Arcata, and McKinleyville that runs more frequently with a few less stops
14	More buses, More Routes, More stops please! Earlier and Later Service would be great, as well as regular increased Saturday/Sunday Service.
15	Either not enough time to shop or too much
16	Interested in service from Redway to Shelter Cove
17	We need HTA/on demand transit (Sat/Sun) 7-8 a.m. (north/south) a way to link mobile HTA Transit lines for a free after hours
18	If the bus was closer, I would ride!
19	The bus is so expensive I ride my bike everywhere but love taking bus when I can afford it
20	Transportation goals need to evolve. We have valuable rail tracks that could easily be utilized for a trolley system. At the terminus of the trolley service could be scooter/golf cart/ bicycle rentals
21	I take the bus to HSU and work as often as possible. Right now, I have to plan 1 hour ahead to walk to Broadway and Del Norte and arrive to class on time. (Not bad, and beats driving around trying to find parking!) That bus stop (for southbound) has no accessible crosswalks, though, and most people j-walk through 4 lanes of speedy traffic. It's also somewhat inconvenient for people coming from Henderson Center, but if I were to hop on a city busy my 1-hour commute would be longer. I love the busses, but strongly advocate for more frequent pick-ups and safer crossings. Especially along Broadway between the Co-Op and the Mall. Thank you for this survey!
22	More bike racks on RTS busses would be fantastic. The racks are frequently full.
23	There are 5 of us (three are students who work part time, one owns a start-up business, and one works full time at minimum wage)
24	more bike racks on buses, more education, a late-night bus between Eureka and Arcata. An in-real-time bus app like one bus away is HUGE. People like to know for certain when they are getting picked up. Otherwise people with any other option will never use it for work, period.

3.3 Summary / Conclusions

Survey results informs on current modes of transportation used, thoughts on current transit services, and desired enhancement for transit/mobility services.

In general, most respondents had the ability to drive, and the private auto was the primary mode of transportation used.

Primary reasons cited for not using transit included:

- The length of time to get to destinations (takes too long);
- Transit doesn't go close enough to destination (or origin); and
- Transit's hours of service – earlier and later weekday service.

In short, the survey results informed on the need for mobility solutions (MoD strategies) that are more competitive with the private auto in terms of travel time and convenience and the need to provide connectivity to transit services (first-last mile). Similarly, Personal Mobility on Demand (PMoD) strategies may be used to provide needed mobility for days of week, hours of day and/or locations (geographic) where trip (and population) densities may not justify fixed route transit services (i.e., unable to attain performance standards/metrics).

Further, there is an opportunity to incorporate active transportation solutions such as (e.g., bicycle) in mobility enhancements.

4.0 EXISTING CONDITIONS AND UNMET NEEDS

In order to effectively advance MoD operational and technologic solutions, it is important to understand the existing transit/mobility landscape in general, and travelers' unmet needs, specifically. Understanding mobility needs will guide the implementation of improved customer-focused transportation and mobility options, with an eye on reducing trips in the car-centric environment.

This chapter describes the unmet transportation needs of Humboldt County by profiling the existing transit/mobility landscape in the county (Section 4.1), including local and regional transportation services. In that landscape, we include both motorized modes and active modes of transportation, including bike share and micro mobility[2], and car share services.

Section 4.2 profiles "Other Supporting Data," including community demographic profiles and Remix data, and Community Survey results.

Section 4.3 presents a summary of stakeholder input.

Section 4.4 provides a synopsis of HCAOG's Reports of Findings from the Unmet Transit Needs Processes in fiscal years 2016/17 through 2019/20.

Section 4.5 summarizes unmet needs and presents preliminary thoughts on opportunities and potential solutions.

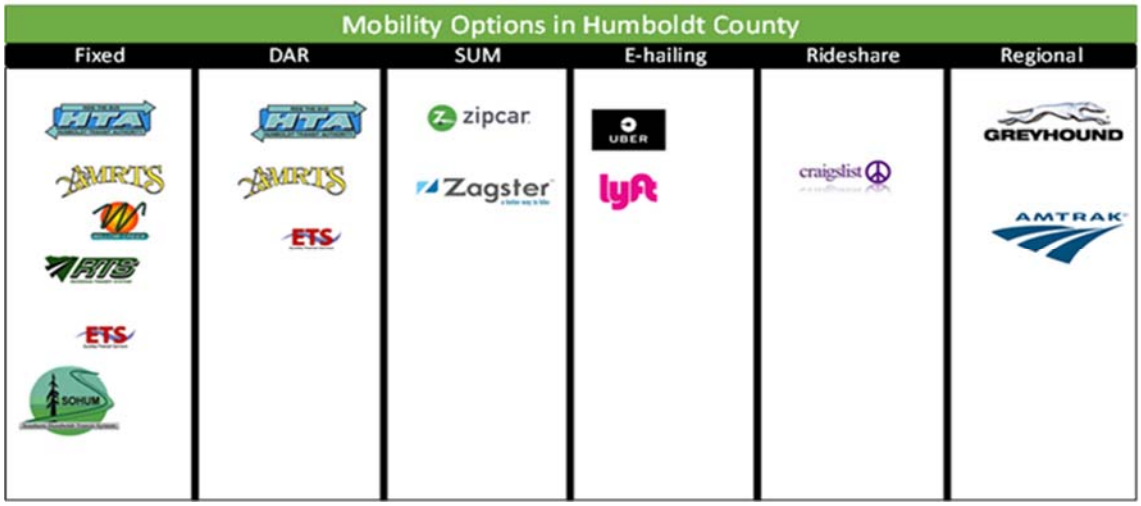
4.1 Transit / Mobility Landscape in Humboldt County

This section summarizes current mobility options in Humboldt County, which are illustrated below and defined as follows:

- Fixed: *Fixed Route Transit* - covers a service corridor with a set of fixed stops and schedules.
- DAR: *Dial-a-Ride* - an origin-to-destination advanced reservation transportation service for seniors and persons with disabilities.
- SUM: *Shared Urban Mobility* - refers to the shared used of a vehicle that allows users to access transportation services on an as-needed basis.
- E-hailing: Process of ordering a car, taxi, or any other form of transportation pick up via virtual devices: computer or mobile device.
- Rideshare: An arrangement in which a passenger travels in a private vehicle driven by its owner, for free or for a fee, especially as arranged by means of a website or app.
- Regional: Bus and/or rail services typically providing long-distance (and inter-jurisdictional) public transportation.

[2] Micro Mobility refers to a new category of vehicles that are thought to become an alternative to traditional modes of transportation. There are currently two main types of vehicles: personal transportation solutions, such as E-scooters, E-bikes etc. and small electric cars with one or two seats, EVs.

Below is a discussion of local and regional public transit services, as well as active transportation and other ride-share services.



4.1.1 Public Transit

Numerous transit providers serve Humboldt County, providing a variety of services. Table 4-1 presents salient characteristics of the respective public transit services including service area, operating days of week and hours of day, and fares. Other services not listed in Table 4-1 are Amtrak, Greyhound, and the Area 1 Agency on Aging Volunteer Driver Program. Regional transit providers that have connections in Humboldt County are Redwood Coast Transit and Trinity Transit. Figure 4-1 presents a map of county transit services.

Table 4-1: Transit Service by Provider

Provider	Start/End	Weekday Times	Weekend Times[3]	Fare (Card)
Redwood Transit System	Trinidad – Rio Dell	5:34am – 10:27pm	8:30am – 9:27pm	$2.10
Southern Humboldt	Benbow – Eureka	6:46am – 9:15pm	8:30am – 8:50pm	Intercity: $4.00
				Local: $1.20
Willow Creek	Willow Creek – Arcata	6:25am – 7:35pm	8:25am – 7:45pm	$3.30
Tish Non-Village[4]	College of the Redwoods – Fortuna	7:10am – 6:57pm	None	Free with RTS ticket
Eureka Transit System	City of Eureka	6:31am – 7:00pm	10:00am – 4:59pm	$1.70
Arcata & Mad River	City of Arcata	7:05am – 9:56pm	7:05am – 6:56pm	$1.75

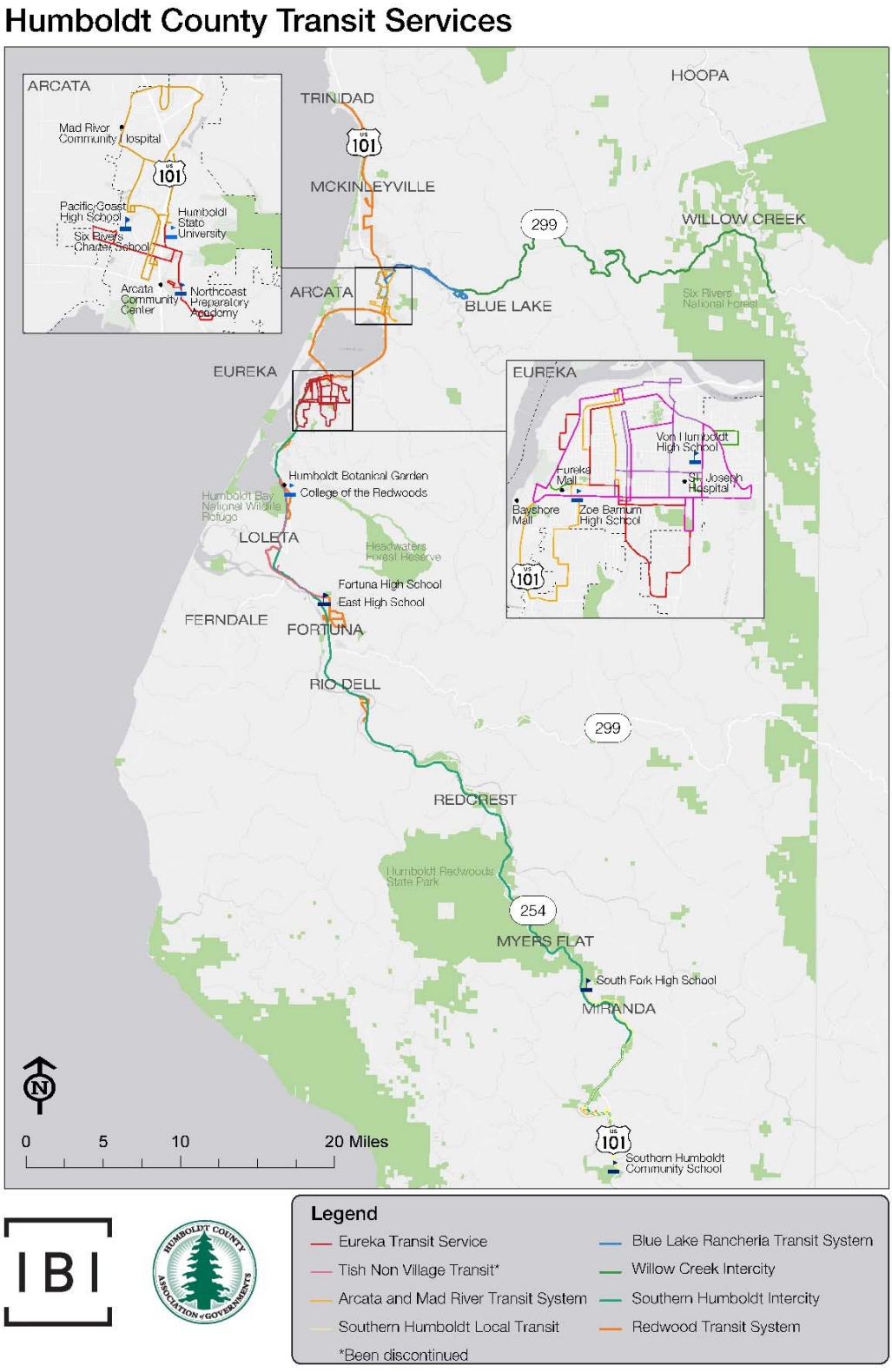
[3] Willow Creek, Eureka Transit System, Arcata & Mad River, Klamath/Trinity Non-Emergency Transportation, and Dial-a-Ride do not provide transit service on Sundays

[4] Tish Non-Village transit service was discontinued on June 29, 2019.

Provider	Start/End	Weekday Times	Weekend Times[3]	Fare (Card)
Fortuna Transit	City of Fortuna	8:30am – 4:00pm	None	$2.50
Blue Lake Rancheria	Blue Lake – Arcata	7:05am – 5:46pm	None	$1.65
Klamath/Trinity Non-Emergency Transportation	Willow Creek – Weitchpec	5:55am – 6:45pm	9:00am – 6:45pm	$2.00 or $4.00
Dial-a-Ride	McKinleyville, Arcata, Eureka	6:00am – 7:00pm	7:30am – 5:00pm	$3.00 to $9.00

Existing Transit Services																			
	Commuter	Intercity	Fixed Route	Deviated Fixed	MoD	Dial-a-Ride	Seniors/Disabled	Headways	Single Fare	Monthly Pass	M-F	Saturday	Sunday	Flagstops	Bike Racks	System Map	Published	Website	Tickets w/ App	GTFS
KTNET				X				2.5 hrs	$2.00	$35	4 runs	2 runs		X			X	X		
RTS	X							30-60min	$ 2.10	$62	6am-10pm	8:30am-9pm	8:30am-7pm		X	X	X	X	X	X
ETS			X			X		60 mins	$ 1.70	$48	6:30am-7pm	10am-5pm				X	X	X	X	X
AMRTS			X			X		60 mins	$ 1.75	$30	7am-10pm	7am-7pm					X	X		X
BLRTS			X			X		60 mins	$ 1.65	$25	7am-6pm			X			X	X		
Willow Creek		X						2.5 hrs	$3.30	$86	4 runs	3 runs				X	X	X	X	X
SHI		X						2 hrs	$4.00	$113	5 runs	2 runs				X	X	X	X	X
Old Arcata Rd					X			Reservation	$3.00	N/A	7am-7pm					X	X	X	X	X
Tish Non Village				X		X		2.5 hrs	$ 2.10	$62	4 runs					X	X	X		X
YTTS				X		X		Reservation	$ 1.00									X		
Fortuna Senior Transit						X	X	Reservation	$2.50	$22.50	8:30am-4pm						X	X		

Figure 4-1: Humboldt County Transit Services



The following describes existing transit services in Humboldt County[5], presented by transit service provider.

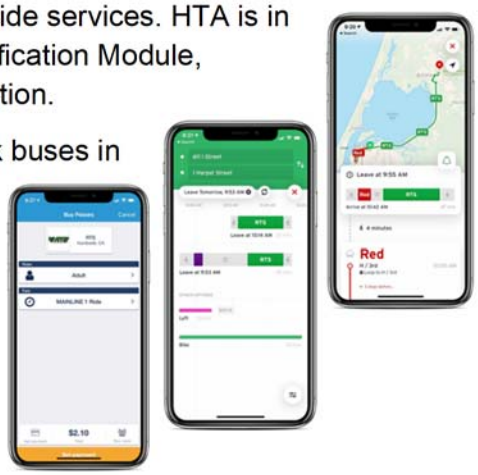
4.1.1.1 Humboldt Transit Authority (HTA)

HTA is the primary intercity public transit system in the county. With several routes, HTA provides service along US 101 from Trinidad to Scotia, service east to Willow Creek (via Highway 299), and service to Garberville and Redway in Southern Humboldt. HTA also operates intra-city, fixed route service in the City of Eureka through the Eureka Transit Service (ETS).

Mobility/Demand-Responsive Technology

HTA uses the following technologies:

- Routematch software supports HTA's existing Dial-A-Ride services. HTA is in the process of adding three Routematch modules: Notification Module, Mobile App for Paratransit, and Automated Fare Collection.
- Swiftly passenger information app allows riders to track buses in real time and know exactly where the buses are on their route at any time.
- Token Transit mobile ticketing app allows HTA customers to pay their bus fare with their smart phones.



Transit Services

- **Redwood Transit System (RTS)**

  This is HTA's mainline service operating Monday through Friday. It operates from Scotia to Trinidad. Major destinations served include Scotia, Rio Dell, Fortuna, Fernbridge, Loleta, College of the Redwoods, Fields Landing, King Salmon, Eureka, Arcata, Manila, Arcata Airport, Humboldt State University, McKinleyville, California Redwood Coast-Humboldt County Airport, Westhaven, and Trinidad.

  RTS has the highest ridership rate among all transit service providers in Humboldt County, comprising of over half of all Humboldt ridership at 615,656. Due to high ridership among all Humboldt transit providers, RTS also has the highest fare revenue at $1,219,000; highest operating cost at $2,681,000; highest subsidy at $1,462,000; and highest farebox ratio at 45.5%. In addition, RTS also has the highest vehicle miles in service (722,948) and vehicle hours in service (33,549). Subsidy per passenger is $2.38, the second lowest.

[5] Source: 5-Year Transit Development Plan

- **Southern Humboldt Transit System**

  SOHUM has two lines, a local route and an intercity route. The local system provides service from Benbow to Miranda, Monday through Friday from 6:53 am to 7:52 pm. The local route has less ridership than the intercity route, at only 11,672, as well as less fare revenue at $14,202. The local route has over 27,500 miles in service, and nearly 1,500 hours in service. Operating costs for the local line are over $100,000. The farebox recovery percentage is 13.7%, the fourth lowest among all transit providers. Subsidy per passenger is the fourth lowest at $7.68. Passengers per hour is the fifth highest at 7.8.

  The intercity route provides access between Benbow and Eureka from 7:05 am to 7:05 pm. The intercity route has 21,846 ridership, the fourth highest among all transit providers. The Southern Humboldt Intercity route brings in a fare revenue of $81,253 but expends an operating cost of $396,388. The farebox recovery is 20.5%, the fifth highest among transit providers. The intercity line has the second highest vehicle miles in service at 232,549, second only to RTS, but the fourth highest in service vehicle hours at 6,295. The subsidy per passenger is $14.43.

- **Willow Creek Intercity Transit**

  The Willow Creek Intercity Transit operates Monday through Saturday. It connects from the transit center in Arcata to the community of Willow Creek, including stops at Valley West Boulevard (Arcata) and McKinleyville High School (unincorporated County). Weekday service operates from 6:25 a.m. to 7:35 p.m. Saturday service operates from 8:25 a.m. to 7:45 p.m.

  Willow Creek has a ridership of 13,343. The Willow Creek service collects $42,700 in fare revenue but has an operating cost of $204,976. Willow Creek operates 2,837 vehicle hours and 106,755 vehicle miles. Willow Creek has a farebox ratio of 20.8%, fourth highest among all Humboldt service providers. The subsidy per passenger is $12.16.

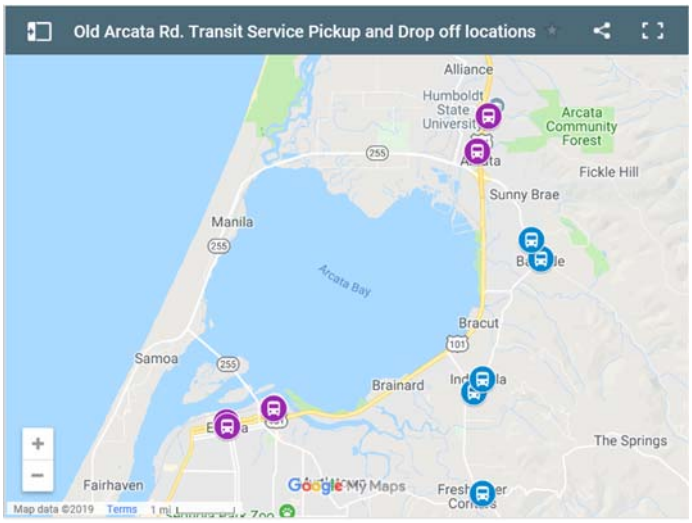
- **Tish Non-Village Deviate Fixed-Route Service (TNVS) - *DISCONTINUED***

  TNVS served the areas of College of the Redwoods, Scenic Drive and Loleta Drive, Tish Non Village, Fernbridge, Palmer Boulevard, and Fortuna (11th & N Street). Service was provided Monday through Friday between 7:19 a.m. and 6:57 p.m. Service began summer of 2015 and averaged 14 passengers a day.

  The TNVS had the lowest ridership among all transit providers in Humboldt at 3,452, the lowest fare revenue at $6,132, the lowest farebox recovery at 4.5%, and the second lowest passengers per hour at 1.5, just above Dial-a-Ride. Despite the low ridership, TNVS had 40,000 miles in service and 2,228 vehicle hours in service. The $137,712 operating cost, and $131,579 subsidy for TNVS resulted in the second highest subsidy per passenger ratio of $35.12, second only to Dial-a-Ride.

- **Old Arcata Road (OAR) - Pilot**

  HTA introduced a demand response transit service on November 1, 2018. Booked 1-day in advance, trip pick up or drop off locations must include a blue stop (see map at right) along Old Arcata Road, between Sunny Brae and Freshwater Corners. Trips from a blue stop to a blue stop and from a blue to purple stop are permitted, but trips from a purple to a purple stop are not (see map).



  The regular fares are $3 or $2 for disabled, senior, and children under 18. Fares may be paid using the "Token Transit" app or by cash.

  Appendix B presents an evaluation of the OAR Pilot.

4.1.1.2 Eureka Transit Service (ETS)

ETS operates four routes Monday through Friday and three routes on Saturday. All routes originate at H Street and 3rd Street except the Green Route. Routes operate on one-hour frequencies.

ETS is the third largest transit service in Humboldt in terms of ridership, at 237,677 riders. ETS does have the second highest fare revenue at $288,015. ETS has over 158,500 service vehicle miles, 14,405 vehicle hours, and an operating cost of $884,752, the second highest operating cost behind the RTS. At 32.6%, the ETS has the second highest farebox recovery ratio. The ETS has the third lowest subsidy per passenger at $2.51 and the third highest passenger per hour at 16.5.

Gold Route: Areas of the city served include downtown Eureka, Pine Hill, Bayshore Mall and the Henderson Center. The route operates Monday through Friday from 6:15 a.m. to 7:00 p.m. and Saturdays from 10:00 a.m. to 5:00 p.m.

Green Route: Areas of the city served include downtown Eureka, Myrtletown, Silvercrest, St. Joseph and General Hospitals, as well as the Bayshore Mall. The route operates Monday through Friday from 6:37 a.m. to 6:44 p.m.

Purple Route: Areas served include downtown Eureka, the County Main Library, Silvercrest Residence, General Hospital, Henderson Center, and the Burre Center. The route operates Monday through Friday from 6:39 a.m. to 7:00 p.m. and Saturdays from 10:00 a.m. to 5:00 p.m.

Rainbow Route: This route serves a broad area of the city such as downtown, Broadway, Bayshore Mall, Henderson Center, Sequoia Park, St. Joseph and General Hospital and Myrtletown. The route operates Saturdays from 10:00 a.m. to 5:00 p.m.

Red Route: The Red Route serves downtown Eureka, Broadway, Bayshore Mall, Henderson Center, Cutten and Sequoia Park. This route operates Monday through Friday from 6:28 a.m. to 7:00 p.m.

4.1.1.3 Arcata & Mad River Transit System (A&MRTS)

A&MRTS has three routes that originate at the Intermodal Transit Facility every hour. Two routes operate on weekdays, and one on Saturdays.

Among all Humboldt transit providers, A&MRTS has the second highest ridership and third highest fare revenue, at over 265,000 riders and $246,000 total fares collected. A&MRTS has the fifth highest vehicle miles at just under 98,000, with 7,770 vehicle hours in service. A&MRTS has the third highest operating costs at $663,000 with a $417,000 subsidy. The farebox ratio for the transit service is 37.2%, second highest among all providers. A&MRTS has the highest rate of passengers per hour at 34.1, and the lowest subsidy per passenger at $1.57.

4.1.1.4 Fortuna Transit

The City of Fortuna provides this demand responsive transportation for seniors over 50 or those who are disabled and unable to drive. Service is available Monday through Friday between 8:30 a.m. and 4:00 p.m. and Saturdays from 9:00 a.m. to 3:30 p.m.

Fortuna Transit is the fourth smallest provider by ridership at 8,500. A fare revenue of $13,225 and an $112,454 operating cost, results in nearly a $100,000 subsidy. The subsidy per passenger is $11.65. Fortuna Transit operates 22,384 vehicle service miles, the lowest of all transit providers, and 2,905 vehicle service hours. The farebox recovery ratio is 11.8%, which is the third lowest in Humboldt County. The number of passengers per hour is 2.9, the fourth lowest.

4.1.1.5 Blue Lake Rancheria Transit System (BLRTS)

BLRTS provides connectivity between the Blue Lake Rancheria and Arcata Transit, HTA lines, and other regional and intercity transit services at the Intermodal Transit Facility. BLRTS operates Monday through Friday between 7:00 a.m. and 7:40 p.m.

Among all Humboldt transit providers, BLRTS has the fifth highest ridership, at over 18,600. BLRTS operates over 44,000 annual vehicle miles, and approximately 2,000 annual vehicle hours. The BLRTS has the fourth highest passenger-per-hour rate, at 9.1.

4.1.1.6 Klamath-Trinity Non-Emergency Transportation (K/T NeT)

K/T NeT provides fixed-route service from two bus services in Willow Creek. One is a connection to the HTA Willow Creek intercity bus route between Willow Creek and Arcata. The second is a

connection to Trinity Transit that serves communities in Trinity County including Weaverville. K/T NeT service area encompasses Willow Creek and areas north along Highways 96 and 196 including Hoopa Valley, Weitchpec, and Orleans. The service operates on Monday through Friday between Willow Creek, Hoopa Valley and Weitchpec. In addition, on Tuesdays and Wednesdays, the route expands to serve Orleans. Limited service is provided on Saturday between Hoopa and Willow Creek. Service is scheduled to meet the Willow Creek and Trinity Transit buses each weekday. K/T NeT operates Monday through Friday between 9:00 a.m. and 7:05 p.m., and Saturdays from 9:00 a.m. to 11:40 a.m., and 6:15 p.m. to 6:45 p.m.

K/T NeT has 5,290 ridership, a farebox ratio of 6.6%, and 2.4 passengers per hour. K/T NeT has a fare revenue of $10,427 but an operating cost of $157,304 for a $146,877 subsidy. The subsidy per passenger is over $27, the third highest among all Humboldt transit providers. K/T NeT has 65,800 vehicle miles in service and 2,247 vehicle hours in service.

4.1.1.7 City Cab/City Ambulance of Eureka (CAE) – Dial-a-Ride

CAE provides public taxi and non-emergency ADA-compliant transportation service in Eureka, Arcata, and McKinleyville. CAE is contracted to provide the Dial-a-Ride service.

Dial-a-Ride has only 4,213 riders, the second lowest among all transit providers. Dial-a-Ride brings in a fare revenue of $43,400 with an operating cost of $223,984. Dial-a-Ride has the third lowest vehicle miles in service at 38,000, but the fifth highest vehicle hours in service at nearly 4,600. Dial-a-Ride has a farebox recovery ratio of 19.2% and a subsidy per passenger of $42.85, the highest subsidy among all providers. However, passengers per hour is 0.9, the lowest among all providers.

4.1.1.8 Summary – Operating and Financial Performance

A summary of operating and financial performance measures for Humboldt's public transit services is presented in Table 4-2. Of note, over 1.2 million annual transit trips are provided at a gross operating cost in excess of $5.5 million.

Table 4-2: Operating and Financial Performance Measures

Transit Service	Ridership	Fare Revenue	Operating Cost	Cost per Passenger	Farebox Recovery Ratio	Passengers Per Vehicle Hour
Redwood Transit System	615,656	$1,219,116	$2,681,449	$4.36	45.5%	18.4
Southern Humboldt Intercity	21,846	$81,253	$396,388	$18.14	20.5%	3.5

Transit Service	Ridership	Fare Revenue	Operating Cost	Cost per Passenger	Farebox Recovery Ratio	Passengers Per Vehicle Hour
Southern Humboldt Local	11,672	$14,202	$103,837	$8.90	13.7%	7.8
Willow Creek	13,343	$42,732	$204,976	$15.36	20.8%	4.7
Tish Non-Village*	3,452	$6,132	$137,712	$39.89	4.5%	1.5
Eureka Transit System	237,677	$288,015	$884,752	$3.72	32.6%	16.5
Arcata & Mad River	265,137	$246,624	$663,676	$2.50	37.2%	34.1
Fortuna Transit	8,515	$13,225	$112,454	$13.20	11.8%	2.9
Blue Lake Rancheria	18,621	n/a	n/a	n/a	n/a	9.1
Klamath/Trinity Non-Emergency Transportation	5,290	$10,427	$157,304	$29.74	6.6%	2.4
Dial-a-Ride	4,213	$43,448	$223,984	$53.16	19.4%	0.9
Countywide (total/average)	**1,205,422**	**$1,965,174**	**$5,566,531**	**$4.62**	**35.3%**	**15.0**

* Tish Non-Village service has been discontinued.

4.1.1.9 Other Transit Services in Humboldt County

Other local and regional transportation providers include:

Amtrak: Amtrak has a bus service from McKinleyville to Martinez with stops in Arcata, Eureka, Fortuna, Rio Dell, and Garberville. Train tickets must be purchased with a bus ticket. Southbound departures are daily from Arcata at 6:15 a.m. and 9:55 a.m., and northbound arrivals into Arcata are at 4:55 p.m. and 10:05 p.m.

Greyhound: Greyhound has service from Arcata to Santa Rosa, with a stop in Eureka. Morning southbound departures from Arcata are at 9:30 a.m., and evening departures are at 10:35 p.m. Return trips arrive in Arcata at 10:30 p.m. and 5:35 a.m.

Area 1 Agency on Aging Volunteer Driver Program (A1AA): A1AA has a volunteer driver program to serve the need for transportation to medical appointments. The service area extends from Scotia to Trinidad to Blue Lake, or wherever volunteers are willing to go. There are 43 volunteers and 200 repeat riders. Drivers and riders both average 70 years old. Trips are now provided for grocery shopping.

Redwood Coast Transit (RCT): RCT is the public transit service for Del Norte County, north of Humboldt County. RCT's Route 20 operates between Smith River (seven miles south of the Oregon border) and Arcata. Arrivals in Arcata are at 9:20 a.m., 4:55 p.m. and 9:20 p.m. Northbound departures are at 10:10 a.m., 5:45 p.m. and 10:40 p.m.

Trinity Transit: Trinity Transit is the public transit service operating in Trinity County, to the east of Humboldt County. Four routes serve Weaverville in north, south, east and west directions. Connections are available in Willow Creek to the HTA Willow Creek Route, which enables passengers to travel between the coast and Redding (where many medical services are provided).

4.1.2 Active Transportation

Humboldt County is well positioned to expand its bicycle infrastructure in cities and unincorporated areas. The Cities of Arcata and Eureka have well-established bicycle infrastructure, and are still planning new Class I, II, and III bikeways. Other cities, such as Blue Lake, Ferndale, Fortuna, and Rio Dell, have only begun implementing their bicycle networks, but have planned a system that fosters safe bicycle access (through the 2018 Humboldt Regional Bicycle Plan).

The City of Arcata has a web of bike lanes and routes, and also a portion of the Humboldt Bay Tail multi-use path. Bike lanes and parking locations reach destinations such as Arcata City Hall, the Arcata Transit Facility, and the HSU campus. Arcata is proposing to add 20.8 miles of bicycle trail and lanes to the network, including the Annie & Mary Rail-Trail. A map of existing and proposed service is presented in Figure 4-2.

The City of Eureka has an expansive network of multi-use paths, bike lanes, and bike routes, including the Eureka Waterfront Trail. Current bicycle infrastructure reaches commercial districts, civic buildings, schools, parks, and medical/social services. Eureka is looking to add over 20.3 miles of bikeways, not including preliminary new project trails such as the South Gateway of Eureka Trail. A map of existing and proposed service is presented in Figure 4-3.

According to the *Humboldt Bicycle Plan*, the unincorporated area of Humboldt has a total of 17.3 miles of bike paths, lanes, and routes, including the lane on Freshwater Road, as well as the Hammond Trail. For the future, Humboldt County is planning to take full advantage of its geographic advantages, by providing at grand total of over 400 new miles of bikeways. A map of proposed Class III bike routes is presented in Figure 4-4.

Figure 4-2: City of Arcata Proposed Bike Facilities

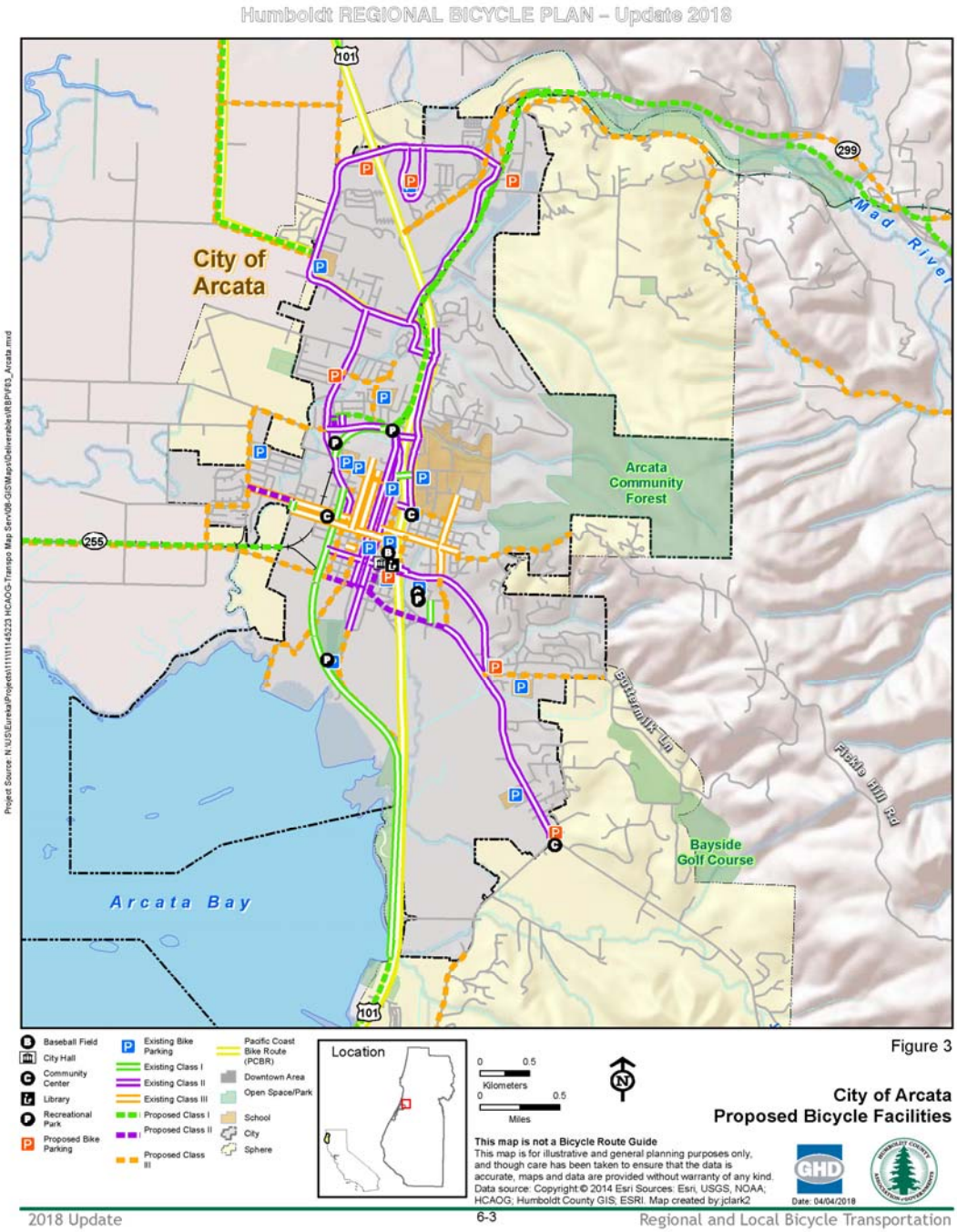


Figure 4-3: City of Eureka Proposed Bicycle Facilities

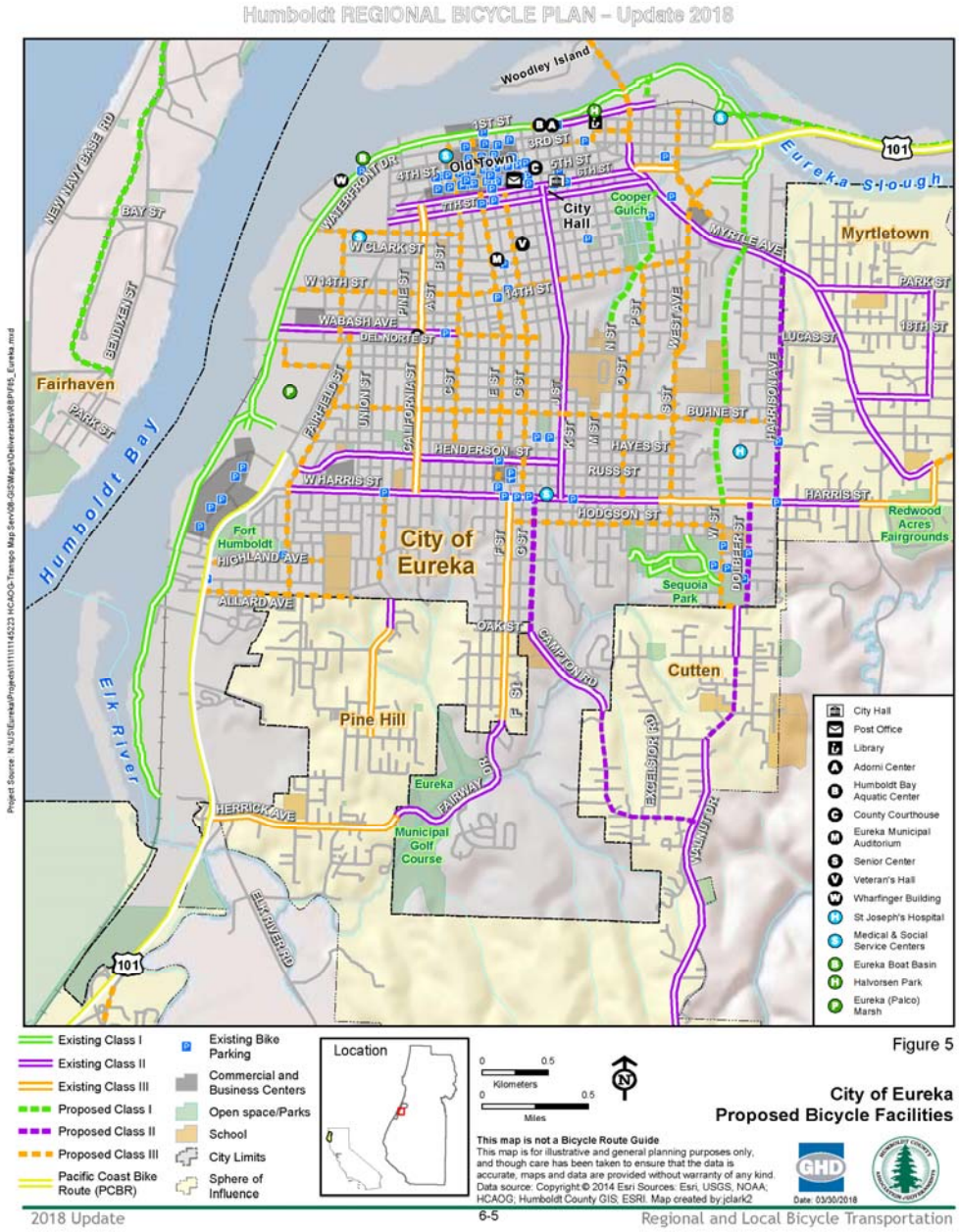
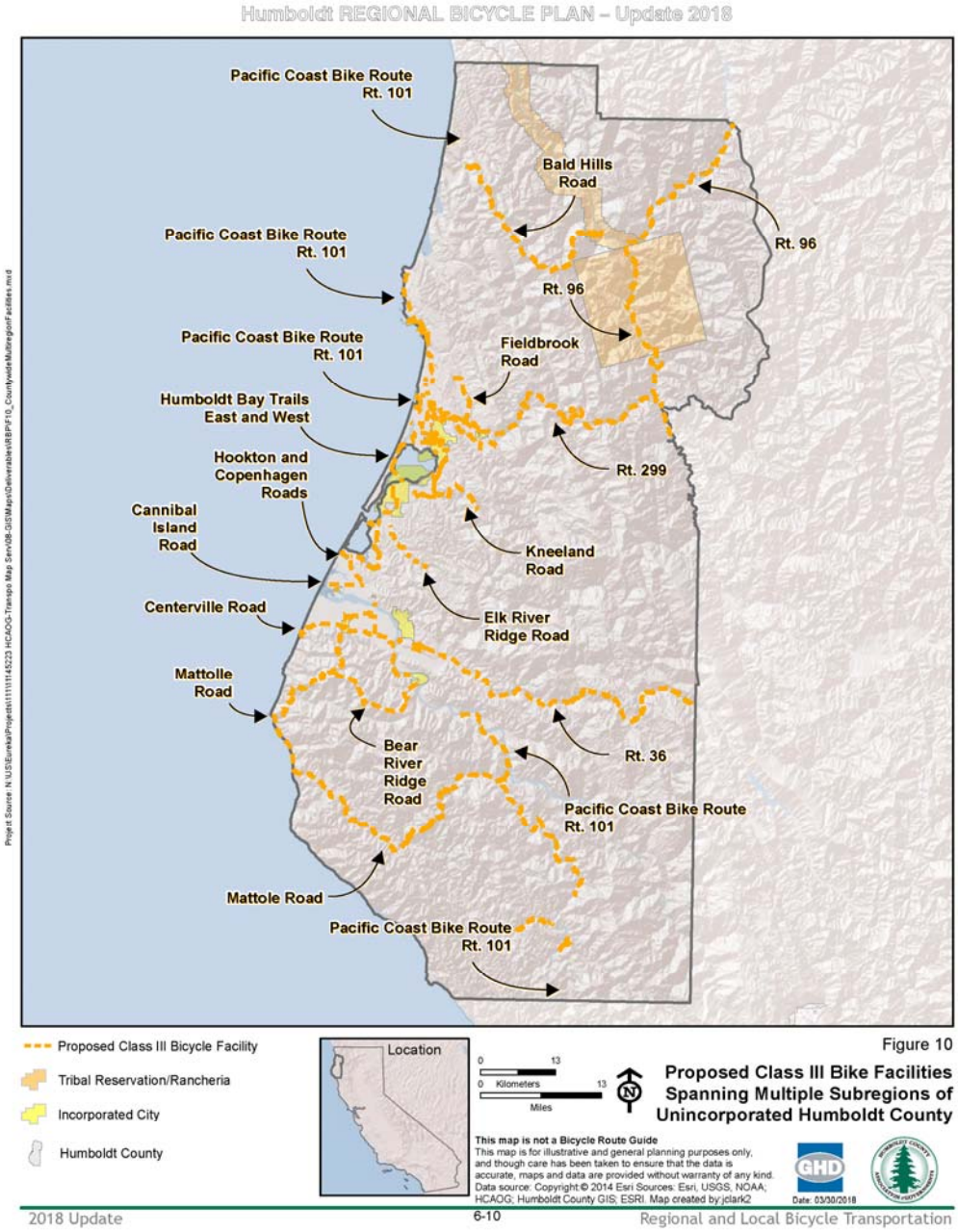


Figure 4-4: Proposed Class III Bikeways in Unincorporated Humboldt County



4.1.3 Bike Share and Micro Mobility

Bike share is a new service in which bicycles are made available for the public on a short-term basis for a nominal fee. Bike sharing systems are either docked or dockless. For docked bike sharing systems, users have to return their shared bike to a dock to end their trip. With dockless bikes, users can end their trip anywhere, by use of a smartphone app. Most bike share services have smartphone mapping to show nearby available bikes or open docks.

One of the main benefits of bike share programs is that they can significantly enhance people's access to fixed-route transit. Bike share programs can even serve as micro public transit by providing affordable, short-distance trips to get users from a bus stop closer to their destination. Because of this, they may reduce private vehicle trips, and provide an opportunity for users to access public transit easier than walking.

Bike share was beginning to appear in Humboldt County, namely Arcata and Eureka. The bike share company Zagster had launched their bike share service to serve Humboldt State University (HSU) and the greater Arcata area and downtown/Old Town Eureka. Bike share was one of the several strategies outlined in HSU's Climate Action Plan.

Zagster more recently announced their intent to cease operations in the County. At the time of preparing this report, Zagster had begun to retrieve bikes and dock stations and are targeting to be fully withdrawn by June 12, 2020. It is reported that they can not afford to give any refunds.

There had been seven docking stations in Arcata and one in Eureka. The locations of the docking stations were:

- HSU Jolly Giant Commons Station
- HSU Harry Griffith Hall Station
- Northtown Station
- Transit Center Station
- Southeast Plaza Station
- North Coast Co-op Parking Lot Station, Arcata
- Northeast Plaza Station
- North Coast Co-op, Eureka

There had been three options to pay for the Zagster bike share service as presented in Table 4-3:

Table 4-3: Zagster Bike Share Pricing in Humboldt (2019)

	Pay-As-You-Go	Student Annual Membership	Annual Membership
Membership Price	N/A	$20 annually	$30 annually
First Hour	$2	Free	Free
After First Hour	$1 every 30 minutes	$2 an hour	$1 every 30 minutes
Maximum Per Ride	$20	$20	$20
Eligibility	Anyone	HSU students, faculty, staff only	Anyone

As of summer, 2018, approximately one year after Zagster's launch in Arcata, there has been 594 trips taken, 39% of them repeat riders. Zagster had 217 active members in Arcata. The program had cost approximately $10,000 a year to manage.

During National Bike Month in May over the last three years, HCAOG asked community members for input on planning and building Humboldt's regional bicycle network. From a rally in Arcata in 2017, community members advocated for bike share kiosks at entrances to town so users could drive to and park on the outskirts of Arcata.

Per Policy 1.4 of the *Humboldt Regional Bike Plan*, HCOAG encourages and will assist local jurisdictions to adopt ordinances that recommend incentives for large-scale developments and employers to provide on-site bike share systems for tenants and/or employees.

4.1.4 Car Share and Ride Share

Car Share: Car sharing is a model of vehicle sharing where users can use cars on an as-needed basis and are charged based on time of use and distance of travel. There are two main car sharing types in Humboldt County: round-trip car sharing, and personal vehicle sharing. Round-trip car sharing allows users access to a shared vehicle fleet. Personal vehicle sharing is a model that allows short-term access to privately owned vehicles.

In Humboldt County, ZipCar provides a round-trip car sharing service at one location. ZipCar is located on Harpst Street at the center of the Humboldt State University campus. Currently, the fleet consists of two vehicles. To drive a ZipCar, a user would sign up for the service for free, and then reserve the car when they need it, preferably at least an hour in advance. Fares for the vehicle depend on the length of car checkout, as well as the distance of the drive. For the Humboldt County ZipCar, a one-hour rental is $9. A three-hour rental is $27. A full day check-out is $74. A two-day check-out is $148. Rates could be higher if the user drives the ZipCar further than 180 miles.

Ride Share: Personal vehicle sharing, or ride-hailing, (Transportation Network Companies [TNCs] such as Uber and Lyft), have recently made their way to Humboldt County. Uber, which started operations in Humboldt in February 2017, is active in the Greater Humboldt Bay Area but has been known to lack a sufficient number of vehicles to provide dependable service, especially outside of the Eureka/Arcata area. Lyft entered Humboldt about six months later, in the summer of 2017. There are other carpool ridesharing services in the Humboldt region, such as Zimride by Enterprise, and Waze Carpool.

4.2 Other Supporting Data That Inform on Unmet Needs

For this strategic planning effort, HCAOG and the consultants have compiled primary data and secondary data to further understand the unmet transportation needs facing Humboldt County. The primary data includes stakeholder input from a directed community survey, one-on-one consultation, committee meetings, public workshops, and other public outreach at local events. The secondary data relies on U.S. Census profiles, including using a software tool, Remix, that

uses census data to assess transit opportunities within a geographic area, the data is synthesized, with results, below.

4.2.1 Community Demographic Profile

The *Community Demographic Profile* (presented in Chapter 2) analyzes the demographic data for Humboldt County that can help us understand and forecast future demand, i.e. potential market, for mobility services. This profile focuses on characteristics of communities with unmet transit and mobility needs. This data collected in this memo analyzes levels of mobility dependency. Key takeaways from the review of community demographic and socio-economic data include:

- Population Change: The population of Humboldt County has been slowly, but steadily, rising in population, a 1% increase since 2013.
- Age: The cohort with the largest population is those 20 to 34 years old. However, the population 65 or older has been growing faster than any other cohort since 2013, with an 18% growth rate.
- Race and Ethnicity: Humboldt County is a majority white community at 75% of the population. However, by percentage, the Hispanic/Latino population has been growing since 2013 while the White population has been in decline.
- Number of Households: Humboldt County has added nearly 1,000 new households since 2015.
- Median Household Income: Household income in Humboldt County has held steady at just above $40,000, about $20,000 less than the California average.
- Vehicles per Household: 7% of households do not have access to a vehicle.
- Journey to Work: Over 70% of people drive alone to work. Less than 2% of commuters take public transit.

Other demographic data on age and income can indicate groups with a greater propensity to be transit dependent. The following are key takeaways from these select cohorts (source: California Department of Finance, in HCAOG's UTN Report of Findings, FY 2018-19).

- **Population without Access to a Vehicle:** Tracts with the highest percentage of population without a car are in Eureka (Tracts 2, 5, and 1: 10.9%, 10.7%, and 8.6%) as well as Fortuna (Tract 109.1, 7.1%).
- **Population over 65:** Miranda (Census Tract 115) has the highest percentage over 65 (26.3%), followed by Orick (Census Tract 102, 25.4%), and Tract 106 (Freshwater 24.7%).
- **Population with Disabilities:** Areas with the highest rate of disabilities are Eureka (Census Tract 1, 27.3%), Fortuna (Tract 109.01, 22.7%), and Willow Creek (Tract 101.02, 22.1%).

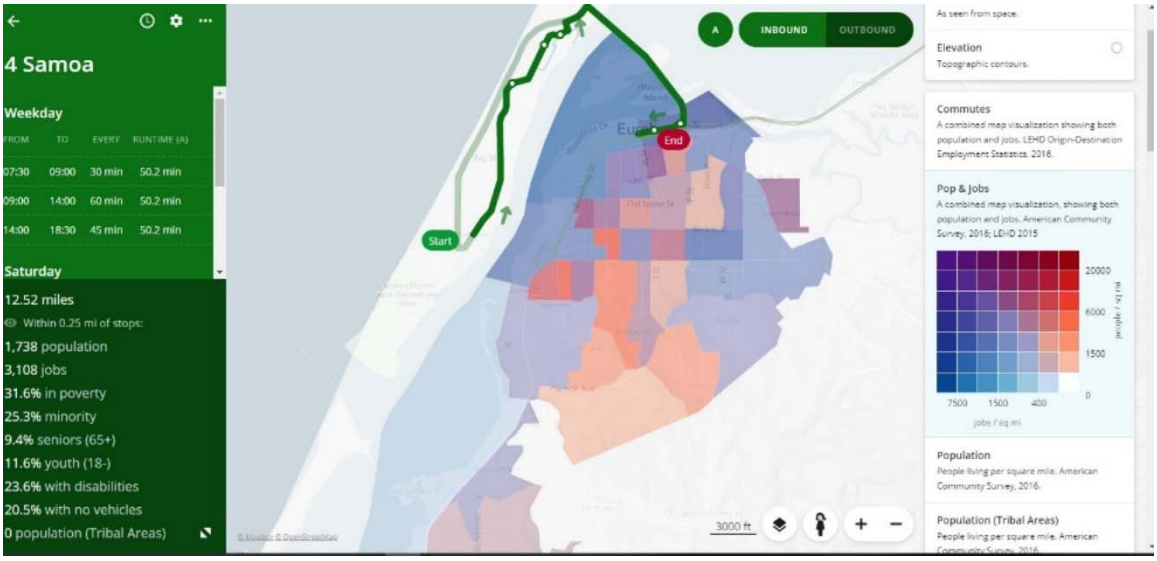
- **Population Living in Poverty:** Areas with the highest rate of those living in poverty are Hoopa Reservation (Tract 9400, 41.5%), and parts of Arcata (Tract 10 and Tract 11.01, 37.7 and 36%).

4.2.2 Remix Data

Remix is a planning tool that can analyze existing transit routes. Remix[6] was used to identify commuting modes and general demographics for those who live close to existing public transit. Remix uses U.S. Census data. The data used for these runs is from the 2017 5-year American Community Survey.

> Remix Software, Inc. provides a planning platform for public transit, designing streets, and managing new mobility. It provides transportation agencies with statistics on collisions, curb and street density, demographics, and ridership.

For illustrative purposes, the map below presents an example of the demographic and socio-economic data in proximity to a Samoa fictional transit route.



Using real data for existing transit routes, Remix data was generated for the following: the A&MRTS Red, Gold, Orange lines; the ETS Gold, Green, Purple, Red, and Rainbow lines; the Southern Humboldt Intercity; the BLRTS; Willow Creek; and Old Arcata. Remix was used to analyze a buffer area around transit lines, and to determine the number of residents within that buffer who:

- Drive alone
- Carpool
- Take transit
- Walk
- Use other mode (taxi, motorcycle)

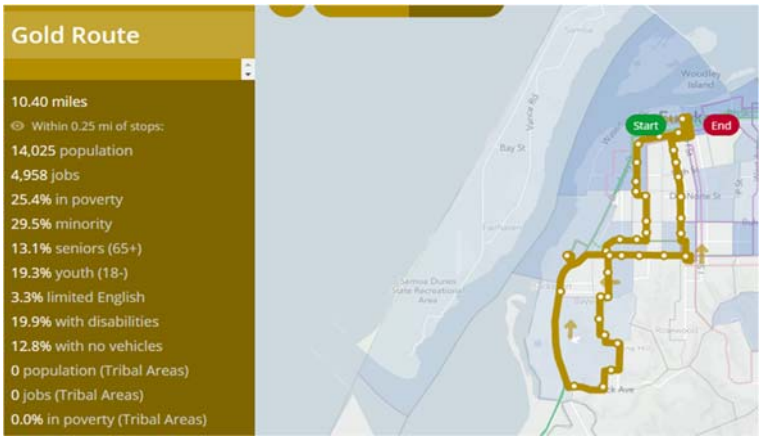
[6] HCAOG staff generated a number of Remix data runs to use for this analysis.

Key observations from the review of Remix data is presented below.

In general, there is a higher percentage of commuters who take public transportation who live within a quarter mile of a transit line compared to those who live within three-quarters of a mile or within three miles.

A&MRTS: About 10,000 people live within three-quarters of a mile of A&MRTS transit service. Of those who live within three-quarters of a mile from a A&MRTS transit line, approximately 40% live in poverty, and 13% do not have access to a vehicle.

ETS: Approximately 15,000 commuters live within three-quarters of a mile from an ETS transit line. Of those who live within three-quarters of a mile from an ETS transit line, approximately 21% of commuters live below the poverty line, and 11% do not own a vehicle.



BLRTS: There are nearly 11,000 people who live within three-quarters of a mile from the BLRTS fixed-transit line. Of those who live within three-quarters of a mile from BLRTS transit service, 36% live below the poverty line, and 12% do not own a vehicle.

RTS: The RTS extends throughout most of the urbanized core of Humboldt County. Because of this, approximately 42,000 commuters live within three-quarters of a mile from the single transit line. Within the three-quarter mile buffer, 23.7% of people live in poverty, approximately 13% of people are seniors, and 18% have disabilities.

Southern Humboldt Intercity (SHI): Over 24,000 commuters live within the Southern Humboldt Intercity three-quarter mile buffer. For SHI, 22.3% people have incomes at a poverty level, 21% have a disability, and 14.2% do not own a vehicle.

Willow Creek: There are 11,500 commuters who live within three-quarters of a mile of a Willow Creek transit line. Of those who live within the three-quarter mile buffer, 40% people have incomes at a poverty level, nearly 11% are seniors, over 12% have a disability, and 14% do not own a vehicle.

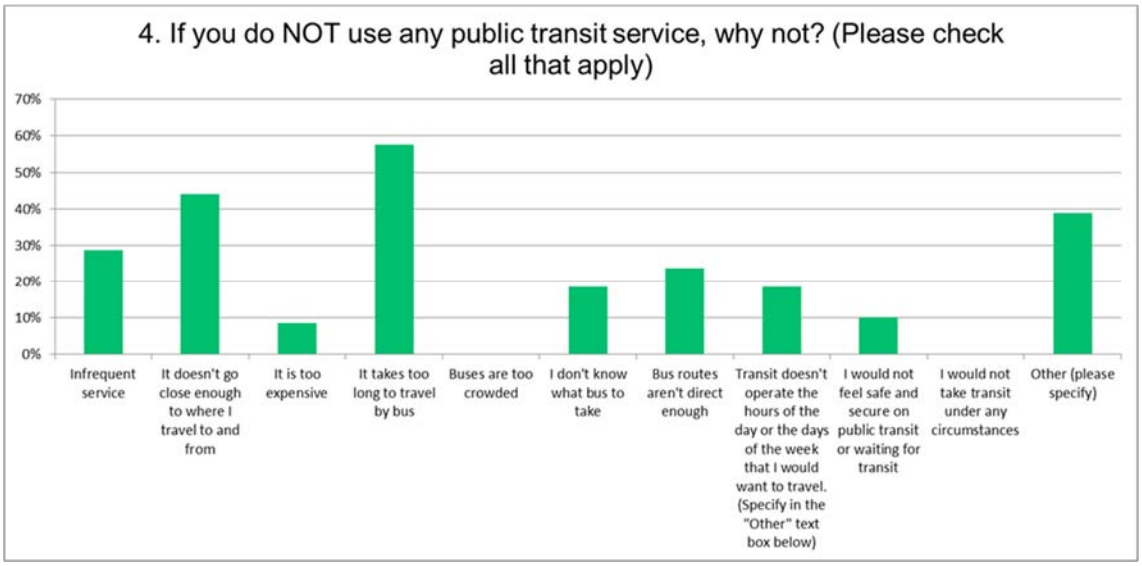
4.2.3 Community Survey

The web-based[7] Community Survey (discussed in Chapter 3) was administered to gain meaningful stakeholder engagement and visioning for transit and active transportation in Humboldt County. The community profile survey asked questions that would provide insight regarding mobility needs, existing transit usage, connectivity, areas of improvement, and interest in possible alternative mobility services. The ten-question survey was submitted by 97 respondents over a two-month period. The survey intended to provide a qualitative assessment

[7] Paper copies of the survey were available at select locations in the County.

of existing transit services including users and potential users of the transit, as well as mobility/transit enhancements that may be desirable. The following are key takeaways of some reasons for not using transit and constraints noted by respondents as well reference to the type of transit improvements that may influence the respondent's propensity to use transit or mobility service.

- The length of time to get to destinations takes too long (57.6%)
- Transit doesn't go close enough to my destination or origin (44.1%)
- Transit's hours of service do not go earlier enough or late enough on weekdays (47.5%)
- Transfers are not convenient (58.8%)
- Survey respondents may be more likely to use transit if there was more frequent bus service (65.8%), a mobile-phone app for real-time information (68.3%), WIFI/ internet access on the bus (65.3%), and a mobile phone app for paying fares (63.2%).



In short, the survey results informed on the need for mobility solutions that are more competitive with private automobile in terms of travel time, convenience, and the need to provide mobility for days of the week, hours of the day, or specific locations where trip and population densities may not justify fixed route transit services. Survey respondents also called for the opportunity to incorporate active transportation solutions for potential mobility enhancements.

4.3 Stakeholder Consultation

The following presents salient comments from stakeholder and public meetings held May 1 and 2, 2019. Comments include reference to unmet needs and suggestions/opportunities for service and operational enhancements.

4.3.1 Social Services Transportation Advisory Council (SSTAC)

- SSTAC service to elderly, disabled, and economic disadvantaged populations: must serve those populations. Looking at different micro-transit opportunities.
- SSTAC goal is to decrease percentage of single vehicle occupancy (SVO) trips.
- Most interested in vehicle-trip sharing and note that some funding sources may be contingent upon decreasing vehicle miles traveled (VMT) (e.g. LCTOP funding)
- On-demand costs add up fast.
- Is there a funding source for ride share?
- What are the "guard rails" (i.e. parameters) for what concepts we go forward with?
- Up and down 101 is "geographic area," but we get asks to serve more areas including connectivity to existing fixed route services.
- Diverted/deviated fixed-route that is app-based.
    - Set parameter, e.g. maybe only deviate up to 3 minutes.
    - Deviation is a premium service. There are multiple technical examples – phone and smartphone. Uses special vehicles, smaller/vans
    - But also thinking of how to apply to the fixed-route bus, yet make schedule more demand-responsive
- Not into the 1-person/one-vehicle pattern, that's not the goal. What will work at least in a confined zone?
- Why parents won't let children walk to school: weather and safety. Can't get funding for crossing guards.
- Safety, lighting, shelters are some needs (plus lack of same are barriers).
- Reduce vehicle miles traveled (VMT) while increasing access: Will project look at more direct and frequent service? (respond to replies that "bus takes too long")
- RTS route–40-45% farebox. Need to build on this success. Cost-saving from decreasing McKinleyville and Fortuna stops could be spent to make other services more robust – possibly increased frequencies, etc.
- City Ambulance of Eureka (CAE) and HTA have an app for DAR. Not well utilized. People in Humboldt still prefer calling HTA and using paper tickets.
- A lot of different mode options are plugged into one info source. And some trip planning isn't detailed enough for some people's needs; e.g. some people can't figure out the separate trip component.
- Scheduling on operator's side.
- Reluctance to any particular options/technologies?
    - Some can't access because they don't have skill set.

  - Economically disadvantaged. No mobile phone.

- HTA transit apps – HTA gets fewer calls since apps went live. Reduced call volumes, therefore, helps HTA to give higher quality service to remaining calls. Makes service more cost-efficient and better.

What are some pilot project proposals?

  - 1: Arcata program to try out software – integrates user app side with transit operators' side.
  - 2. Get people (SSTAC target population) onto mainline transit.
  - 3. Fairhaven, Samoa, Manila, Old Arcata Road (industry on one side, trailer park on other side).

- Can we charge for premium service?
- Consider regulations/incentives for e-hailing (Uber, Lyft, e.g.) private so that we don't duplicate what exists.

4.3.2 Mobility-On-Demand Public Workshop

Participants' Comments: *What are Humboldt's mobility-on-demand (public transportation) needs?*

- Transit, apps, info: People need to know where they are, how to use. There's an age gap, too (in accessing and/or being aware of apps).
- 2 apps exist for local system right now: Transit and Token Transit, and people have heard of neither.
- Need service to Medford, Redding – system from coast to inland does not exist.
- Unmet need: McKinleyville serviced by RTS (intercity); it stops at airport, which adds 20 minutes, and usually no one boards/gets off there. McKinleyville could use a separate service.
- Coordinate bike-on-bus trip users. Safer, convenient bike lockers. Then on-bus bike racks won't be such high demand?
- Consolidate administration of all transit services?
- Full buses now; there could be more frequent buses at peak times.
- Carpool app
- Give carpools reserved parking spaces and/or discounted parking permit.
- There is an HSU carpool app on website
- Could school buses be feeder buses, especially to alleviate peak demand times, or late night?
- Shower trailer

- Zagster – seems docks are full downtown and empty at HSU campus.
- Transit card that you can load. Would increase convenience for people without bank accounts, credit cards, etc. (unbanked).
- Bike Share doesn't provide helmets. 30-minute max use is a barrier. (Note: For HSU students, the first thirty-minutes are free but there is no 30-minute limit.)
- Make intercity speed limits below 40 mph.

4.4 Previous "Unmet Transit Needs" Reports

This section contains discussion of the last four adopted unmet transit needs reports of Humboldt County. The California State Transportation Development Act requires planning agencies to annually identify unmet transit needs of the jurisdiction, and if those unmet needs are 'reasonable to meet'. The purpose of requiring planning agencies to determine unmet needs is to adequately allocate funding to agencies through the Local Transportation Fund (LTF) and the State Transit Assistance (STA) Fund. A synthesis of previous identified unmet transit needs reports of past fiscal years (2016/17 through 2019/20) is presented in Table 4-4.

Table 4-4: Previously Identified Unmet Transit Needs

	Unmet Needs Reasonable to Meet	Unmet Needs Reasonable to Meet (but lacks sufficient funds)	Either not unmet, or unreasonable to meet
FY 2019-2020	- A southwest Eureka stop in between Broadway & McCullen and Herrick & Elk River Road - Blue Lake Saturday service	- N/A	- Transit service to Samoa and Ferndale - ETS late night service - Bike racks on bus - Coordinating Willow Creek's Route with RTS on first A.M. run - A permanent Willow Creek stop at Valley West - Bus cleanliness/ safety - Expanded transit for UTN hearings
FY 2018-2019	- N/A	- Late-night weekday service on the RTS	- N/A
FY 2017-2018	- N/A	- N/A	- N/A
FY 2016-2017	- N/A	- N/A	- N/A

	Unmet Needs Reasonable to Meet	Unmet Needs Reasonable to Meet (but lacks sufficient funds)	Either not unmet, or unreasonable to meet
FY 2015-2016	- New service to Tish Non-Village - New service on Old Arcata Road	- N/A	- N/A

4.4.1 Adopted FY 2019-20 Unmet Transit Needs Report of Findings

The Social Services Transportation Advisory Committee (SSTAC) identified two unmet needs that they determined were reasonable to meet. These were the southwest Eureka stop near major commercial businesses and lodging, and the Blue Lake Saturday service.

Southwest Eureka Stop: "ETS's Gold Route currently serves southwest Eureka on the 101-corridor with one-hour headways from Monday-Saturday. It currently stops at Broadway & McCullen and Herrick & Elk River Road. However, it does not stop between those two areas. This is the longest closed-door segment of the Gold Route. There is major commercial development, including retail, manufacturing, and lodging in that area. Major businesses include Pierson's, Lost-Coast Brewery, Rainbow Self-Storage, a Chrysler/Jeep/Fiat dealership, Pacific Motorsports, and Humboldt Motorsports. Manufacturing and industrial-related job centers include Hilfiker retaining walls, Powell Landscape materials, and McMurray Roofing. Lodging includes Comfort Inn and the Flamingo Hotel."

Blue Lake Saturday Service: "Blue Lake Rancheria Transit Service (BLRTS), is an intercity route which connects with the RTS at the Arcata Transit Center. It is managed and operated by the Blue Lake Rancheria. The City of Blue Lake contributes a portion of their LTF funding to the service. BLRTS has service during weekdays only, from 7 a.m. to 5 p.m. with a three-hour lunch break from 10 a.m. – 1 p.m. Blue Lake has no service on Saturday. The HTA Willow Creek bus passes by Blue Lake via Highway 299 on Saturday without stopping."

Other: Other unmet needs requests were identified but were ultimately determined as either not an unmet need or unreasonable to meet. These included: transit service to Samoa and Ferndale; ETS late night service; bike racks on the bus; coordinating the Willow Creek route with the RTS northbound on its first a.m. run; having the Willow Creek route always stop at Valley West; bus cleanliness and safety; and limited transit to UTN hearings.

4.4.2 Adopted FY 2018-19 Unmet Transit Needs Report of Findings

The HCAOG Board found, consistent with the SSTAC, SCC, and TAC recommendations, that there is an unmet transit need for late-night weekday service on Redwood Transit System (RTS) that is reasonable to meet but cannot be funded due to insufficient Local Transportation Funding from all of the required contributing entities. The finding has been made based on consideration of comments generated during the unmet needs public participation process and measured

against the evaluative criteria established in the RTPA's adopted definitions for the terms "unmet transit need" and "reasonable to meet."

The additional late-night weekday service on the RTS was deemed reasonable to meet but could not be funded as the Cities of Eureka and Arcata currently use all their Local Transportation Funding on transit uses. However, there are other regional transit funds: State Transit Assistance funds; Formula Grants for Rural Areas (5311 Program); and Low Carbon Transit Operations Program (LCTOP), that may be considered in funding the Arcata and Eureka share of increased costs. Setting aside regional funds would require HCAOG Board action.

There were other unmet needs identified in the 2018-19 report of findings, including a request to expand the Dial-a-Ride service area and hours, and a request for Saturday and Sunday service to Southern Humboldt. While both are considered unmet needs, both are not reasonable to meet based upon low farebox recovery projections.

4.4.3 Adopted FY 2017-18 Unmet Transit Needs Report of Findings

The Social Service Transportation Advisory Council (SSTAC) recommendation and the HCAOG Board findings were consistent that there were no unmet transit needs that are reasonable to meet. The finding had been made based on deliberation and consideration of comments generated during the unmet needs public participation process.

The most frequent comments were in response to additional runs between Blue Lake and Arcata, new service to Fieldbrook, West Glendale, and Korbel, and concerns of overcrowding during peak hours on the RTS route.

4.4.4 Adopted FY 2016-17 Unmet Transit Needs Report of Findings

The Social Service Transportation Advisory Council (SSTAC) recommendation and the HCAOG Board findings were consistent that there are no unmet transit needs that are reasonable to meet. The finding had been made based on consideration of comments generated during the unmet needs public participation process.

This document also recapped the previous fiscal year's unmet transit needs process, which included new services to Old Arcata Road and the Tish Non-Village. The HTA, funded by the County, was able to provide service to the Tish Non-Village. The unmet transit needs process estimated 30 riders per day, but actual ridership was 15 riders per day. The farebox recovery ratio was only 3.68%, when projected at 11.82%.

4.5 Summary of Unmet Transit Needs

The Humboldt County Association of Governments (HCAOG) is looking at *a way forward* by leveraging next generation operating and technology solutions to address public transportation and active transportation/mobility needs. Users of the transportation system in Humboldt County have identified a range of short comings together with opportunities for more personal choice and flexibility in mobility. While advancing transit and active transportation networks, there remain several unmet needs that can be addressed by leveraging next generation operating and technology solutions. Below is a summary of what stakeholders have said are their unmet transit needs.

Transit

Unmet transit needs:

- It takes too long to get to destinations (by bus).
- Transit doesn't go close enough to potential users' destination or origin.
- Transit's hours of service are not early enough or late enough on weekdays.
- Transfers are required or not convenient
- Transit service is not frequent enough
- The lack of a Countywide transit mobile app hinders potential users' ability to receive real-time information and/or pay fares

Potential solutions to meet transit needs:

- Consider express buses that skip low-usage stops. Consider dedicated bus lanes in higher density areas.
- Transit connectivity (distance to/from transit bus stops) that may be alleviated through first-last mile mobility solutions.
- Consider expanding transit service hours.
- Consider adjusting (or restructuring) some of the bus routes that may result in faster travel times.
- Consider increasing the number of buses and service frequency.
- Consider creating a county-wide mobility app that allows users to locate buses and schedules in real-time as well as allow users to pay fares online without cash or a card.
- Facilitate growth of ride-hailing companies (generate business opportunities through partnerships in the provision of supplemental dial-a-ride service, first-last mile transit connectivity services, etc.).

Active Transportation & Ride-Share Services

Unmet Bicycle, Bike Share, and Ride-Share Needs:

- Lack of bicycle parking in public places and at businesses.
- Lack of bicycle infrastructure in key locations, locally and regionally.
- Lack of ride-share drivers (especially outside the Eureka and Arcata urbanized areas).

Potential Solutions to meet bicycle, bike share, and ride-share needs:

- Facilitate expanded bicycle parking at public places. This may include incorporating bicycle parking in land use and development agreements, the provision of secure bicycle lockers at transit hubs, etc.
- Consider expanding upon the current bicycle network, preferably with Class I and Class IV bikeways where applicable, throughout Humboldt County.

- Consider facilitating growth for bike share opportunities. This may include a robust education/marketing/communication strategy, and enhanced integration with transit operations and service delivery (bike racks on buses, an app providing real-time availability of bike rack capacity, etc.).

5.0 MOBILITY ON DEMAND INNOVATIVE PRACTICES

As the mobility landscape continues to evolve, connected travelers, continued advancements in transportation technologies, and private sector involvement present unprecedented opportunities for improving public transportation. In recent years, concepts such as microtransit and mobility-on-demand have helped agencies fill first and last mile gaps by developing and integrating unconventional modes into their services, engaging the private sector in the form of transportation network companies (TNCs), car-share, bike-share and other modes as alternative to private vehicles. However, while transit agencies continue to experiment with new business models, new suppliers, and new technologies, there remain challenges related to providing cost-effective, efficient, and equitable service to all people.

Mobility on Demand (MoD) is an innovative user-focused approach which leverages mobility services, integrated transit networks, and real-time data, to give users an easier and smoother traveling experience from origin to destination.

Mobility on Demand may expand customer travel opportunities and offer customers spontaneity of travel. The service model may be enabled by private companies (such as Uber, Lyft, taxis, private microtransit), or the agency, and used to facilitate first-mile/last-mile solutions, paratransit, and travel within low-density zones where it is not economically feasible to provide conventional transit service. Further, MoD may be used as an offering for same day specialized/paratransit and rural transit services.

Available under separate cover is a Technical Memorandum providing for a comprehensive presentation of MoD Innovative Practices.

The MoD Innovative Practices Technical Memo presents discussion of the following:

- **Mobility Landscape in North America**: Describes the impacts of transportation on people and cities; overview of current challenges, factors driving change, new mobility solutions and suppliers, and where things look like they are headed.
- **Emerging Role of Transit Agencies**: Describes the transit agency as mobility manager; new business models; and challenges and opportunities for transit agencies.
- **Challenges and Opportunities**: Describes some of the challenges and considerations of deploying new service models, engaging private sector, and using other strategies for first- and last-mile connectivity.
- **State of Industry Overview**: Describes the general state of mobility in the United States, including services, contexts, partners, and examples of initiatives; and specific case studies. We have summarized the case studies under the following categories of mobility services:
    - **Local mobility**: mobility options customized to local conditions targeted to increase ridership (e.g., local shuttles)
    - **Commuter services**: mobility options designed to enhance connectivity to existing transit services and facilities (e.g., transit centers, park and ride locations)

- **Destination-based service**: shuttles or other services designed to take riders to and from a specific type of destination (e.g., commercial, retail, education, and recreation).

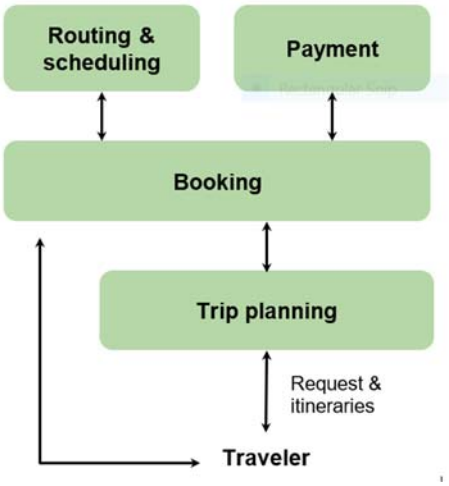
Appendix A of the Technical Memorandum provides some additional examples of such implementations.

- **Emerging Mobility Technologies:** Profiles *mainstream* and *limited commercial* deployments as well as *advanced research but no deployments*.
- **MoD Examples – Humboldt County Environment:** Presents findings from research and survey endeavors specific to MoD examples applicable to the Humboldt County operating environment.
- **Analysis**: Describes key themes related to transit agency initiatives; key considerations and questions; and assesses MoD Sandbox grant recipients.
- **Conclusions:** Provides a synopsis of innovative practices in next-generation operational, service delivery and technological deployments.
- **Opportunities - *A Way Forward*:** Provides a framework for discussion of opportunities for advancing MoD/next-generation operational, service delivery and technological solutions to address identified transit/mobility needs in Humboldt County.

MoD options in rural and small urban areas, while not growing as rapidly as MoD options in urban centers, are improving through changes to existing options that may make both existing and newer options more approachable for travelers (e.g. changing the way demand-responsive transportation is provided), the introduction of new options (such as shared micro-mobility services), and shifting cultural factors (individuals more willing to share a ride in a vehicle with strangers).

In a scan of dozens of small urban and rural mobility-on-demand examples, the options that emerged as the most promising or as having the most useful lessons for Humboldt County's operating environment include:

- volunteer driver programs,
- modern hitch-hiking,
- on-demand transit,
- shared micro-mobility,
- shared cars,
- community ridesharing, and
- the use of TNCs to fill gaps in or replace service.



Within these options, several strategies stand out as good practice for Humboldt County:

- Integrating planning, booking, and payment for travelers,
- Providing travelers with online, app-based, and phone-based information,

- Servicing a mixture of private pay and subsidized rides,
- Focusing resources on the most critical needs first, and
- Starting small and growing the program over time to ensure sustainability.

Detailed in the Technical Memorandum are examples and offerings of lessons for Humboldt County's consideration of mobility-on-demand services. Programs that are no longer operating or have been scaled back are included, because these also provide helpful lessons for program development.

Transit agencies in the United States have been partnering with private sector entities including TNCs and private microtransit companies, and real-time routing and dispatching software providers for several years, particularly since the launching of USDOT's MoD Sandbox initiative. However, transit agencies are still assessing how best to position themselves in the shifting paradigm of mobility. Throughout this time agencies have experimented with replacing existing services, complementing current services, and adding new services. Given that most of the operating cost in the transit industry is attributed to direct driver employment and vehicle ownership, agencies have experimented with a variety of models, where they: 1) operate a service on their own; 2) use a contractor to run their services; or 3) partner with TNC or taxis and subsidize the trip cost as well as fares.

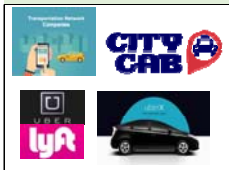
There is no clear conclusion on the best model, and it varies largely on the type of service being provided and the ridership demography. The experiments continue.

Information gleaned from nation-wide examples of next-generation mobility (operations, service delivery and technology) informs on potential applications in Humboldt County. Chapter 6 presents a framework for discussion of opportunities for advancing MoD/next-generation solutions to address identified transit/mobility needs in multiple locations in the county.

Figure 5-1 presents a summary of a select number of service alternatives and a brief description of service design attributes. Presented service alternatives include:

- Personal Mobility on Demand (PMoD)
- Scheduled Microtransit
- Flexible Microtransit
- Modern Hitch-Hiking
- Vehicle Sharing

Figure 5-1: Service Alternatives

Service Alternative		Service Design Attributes				
		Service Description	**Vehicle Types**	**When Can I Use It?**	**How Do I Use It?**	**How Much Might It Cost?**
	**Personal Mobility on Demand**	Low-capacity - individuals or small groups. On-demand (next vehicle available) +/or advanced booked	sedans, minivans, taxis, transportation network companies (TNCs) - like Uber, Lyft	Flexible: commuter peak hrs., late night "owl" service, 24/7. **Typically 15 to 30 minute response time.**	Reservations required: app based +/or phone call center	Typically **subsidized** taxi/TNC service. Fare may be $1. or $2.
	**Scheduled Microtransit**	Moderate capacity - fixed route, set schedule (shuttles, circulators) Like regular transit.	vans, shuttle buses	Flexible: span & frequency range from defined periods (commuter peaks) to fixed route operating hrs. Primarily as feeders. **Typically would run every 30 to 60 minutes**.	Walk-up service. No booking.	Typically - regular transit fare
	**Flexible Microtransit**	Demand Response / On Demand - Moderate capacity, dynamic itinerary.	vans, shuttle buses	Flexible: span & frequency range from defined periods (commuter peaks) to transit operating hrs. Dynamic in response to demand. **Typically 30 to 60 minute response time.**	Reservations required: app based +/or phone call center	Typically - regular transit fare
	**Modern Hitch-Hiking**	Demand response / On Demand - Moderate capacity, dynamic itinerary. Typically, pre-register/membership based	private passenger vehicles	Flexible: span and frequency based on availability of ride-matching	Examples report that riders typically wait 5 to 10 minutes for pick-up.	May be membership fee basis.
	**Vehicle Sharing**	Bike share, car share, and ride share services - expand reach of fixed-route transit services	Bicycles, electric scooters, sedans	Flexible. **Typically available 24/7.**	Typically walk-up service. May be reservation based.	Typically - market rates.

6.0 GUIDING PRINCIPLES AND EVALUATION FRAMEWORK

From the onset, the HCAOG project management team collaboratively developed the following four *Guiding Principles* to shepherd the development and advancement of MoD strategies and potential pilot projects.

Guiding Principles: (*within context of unmet transit/mobility needs*):

1. Reduce Greenhouse Gas (GHG) Emission
    - Reduction of single-occupancy vehicles and/or vehicle miles traveled (VMTs).
2. Increase Transit Effectiveness
    - Increase of overall ridership, reduction of travel times, increase in riders per service hour or service mile.
3. Contribute to Regional Economic Development
    - Provide additional transit/mobility service offerings available for residents, visitors, (may be targeted to specific market segments including HSU students, business community, etc.).
4. Equitable Access
    - Provide reliable, convenient access to goods and services for transportation-disadvantaged population.

The evaluation of potential pilot projects and a preferred approach for proceeding with potential pilot projects is presented in Chapter 7. The Evaluation Criteria considered is presented below.

Evaluation Criteria:

- Effectiveness in terms of the population/market served (including the student, indigent, elderly and disability communities together with the general public -- residents, tourists, etc.); and in terms of the number of trips generated (ridership, by trip purpose);
- Overall Cost - the total cost of providing the service; Consideration of such factors as: capital vs. operating costs, large capital outlays, and present-valued expenditures over the long-term;
- Efficiency - the cost per trip, per vehicle-hour, per vehicle mile, etc.; Costs to both user and to the funding partners;
- Reduce Vehicle Miles Traveled (VMTs) Per Capita / Single Occupancy Vehicles (SOVs);
- Level of Service - hours of service, frequency of service, trip purpose, etc.;
- Quality of Service - to the user (enhance customer experience); measured in terms of convenience, transfers, trip times, comfort, dignity, and flexibility (response time, advance booking requirement, etc.);

- Socio-economic factors - impact on employment and social well-being;
- Civil rights implications - delivery of services for persons with disabilities, integration, etc.;
- Organizational issues such as operational flexibility, control and accountability, human and labor relations;
- Ease of implementation;
- Technical risk - if new or modified equipment is required; Ability of 'the appropriate authorities' to support the equipment (e.g. scheduling systems, vehicles, etc.); and
- Political risk - the potential for changes in policy or funding directions at HCAOG, HTA, local, or State level(s).

In collaboration with the project management team, Figure 6-1 presents an evaluation of a series of preferred *Service Alternatives* and *Mobility Technologies*. The evaluation considers impact or compliance with prescribed *Guiding Principles* and *Evaluation Criteria* and illustrates: Positive (+), Neutral (0), or Negative (-).

The Service and Technology strategies include:

SERVICE ALTERNATIVES

- On-Demand Transit
- Vehicle Sharing / Micro-Mobility (motorized)
- Modern Hitch-Hiking
- Community Ridesharing
- Volunteer Driver Program
- Active Transportation - Vehicle Sharing (bicycles, e-scooters)

MOBILITY TECHNOLOGIES

- Trip Discovery (trip planning)
- Trip Booking (e-Hailing)
- Cashless (mobile) Payments

Figure 6-1: Strategies Evaluation Matrix

	Guiding Principles				Evaluation Criteria											
MoD Strategies	Reduce GHG Emissions	Increase Transit Effectiveness	Contribute to Regional Economic Development	Equitable Access	Effectiveness - population served & ridership potential	Economy - total cost of service	Efficiency - cost per trip, per veh. Hour	Reduce Vehicle Miles Traveled (VMTs) Per Capita/SOV	Level of Service	Quality of Service (User's experience)	Socio-economic factors	Civil Rights Implications	Organizational - operational flexibility, control, accountability	Ease of Implementation	Technical Risk	Political Risk
SERVICE ALTERNATIVES																
On-Demand Transit	–	+	+	+	+	+	+	–	+	+	+	+	+	+	–	–
Vehicle Sharing / Micro-Mobiility (motorized)	+	+	+	+	+	+	+	+	+	+	+	0	–	+	–	–
Modern Hitch-Hiking	0	+	+	+	+	+	+	+	+	+	–	0	–	+	+	–
Community Ridesharing	+	–	+	+	+	+	+	+	+	+	+	+	0	+	+	–
Volunteer Driver Program	0	–	+	+	–	+	+	+	+	+	+	+	0	+	+	+
Active Transportation - Vehicle Sharing (bicycles, e-scooters)	+	+	+	+	+	+	+	+	+	+	+	0	+	+	+	+
MOBILITY TECHNOLOGIES																
Trip Discovery (trip planning)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	–	–
Trip Booking (e-Hailing)	+	+	+	+	+	+	+	0	+	+	+	+	+	+	–	–
Cashless (mobile) Payments	0	+	+	+	+	+	+	0	+	+	0	+	+	+	–	–

Legend

+	Positive / Somewhat Positive
0	Neutral / No Significant Change or Impact
–	Negative / Somewhat Negative

7.0 *A WAY FORWARD* – POTENTIAL PILOT PROJECTS

This chapter presents discussion of strategic direction for potential pilot projects/implementation alternatives (Section 7.1 - Opportunities) and an evaluation of same within prescribed evaluation criteria. The evaluation criteria (and *Guiding Principles*) were presented in Chapter 6. The evaluation of potential pilot projects and a preferred approach for proceeding with potential pilot projects is presented in Section 7.2, *A Way Forward*.

The development of implementation alternatives has been informed by outcomes from previously prepared Technical Memos (as presented in previous chapters) including profiles of existing conditions (transit/mobility services), community demographic profile, identified unmet needs, survey research and stakeholder consultation, and the research of innovative MoD practices.

7.1 Opportunities

Opportunities for going forward were informed by previously documented unmet need and community input (survey research and stakeholder consultation). Key takeaways included:

- Need for mobility solutions (MoD strategies) to facilitate spontaneous and convenient travel;
- Need to provide connectivity to transit services (first-last mile);
- Need to address service availability - expanded hours of day & days of week;
- Recognize locations where trip (and population) densities may not justify fixed route transit; and
- There is an opportunity to incorporate active transportation solutions in mobility enhancements.

Further, for those surveyed who did not use transit, the primary reasons included:

- Takes too long;
- Does not go close enough;
- Infrequent service; and
- Doesn’t operate hours and/or the days of week.

The following presents a summary of opportunities (locations and MoD Applications) based on identified unmet need and/or latent demand.

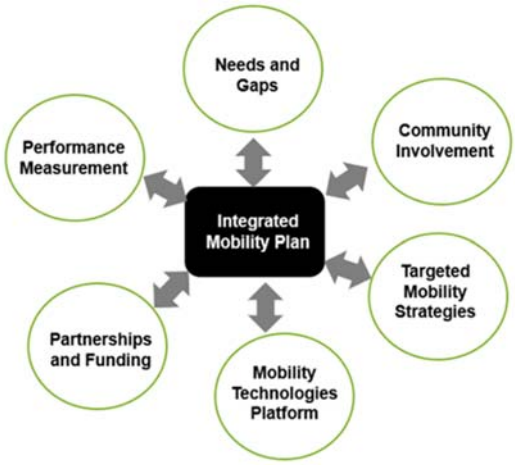
Unmet Need / Latent Demand	Locations or Services Identified (comment received)	*MoD* Application(s)
Address Unserved or Underserved Areas	Service to/from Southern Humboldt to Eureka/Arcata	HTA's updated Southern Humboldt Intercity is serving this need.
	Service to Manila (Samoa)	Low-priority need due to low density (insufficient to support regularly scheduled service). **Potential for PMoD[8] – demand-response, payment for service consumed.**
	Old Arcata Road between Eureka-Arcata: Freshwater, Bayside, Jacoby Creek	*Pilot project continues.* Prepared Evaluation Report and recommendations.
Lifeline to remote rural areas	Hoopa Valley, Orick, Weitchpec	Low-priority due to current low demand. Demand may be served by local services including Klamath Trinity Non-Emergency Transportation (KTNeT).
Address Service When It's Needed (trip densities may not justify regularly scheduled service)		
Later evening Sunday (weekend service)	Fixed route and dial-a-ride services in Eureka and Arcata	**Potential for PMoD – demand-response, payment for service consumed.**
Address Service for Most Vulnerable Customers		
Enhancing trips for elderly/ disabled for health/medical appointments	Add more dial-a-ride service vehicles to reduce long wait times	**Potential for PMoD – demand-response, payment for service consumed.**

[8] PMoD - *Personal Mobility on Demand*: Service description includes service provided by sedans, minivans, taxis, transportation network companies (TNCs), in an on-demand (next vehicle available) and/or advanced booked mode.

Unmet Need / Latent Demand	Locations or Services Identified (comment received)	*MoD* Application(s)
Facilitate access to & use of, mainline (fixed-route) transit.	Proximity to fixed-route transit services	Service Delivery: **Potential for PMoD – provision of first/last mile/connectivity to transit. Demand-response, payment for service consumed.**
		Operations: Information dissemination (available transportation/mobility options and trip planning), travel/ mobility training (for those unfamiliar with 'how to use' transit).
Increase Ridership on Good-Performing Routes		
Streamline RTS (reduce travel times)	Reduce / minimize remote stops that have low / lowest ridership and high / highest time requirements / impact running time.	**Potential for PMoD – provision of first/last mile/connectivity to transit. Demand-response, payment for service consumed**
Increased frequency on RTS	Provide express intercity route (north-south)	Streamline RTS/shorten trunk.

7.2 A Way Forward

This section presents a preferred approach for proceeding with potential pilot projects to advance enhanced mobility for residents, commuters, and visitors.



A preferred approach, as discussed herein is designed to address:

✓ **Input from the community:**

- More frequent bus service
- More direct or express service
- Expanded transit service hours and/or days of week of operation

- ✓ **Able to address multiple service types including:**
  - First/last mile feeder connections (including RTS route access)
  - Coverage-oriented transit/mobility in low-density corridors and neighborhoods
- ✓ **Able to reduce single-occupancy vehicle travel, and hence the reduction of:**
  - Vehicle miles traveled (VMTs)
  - Traffic congestion
  - Greenhouse gas emissions and other air pollutants
  - Energy consumption
  - Demand for on-street parking

Consideration of near-term pilot projects includes the following three service alternatives:

1. On-Demand Transit (Personal Mobility on Demand – PMoD);
2. Modern Hitch-Hiking; and
3. Active Transportation (facilitating expansion of bike share program)

Service alternatives or strategies (as described in Chapter 5, Innovative Practices or suggested through public comment) that were not advanced for further consideration as part of a deployment strategy included:

- A volunteer driver program; and
- Pedicabs.

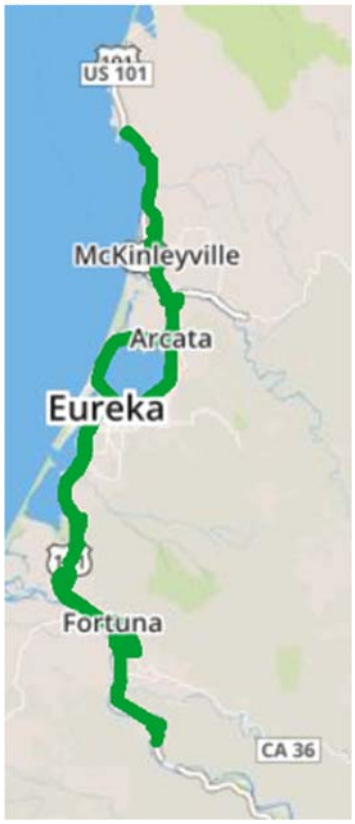
A volunteer driver program may have merit but is likely better addressed within the context of future updates to the County's Coordinated Transportation Plan update.

Pedicabs are prevalent in cities throughout the nation including Boston, Chicago, Denver, New York, New Orleans, San Diego, and San Francisco. They are private-sector initiatives in communities that have the population and travel demand densities enabling private entities to justify the investment and accompanying business case to ensure an adequate return on investment. It is believed that potential sites in Humboldt County (i.e., HSU Library Circle, downtown or Northtown Arcata) would not be able to generate adequate travel demand. This may be borne out by Zagster ceasing operations in the County, presumably as a result of inadequate demand for their bike-share program[9].

[9] According to a Zagster Team (corporate) update of June 1, 2020, "Some bikeshares will be shutting down permanently due to the impact of COVID-19 on Zagster's business".

7.2.1 On-Demand Transit – Connectivity to RTS

The Redwood Transit System (RTS) offers service between Scotia, Fortuna, Loleta, Fields Landing, Eureka, Arcata, McKinleyville, Westhaven, and Trinidad seven days per week. RTS provides more than 600,000 passenger-trips per year.



With an eye on streamlining the RTS route alignment, reduce the travel time (total route run time), and increase service frequency, two complementary strategies are presented: (1) Eliminate three deviations from the current route alignment; and (2) Short-turn the route at both the north and south ends of the alignment.

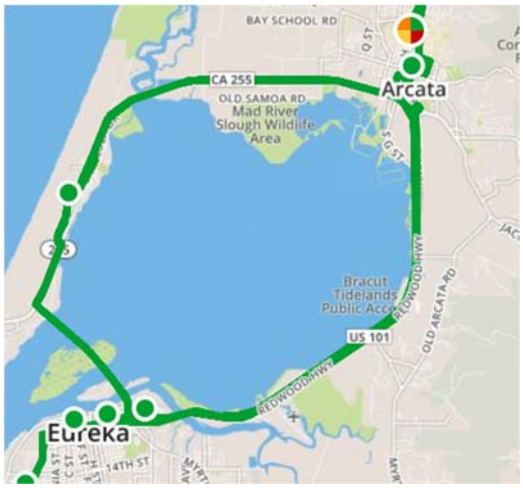
1. Elimination of Three Deviations: These deviations are Fortuna, Manila, and the Arcata-Eureka airport in McKinleyville.

While all three stops are not served by every RTS run, run time savings by eliminating current deviations are as follows:

- Fortuna stops, approximately 15 minutes;
- Manila (Community Center), approximately 15 minutes; and
- Airport terminal, approximately 8 minutes.

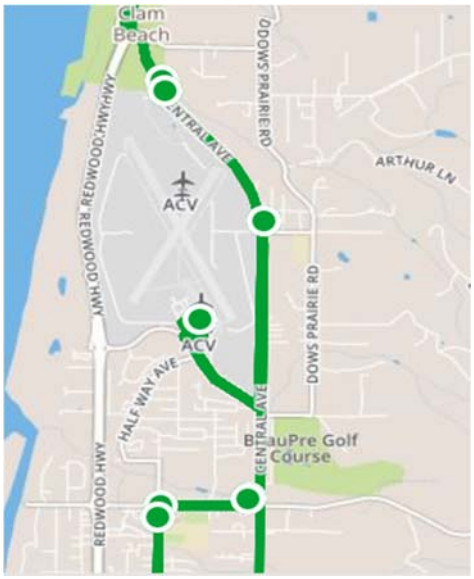
Based on boarding information provided by HTA, the Fortuna deviation generates less than 100 daily passenger trip on/offs; Manila, less than 10 daily passenger trip on/offs; and the airport terminal, approximately 35 daily passenger trip on/offs.

The above presented number of passenger trip on/off counts were based on a sampling of RTS southbound and northbound bus runs. The number of weekday and weekend RTS bus runs serving example locations in Fortuna, Manila and the airport, is presented below.

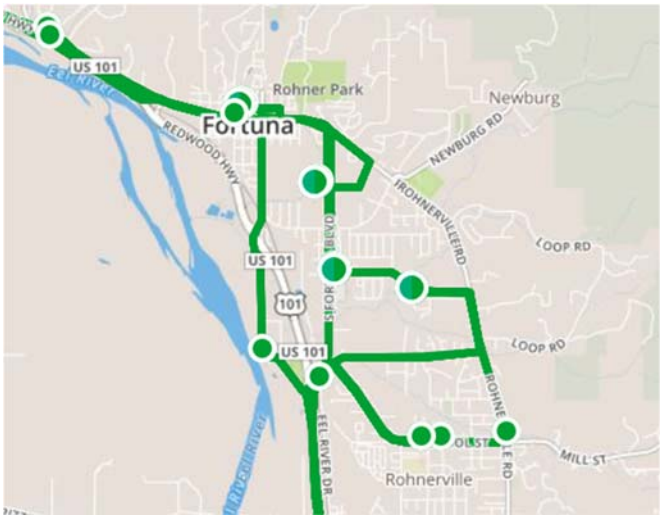


Number of North & South Bound Runs Serving Stops (avg. per day)		
Example Locations	**Weekday Service**	**Weekend Service**
Fortuna		
11th & N Streets	34	8
Redwood Village Shops	8	6
Manila		
Community Center	10	4
Arcata-Eureka Airport		
Airport Terminal	32	9

The prospect of modifying the RTS route alignment and advancing Personal Mobility on Demand (PMoD) services to provide connectivity to RTS should consider the following:



- Uncertainties presented by a post-COVID-19 environment;
- The need to negotiate with the California Redwood Coast – Humboldt County Airport (owned by the County) for 'permission' including the granting of an operating license for what may result in a private contractor (i.e., taxi or TNC) providing PMoD connectivity services. Advancing a collaborative approach may demonstrate an effective public-private partnership; and
- The need for additional discussions with City of Fortuna officials prior to advancing any modifications to the RTS route alignment.



Using a model similar to that of the *Old Arcata Road Taxi-Transit Pilot*[10], a PMoD service, generally with 15-minutre on-demand capacity, would replace the fixed-route service at these RTS deviations. An on-demand PMoD service would provide connectivity to a RTS bus stop (feeder service). This scenario will not only enhance RTS performance and the experience for the majority of customers, but also provide an opportunity to expand the catchment area for 'new' customers who have previously not had first/last mile mobility options (access to a bus stop).

Streamlining the RTS route alignment will eliminate out of direction travel and reduce the travel time for the majority of RTS customers. However, passengers who would be using the PMoD service as a feeder would require a transfer to the RTS and hence a "two seat ride".

Collaboration with Fortuna Transit: The City of Fortuna provides demand responsive transportation for seniors over 50 or those who are disabled and unable to drive. Service is available Monday through Friday between 8:30 a.m. and 4:00 p.m. Current service productivity is 2.9 trips per hour at an average subsidy per trip of $11.67. Average distance per passenger trip is 2.6 miles.

[10] An evaluation of the OAR Pilot is presented in Appendix B.

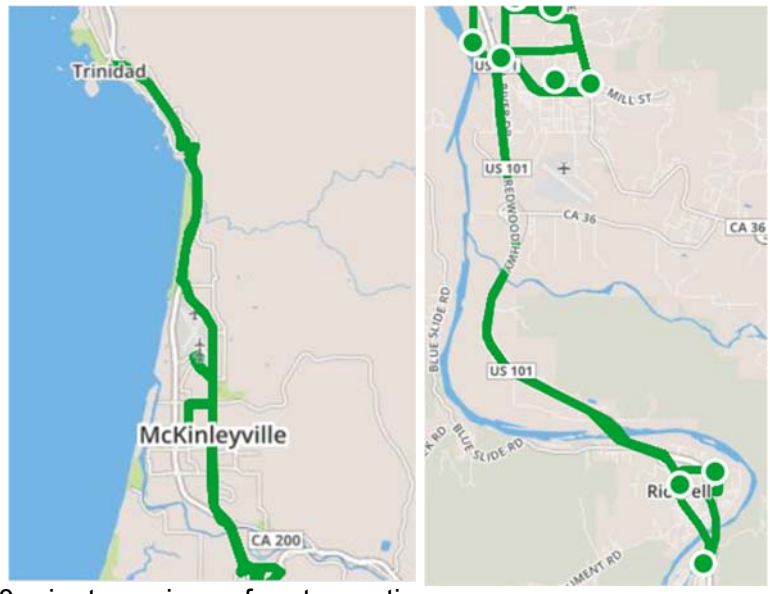
It is imperative that prior to advancing any modifications to RTS routing, additional discussions take place with Fortuna city officials. Further, it is important to discuss any opportunity to expand the mandate of the city's demand responsive transportation to include the general public and to provide scheduled feeder service to RTS bus stops. For example, RTS bus stops at the Fortuna Park and Ride lot in the south and 11th and N Street in the north.

A near-term opportunity for a pilot project may be for the city to enable the general public to use the city's demand responsive transportation service. Through the use of incentives (i.e., use of fare policy to influence travel behavior) and a robust marketing and communications strategy followed by service monitoring and evaluation, a pilot project could determine the effectiveness of the service (operating in a hybrid mode) to meet resident's mobility needs including first/last mile connectivity.

It is important to note that Fortuna has been supportive of examining alternate scenarios and advancing discussions.

2. Short-Turn at North & South Terminus of RTS Route

Again, with an eye on streamlining the RTS route alignment, reduce the total route run time, and increase service frequency, service would operate between McKinleyville and Fortuna. The McKinleyville to Trinidad and the Fortuna to Scotia route segments would be provided by an on-demand PMoD service would provide connectivity to a RTS bus stop (feeder service).



Eliminating these two route segments would translate to a 30-minute savings of route run time.

Current run times for these two route segments are:

- McKinleyville to Trinidad = 13 minutes
- Fortuna to Scotia = 16 minutes

PMoD Evaluation: Based on the evaluation criteria previously presented, the following table provides a commentary on each of the criteria presented:

EVALUATION CRITERIA	COMMENTARY ON APPLICABILITY TO ON-DEMAND / PMOD PILOT
Effectiveness in terms of the population served and in terms of the number of trips generated	+ Serves residents, employees, commuters and visitors. The provision of connectivity to public transit (RTS), hence increasing the use of public transport by the general population is one of the most important steps towards reducing global greenhouse gas emissions.
Overall Cost - the total cost of providing the service and consideration of factors such as: capital vs. operating costs, large capital outlays, and present-valued expenditures over the long-term	+ Little financial risk: no capital investment and only pay for service consumed (operating costs). Need to determine/assess any financial risk of decline in RTS ridership.
Efficiency - the estimated cost per trip, per vehicle-hour, plus costs to both the user and to the funding partners	+ Estimated cost per trip (pay for service consumed) typically more cost effective than the fixed hourly rate of providing regular transit service.
Reduce Vehicle Miles Traveled (VMTs) Per Capita / Single Occupancy Vehicles (SOVs)	- PMoD may reduce vehicle miles traveled (VMTs) if operating in carpool/share-ride mode (2 or more unrelated/unconnected passengers). Further, provides an opportunity to expand the catchment area for 'new' customers who had previously not had first/last mile mobility options (access to a bus stop).
Level of Service – hours of service, frequency of service, etc.	+ Flexible and may be tailored to travel demand and/or budgetary constraints.
Quality of Service – to the user (enhance customer experience); measured in terms of convenience, transfers, trip times, comfort, dignity, and flexibility (response time, advance booking requirement, etc.)	+ Eliminates out of directional travel and reduces the travel time for the majority of RTS customers. Impacted customers (those boarding at current deviation bus stops) will now have a two-seat ride (PMoD serving as a feeder and hence requiring a transfer).
Civil Rights Implications - delivery of services for persons with disabilities and integration	+ Accessible to all providing for equitable access.
Socio-Economic Factors - impact on employment and social well-being;	+ Serves residents, employees, commuters and visitors. The provision of connectivity to public transit (RTS), hence increasing access to goods and services including employment, education, social, recreational, etc. trip purposes.

EVALUATION CRITERIA	COMMENTARY ON APPLICABILITY TO ON-DEMAND / PMOD PILOT
Organizational Issues such as operational flexibility, control and accountability, human and labor relations	+ Operationally flexible – pay for service consumed and ability to modify service parameters to manage demand and influence travel behavior.
Ease of Implementation	+ TBD. Probable need for competitive procurement for operating entity. Acceptance testing of e-hailing/ride share technology used by transit/mobility service provider.
Technical Risk - if new or modified equipment is required	- Assumed leverage technology used by transit/mobility service provider (i.e., taxi or TNC).
Political Risk - the potential for changes in direction of local policies	- Discretion of HTA and/or HCAOG Board. Ability to modify service parameters.

For the PMoD pilot project, HCAOG could sponsor the advancement of a pilot of **Humboldt *e*-Ride**[11] service. **Humboldt *e*-Ride** will be a directly subsidized microtransit/on-demand ride hailing (e-Hailing) or shared-ride service in sedans, SUVs or vans.

Humboldt *e*-Ride would provide advanced booked same day service. Service may be requested/booked through a vendor supplied App or by making request by telephone through a call center/dispatch office.

For discussion purposes, a maximum subsidy of $9.00 has been set. The $9.00 figure would translate to an approximate four to four-and-one-half mile trip given prevailing ride-share/TNC rates[12]. A comparable trip by taxi would cost approximately $15 to $16[13].

While fare policy may be used to influence travel behavior, it is assumed, for the purposes of advancing a potential MoD pilot project, the current HTA fares will apply and be collected upon boarding.

With the emerging alternate delivery models of the rideshare companies (e.g. *LyftLine*, *Uber Pool* and *Uber Express POOL*), the promoting of greater shared-rides, may result in additional cost savings.

[11] e-Ride or e-Hailing refers to the request of a demand-responsive mobility service via an app or call-center.
[12] Based on Uber Fare Estimator
[13] Based on published rates by Cab Louie: $2.00 gate fee plus $3.00 per mile. It has been suggested that actual taxi fares are higher than the published fares noted.

Partnering with current transportation/mobility providers such as taxis or TNCs avoids direct institutional ownership of the service by the HCAOG (or HTA) and incurs costs only for services consumed.

Typically, PMoD type operations by a transit agency would be done on an hourly rate, governed by prevailing labor agreements and wage rates. For example, HTA reported in 2018 an hourly rate of close to $97. PMoD services may generate 2 to 2.5 trips per hour (depending on prescribed service parameters). A public sector operation would translate to a $38. to $48. cost per trip.

Again, paying only for service consumed is the advantage cited by transit agencies who have partnered with taxi/ride-share companies.

The **Humboldt *e*-Ride** service model may also be applied to other areas where existing transit performance falls below prescribed service standards. Other additional possible applications may include replacing evening service in Eureka.

Of note, going forward with potential pilot projects may enable proof of concept and an opportunity for monitoring and evaluating the effectiveness of PMoD services. Based on pilot project outcomes, the concept may be applied to other geographic areas in the county, areas that historically have not had the population and trip densities to justify any type of fixed-route service or traditional demand-response dial-a-ride services. PMoD may be a concept appropriate for such geographic areas such as Ferndale. Limited population and trip densities may be served on the basis of payment for service consumed.

7.2.2 Modern Hitch-hiking

While hitch-hiking is not as prevalent as it has been in the past (in part due to laws prohibiting it and concerns about driver and passenger safety), technology solutions and the general public's increasing comfort with sharing a ride with a stranger (such as in shared TNC rides), have inspired a new generation of app-supported hitchhiking options. This shifting dynamic means that while there are few U.S.-based examples from recent years, one may anticipate seeing more in the future.[14] [15]

[14] In 2014, the Lawrence OnBoard project brought organized hitchhiking to Lawrence, KS. The project first used Carma Carpooling technology and then the Klokan GogoRideshare app. The project itself is no longer active (other than to provide resources to others), and it's unclear if there is still a robust hitchhiking practice in Lawrence.

[15] Hitch, a start-up in Texas, will soon expand its app-based hitch-hiking services from just one route (between Houston and Austin) to two (adding between Austin and Dallas). Passengers typically pay about $25 through the app, can book a ride in advance or up to 1-2 hours before their ride, and must verify their identification through the app. Drivers are added to the system subject to a background check.

Modern hitch-hiking is typically an administrative model whereby a public sector entity may assume responsibility for the procurement and deployment of an app-based service that match drivers and passengers.

Modern Hitch-hiking Evaluation: Based on the evaluation criteria previously presented, the following table provides a commentary on each of the criteria presented:

EVALUATION CRITERIA	COMMENTARY ON APPLICABILITY TO MODERN HITCH-HIKING PILOT
Effectiveness in terms of the population served and in terms of the number of trips generated	+ Serves residents, employees, commuters and visitors.
Overall Cost - the total cost of providing the service and consideration of factors such as: capital vs. operating costs, large capital outlays, and present-valued expenditures over the long-term	+ Limited financial risk: Capital investment for procurement of app. May charge administrative or membership fee.
Efficiency - the estimated cost per trip, per vehicle-hour, plus costs to both the user and to the funding partners	+ May charge administrative or membership fee. May incorporate mileage reimbursement agreement between the driver and the passenger.
Reduce Vehicle Miles Traveled (VMTs) Per Capita / Single Occupancy Vehicles (SOVs)	+ Will reduce vehicle miles traveled (VMTs) as a variation on a carpool/share-ride mode (2 or more unrelated/unconnected passengers). Further, provides an opportunity to expand the catchment area for 'new' customers who had previously not had first/last mile mobility options (access to a bus stop).
Level of Service – hours of service, frequency of service, etc.	+ Flexible and may be tailored to travel demand and/or budgetary constraints.
Quality of Service – to the user (enhance customer experience); measured in terms of convenience, transfers, trip times, comfort, dignity, and flexibility (response time, advance booking requirement, etc.)	+ May be favorable but is a function of ride/driver availability.
Civil Rights Implications - delivery of services for persons with disabilities and integration	– Typically would not be available to individuals who require an accessible vehicle.
Socio-Economic Factors - impact on employment and social well-being;	+ Serves residents, employees, commuters and visitors. Provision of an additional mobility option providing access to goods and services including employment, education, social, recreational, etc. trip purposes.

EVALUATION CRITERIA	COMMENTARY ON APPLICABILITY TO MODERN HITCH-HIKING PILOT
Organizational Issues such as operational flexibility, control and accountability, human and labor relations	- Administrative burden typically taken on by public sector entity. Need to assess risk, liability and exposure. Operationally flexibility is a function of available drivers and their travel patterns.
Ease of Implementation	+ Administrative burden including procurement of an app, development of membership/participant policies and procedures, development of rider/driver database, provision and processes for security screening and monitoring, and marketing and communications.
Technical Risk - if new or modified equipment is required	+ Need to procure appropriate technology/app. Need to ensure rider and driver acceptance of technology.
Political Risk - the potential for changes in direction of local policies	TBD.

7.2.3 Active Transportation (facilitating a bike share program)

Humboldt County is well positioned to expand its bicycle infrastructure in cities and unincorporated areas. The Cities of Arcata and Eureka have well-established bicycle infrastructure, and are still planning new Class I, II, and III bikeways. Other cities, such as Blue Lake, Ferndale, Fortuna, and Rio Dell, have only begun implementing their bicycle networks, but have planned a system that fosters safe bicycle access (through the 2018 Humboldt Regional Bicycle Plan).

Bike Share and Micro Mobility: Bike share is a new service in which bicycles are made available for the public on a short-term basis for a nominal fee. Bike sharing systems are either docked or dockless. For docked bike sharing systems, users have to return their shared bike to a dock to end their trip. With dockless bikes, users can end their trip anywhere, by use of a smartphone app. Most bike share services have smartphone mapping to show nearby available bikes or open docks.

One of the main benefits of bike share programs is that they can significantly enhance people's access to fixed-route transit. Bike share programs can even serve as micro public transit by providing affordable, short-distance trips to get users from a bus stop closer to their destination. Because of this, they may reduce private vehicle trips, and provide an opportunity for users to access public transit easier than walking.

Bike share was beginning to appear in Humboldt County, namely Arcata and Eureka. The bike share company Zagster had launched their bike share service to serve Humboldt State University (HSU) and the greater Arcata area and downtown/Old Town Eureka. Bike share was one of the several strategies outlined in HSU's *Climate Action Plan*.

Zagster more recently announced their intent to cease operations in the County. According to a Zagster Team (corporate) update of June 1, 2020, "Some bikeshares will be shutting down permanently due to the impact of COVID-19 on Zagster's business".

At the time of preparing this report, Zagster had begun to retrieve bikes and dock stations and are targeting to be fully withdrawn by June 12, 2020. It is reported that they cannot afford to give any refunds.

Zagster had seven docking stations in Arcata and one in Eureka. The locations of the docking stations were:

- SU Jolly Giant Commons Station
- HSU Harry Griffith Hall Station
- Northtown Arcata Station
- Arcata Transit Center Station
- Southeast Arcata Plaza Station
- North Coast Co-op Parking Lot Station, Arcata
- Northeast Arcata Plaza Station
- North Coast Co-op, Eureka

Unmet Bicycle and Bike Share Needs:

- Lack of bicycle parking in public places and at businesses.
- Lack of bicycle infrastructure in key locations, locally and regionally.

Potential solutions to meet bicycle and bike share needs:

- Facilitate expanded bicycle parking at public places. This may include incorporating bicycle parking in land use and development agreements, providing secure bicycle lockers at transit hubs, etc.
- Consider expanding upon the current bicycle network, preferably with Class I and Class IV bikeways where applicable, throughout Humboldt County.
- Consider facilitating the re-introduction of a bike share program. Notwithstanding Zagster ceasing operations in the County, presumably because it was not financially viable, *facilitating* may include a robust education/marketing/communication strategy, and enhanced integration

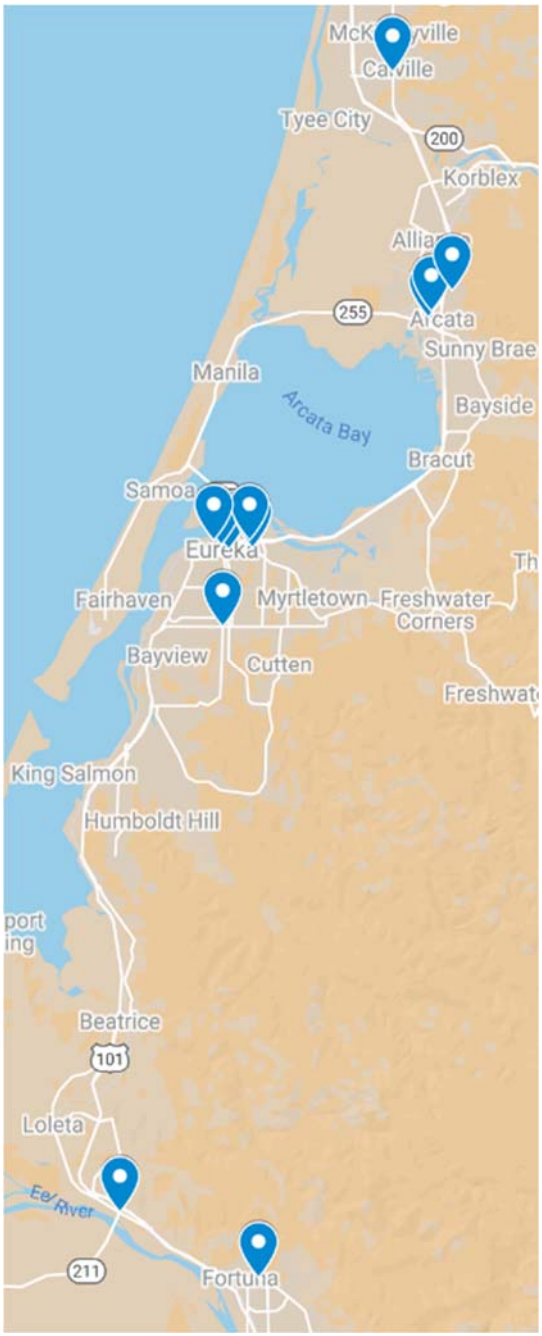
with transit operations and service delivery (bike racks on buses, an app providing real-time availability of bike rack capacity, etc.). Facilitating a bike share program would not include subsidizing the deployment or operation.

Expanded Bike Share Program: For discussion purposes, the following presents a list (and map) where bike share stations may be appropriate based on connectivity to RTS, the potential to create mobility hubs where intermodal connections can be made, and surrounding land uses. HTA bus rack utilization data was also analyzed and while the bike racks were well utilized, the data did not inform on locational/geographic considerations for bike share station locations.

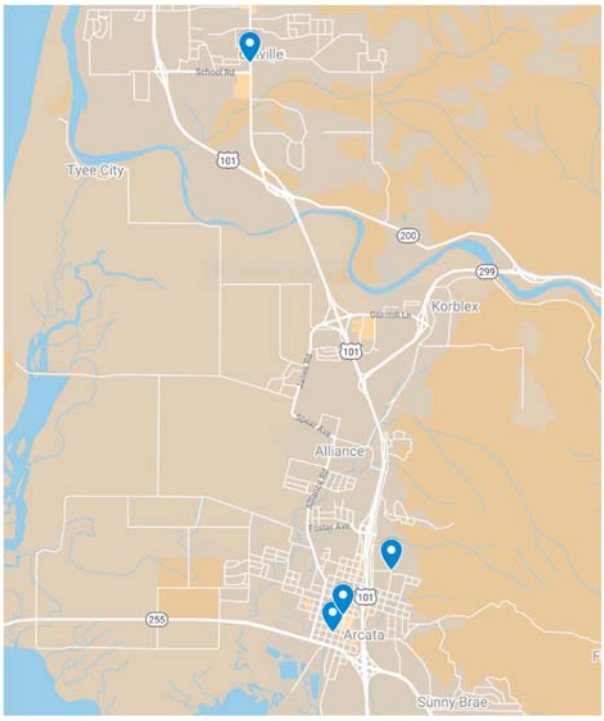
Following concurrence of a preferred approach, including governance, to advance an expanded bike share program, NACTO's guide on station siting is a beneficial resource for site selection, including curb allocation, space availability and requirements (footprint), etc.

List of Possible[16] Bike Share Station Locations:

- 6th Street & H Street, Eureka
    - significant number of bikes loading and unloading here onto RTS buses
- Alternative (to 6th & H St.) bikeshare location - 6th & J, Eureka
    - at the juncture between J & 6th street
- ETS/RTS transfer location - 4th & H Streets
    - Bike route is on 6th and 7th and J Streets. ETS transfer is 3rd and H. RTS transfer pair is 4th and 5th & H Streets.
- F & Harris - Henderson Center (ETS)
    - on ETS routes and on a bike route
- Myrtle & 7th
    - on a bike route that goes to Myrtletown, near the RTS route
- HWY 101 & R Street (Alternative to Myrtle & 7th)
- School Road, McKinleyville
- Fortuna – possible multiple locations, TBD.
- Fernbridge
    - provide access to Ferndale through bikeshare
- Arcata Plaza
    - Possible expansion of current docking stations
- HSU - B Street
    - access to the heart of the campus. Bikeshare likely does not need to be connected with transit on campus.
- Gazebo - Old Town Eureka



[16] Provided for further consideration/discussion.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Korblex
Alliance
Arcata
Sunny Brae
101
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299
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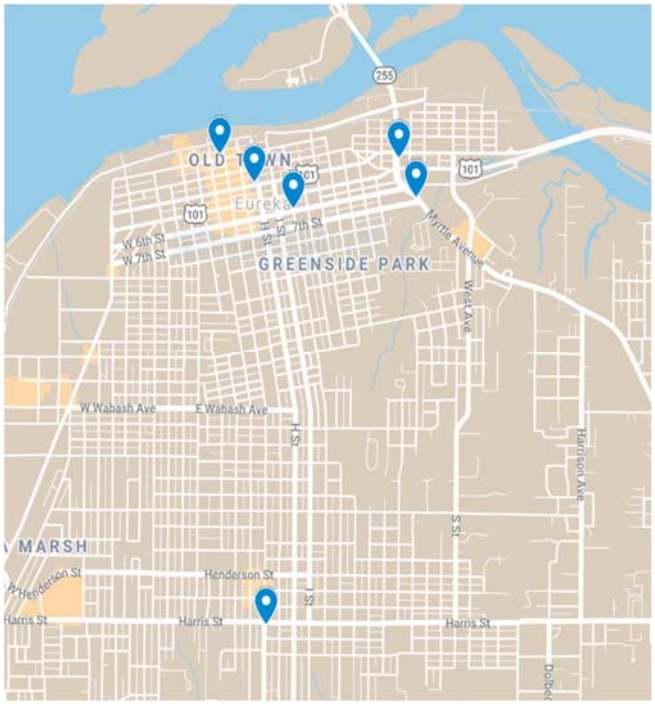
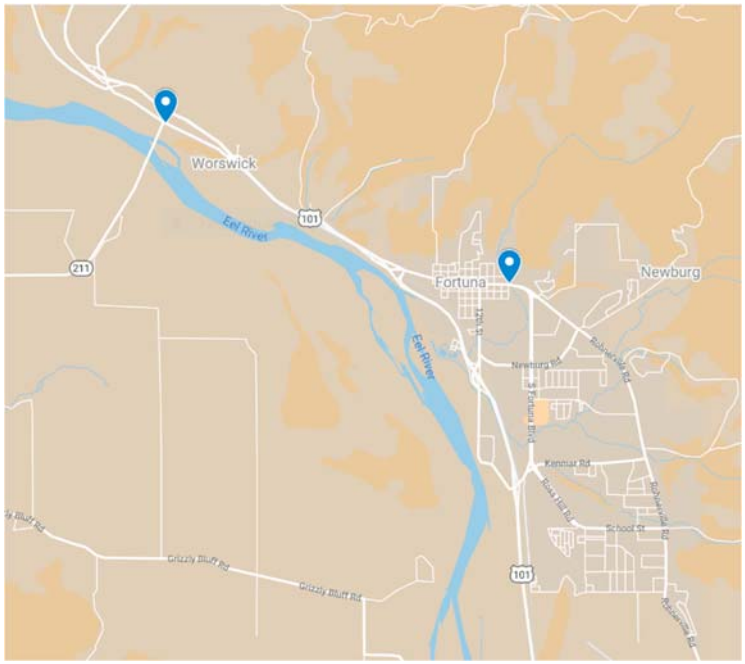

OLD TOWN
Eureka
GREENSIDE PARK
MARSH
W Wabash Ave
E Wabash Ave
Henderson St
Harris St
Myrtle Avenue
West Ave
101
255


Worswick
Eel River
Fortuna
Newburg
101
211

Facilitating a Bike Share Program: Based on the evaluation criteria previously presented, the following table provides a commentary on each of the criteria presented:

EVALUATION CRITERIA	COMMENTARY ON APPLICABILITY TO FACILITATING A BIKE-SHARE PROGRAM
Effectiveness in terms of the population served and in terms of the number of trips generated	+ Serves residents, employees, commuters and visitors.
Overall Cost - the total cost of providing the service and consideration of factors such as: capital vs. operating costs, large capital outlays, and present-valued expenditures over the long-term	+ Limited financial risk: This would be a private-sector initiative with support from a public entity. The latter possibly providing a robust marketing and communications strategy, possible incentives (tied to use of public transit, etc.
Efficiency - the estimated cost per trip, per vehicle-hour, plus costs to both the user and to the funding partners	+ Costs of administrative burden in facilitating program.
Reduce Vehicle Miles Traveled (VMTs) Per Capita / Single Occupancy Vehicles (SOVs)	+ Will reduce vehicle miles traveled (VMTs) through use of active transportation (bicycles) which may also include connectivity to public transit. Further, provides an opportunity to expand the catchment area for 'new' customers who had previously not had first/last mile mobility options (access to a bus stop).
Level of Service – hours of service, frequency of service, etc.	+ Flexible and may be available 24/7.
Quality of Service – to the user (enhance customer experience); measured in terms of convenience, transfers, trip times, comfort, dignity, and flexibility (response time, advance booking requirement, etc.)	+ May be favorable but is a function of availability of docking stations.
Civil Rights Implications - delivery of services for persons with disabilities and integration	– Would not be available to individuals who require an accessible vehicle.
Socio-Economic Factors - impact on employment and social well-being;	+ Serves residents, employees, commuters and visitors. Provision of an additional mobility option providing access to goods and services including employment, education, social, recreational, etc. trip purposes.
Organizational Issues such as operational flexibility, control and accountability, human and labor relations	+ Administrative burden typically taken on by public sector entity. Limited to no risk, liability and exposure.

EVALUATION CRITERIA	COMMENTARY ON APPLICABILITY TO FACILITATING A BIKE-SHARE PROGRAM
Ease of Implementation	+ Administrative burden including facilitating or development of a marketing and communications strategy.
Technical Risk - if new or modified equipment is required	None. Assuming private sector entity provided appropriate technology/app.
Political Risk - the potential for changes in direction of local policies	+ Limited risk or exposure.

7.2.4 Pilot Project – A Framework for Monitoring and Evaluation

Important to the deployment of potential pilot PMoD services is that of developing a framework for service monitoring and evaluation. The following table presents key performance indicators (KPIs) reflecting service effectiveness, efficiency, quality, and impact. Of note, these KPIs go beyond reflecting typical measures of monitoring transit performance and include 'impact'. While less quantifiable, it is important to document net impacts on access to employment, education and/or health care services. Such impacts may range from the ability to attract and retain employees, people gaining employment, improved health outcomes, etc. These net benefits will have corresponding financial benefits to employers, the health care community, etc.

CATEGORY	KEY PERFORMANCE INDICATORS (KPI)	
Effectiveness	Total ridership Trips per hour	
Efficiency	Total cost Budget variance Cost per trip	Subsidy per trip Revenue/cost ratio
Quality	Average trip time Average miles per trip Average wait time	Complaints per 100 rides Brand awareness
Impact	Net ridership change Access to employment, education, medical appointments Financial impacts and benefits to employers, hospitals, etc.	

Appendix A:
Community Survey Instrument

May

Mobility on Demand Survey

We Need Your Input!

To enter drawing, return completed survey by May 17

Enter for your chance to win a local $35 gift certificate *see page 3*

Go to HCAOG.NET to take this survey on-line

To best meet the transportation and mobility needs of residents and visitors to our County, the Humboldt County Association of Governments (HCAOG) is developing a shared vision for what "mobility on demand" can look like in Humboldt County. This survey is one way for you to provide input about current transit services, areas for improvement, and what new mobility options or technologies you would use, such as ride hailing (e.g. Uber, Lyft), bikeshare (e.g. Zagster), carshare, micro-transit, smart phone apps for payments, etc.

What you have to say is important in helping to make improvements and plan for the future. Thank you for your participation.

PLEASE TELL US ABOUT YOUR USE OF TRANSIT AND YOUR TRAVEL PATTERNS.

1. What is the zip code where you live (residence)? ☐☐☐☐☐

2. What type of transportation do you or other members of your household use <u>in a typical week</u> and for what purpose? Please check <u>all</u> that apply.

	Work	Social / Recreational	Shopping	Doctor / Medical	School/ Education	Other
a. Personal vehicle (as *Driver or Passenger*)	☐	☐	☐	☐	☐	☐
b. Redwood Transit Service (RTS)	☐	☐	☐	☐	☐	☐
c. Willow Creek	☐	☐	☐	☐	☐	☐
d. Arcata & Mad River (AMRTS)	☐	☐	☐	☐	☐	☐
e. Eureka Transit Service (ETS)	☐	☐	☐	☐	☐	☐
f. Southern Humboldt (SOHUM)	☐	☐	☐	☐	☐	☐
g. Tish Non Village Transit	☐	☐	☐	☐	☐	☐
h. Blue Lake Rancheria Transit Service (BLRTS)	☐	☐	☐	☐	☐	☐
i. Old Arcata Road Service	☐	☐	☐	☐	☐	☐
j. HTA's Dial-a-Ride	☐	☐	☐	☐	☐	☐
k. Regular taxi or ride share service (e.g. Uber, Lyft, etc.)	☐	☐	☐	☐	☐	☐
l. Bicycle	☐	☐	☐	☐	☐	☐
m. Walk	☐	☐	☐	☐	☐	☐
n. Other (specify) _____	☐	☐	☐	☐	☐	☐

3. a) If you have used public transit/bus services in Humboldt within the last six months, what do you think of the transit service? (If you <u>have never used</u> any of the bus services, please go to Question 4).

	Almost always	Often	Unsure	Not very often	Almost never
a. Service is convenient and easy to use	☐	☐	☐	☐	☐
b. The travel times are reasonable	☐	☐	☐	☐	☐
c. I feel safe on the transit service	☐	☐	☐	☐	☐
d. Transit information is readily available	☐	☐	☐	☐	☐
e. Transit arrives on schedule (is punctual)	☐	☐	☐	☐	☐
f. Transit fares are reasonable	☐	☐	☐	☐	☐
g. Transfers are convenient	☐	☐	☐	☐	☐
h. Overall, I am satisfied with the transit service	☐	☐	☐	☐	☐

3.b) How do you typically locate information about transit services?

☐ Transit customer service (phoning a transit agency) ☐ Website ☐ Facebook ☐ Riders' guide
☐ From the driver ☐ At the bus stop ☐ Other (specify) _____

4. If you do NOT use any public transit service, why not? (Please check all that apply)

☐ Infrequent service
☐ It doesn't go close enough to where I travel to and from
☐ It is too expensive
☐ It takes too long to travel by bus
☐ Buses are too crowded
☐ I don't know what bus to take
☐ Bus routes aren't direct enough
☐ Transit doesn't operate the hours of the day or the days of week that I would want to travel. Specify_____
☐ I would not feel safe and secure on public transit or waiting for transit
☐ Other (please state) _____
☐ I would not take transit under any circumstances

5. For the types of improvements you would like to see (pick all that apply), what is the likelihood you would use transit/mobility services if the improvements were made ?

Type of improvement I would like to see	Would certainly use	Would likely use	Might use	Not very likely use	Would never use	Would not make a difference
Better information on how to use transit	☐	☐	☐	☐	☐	☐
Extended weekend service	☐	☐	☐	☐	☐	☐
Later week night service	☐	☐	☐	☐	☐	☐
Earlier weekday morning service	☐	☐	☐	☐	☐	☐
On-demand ride hailing service (i.e., subsidized, shared-ride service in a van or sedan; rides requested through a Smart phone or tablet app.)	☐	☐	☐	☐	☐	☐
Bicycle share or electric-scooter share program	☐	☐	☐	☐	☐	☐
More bus stops	☐	☐	☐	☐	☐	☐
More frequent bus service	☐	☐	☐	☐	☐	☐
More shelters or benches at bus stops	☐	☐	☐	☐	☐	☐
Fewer transfers required	☐	☐	☐	☐	☐	☐
A mobile phone app for planning trips	☐	☐	☐	☐	☐	☐
A mobile phone app for paying fares	☐	☐	☐	☐	☐	☐
A mobile phone app for real-time information	☐	☐	☐	☐	☐	☐
WIFI/wireless Internet access on the bus	☐	☐	☐	☐	☐	☐
Improved bus service to (specify location(s)) _____	☐	☐	☐	☐	☐	☐
Other (please state) _____	☐	☐	☐	☐	☐	☐

IN THIS SECTION PLEASE TELL US ABOUT YOU AND YOUR HOUSEHOLD [OPTIONAL]

6.a) How many people live in your household? _____ **6. b) How many cars or SUVs? _____**

7. Which of the following categories best matches your annual household income?

☐ Under $20,000 ☐ $21-$34,000 ☐ $35-$50,000 ☐ over $50,000 ☐ Prefer not to answer

8. Which of the following age categories matches your age?

☐ Under 18 ☐ 19-35 ☐ 36-59 ☐ 60 or over ☐ Prefer not to answer

COMMENTS:

Thank you for your participation

RETURN SURVEY TO: ♦ Box, if provided

♦ HCAOG, 611 I Street, Suite B, Eureka or info@hcaog.net or fax: (707) 444-8319

♦ Arcata Transit Center, 925 E Street, Arcata ♦ Humboldt Transit Center, 133 V Street, Eureka

♦ Blue Lake City Hall, Fortuna City Hall, Rio Dell City Hall

OPTIONAL

Enter for your chance to win a valuable gift certificate from a local shop or restaurant

Name: _____ Email: _____

Phone: _____

Appendix B:
Evaluation of *Old Arcata Road* Pilot

Mobility on Demand Strategic Plan

Evaluation of *Old Arcata Road* Pilot

TECHNICAL MEMORANDUM

Draft – for discussion

Prepared for HCAOG
By IBI Group

January 2020

Contents

ATTACHMENTS:

1.0 Context

The Humboldt County Association of Governments (HCAOG) is developing a *Mobility on Demand (MoD) Strategic Development Plan* with an overarching goal of providing affordable and accessible mobility solutions for all travelers. As articulated by HCAOG, the agency "seeks to set a plan for optimizing technology-enabled mobility on demand transportation options in Humboldt County." In short, the MoD Strategic Development Plan's overall purpose is to assist the HCAOG in determining the best courses of action to increase multimodal mobility and accessibility in Humboldt County, especially for public transportation and transit, bicycling, walking, rideshare, and other modes separate from single-occupancy automobile.

Mobility on Demand is an innovative user-focused approach which leverages mobility services, integrated transit networks, and real-time data, to give users an easier and smoother traveling experience from origin to destination. The Strategic Plan will ultimately improve mobility options for all travelers and users of the transportation system in an efficient and safe manner.

As the mobility landscape continues to evolve, connected travelers, continued advancements in transportation technologies, and private sector involvement present unprecedented opportunities for improving public transportation. In recent years, concepts such as microtransit and mobility-on-demand have helped agencies fill first and last mile gaps by developing and integrating unconventional modes into their services, engaging the private sector in the form of transportation network companies (TNCs), car-share, bike-share and other modes as alternative to private vehicles. However, while transit agencies continue to experiment with new business models, new suppliers, and new technologies, there remain challenges related to providing cost-effective, efficient, and equitable service to all people.

"OAR Taxi-Transit": As an early adopter of a MoD service delivery strategy, the Humboldt Transit Authority (HTA) began a test pilot project in November 2018 with the provision of subsidized taxi rides to provide connectivity to transit hubs/bus stops in a defined area. This is the first pilot project of this kind in Humboldt County, and it generally covers the unincorporated area along the Old Arcata Road (OAR) corridor between Arcata and Eureka.

1.1 Tech Memo Objective

As part of determining the feasibility of implementing mobility-on-demand services in Humboldt's rural setting, this paper provides for: (a) an assessment of how the "OAR Taxi-Transit" pilot service is performing; and (b) to advise HCAOG and HTA on any recommended adjustments.

It is important to note that this assessment of the "OAR Taxi-Transit" pilot is undertaken within a framework of broader project objectives, namely the *Mobility on Demand (MoD) Strategic Development Plan.* This Plan has an overarching goal of providing affordable and accessible mobility solutions for all travelers. Further, it would be prudent to view the evaluation of the "OAR Taxi-Transit" pilot within the context of previously prepared technical memoranda including *Existing Conditions and Unmet Needs* and *MoD Innovative Practices*. These papers provide insight into existing transit/mobility services, broader community (unmet) needs and innovative/next-gen mobility (operational and technical) solutions. Innovative/next-gen mobility solutions were presented within a framework of broader program objectives, guiding principles, and an evaluation framework.

1.2 Tech Memo Structure

Section 2 of this tech memo provides a description of the OAR Taxi-Transit program.

Section 3 provides for an evaluation of the pilot's performance.

Section 4 presents a preferred approach for going forward.

2.0 "OAR Taxi-Transit" Pilot – Background and Service Parameters

On January 15, 2016 the HCAOG Board adopted the *FY 2016-17 Unmet Transit Needs Report of Findings*. Included in that report was the need for transportation services to the residents that live along Old Arcata Road.

The HTA board approved the contract for services for Old Arcata Road at the September 26, 2018 board meeting and it was approved by County Public Works. HTA staff has worked with several different agencies and community members identifying current resources available for the service, funding opportunities, and pick up locations.

As part of the Unmet Transit Needs analysis, two community surveys were administered:

1. November 2013 – broad survey to gauge respondent's unmet transit/mobility needs; and
2. April 2014 – follow up specific to transit needs in OAR service area.

A copy of each survey instrument is included as Attachment A.

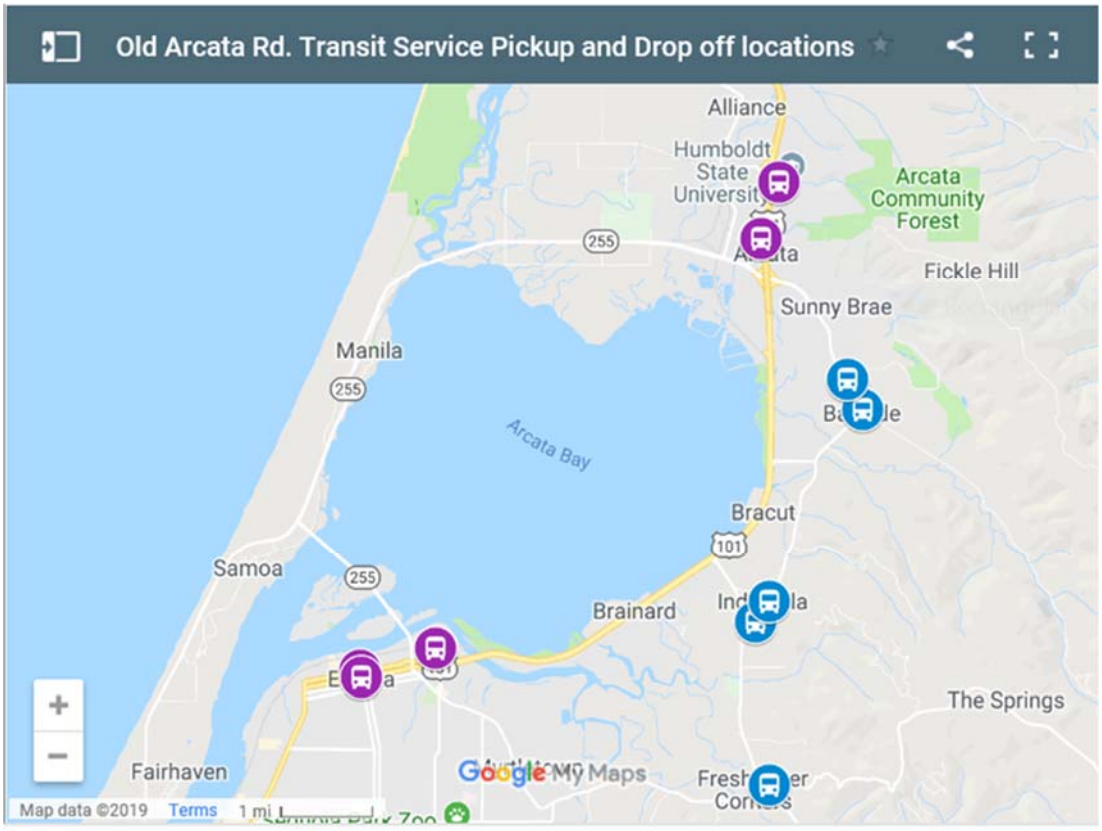
Observations:

- The survey instrument does not appear to account for non-committal survey bias; and
- Survey respondents would not have been aware of operating parameters including advance booking requirements, fares, stop/pick-up locations, etc.

Having received $35,000 for the pilot, HTA entered into an agreement with City Cab to provide the service at a rate of $19.00 per ride. The pilot began on November 5, 2018. Details about the service are as follows:

- Operated by City Cab, using a reservation system software program (RouteMatch) that was already in place for Dial-A-Ride. Old Arcata Road residents need to call 24 hours in advance to schedule a ride.
  - Reservations accepted up to 3:00PM day before
  - Service available weekdays, from 7:00AM to 7:00PM
- The two forms of payment are cash and Token Transit (TT). TT is a cellular phone application that can be downloaded for free on iPhone or Android. The cost of a regular fare is $3.00, and the reduced fare is $2.00 for seniors, children 17 or under, or persons with disabilities.
- This is a "Pilot Program" that will run between November 5, 2018 to June 20, 2020 to gauge the public's interest.

While a demand-response service, there are designated locations for general public pick-ups and drop offs. This is not a door-to-door service. Below is a map of the OAR service area and pick-up or drop off (stop) locations.



A customer's pick-up or drop-off stop/location must include a **blue** stop along Old Arcata Road, between Sunny Brae and Freshwater Corners. A **blue** stop to a **blue** stop and a **blue** to **purple** stop is permitted, but a **purple** to **purple** is not.

Designated Pick-up/Drop off locations:

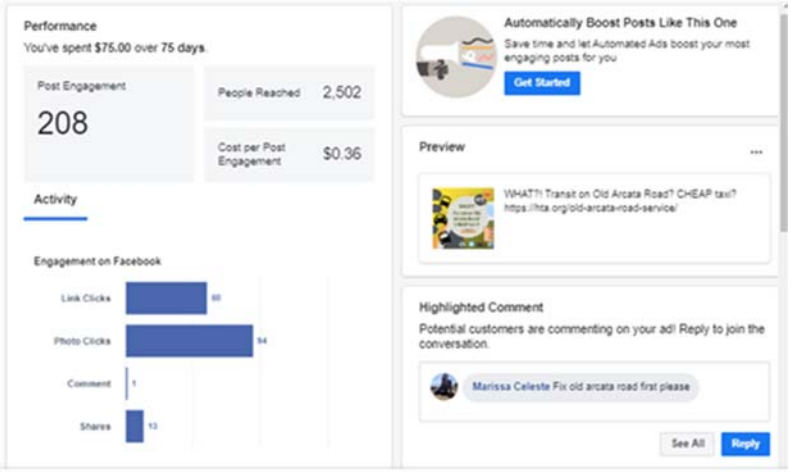
Blue:

- 75 Greenwood Heights
- 7650 Myrtle Avenue
- 7882 Myrtle Avenue
- 1836 Old Arcata Road
- 1610 Old Arcata Road

Purple:

- 4th/5th & H, Eureka
- Arcata Transit Center
- HSU Library Circle
- HTA, 2nd & V, Eureka

In promoting the pilot, the HCAOG ran a Facebook advertisement for 75-days reaching 2,502 people and resulting in 208 "engagements", meaning people clicked on the ad for more information.



Of note, two-thirds of people reached were women and primarily between the ages of 25 and 44 years old.

Just before the service started, HCAOG mailed a postcard/flyer (illustrated below) to residents in the OAR service area. A copy of the postcard is provided as Attachment B. In July 2019, HCAOG did more marketing, by posting flyers in places along Old Arcata Road, by boosting posts on social media, and by getting media coverage in a few community newsletters.

3.0 "OAR Taxi-Transit" Pilot – Performance

Since the launch of the pilot in November 2018, to September 23, 2019, there have been a total of ten (10) one-way trips provided during this eleven-month period. The structure of the agreement with City Cab is such that payment is only for trips provided (service consumed) and as such the net budgetary impact has been less than $200.

A typical pilot program evaluation would include looking at a number of performance characteristics including:

- Total number of trips taken by customers per month
- Trips per day
- Ridership every hour to identify peak times
- Total number of requested trips per day and month
- Total number of no-shows per day and month
- Total service hours per month
- Total miles driver per month
- Total amount of trip fares per month;
- Operating cost per month (monthly breakdown of itemized costs)

The low ridership and hence, limited data, negates the ability (and need) for a more robust evaluation. In the absence of sufficient data, we assume that the pilot's service parameters including the need to book one-day in advance and the need to go to a designated pick-up location are deterrents for many people.

4.0 A Preferred Approach

As previously mentioned, this assessment of the "OAR Taxi-Transit" pilot is undertaken within a framework of broader project objectives, namely the *Mobility on Demand (MoD) Strategic Development Plan*. This plan is identifying other potential pilots for on-demand mobility services and in so doing, is informed by the experience of the "OAR Taxi-Transit" pilot.

As presented in the *Innovative Practices* tech memo, successful MoD deployments typically provide for greater spontaneity in travel and the ability to book a trip in real-time by leveraging app-based capabilities (such as those used by transportation network companies). Further, successful deployments provide for curb-to-curb service, hence addressing the first/last mile challenge of "getting to the stop".

It is important to determine if there is an appetite to amend the parameters of the current "OAR Taxi-Transit" pilot in advance of broader study outcomes (targeted for first quarter 2020). Study outcomes will include identifying one or more potential MoD pilots and detailed operating parameters.

4.1 Amended "OAR Taxi-Transit" Service Parameters

A preferred approach for going forward includes amending the current service parameters to include:

1. Provide same-day service, booked at least one-hour in advance.
2. Provide curb-to-curb service.
3. Maintain current fare structure ($3 Regular fare and $2 for disabled, seniors and children under 18).
4. Maintain current days of week (Mon. – Fri.).
5. Expand the hours of service to 7:30PM (7:00AM – 7:30PM).
6. Channel demand: While service may be available from 7:00AM to 7:30PM, trips may only be booked within prescribed "windows", within 3-hour increments such as:
    - 7:00-7:30AM
    - 10:00-10:30AM
    - 1:00-1:30PM
    - 4:00-4:30PM
    - 7:00-7:30PM

Channelling demand, as described herein fosters a greater probability of ride-sharing and may be used as a demand management tool if it becomes necessary to influence travel behavior to control costs.

Attachment A: Survey Instruments
November 2013 & April 2014

Dear Resident:

The Humboldt County Association of Governments (HCAOG), as the Regional Transportation Planning Agency, annually reviews unmet public transit needs in Humboldt County. This survey is being distributed to gather information to determine how many residents in areas along Old Arcata Road would regularly use public transit if funding were available to provide service.

Paper surveys may be returned postage-paid, by refolding with HCAOG's address as the recipient. Surveys can also be dropped off at: HCAOG Office, local transit buses, local city halls, Humboldt County Board of Supervisors' Office, local libraries, or local senior center. **Thank you for your response!**

Transit Survey

You can take the survey on-line: www.hcaog.net

Please return surveys by November 30, 2013.

Do you need bus or dial-a-ride service that is not available?

The Humboldt County Association of Governments (HCAOG) is conducting the annual unmet transit needs cycle and we welcome your comments about using public transit (bus or dial-a-ride).

Name (optional): _____ **E-mail/phone** (optional): _____

City/area where you live:_____

Age: Under 16 ☐ 16-24 ☐ 25-54 ☐ 55-64 ☐ 65-75 ☐ 76 + ☐

How do you normally travel in Humboldt County? *Check the <u>two</u> that apply most.*

Public bus ☐ Dial-a-Ride ☐ Drive my vehicle ☐ Walk ☐ Bike ☐

Carpool ☐ Taxi ☐ Travel provided by social service agency ☐

If you don't use the bus or dial-a-ride, why not? *Check all that apply.*

Not aware of available services ☐ Disability/access ☐ Too expensive ☐

Use my vehicle ☐ Need help traveling ☐ Bus stop is too far ☐

Does not go where I live or need to travel ☐ Does not run at the times I need it ☐

Is there somewhere in Humboldt County you want to go by bus or dial-a-ride but cannot? No ___ Yes ___ Which city/area? _____

If bus or dial-a-ride were provided, would you use it weekly? Yes ___ No ___

What is your transit need?

I need to go from: _____ _____

Location / street name City / area

I need to go to: _____ _____

Location / street name City / area

Between the hours of: *Check all that apply.*

6:00 am - 9:00 am __ 9:00 am – Noon __ Noon to 3:00 pm __

3:00 pm - 6:00 pm __ 6:00 pm – 9:00 pm __ 9:00 pm - 12:00 midnight __

On: Mon ☐ Tues ☐ Wed ☐ Thurs ☐ Fri ☐ Sat ☐ Sun ☐

Trip(s): Work ☐ School ☐ Medical ☐ Shopping ☐ Voting/Civic ☐

Place of Worship ☐ Recreation ☐ Social (visit friend/family) ☐

THANK YOU FOR TAKING THE TIME TO FILL OUT THE SURVEY

Please return to: Humboldt County Association of Governments (HCAOG)

611 "I" Street, Eureka, CA 95501, fax (707) 444-8319

HCAOG
611 I Street, Suite B
Eureka, CA 95501

HCAOG
611 I Street, Suite B
Eureka, CA 95501

HUMBOLDT COUNTY ASSOCIATION OF GOVERNMENTS
611 I Street, Suite B
Eureka, CA 95501
(707) 444-8208
http://www.hcaog.net

April 2, 2014

Dear Resident:

Re: Transit Need Survey (Transit Service on Old Arcata Road)

This letter is sent as a follow up to the transit need survey that the Humboldt County Association of Governments (HCAOG) conducted in November 2013.

We are contacting you as you indicated potential use of a transit service along Myrtle Avenue and Old Arcata Road between Hall Avenue (Eureka) and Sunny Brae (Arcata). One hundred thirty-eight survey responses were received from residents in the Old Arcata Road area.

In an effort to gather more specific data, we need additional information for the HCAOG Board to determine if this potential service is a need that is reasonable to meet. A key piece of information is anticipated ridership. Your response to the enclosed questions will allow the HCAOG Board to make an informed decision. Please complete the following questions:

1. From Monday through Friday, how many trips per week would you use transit service along Old Arcata Road if service were provided?
   _____ round trips _____ one-way trips

2. What times of day would you use the service? (Please check selections below)

AM	PM	Evening PM
___ 6:00 – 7:00 am	___ 12:00 noon – 1:00 pm	___ 6:00 – 7:00 pm
___ 7:00 – 8:00 am	___ 1:00 – 2:00 pm	___ 7:00 – 8:00 pm
___ 8:00 – 9:00 am	___ 2:00 – 3:00 pm	___ 8:00 – 9:00 pm
___ 9:00 – 10:00 am	___ 3:00 – 4:00 pm	___ 9:00 – 10:00 pm
___ 10:00 – 11:00 am	___ 4:00 – 5:00 pm	
___ 11:00 – 12:00 noon	___ 5:00 – 6:00 pm	

Your input is important. We ask that you return the questions by **Monday April 14**. Thank you for taking the time to complete the additional questions. A postage paid return envelope is included to submit your response. We appreciate your interest in transportation in Humboldt County.

Sincerely,

Debra Dees
Associate Planner

Attachment B: RTS OAR Postcard

Rides are $3 for a regular fare, and $2 for disabled, senior, and children under 18

*Pilot program! November 1- June 30, 2019

RTS

Introducing Old-Arcata Rd. Transit Service!*

Enjoy your ride in 3 easy steps!
1. Call 707-442-4555 the day before, prior to 3pm to reserve.
2. Go to your designated location and get picked up by City Cab or Dial-a-Ride
3. Pay with cash or Token Transit and ride!

For designated **Blue** and **Purple** route pickup/drop off locations, visit us at www.goo.gl/UsUdCv

RIDE THE BUS HTA HUMBOLDT TRANSIT AUTHORITY

CITY CAB

*Weekdays only, from 7:00 am to 7:00 pm

Introducing Old Arcata Road Transit Service
Pilot Program!

Call 707-442-4555
24 hours in advance to make your reservation
To learn more visit us at
www.goo.gl/UsUdCv