

# Humboldt County

# Transportation-Disadvantaged Populations Report

*Planning for access... for everyone.*

**Planning for  
Active  
Transportation and  
Health**

an effort of the  
Healthy Rural Roads Project

**May, 2006**

*Prepared by*  
**Natural Resources Services**  
A Division of Redwood Community Action Agency  
Eureka, California - [www.nrsrcaa.org/path](http://www.nrsrcaa.org/path)

*With assistance from*  
**Nelson/Nygaard Consulting Associates**  
**Transportation & Land Use Coalition**  
**Alta Planning + Design**  
**Victoria Transport Policy Institute**  
**Planwest Partners**

**The County of Humboldt Public Works Department**

**The Caltrans Environmental Justice Program**

*Prepared for*

*With funding from*



## TABLE OF CONTENTS

---

<b>Executive Summary</b>	<b>1</b>
<b>Introduction to the Report</b>	<b>2</b>
About The Report	2
What Does It Mean to Be Transportation Disadvantaged	3
Why Consider Transportation Disadvantage?	3
Transportation Equity Is the Law	4
Benefits of Planning for Transportation Equity	5
Transportation Equity and Community Values	5
Analysis of Transportation Disadvantage by Rural Governments	6
<b>1. Profile of Transportation Disadvantaged Populations</b>	<b>6</b>
1.1 Carless Households	7
1.2 Low Income	8
1.3 Mobility-Impaired	9
1.4 Ethnic Minority & Limited English Proficiency	11
1.5 Youth	16
1.6 Seniors	17
1.7 Geographic Isolation	20
1.8 Multivariate Transportation Disadvantage	22
<b>2. Major Transportation Challenges in Humboldt County</b>	<b>23</b>
2.1 Access to Key Destinations	24
2.2 Access to Convenient Transit	27
2.3 Pedestrian & Bicycle Safety	31
2.4 Tribal Transportation Challenges	35
2.5 Public Participation Issues	35
<b>3. Need for Future Research</b>	<b>36</b>
3.1 Data Gaps	36
3.2 Additional Access Issues	36
3.3 Regional GIS Analysis	37
<b>4. Resources for More Information</b>	<b>37</b>
<b>Appendices</b>	
A. GIS Methods	A1
B. Public Participation Methods	B1
C. Interview & Outreach List	C1

## LIST OF FIGURES\*

---

- Figure 1a. Census Block Groups and Estimated Residential Locations in Humboldt County
- Figure 1b. Census Block Groups and Estimated Residential Locations in the Humboldt Bay Region
- Figure 2a. Carless Households in Humboldt County
- Figure 2b. Carless Households in the Humboldt Bay Region
- Figure 3a. Low-Income Households in Humboldt County
- Figure 3b. Low-Income Households in Humboldt Bay Region
- Figure 4a. Mobility-Impaired Populations in Humboldt County
- Figure 4b. Mobility-Impaired Populations in the Humboldt Bay Region
- Figure 5a. Minority Populations in Humboldt County
- Figure 5b. Minority Populations in the Humboldt Bay Region
- Figure 6a. Native American & Latino Populations in Humboldt County
- Figure 6b. Native American & Latino Populations in the Humboldt Bay Region
- Figure 7a. Youth Population in Humboldt County
- Figure 7b. Youth Population in the Humboldt Bay Region
- Figure 8a. Senior Population in Humboldt County
- Figure 8b. Senior Population in the Humboldt Bay Region
- Figure 9a. Multivariate Transportation Disadvantage: Humboldt County Characteristics (Carless, Mobility-Impaired and Low-Income Populations)
- Figure 9b. Multivariate Transportation Disadvantage: Humboldt Bay Region Characteristics
- Figure 10a. Multivariate Transportation Disadvantage: Humboldt County Demographics (Youth, Elder and Minority Populations)
- Figure 10b. Multivariate Transportation Disadvantage: Humboldt Bay Region Demographics
- Figure 11a. Areas of Multivariate Transportation Disadvantage in Humboldt County
- Figure 11b. Areas of Multivariate Transportation Disadvantage in the Humboldt Bay Region
- Figure 12. Transit Routes & Estimated Residential Locations in Humboldt County
- Figure 13. Transit Routes & Areas of Multivariate Transportation Disadvantage in Humboldt County
- Figure 14. Public Transit Routes, Stops and Access to Health Care & Large Employers in the Humboldt Bay Region
- Figure 15. Locations of Bicycle- & Pedestrian-Vehicle Collisions in Eureka, CA (1999 -June 2004)
- Figure 16. Locations of Pedestrian-Vehicle Collisions with Age and Race of Victim in Eureka, CA (1999- June 2004)
- Figure 17. Locations of Bicycle-Vehicle Collisions with Age and Race of Victim in Eureka, CA (1999- June 2004)
- Figure: 18. Locations of Bicycle- and Pedestrian-Vehicle Collisions and Low Income Households in Eureka, CA (1999 - June 2004)

\*Figures are not included in this document, but are provided as a 'virtual' attachment due to their size and number. They are 11x17 inches in size and available for viewing and download on the project website at [www.nrsrcaa.org/path/TDPReport](http://www.nrsrcaa.org/path/TDPReport).

## LIST OF TABLES & GRAPHS

---

- Table 1: Humboldt County population based on race or ethnicity.  
 Table 2: Population projections for Humboldt County ethnic minorities from 2000 to 2030.  
 Table 3: Age of Transit Passengers by Population Group  
 Table 4: Humboldt County Low Income Seniors Age 60 or Older  
 Table 5: Humboldt County Seniors Age Sixty or Older Population Projections  
 Table 6: Geographically Isolated Planning Areas  
 Table 7: Humboldt County Causes of Death 2001-2003  
 Table 8: Purpose of transit trips by population group.  
 Table 9: Unmet Transit Needs Summary by Year and Issue  
 Table 10. Humboldt County 2003 bicycle and pedestrian collisions by City, County and road classification.
- Graph 1: Bicyclist injuries and fatalities from injury motor vehicle collisions in eight non-metropolitan California Counties, 1992-2001.  
 Graph 2: Bicyclist injuries and fatalities from motor vehicle collisions by age group in eight non-metropolitan California counties, 1992-2001.  
 Graph 3: Pedestrian injuries and fatalities from motor vehicle collisions in eight non-metropolitan California counties, 1992-2001.  
 Graph 4: Pedestrian injuries and fatalities from motor vehicle collisions by age group in eight non-metropolitan California counties, 1992-2001.

## LIST OF ACRONYMS

---

- A1AA - Area 1 Agency on Aging  
 A&MRTS - Arcata and Mad River Transit System  
 ADA - Americans with Disabilities Act  
 A&MRTS - Arcata & Mad River Transit System  
 CAC - Citizens Advisory Committee of HCAOG  
 Caltrans - California Department of Transportation  
 CR - College of the Redwoods  
 CTSA - Coordinated Transportation Service Authority  
 DAR/DAL -Dial-a-Ride/Dial-a-Lift  
 ESL - English as a Second Language  
 ETS - Eureka Transit Service  
 GIS - Geographic Information Systems  
 HCAOG - Humboldt County Association of Governments  
 HCAR - Humboldt Community Access and Resource Center  
 HCTTC - Humboldt County Tribal Transportation Commission  
 HSU - Humboldt State University  
 HTA - Humboldt Transit Authority  
 HumPAL - Humboldt Partnership for Active Living  
 K/T Net - Klamath/Trinity Non-Emergency Transportation  
 NCIDC - Northern California Indian Development Council  
 TAC - Technical Advisory Committee of HCAOG  
 RCAA - Redwood Community Action Agency  
 RTP - Regional Transportation Plan  
 RTS - Redwood Transit System  
 SR - State Route or highway  
 SSTAC - Social Service Transportation Advisory Committee of HCAOG  
 SWITRS - Statewide Integrated Traffic Records System  
 WIB - Workforce Investment Board

## EXECUTIVE SUMMARY

---

As community transportation and access needs evolve, planners and decisionmakers require new tools to address those needs. This report is an effort to provide new tools that enable decisionmakers to plan for more functional and equitable access to goods, services and employment, particularly for the approximately 30 percent of the population who does not drive. When those individuals with the greatest mobility challenges are planned for and accommodated, the entire community is better served.

Current transportation and land use patterns tend to be automobile-oriented. The location of common destinations (worksites, public services and facilities), configuration of transportation funding, and common planning and design practices are designed to favor automobile transportation, often to the disadvantage of non-automobile travel.

Transportation planners and decisionmakers cannot address these issues alone: they need the expertise of health, social service, land use planners, economic development professionals and community members to better address and integrate the changing patterns of community life with the spectrum of vital transportation needs.

Humboldt County residents who experience challenges achieving basic access to services, goods, employment and/or education (that can be analyzed with data and/or are relevant to the local rural context), are most often:

- ‘Carless’ or have limited access to automobiles;
- Low-Income (less than \$35,000 household income);
- Mobility-impaired (physical, mental or self-care disability);
- Youth aged 15 and under (non-drivers);
- Seniors aged 62 and over (those identified by the state to have ‘senior’ status);
- Ethnic minority and/or low-English proficient; and/or
- Geographically isolated.

In an experimental effort to identify geographic of these populations, each was mapped by Census block group (except geographically isolated areas). Those maps, when ‘overlaid’, indicate potentially high concentrations of transportation-disadvantaged populations:

- Yurok and western Hoopa Reservations
- Orleans and surrounding Karuk lands;
- Willow Creek area;
- Orick and surrounding area;
- North and south Arcata;
- Many parts of Eureka;
- Lower Humboldt Hill and Elk River Valley;
- Table Bluff;
- Loleta;
- North and south Fortuna; and,
- Downtown and eastern Rio Dell.

Analysis of mapping and research regarding access to health care, employment, and transit routes indicates generally good transit access to those services within the Humboldt Bay region but also highlights opportunities to expand services to areas with higher concentrations of disadvantaged populations. In rural areas where transit services are more costly and challenging to provide, analysis indicates very limited service.

Numerous organizations and agency representatives that provide health, employment, social and issue-focused services to transportation-disadvantaged populations are struggling with access needs that negatively affect their ability to provide services. When the issue of improved access to services and employment is discussed with a broad cross-section of organization and agency representatives, the consistent theme is a need for increased:

- Coordination between service programs that make efforts at providing transportation assistance;
- Support for rural transportation programs; and,
- Marketing and information about transit services.

Pedestrian and bicycle injury and fatality rates are very high for Humboldt County compared to other non-metropolitan counties in California, particularly on US 101 in the City of Eureka.

Overall, there is much interest in addressing the needs of transportation-disadvantaged populations in Humboldt County with creative solutions and cross-disciplinary effort.

## INTRODUCTION TO THE REPORT

---

### About the Report

This report is an initial effort to identify who, where and generally how numerous populations in Humboldt County have their lives restricted by the current level of transportation services and options. These ‘transportation-disadvantaged’ populations suffer transportation challenges that have significant impacts on individual and family access to daily needs and services.

This report is based on the premise that it is good process to better understand and include consideration of the estimated one-third of the population who do not drive in relevant planning processes. In addition, considering these populations is the law per the Civil Rights Act and Executive Order on Environmental Justice. Tools and information to meet these requirements, however, have been somewhat lacking to date, especially for governments with limited means.

Metropolitan and urban examples of quantitative efforts to identify, map and even mathematically model transportation regions provide inspiration and elements of process to replicate for rural regions, but are generally not duplicable by small governments due to the resources required. This report is intended to help rural governments, such as those in Humboldt County, to use a new way of assembling information to begin to more strategically address the needs of transportation-disadvantaged populations in transportation and community planning efforts.

This report does not address solutions to problems and/or challenges identified herein. An upcoming document, *Opportunities to Improve Transportation Equity in Humboldt County*, will present a suite of potential solutions to a number of Humboldt County’s transportation challenges. Both reports are available with other PATH documents at [www.nrsrcaa.org/path/Documents](http://www.nrsrcaa.org/path/Documents).

-----

*The “transit-dependent” (low-income, minorities, elders, etc) must often rely on public transportation not only to travel to work, but also to get to school, obtain medical care, attend religious services and shop for basic necessities such as groceries. The transit dependent commonly have low incomes and thus, in addition to facing more difficulties getting around, they face economic inequities as a result of transportation policies oriented toward travel by car.*

- Moving to Equity: Addressing Inequitable Effects of Transportation Policies on Minorities, 2003

-----

## What Does It Mean To Be Transportation-Disadvantaged?

The online Transportation Demand Management Encyclopedia ([www.vtpi.org/tdm/tdm13.htm](http://www.vtpi.org/tdm/tdm13.htm)) defines transportation disadvantage by identifying populations with limited access to automobile travel. Most experts note that approximately 30% of all-age populations do not drive for various reasons (Frumkin, 2005). To identify transportation-disadvantaged populations that can be analyzed with census and other data and/or that are relevant to a rural Humboldt County context, the project team defines these populations as people who are:

- ‘Carless’ or have limited access to automobiles;
- Low-Income (less than \$35,000 household income);
- Mobility-impaired (physical, mental or self-care disability);
- Youth aged 15 and under (non-drivers);
- Seniors aged 62 and over (those identified by the state to have ‘senior’ status);
- Ethnic minority and/or low-English proficient; and/or
- Geographically isolated.

*Though nearly everyone in the U.S. walks or travels by human power of some sort and approximately one third of the population does not drive, 0.7 percent of federal transportation funds were spent specifically on pedestrians between 1998 and 2001.*  
- Surface Transportation Policy Project, 2002

It is common for an individual to experience more than one type of transportation disadvantage, a situation that compounds socioeconomic challenges (Litman, 2004). Disadvantaged status is multi-dimensional. Disadvantaged status evaluation should take into account the degree and number of these factors that apply to an individual. The greater their degree and the more factors that apply, the more disadvantaged an individual or group can be considered. For example, a person who has a low-income but is physically able, has no caregiving responsibilities, and lives in an accessible community is not significantly transportation-disadvantaged, but if that person develops a disability, must care for a young child, or moves to an automobile-dependent location, their degree of disadvantage increases.

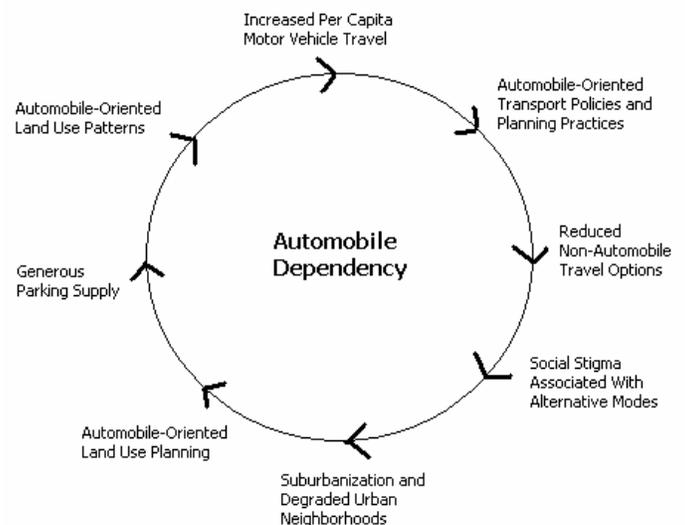
## Why Consider Transportation-Disadvantage?

The current transportation system provides a high level of service to a majority of users under most conditions, particularly for approximately 70% of the population who drives. Investment in modes that serve the other 30% - those who are not able-bodied, the young, and those who cannot afford to own or maintain a vehicle - does not match the size of the population in need.

Current planning practices tend to bias decisions toward automobile dependency, away from a more balanced, multi-modal transport system. Land use and transportation planning efforts simultaneously influence each other, and the pattern, illustrated below, has been one of reduced planning for and investments in non-automobile transportation means that are critical to the significant proportion of the population who does not drive.

### The Cycle of Status Quo Planning

Figure source: Victoria Transport Policy Institute



Because access challenges are experienced more seriously by physically, economically or socially disadvantaged people, deficits in transportation system function are important to address and improve transportation equity.

Transportation projects are some of the most significant investments made in rural communities. Transportation investments also have a very long “shelf life,” often lasting many decades. For these reasons, transportation planning efforts, mobility programs, and capital projects can have serious consequences that can positively or negatively affect people’s lives for decades.

Planners should be concerned with addressing ‘transportation equity’ by providing an equitable distribution of transportation investments and equal access to social needs and economic opportunities. By accommodating those with involuntary non-automobile transport needs (see Section 2.2), all community members are also better served.

Everyone, at some point in their lives, will experience mobility limitations, whether it is due to an injury or an injured family member, aging eyes or a dysfunctional vehicle. Designing transportation systems for people with transportation disadvantages ensures access for the whole community, whose members will benefit from:

- Independent mobility;
- Better access to food, education, health care and other basic services;
- Increased opportunity for active transportation; and
- Improved economic opportunity.

## Transportation Equity Is the Law

Law and administrative guidance requires that federally-funded projects and programs ensure funds are not used in ways that result in discriminatory actions:

- Title VI of the 1964 Civil Rights Act – prohibits discrimination “on the basis of race, color or national origin in any program of activity receiving federal financial assistance.”
- Environmental Justice Executive Order 12898 – “identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations.”
- National Environmental Policy Act (NEPA) – consideration of impacts before taking major actions with potential to cause significant social, economic and environmental impacts.
- Americans With Disabilities Act (ADA) - gives civil rights protections to persons with disabilities similar to protections provided by the Civil Rights Act.
- And, Caltrans’ Title VI Program is in place “to eliminate barriers that prevent under-represented groups from receiving access and benefits from the transportation planning and project development processes and transportation as a whole” (Caltrans, 2002).

-----

*Since early 2001, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) - and by extension those agencies receiving federal transportation funding - have placed renewed emphasis on environmental justice. Put simply, environmental justice is a concept born of the 1694 Civil Rights Act that demands no single population consistently bears the burden of government activity. However, the steps necessary to ensure that seemingly simple outcomes are considerably more complicated, and involve a significant adjustment in the way transportation planning has traditionally been approached.*

- Kern Council of Governments’  
Environmental Justice Report, 2003

-----

In addition to non-discrimination on the basis of race, color, national origin, disability and age, Caltrans also incorporates principles of environmental justice into its guidelines, ensuring that programs, policies and activities do not have any disproportionate, adverse effects to low-income and minority populations (Caltrans, 2002).

These requirements all address the basic principles transportation equity – fundamentally Title VI and environmental justice regulations. They attest to the general changing atmosphere of transportation planning and the evolving considerations of equity of investments, public involvement and a proactive approach to community planning.

*In the development of transportation projects, social, economic and environmental effects must be considered fully along with technical issues, so that final decisions are made in the best overall public interest.*

- Main Streets: Flexibility in Design and Operations, 2005

## Benefits of Planning for Transportation Equity

Promoting transportation equity is required by law and also serves the whole community. When local governments make the decision to invest in a transportation system that accommodates those with non-automobile mobility needs, transportation choices for the entire community are enhanced as well. These community-wide benefits include:

- **Public health.** Investing in transportation projects that promote transportation choice and equity can improve public health in many ways by providing:
  - Increased opportunity for “active transportation” (walking and biking).
  - Improved access to health care services.
  - Better access to fresh foods.
- **Public safety.** Investing in transportation choice and equity can promote improved public safety in two ways:
  - By designing transportation facilities to accommodate non-automobile trips while also reducing modal conflicts, traffic injuries and fatalities can be reduced
  - Research has shown that improving opportunities for non-automobile transportation promotes social interactions among neighbors and increased neighborhood cohesion.
- **Economic development.** Investing in transportation projects that promote transportation choice and equity provides transportation-disadvantaged populations with better access to educational and employment opportunities. This helps support a more educated and well-trained workforce, and helps recruit and retain both employers and employees.
- **Resource efficiency.** Government officials can more effectively meet non-discrimination requirements through an inclusive planning process. Promoting transportation investments that serve all user groups also improve cost-effectiveness so that public monies are not spent in ways that do not adequately meet actual community needs.

## Transportation Equity & Community Values

Without safe, affordable, convenient transportation choices, transportation-disadvantaged populations have limited ability to meet their basic life needs, such as access to food, affordable housing, and medical care. In addition, those that lack mobility choices have restricted access to educational, employment, social and cultural opportunities.

Lack of transportation choices can seriously impair people’s ability to 1) realize their highest potential as individuals and 2) fully participate in civic and community life. Consideration of transportation equity can align transportation investments with fundamental democratic values.

## Analysis of Transportation Disadvantage by Rural Governments

Rural region governments typically lack resources for the staffing and programming needed to employ costly or exhaustive efforts to address transportation equity during the planning process. Though resources may be limited, it is essential that planners have better information about populations with substantial non-automobile transportation needs. *The PATH Guide* provides suggestions for affordable measures to address transportation equity, including mapping and public participation techniques.

In particular, it is recommended that transportation planners have a system for regular dialogue with transportation-disadvantaged population representatives and professionals as part of the standard public scoping processes. These stakeholders should be individuals who consider, serve or represent transportation-disadvantaged groups in their work. Information from these groups can be combined with improved community outreach efforts. Needs and concerns common to numerous groups or sectors within a community can then be identified as potential priority goals or policies.

## 1. PROFILE OF TRANSPORTATION-DISADVANTAGED POPULATIONS

---

The project team performed a literature search, found previously reported materials, conducted interviews and attended meetings to find more about the needs of Humboldt County residents who are transportation disadvantaged. There is much more documentation of transportation challenges of seniors and mobility-impaired populations than other disadvantaged populations.

In an effort to model a process of information-gathering that could be replicated by rural governments and transportation planners, the information included in this report is limited to existing documents, individual interviews and meeting notes – no original research was conducted, nor were raw data sources processed. Public participation methods are summarized in [Appendix B](#). Individuals interview references are not cited in text; a list of interviewees and stakeholder groups contacted is included in [Appendix C](#).

### About the GIS & Maps

The Geographic Information Systems (GIS) data compiled and maps developed for this report are collectively an experimental tool to begin to help planners and decisionmakers better understand where transportation-disadvantaged populations are located and concentrated in Humboldt County. Each reviewer may focus on something different when viewing the map figures associated with this report. For some, they may provide a more definitive foundation for information that was already known or supposed. In many cases, they may illuminate an issue not highlighted previously. All map figures are available for viewing and download on the project website at [www.nrsrcaa.org/path](http://www.nrsrcaa.org/path). GIS analysis and map production methods are described in [Appendix A](#).

Mapping rural populations using available Census data presents a few challenges. Rural Census blocks are often very large, and it can be difficult for planners to use this data to plan for a small, dispersed population. In Humboldt County, there are both relatively small blocks in the urban area around Humboldt Bay and large blocks in the outlying areas.

[Figures 1a and 1b](#) illustrate an effort to improve this planning challenge by mapping ‘Estimated Residential Locations’ that include both single and multi-family residential parcels with Census block group boundaries for reference. This data layer is included in all of the following maps of Census data and some transit service maps to visually provide the context of where transportation-disadvantaged populations may actually be living within (particularly large) Census block groups. [Figures 1a and 1b](#) also show the actual Census block group number and a table which shows the specific population and/or household counts per block group.

The maps indicating various levels of transportation disadvantage by Census block are based upon Census 2000 figures gathered as either 100 percent data (data collected for every individual) or sampling data (data collected for every sixth household). Data for senior, youth and minority populations are 100 percent data. Carless households, low-income households and mobility-impaired populations are based on sampling data. The tables in Figures 1a and 1b are based on 100 percent data – these numbers vary slightly for sampling data. Actual sampling of individual and household figures can be viewed in [Table A2, Appendix A](#).

For clarity, the discussion in the following sections identifies notable block groups for each indicator of potential transportation disadvantage by both general name and number.

## 1.1 Carless Households

Census 2000 data indicates Humboldt County has 4,479 households with no vehicle – approximately 8.7 percent of all county households. Overall, in California, 9.5 percent of households are carless. Data also indicates that in 2004, there were 96,065 residents licensed to drive in Humboldt County (Department of Motor Vehicles, 2005). When comparing the number of licensed drivers to the County’s total population, approximately 24 percent of residents do not or cannot drive (96,065 licensed drivers of 126,518 total population).

While this data indicates a very high number of licensed drivers within the County – approximately 95 percent of the eligible driving population in the County over 15 years of age – it is likely that a significant number of licensed-drivers are non-drivers or infrequent drivers that do not own a vehicle.

### Transportation Challenges of Carless Households

While those located in urban centers have more options for transport and are at less of an obvious disadvantage, compounding factors such as disability or caregiver responsibilities can make existing resources more difficult to use. There are no advocacy organizations or reports specifically dedicated to ‘carless households’, however a number of organizations serve community members who either lack automobiles or who are transportation disadvantaged.

*While non-drivers make 15 percent fewer trips to the doctor than drivers, they make 65 percent fewer trips for social, family and religious purposes. This means in effect that while drivers go out for these social purposes about 8 times per week, on average, non-drivers only go out about 3 times a week.*

- Aging Americans: Stranded Without Options, 2004

- The 2005 Northern California Indian Development Council *Community Action Plan* identified transportation as one of the most significant low-income community challenges, specifically medical access.
- Organizations that support Latino families have noted consistent trends with vehicle ownership: families having a vehicle oftentimes lack a licensed driver and/or insurance and when the vehicle goes with one parent, the rest of the family has limited access to health care and school – discussed in more detail in section 3.3 ‘Ethnic Minority and Limited-English Proficiency’.
- Low-income populations in north, east and south Humboldt County experience significant challenges accessing health, social and legal services concentrated in the Humboldt Bay region – discussed in more detail. In section 3.6 ‘Geographically Isolated’.
- Social service providers and school representatives who serve homeless and low-income families face daily challenges helping families access social and medical services.
- Limited hours, infrequent scheduling, multiple transfers, limited geographic scope and long work-days often make public transit a means of limited usefulness to many people.

- Seniors and Youth are often without vehicles and face daily challenges of getting to medical appointments, school, recreational facilities and other important locations and services.

## Where Are the Carless Households in Humboldt County?

Figures 2a and 2b illustrate relatively high concentrations of households (12-38 percent of block group households) without access to an automobile in both geographically-isolated areas and urban centers, including:

- Northern Eureka, in particular, illustrates a very high (18-38 percent) rate of carless households (Blocks 1, 2, 3, 4, 9, 19, 20);
- Neighborhoods of west, south and east Eureka (Blocks 7, 13, 32);
- South, downtown and Valley West areas of Arcata (Blocks 38, 39, 41, 42, 44, 45 50);
- Rio Dell; (Blocks 94, 95)
- Very isolated Yurok Tribal lands along Highway 169 have a very high percentage (18 -38 percent) of carless households (Block 54);
- Western Hoopa Reservation (Block 51); and
- A number of rural areas such as Orick, Carlotta, Bridgeville, Avenue of the Giants, Redway and Garberville have 8 -11 percent of carless households per block group.

### The Transportation Challenge: Being a Carless Household

"There are many places in the County that tourists go to and enjoy, but because no transit went near them and they are way too far to bike or walk, I could not get there easily."

"I just started enjoying the parks in the past few years after living here since 1978!"

"The transit needs to be expanded - it is a critical service - without it I would not have been able to go to school and complete my degree."

- Third Generation Carless Resident, Eureka

## 1.2 Low-Income

Humboldt County has a high percentage of low income population relative to the state— 19.5% of families in Humboldt County are impoverished versus 14.2% of the state overall. For the purposes of this effort, \$35,000 is used as the threshold for low-income households that may experience transportation disadvantage based on income.

### Transportation Challenges of Low-Income Households

Approximately \$6,000 to \$9,000 is required per year to own, operate and maintain a vehicle, assuming 12,500 miles driven (American Automobile Association, 2003). Even for families which share a car among several drivers, the high cost of owning a car and the often long distances traveled in rural regions, often means families must spend a disproportionate amount of their household income on transportation.

People with limited financial means must often rely on other non-automobile modes because there is no vehicle in the household or the availability of a shared vehicle (either belonging to a neighbor, friend, or family member outside the household) is limited.

### Who & Where Are Low-Income Households

As illustrated in Figures 3a and 3b, while low-income populations are dispersed throughout the County, there are notable geographic concentrations that, in many cases, correlate with carless household locations. Block groups that have specifically between 59 – 91 percent low-income households include:

- Northern and western Eureka (Blocks 1-4, 7-13, 19-22, 26);

- King Salmon, Fields Landing and part of Humboldt Hill (Blocks 77, 79, 80);
- South and ‘Valley West’ Arcata (Blocks 38, 39, 41, 42, 44-46, 50);
- Table Bluff (Block 81);
- North and South Fortuna (Blocks 86, 92);
- Rio Dell (Blocks 94,95);
- Bridgeville and east of Bridgeville along SR 36 (Block 90);
- SR 169 and the Yurok Reservation (Blocks 53-55);
- The Hoopa Reservation (Blocks 51, 52)
- Northern Humboldt County (Blocks 53, 55, 57)

The geographically-isolated areas in the northern and southern areas of the County have percentages of low-income households at 49 percent or higher (except Willow Creek, Trinidad, Scotia, Carlotta and south of Garberville).

### 1.3 Mobility-Impaired

Mobility-impaired individuals must often expend much energy, time and money to obtain basic access to services and food. It is a national and state goal to increasingly improve the independence of mobility-impaired individuals, and increased transportation options are generally the key to this effort.

The Americans with Disabilities Act (ADA) and several other important pieces of legislation regarding design standards, barriers, accessibility guidelines, education and employment help to ensure that the needs of those with physical limitations are considered and addressed. Still, many of these efforts do not address the legacy of infrastructure and systems that do not accommodate people with impaired mobility, nor the fact that most rural governments cannot afford to eliminate legacy barriers. In Humboldt County, it is not uncommon to see a wheelchair user in the street with traffic because there are sidewalk gaps, inadequate width and/or a lack of curb cuts at intersections.

It is important to recognize that anyone can become temporarily impaired and benefit from access to non-automobile forms of transportation. Many able-bodied travelers will become sight-impaired or experience body changes that shift them toward dependency on others for access to basic services.

#### Transportation Challenges of Being Mobility-Impaired

Service providers who work with these populations note a very strong mandate to help these residents maintain independence, which is directly related to transportation and access to services. In addition, it is important for these populations, as for all people, to be able to maintain social networks and to attend social events and recreational opportunities. A Humboldt Council of the Blind representative notes that the most often requested assistance from their constituency is to pursue increased evening and weekend transit service in the Humboldt Bay region.

#### The Transportation Challenge: Being Mobility-Impaired

“I’ve heard wheelchair-bound clients discussing the dilemma of limited space on buses for wheelchairs -- a number of these folks coordinate with each other when they will be riding buses so that they avoid waiting for a bus with enough space for them.”

-Service provider, Mobile Medical

“Getting into Eureka for a medical appointment from Rio Dell is an all day affair. The rainy season adds additional difficulties as wheelchairs and other related equipment can short out in the rain.”

- Disabled Resident, Rio Dell

Workforce development programs are making efforts to improve the ability of mobility-impaired populations to work from home (which will partly reduce their demand for transportation services) and also place high priority on increasing the ability of these residents to get to work, in general.

Legacy infrastructure issues and other street safety challenges can be a significant barrier to those with mobility impairment. The Lighthouse for the Blind, an organization that provides assistance and training for those with sight impairment – notes that many sight-impaired people do not venture out of the house for fear of their safety and other challenges associated with independent travel, meaning services must come to them.

Staff with Tri-County Independent Living note that the federal and state governments have placed priorities upon ensuring mobility-impaired individuals can function independently. Independence is a challenge, however, since living at home and accessing needed services is based on convenient transit service.

Organizations that provide services to the mobility-impaired population of Humboldt County are interested in considering the potential for increased levels of specialized transportation services via coordination of resources and efforts. Most of these organizations have staff, budget, and/or vehicle/s for this purpose, but do not have enough of any of these distinct elements to provide adequate transportation for their constituencies, nor do they feel they can do so efficiently or effectively.

## Who & Where Are the Mobility-Impaired?

The census identifies a sampling of households (one in six) with several categories of individuals who experience impaired mobility, including sensory, physical, mental and self-care disabilities. According to 2000 Census definitions, individuals are classified as having a disability if any of the following three conditions was true:

- They are five years old and over and reported a long-lasting sensory, physical, mental or self-care disability;
- They are 16 years old and over and reported difficulty going outside the home because of a physical, mental, or emotional condition lasting six months or more; or
- They are 16 to 64 years old and reported difficulty working at a job or business because of a physical, mental, or emotional condition lasting six months or more.

There are 25,116 disabled persons over 5 years of age in Humboldt County, or 21.2 percent of the population over five years old. This is slightly higher than the state and national statistics for disabled persons— 19.2 and 19.3 percent, respectively.

According to Lighthouse for the Blind, 19 percent of Humboldt County residents report significant impairment of vision. Numbers of sight-impaired people are expected to double by 2030 for many reasons, including, aging ‘baby boomers’, longer lifespans, increasing rates of diabetes and increasing rates of surviving premature babies many of whom have sight impairment.

It is difficult to accurately determine how many people at any one time have a condition that prevents them from driving. However, the number of Humboldt County residents who are 16 or older who have disability placards is reported to be 7090 permanent and 302 temporary placards (Department of Motor Vehicles, 2005), or almost one-third of disabled persons in the County.

Figures 4a and 4b illustrate five levels of concentration of mobility impairment in Humboldt County, derived from Census data with a sampling of one in six households. The following block groups are reported by the Census to have relatively high concentrations (23-41 percent) of mobility impaired populations:

- North Eureka (Blocks 1-4, 9, 19-24, 26 27);
- South Eureka (Blocks 11, 13, 18)
- Southeast of Eureka in the communities of King Salmon and Fields Landing (Block 79);
- The ‘Valley West’ area of north Arcata (Block 50);
- Central McKinleyville (Blocks 67, 68);
- Fortuna (Blocks 86, 91);
- Rio Dell (Block 94);
- Avenue of the Giants, Redway and the area in between Redway and Miranda (Blocks 102, 104);
- SR 169, the Yurok Reservation (Blocks 53, 54);
- Orick (Block 57); and
- Willow Creek (Blocks 53, 56).

## 1.4 Ethnic Minority & Limited English Proficiency

Two key issues spurred the project team to include ‘ethnic minorities’ as transportation-disadvantaged populations are:

- Development of a planning process that is non-discriminatory, based on Title VI and Environmental Justice guidance; and
- A strong correlation between ethnic minorities and other factors of transportation disadvantage addressed herein.

The established link between ethnicity and pedestrian deaths is due to the fact that minority populations are less likely to own a vehicle and more likely to walk, bicycle and/or use public transportation, resulting in greater exposure to the dangers of the street (Surface Transportation Policy Project, 2002). From 1980 to 1996 in the U.S., the pedestrian death rate was 2.2 per 100,000 for Caucasians, 3.9 for Blacks and 5.1 for Latinos – among children and the elderly, racial and ethnic disparities were even more pronounced (Frumkin, et al., 2004). Caltrans survey data indicate that, in California, Latino children make more than twice as many of their trips on foot compared to Caucasian children (Surface Transportation Policy Project, 2003).

In general, only 1 percent of whites and 1 percent of African Americans speak English “not well or not at all,” compared with 24 percent of Latinos and 17 percent of Asian Americans. Latinos and Asian Americans are the fastest growing minority populations in the United States, suggesting that language barriers will increasingly be an issue in the future (Sanchez, Stolz and Ma, 2003).

Executive Order 13166 “Improving Access to Services for Persons with Limited English Proficiency,” issued in August 2000, specifically clarified to recipients of federal funds that “failing to provide meaningful access to individuals who are limited English proficient” may constitute national origin discrimination under Title VI (ibid).

*Inequitable transportation policy decisions are often made because minority and low-income individuals and communities are unable to learn about transit options or have little voice in transportation planning because of language barriers or lack of information. Also, like other obstacles to transportation accessibility, language barriers diminish social and economic opportunities by limiting a person’s ability to travel (such as by preventing a person from obtaining a drivers’ license) [...] which is exacerbated by their inability to communicate to policymakers and planners about transportation needs.*

- Moving to Equity: Addressing Inequitable Effects of Transportation Policies on Minorities, 2003

## Transportation Challenges of Having Limited English Proficiency

Representatives of community programs that serve people who do not speak or understand English well note that it is very important, but challenging, for their clients to access and understand transit schedule information that is only printed in English. Access to ‘English as a Second Language’ classes using public transit or even for those receiving specialized transportation services is also a challenge, especially for 1) parents who care for children and 2) those who work and need to access evening or weekend classes.

It was also noted that many Latino families tend to work very hard, often long hours that are not necessarily conducive to travel by transit. One of the largest employers of Spanish-speaking residents in the County notes that these employees are good at carpooling and coordinating transportation efforts between the Eel River valley and north Arcata. Still, they would be interested in considering a specialized employee transportation program.

In addition, bicycle and pedestrian safety materials are primarily distributed in English. This may partly contribute to the correlation between ethnicity and pedestrian/bicycle related accidents, though this correlation has not been studied locally.

## Transportation Challenges for Ethnic Minorities

### Tribal Challenges

Some of the institutional transportation challenges facing Tribes are addressed in Section 2.3, below. Transportation disadvantages facing Tribes are typically compounded: isolation, poverty, unemployment and health issues exacerbate transportation needs. Remote living generally translates to fewer, less functional transportation and infrastructure services, which can drive Tribal members away from families and ancestral lands.

The Northern California Indian Development Council’s 2005 *Community Needs Assessment* notes that most Tribes in their service area are located in isolated areas. NCIDC suggests a list of characteristics common to such areas that includes ‘isolation and mobility disadvantages’ – characteristics that pose special challenges in efforts to address “childcare, transportation, health care and housing” needs. Survey data collected by NCIDC in their service area (Del Norte, Humboldt, Trinity and Siskiyou Counties) indicates that there is a marked inequity indicative of the gap in services, resources and opportunities for the Native American population, and is indicative of the underlying unemployment problem on a scale that is unique to Indian Country.

- Analysis of US census data indicates that the median family income is \$21,750 for Native American families in California (and \$35,798 for the average Californian). Per capita income for the average California Native American is \$4,478 (\$25,346 for the average Californian). NCIDC survey data indicates 54 percent of clients make less than \$12,830/year.
- The average poverty level of Native Americans in California is 33 percent. Within the NCIDC service area, the poverty level is in excess of 27 percent, based on the survey conducted, even when exempt government assistance is considered as income.
- Unemployment disparity is the single largest issue identified by NCIDC. Native Americans (including both urban and rural/reservation populations) have approximately a 50 percent rate of

### The Transportation Challenge for Native Americans

“Many tribal members move away from their communities due to transportation constraints and related concerns about health and safety. Tribes lose their diversity, strength of cultural fabric... because of transportation challenges”

- Humboldt County Tribal Transportation Commission Members

“Indians are treated like it is a ‘back of the bus’ planning system.”

- Staff, Northern California Indian Development Council

unemployment. In the NCIDC service area, that number is a 48 percent unemployment rate – added to a 22 percent under-employed (less than full time) rate, there is a total of 72 percent of the population either unemployed or underemployed.

- Physical health, mental health and substance abuse issues are a significant community challenge that generates transportation needs.

One of the few examples of Tribal-focused transportation planning efforts is the *Yurok Tribal Transportation Plan: Taking Back a Traditional Trail*, due to be completed in 2006. The draft Plan will address the extreme remoteness that makes it difficult for Tribal members to access modern services such as healthcare, education and economic opportunity. It also states that public transit is the biggest unmet need facing the average Yurok Tribal member in accessing those modern services.

## Latino Community Challenges

Participants of monthly LatinoNet meetings ([Attachment 1](#)) recently noted that transportation is a top priority and a significant challenge for many Latino families:

- Generally, priorities for a one-vehicle household tend to be: work first, school second, health later.
- Legally, undocumented residents cannot get a license or insurance, yet many of them have vehicles and the means to get a license and/or insurance.
- Infrequency of transit service, general locations and scheduling is often very difficult for those who do not have regular work schedules.
- There are many large employers in the County that are not part of the larger discussion of transportation needs.
- Many families have a difficult time getting to regular medical appointments, which can cause a host of problems (e.g. to attend school, kids must have immunizations, but if they can't get to the clinic, no school).

Organizations that provide services to Humboldt County's minority residents are interested in considering the potential for increased levels of specialized transportation services via coordination of resources and efforts. Most of these organizations serving these populations have staff, budget, and/or vehicle/s for this purpose, but do not have enough of any of these distinct elements to provide adequate transportation for their constituencies, nor do they feel they can do so efficiently or effectively.

## Who & Where Are Ethnic Minority Populations?

In Humboldt County, people of races and ethnicities other than 'white' make up 17.5 percent of the population. The greatest numbers of minority residents in Humboldt County are of Native and Latino descent totaling 12.2 percent of the population.

It is challenging to describe locations of Humboldt County's Native residents, who comprise 5.7 percent of the County's total population ([Table 1](#)). Trying to describe the culturally distinct Tribes in one category is, as Humboldt County Tribal Transportation Commission members put it, 'like trying to describe all Humboldt County Cities' in one category. Because many Tribes do not have Reservations or Rancherias, and/or those areas do not reflect an accurate location of Tribal membership, a project effort to map Tribal lands was discontinued.

People identifying themselves as 'Hispanic or Latino of any race' represent approximately 6.5 percent of the Humboldt County population and the numbers are steadily growing ([Table 1](#)). Latinos are generally concentrated in the Eel River Valley, Table Bluff area and in the urban centers around Humboldt Bay ([Figures 5a and 5b shows total minority population and 6a and 6b highlight Latino and Native Populations](#)).

Additionally, Humboldt County service providers consistently note that these populations are growing very rapidly. According to the Latino Community Provider Network website ([www.latinonet.net](http://www.latinonet.net)):

- The percent of births in Humboldt County among Latinos increased from 3.9% in 1989 to 12% in 2002.
- Humboldt County's Latino population grew at a rate of 65% since 1990, compared to a 42% increase across California.

**Table 1. Humboldt County population based on race or ethnicity.**

Ethnic or Racial Group	Population	Percent of Total County Population	Percent of Total State/National Population
Total County population	126,518	100	100
White	107,179	84.7	59.5/75.1
Hispanic or Latino of any race	8,210*	6.5*	32.4/12.5
American Indian and Alaska Native	7,241	5.7	1.0/0.9
Asian	2,091	1.7	10.9/3.6
Black or African American	1,111	0.9	6.7/12.3
Native Hawaiian and Other Pacific Islander alone	241	0.2	0.3/0.1
Some other race	3,099	2.5	N/A

Source: U.S. Census Bureau, 2000.

\*The total 'minority' population is equal to greater than 100 percent because the 'Hispanic or Latino of any race' subtotal is artificially constructed for the purposes of this study: the number includes individuals who are effectively counted two or possibly more times if they identify with more than one race.

People with limited English proficiency comprise 3% of the Humboldt County population, or approximately 3,800 persons. While these numbers are relatively low compared to the state at 20 percent and nationally at 8 percent, [Table 2](#) shows substantial projected increases in populations with potential non-English speakers.

There is a notable lack of specific information on the general needs (including transportation) of minority populations in Humboldt County. In a recent compilation of 33 reports documenting a diversity of health-related needs (including transportation) of County residents – not one had specific information about ethnic minorities (St. Joseph's Health System, 2005).

[Figures 5a and 5b](#) illustrate five levels of concentration of ethnic minority per block group in Humboldt County. The following block groups are reported by the Census to have medium to high (18-38 percent) and very high (39-90 percent) concentrations of minority residents:

- Northwestern Eureka (Blocks 1-4, 9, 10, 19);
- The 'Valley West' area of north Arcata and Central Arcata (Blocks 38, 39, 41, 42, 44, 45, 50);
- Central McKinleyville (Block 68);
- Fortuna (Blocks 84-86);
- Blue Lake Rancheria area – west of the City of Blue Lake (Blocks 62, 63)
- SR 169, the Yurok Reservation (Blocks 54, 55);
- Hoopa Reservation (Blocks 51, 52); and
- Table Bluff and Loleta (Block 81).

Undocumented workers are not accounted for in this data and are thought to be living in Humboldt County in significant numbers – potentially raising minority populations 2 percent or more.

Figures 6a and 6b illustrate two levels of concentrations of Native American and Latino persons per block group.

The highest concentrations (32- 84 percent) of Native persons per block group are located around SR 169 and the Yurok Reservation and just south in the Hoopa Reservation. The entire northern portion of the County has either medium or high (8 -31 or 32-84 percent) concentrations of Native American persons. Additional areas of medium concentration include:

- Northwestern Eureka (Blocks 1-4, 8, 9, 13, 19);
- The ‘Valley West’ area of north Arcata and Central Arcata (Block 50);
- Central McKinleyville (Block 68);
- Blue Lake Rancheria area – west of the City of Blue Lake (Block 62); and
- Table Bluff and Loleta (Block 81).

The highest concentrations (9-16 percent) of Latino persons per block group are located in:

- Central Arcata (Block 45);
- Northwestern Eureka (Blocks 1, 2, 4, 9, 19);
- Table Bluff and Loleta (Block 81).
- Fortuna (Blocks 84-86); and
- Rio Dell (Block 95).

The following areas show medium to high concentrations of both Latinos (5-8 and 9-16 percent) and Native Americans (8-31 percent).

- The Valley West Area of North Arcata (Block 50);
- Northwestern Eureka (Blocks 1,2,4,8,9,13 and 19); and
- Table Bluff and Loleta (Block 81).

## The Very Near Future

Projections by the California Department of Finance in 2005 show that over the next 15 years, Humboldt County’s ethnic minorities will increase rapidly in relation to overall population growth rates (Table 2). Specifically, the Latino population is projected to increase by 80 percent in less than 15 years to approximately 15,400 and the Native American population by over 50 percent to approximately 10,500.

**Table 2: Humboldt County Ethnic Minority Populations Projections 2000 -2030**

	2000	2010	2020	2030
Total Population	127,173	133,136	139,518	142,412
		<b>4.69%</b>	<b>9.70%</b>	<b>11.98%</b>
White Population	104,234	103,070	101,530	96,878
		-1.12%	-2.59%	-7.06%
Hispanic Population	8,515	11,808	15,348	19,018
		<b>38.68%</b>	<b>80.25%</b>	<b>123.35%</b>
Asian Population	2,107	2,361	3,075	3,571
		12.06%	45.94%	69.48%
Pacific Islander Population	250	290	310	327
		16%	24%	30.80%
Black Population	1,089	1,341	2,407	3,376
		23.14%	121.03%	210.01%
American Indian Population	6,931	9,033	10,543	12,007
		<b>30.33%</b>	<b>52.11%</b>	<b>73.24%</b>
Multirace Population	4,047	5,233	6,305	7,235
		29.31%	55.79%	78.77%

**Percent change relative to year 2000**

Source: California Department of Finance. Report E-3 California County Race/Ethnic Population Projections  
[http://www.dof.ca.gov/HTML/DEMOGRAP/Estimates/E-3/E-3\\_2000-04.asp](http://www.dof.ca.gov/HTML/DEMOGRAP/Estimates/E-3/E-3_2000-04.asp)

\*Base Population— As the benchmark (starting population), the Department of Finance has used the 2000 Census counts as modified by the Bureau of the Census to eliminate the “Other” race category. These counts represent a modification to the race distribution of the census count and not an adjustment for undercount to the total. These race groups are consistent with the population that is being used by the Census Bureau for current estimates as well as national projections.

## 1.5 Youth

One of the most significant non-driving populations in most communities are those individuals who are too young to be licensed to drive. Even being old enough to obtain a driver’s license does not guarantee access to a vehicle, especially for youth from low-income families. Together, youth and elders compose one third of the population in Humboldt County.]

*Per capita, children pedestrians make about ten times the rate of walking and cycling trips than that of adults.*  
 - Gilbert and O'Brien, 2005

Current transportation systems create unhealthy conditions for children in a variety of ways, including:

- Increased exposure to injury and death from traffic collisions;
- Poor air quality, including ground-level ozone which is particularly harmful to children who are closer to the ground than adults; and
- Reduced opportunities for physical activity and reduced access to healthy food (i.e. “food insecurity”), resulting in increased obesity rates.

Low-income children face an increased exposure to many of these risk factors since affordable housing is often located along high-speed, high-volume streets, in neighborhoods that lack parks, playgrounds and access to other safe places to play (Surface Transportation Policy Project, 2003).

Finally, researchers have found that increased opportunities for children to travel on foot, by bike, or on transit affects children’s confidence, social skills, and ability to understand and respond to the world around them (what sociologists call “performative competence”; see Engwicht, 1993 and Tolley, undated).

## Transportation Challenges for Youth

Very little is written about the general needs of youth in Humboldt County, much less about their transportation needs. It is a fact, however, that without vehicles, youth must rely on alternative forms of transportation. Without these alternative modes, or facilities to support these modes, the impact is much greater, particularly for those in rural regions.

Most parents experience the chauffer syndrome – the need to transport children from place to place. This is not typically an option for disadvantaged families experiencing mobility limitations. Consequently, important social and employment options for disadvantaged youth can be extremely limited. Continuing education students do not have school-based transportation systems available, and often must rely on public transit for school and work. Schedule limitations and cost of public transit are noted to discourage youth working to establish successful employment habits – often at jobs that are during hours of reduced or nonexistent transit service. In addition, the ten-year track record of bicycle and pedestrian safety is troublesome for Humboldt County youth (see [Section 2.2](#)).

...current research documents greater risk of overweight among low-income children and among food insecure children. California has higher percentages of food insecure children under 12, food insecure households, and adults and children living in poverty. California [also] has a higher prevalence of both childhood and adult obesity than the nation as a whole [which] is associated with many chronic illnesses in adults and children [including for children] increased risk of asthma, sleep apnea, joint problems, high blood pressure, Type II diabetes and hyperlipidemia...

- University of California Body Weight and Health Working Group

## Who & Where Are the Youth of Humboldt County?

Youth 15 years and younger are ineligible for a driver's license – there are 25,856 persons 15 years and under in Humboldt County – over 20 percent of the population. [Figures 7a and 7b](#) illustrate relatively high concentrations (23 – 39 percent of block group residents) of youth under 15 years:

- Northeastern Humboldt County and Tribal lands (Blocks 51, 52, 54, 55);
- McKinleyville (Blocks 65, 68- 73);
- Central neighborhoods of Eureka and some Cutten, Pine Hill and Humboldt Hill neighborhoods (Blocks 8, 10, 11, 13, 23, 25, 30, 76);
- Central Fortuna (Blocks 84, 86); and
- Scotia (Block 97).

### 1.6 Seniors

As the 'baby boom' generation ages, the number of adults over the age of 65 will double in size to account for approximately 20 percent of the U.S. population by the year 2030 (International City/County Management Association, 2005). Transportation planners must increasingly consider the needs of elder non-drivers in streetscape design and transit planning. Despite the fact that elders can lose their ability to drive, in many communities, driving is essential to meet daily needs. In many cases the alternatives are nonexistent (Frumkin, et al., 2004), limited, unattractive, impractical or unattainable.

#### The Transportation Challenge for Seniors

"Helping seniors to maintain independent living is a top priority. Lack of transportation options, especially in outlying areas, makes it more and more difficult."

- Planner, Area 1 Agency on Aging

"I lost much of my independence when I could no longer drive due to poor eyesight. It's very important to me to stay living in my home. The 'Quail' senior bus is the only reason I'm still able to do so."

- Southern Humboldt Senior

Many seniors (and youth, for whom the same comparison can be made) do not have other alternatives and so depend on transit. Table 3 illustrates that seniors 65 and older represent a higher percentage of transit ridership in areas with low population than in urban areas – possibly because overall transit ridership is much lower (on a per-person basis) in lower-population areas (largely because of more dispersed land uses and sparser transit systems).

**Table 3. Age of transit passengers by population group.**

Population	18 and under	19 – 64 years	65 and over
Under 50,000	21%	61%	18%
50,000-199,999	19%	68%	13%
200,000-500,000	15%	70%	15%
500,000-999,999	9%	77%	14%
1 million and more	10%	84%	6%
National Average	10%	83%	7%

Source: American Public Transit Association, [www.apta.com/research/stats/ridershp/age.cfm](http://www.apta.com/research/stats/ridershp/age.cfm)

Incapacity to drive with old age becomes a significant factor at some point, though there is no standard age after which driving becomes infeasible – the number of people who cannot drive due to conditions associated with age is difficult to accurately quantify. This is particularly true as the number of ‘frail elderly’ grows; these are people are not wholly unable to drive, but who are increasingly unable or unwilling to drive at night, on busy roads or in other situations.

### Transportation Challenges for Seniors

According to the Senior Needs Assessment Survey updated by the Area Agency on Aging every four years, transportation is consistently one of the top ten concerns for seniors in Humboldt County. Problems with transportation create a significant barrier to getting services to people in need. Seniors often put off medical visits, grocery shopping and other necessities due to lack of transportation. The following represents a summary of documented challenges identified in 2005.

- Difficult to access services and attend necessary medical treatments from rural areas;
- Cost, distances to stops, and waiting times are difficult to manage;
- Increased service times on evening and weekends for all forms of public transportation;
- Mobility issues can make getting in and out of vehicles challenging – need for assistance to help impaired adults using public transit;
- Lack of education and awareness make use of transit services very difficult; and
- Cleanliness and safety of bus shelters and facilities.

The need for more public transit and safe walking routes will continue to grow as Humboldt County population ages. Seniors need more education and assistance with learning to use the bus system and other transportation modes. Seniors, family and caregivers are

*Lack of contact with others has been shown to be detrimental to the emotional well-being of older people. Not being able to get around also reduces older adults' ability to participate in the economy. Non-drivers 65 and over make less than half as many shopping trips as drivers do. They also make less than half the number of trips to restaurants and other places to eat.*

*African-American, Latino, and Asian-American elders are disproportionately affected by the lack of options because many more do not drive. While just 16 percent of white persons 65 and over do not drive, 42 percent of older African-Americans, 39 percent of older Latinos, and 45 percent of older Asian-Americans do not drive. This may explain why over a third of the total population of older Latinos, African-Americans and Asian-Americans stay home on any given day - 34, 36 and 38 percent, respectively. In comparison, just 22 percent of all older white people stay home on any given day.*

- Aging Americans: Stranded Without Options, 2004

often not aware of all available services. A 2004 survey of In Home Supportive Services reports that 64.4% of respondents reported “never heard of it” with regards to transportation services available to seniors (A1AA, 2005). Many seniors are intimidated by using public transit. A1AA has held a ‘senior bus day’ in coordination with HTA to help seniors understand the system better.

Table 4 illustrates that many seniors live with compounding factors for potential disadvantage. Over 3000 seniors live at 125 percent of the poverty level or below – 860 of these seniors are also geographically isolated.

**Table 4: Humboldt County Low Income Senior Age 60 and above**

	60+ Total	Non- Minority	Native Amer.	Hispanic	Asian	African Amer.
<b>Low Income</b>	3095	2595	185	115	15	10
<b>Rural</b>	6505	5825	370	120	20	15
<b>Low Income/ Rural</b>	860	690	120	4	0	0

\*The remaining persons identified themselves as multi –race or other

\*Low Income defined as 125% of the poverty level

Source: Area One Agency on Aging, Planning and Service Area Plan 2005, Tables 19 and 20. Derived from 2000 Census Summary File 3.

In Humboldt County there are 320 “linguistically isolated’ (defined as limited English proficiency and little access to those that speak both their native language and English) seniors and 2,976 that have “greatest social need’ (defined to be individuals who have at least two of the following characteristics: disabled, language/communication barrier, lives alone, age seventy five or older).

In addition there are 1,129 seniors that are responsible for grandchildren and 860 that are considered low income and living in a rural area (A1AA, 2005). When combined, these factors can contribute to greater transportation challenges and disadvantages.

## Who & Where Are the Seniors of Humboldt County?

Currently in Humboldt County, approximately 12.6 percent of the population is over 65 years of age, compared to 11.1 percent of the state overall. The percent of County population 62 years and over (as a number used by the state to confer various ‘senior’ benefits) was mapped (Figures 8a and 8b) to illustrate locations of high senior population density. Particularly high concentrations of seniors occur in south and east Eureka and the eastern county Trinity River area.

**Table 5: Humboldt County Seniors Age Sixty or Older Population Projections 2000 -2030**

	1990	2000	2010	2020	2030
Total Population		127,173	133,136	139,518	142,412
Percent change relative to year 2000			4.69%	9.70%	11.98%
Senior Population		20574	26592	34774	36473
Percent change relative to year 2000			29.30%	68.90%	77.10%

Source: California Department of Finance, Populations Projections, Report 03 P-3, 2004

According to current projections, the senior population in Humboldt County will be rising dramatically in relation to overall population growth. Transportation issues associated with this population will continue to grow as well. Table 5 shows that by 2030 the senior those over age 60 will increase by 77 percent, while the total population will rise around 12 percent.

Figures 8a and 8b illustrate concentration of seniors (age 62 and above) in Humboldt County. The following areas show a high (17-34 percent) of seniors within each block group:

- Northeastern County and Willow Creek (Block 53, 57);
- Willow Creek (Block 56);

- Trinidad (Block 58);
- West and east McKinleyville (Blocks 67, 70, 71);
- North Arcata Area (Block 47)
- Blue Lake (Block 63);
- Central Eureka neighborhoods, Myrtle town, south Cutten, Elk River and Humboldt Hill neighborhoods (Blocks 5-7, 15, 16, 20, 23-28, 30 -32, 76, 80).
- Central Fortuna (Blocks 84-86); and
- Ferndale, Rio Dell, and southwestern County (Blocks 94, 96, 98, 99).

## 1.7 Geographic Isolation

Rural region residents – particularly households located in isolated ‘frontier’ areas beyond rural communities – face a significant disadvantage when relying on non-automobile transportation to access basic services and employment.

Though some people choose to accept transportation challenges associated with rural lifestyles, many rural residents do not openly choose this lifestyle or the associated transportation difficulties and costs. Similarly, rural region governments do not usually have the resources to provide transportation services or facilities to those areas with more sparse populations and lower tax bases.

As noted by the International City/County Management Association (2005), rising real estate costs can force lower-income residents to search outlying areas (that are poorly accommodated by non-automobile options) for affordable housing, exacerbating transportation challenges. This is noted as a significant issue in Humboldt County, particularly for many Native Americans who live on isolated ancestral lands.

---

*Frontier areas are sparsely populated rural areas that are isolated from population centers and services. Frontier is sometimes defined as places having a population density of six or fewer people per square mile.*

- Rural Assistance Center Online,  
[www.raconline.org/info\\_guides/frontier/frontierfaq.php](http://www.raconline.org/info_guides/frontier/frontierfaq.php)

---



---

*Regardless of their current economic fortunes, small urban and rural communities often lag behind in adequate public transportation. Nearly two-thirds of all residents in these communities have few if any transportation options: 41 percent have no access to transit and another 25 percent live in areas with below-average transit services.*

*This is an extraordinary hardship for the millions of car-less households and non-drivers who reside in non-metropolitan America. The lack of transit options puts low-income families, especially, at a tremendous disadvantage economically.*

- American Public Transportation Association

---

### Transportation Challenges for the Geographically Isolated

Organizations that serve people living in rural areas cite transportation challenges as a significant barrier to those residents’ ability to access health, social and legal services, employment, and educational and social opportunities that are concentrated in the Humboldt Bay area. Some of these issues are addressed above in population-specific discussion.

The Humboldt County Tribal Transportation Commission notes that many rural routes have little or no traffic data collected. Additionally, even when data is collected, law enforcement is sparse and many residents do not have good communications access, so it is noted that rates of reporting are very low. So it is difficult for planners to document transportation safety needs if incomplete data exists upon which to base needs assessment efforts. Transport issues play a role in compounding factors forcing families to leave the county.

Family Resource Center coordinators note that there is a very strong need, and has been for many years, for some sort of basic public transportation service (a large van or small bus one day per week from each of the rural areas) to improve access to critical social, health and legal services centralized in the Humboldt Bay region. Community spaces in rural areas provide opportunities for networking and encourage community transportation problem-solving. They note that there are many low-income residents in rural areas that have no other choice for housing and often are dissuaded from seeking employment in the Humboldt Bay region because of the high transportation costs. They also note that it is very difficult for many youth to participate in after school activities in these areas and for seniors to obtain access to basic needs.

**The Transportation Challenge: Being Geographically Isolated**

“Many folks in Southern Humboldt have lost faith that the transportation situation will improve. After trying for so long to provide input and receive some attention as a region, they’re jaded; they never feel heard or understood.”

- Southern Humboldt Family Partnership Council

“Living in sub-standard housing far from town -- the only places in reach of their budgets -- is the only way some people can afford to live. Those who think they choose this situation, and that people should just move to town, do not understand the complexity of the situation.”

“Volunteer organizations and gathering places for the disadvantaged help by allowing people to network for rides. Getting to and from the bus is often a problem, especially for those unable to walk long distances. We have seen patients who must walk in bad weather for miles to seek medical services.”

- Willow Creek Family Resource Center

“There are very few jobs out here. Due to the high cost of transportation it is not worthwhile for some to get a job. They would lose the income they presently receive and they are unable to earn much more than they are currently getting without working. I have been wanting to help organize a carpool service and try and link individuals up who drive to "town" each day.”

- Bridgeville Family Resource Center

**Who & Where Are The Geographically-Isolated?**

Nearly half of the Humboldt County population lives in unincorporated areas, and nearly one-fifth of County residents live in very rural, geographically-isolated areas (identified as ‘Census Designated Places’ or ‘Census County Districts’ in Table 6, extrapolated from Dyett & Bhatia, 2002).

Geographic isolation can be estimated as households that are approximately one hour by vehicle travel from essential services such as full medical, social and food services. Means to potentially measure this factor include distance from stores, transit, and/or medical services. There are many parts of the County that are roughly one hour (in

**Table 6. Geographically-isolated areas of Humboldt County\***

Census 'Designated Places' & 'County Districts'	Population, 2000
Hydesville CDP	1209
Redway CDP	1188
Willow Creek CDP	1743
Ferndale CCD	1824
North Coastal CCD	4326
Garberville CCD	7832
Trinity-Klamath CCD	3694
<b>Total</b>	<b>21816</b>
Humboldt County Population	126500
<b>Percent of population</b>	<b>17.25%</b>
<b>Additional Rural Planning Areas - Less Isolated</b>	
Westhaven/Moonstone CDP	1044
Fortuna CCD	4506
<b>Percent of Population</b>	<b>21.63%</b>

Source: 'Humboldt County Building Communities Report', Dyett & Bhatia 2002

good travel conditions) from Eureka, including: Orick, Willow Creek, Bridgeville, and Garberville. These are the most accessible of the rural communities, and for some in the County, these communities serve as smaller hubs for services and employment. There are a significant number of County residents who live more than an hour – some up to three hours – from Eureka.

No attempt was made to map geographic isolation in Humboldt County because of the number of factors required to determine a time-based distance from services – many roads in rural Humboldt County are rugged, circuitous routes, the mileage of which does not correlate well to the time it takes to travel them.

## 1.8 Multivariate Transportation Disadvantage

Each of the six previous map sets illustrate part of the geographic picture of transportation disadvantage in Humboldt County. As noted previously, individuals and families face the most challenging access issues when they face multiple factors of transportation disadvantage. In addition, some geographic areas of the County experience relatively high numbers of multiple transportation-disadvantaged populations – called ‘multivariate transportation disadvantage herein – which the project team has attempted to illustrate by overlaying illustrations of population-specific transportation-disadvantage.

The intent of the following map overlays is to help provide decisionmakers with a better understanding of the geographic areas where there are high levels of multivariate transportation disadvantage. For more information on how the data was combined and overlaid, refer to Appendix A: GIS Methods.

Six layers of information about transportation disadvantage were combined in three ways, as follows:

- A map of ‘characteristics of transportation disadvantage’ – data based on a sampling of one in six households – includes carless, mobility impaired and low-income populations (Figures 9a and 9b). This map indicates that the following Census block group areas have high and very high levels of multivariate transportation disadvantage associated with these three characteristics:
  - SR 169 on the Yurok Reservation (Block 54);
  - Hoopa Reservation (Blocks 51,52);
  - Northwest County including Orick (Block 53, 57);
  - Northeast County including Orleans (Block 55)
  - Valley West, central and southern Arcata (Blocks 38, 39, 42, 44, 45, 50);
  - Arcata bottoms Manila and Samoa (Block 43)
  - North and parts of west Eureka (Blocks 1-4, 7-10, 13, 15, 17, 18, 19-22, 24, 26, 29, 32);
  - Lower Humboldt Hill, King Salmon and Fields Landing (Blocks 79, 80);
  - North of Fortuna and Central Fortuna (Blocks 83-85);
  - Rio Dell (Blocks 94, 95);
  - Bridgeville and east of Bridgeville along SR 36 (Block 90); and
  - South Avenue of the Giants to Redway (Blocks 102, 104).
- A map of ‘demographics of transportation disadvantage’ – data collected for each individual – includes seniors, youth and minority populations (Figures 10a and 10b). This map indicates that the following Census block group areas have high and very high levels of multivariate transportation disadvantage associated with these three demographics:
  - Yurok, Hoopa and Karuk Tribal areas and Orleans (Blocks 51, 52, 54, 55);
  - Willow Creek and southeast of Willow Creek (Block 53);
  - Trinidad (Block 58);
  - Central McKinleyville (Block 68);

- Parts of east, central and southwest Eureka (Blocks 7, 8, 10, 11, 13, 18, 20, 23, 25, 28);
  - South Cuten and Elk River valley (Blocks 30, 76);
  - King Salmon, Fields Landing and parts of Humboldt Hill (Blocks 79, 80);
  - Table Bluff and Loleta (Block 81);
  - North and Central Fortuna (Blocks 84, 85); and
  - Rio Dell (Blocks 94-96)
- These two maps were combined (by a process described in [Appendix A](#)) to produce a map of Countywide multivariate transportation disadvantage ([Figures 11a and 11b](#)). The following block groups are identified to have high and very high levels of overall potential multivariate transportation disadvantage:
    - Yurok and western Hoopa Reservations (Blocks 51 - 54);
    - Orleans and Karuk Tribal areas (Block 55);
    - Willow Creek (Block 53);
    - North and south Arcata (Blocks 41, 50);
    - \*/-Northwest and northeast Eureka (Blocks 1-5, 7-10 , 11, 13, 19-22);
    - Southwest Eureka (Block 18);
    - Lower Humboldt Hill and Elk River Valley (Blocks 79, 80);
    - Table Bluff and Loleta (Block 81);
    - North and south Fortuna (Blocks 84-86; and
    - Downtown and eastern Rio Dell (Blocks 94, 95).

These figures are starting points to help integrate information about transportation disadvantaged populations into transportation planning processes. These figures illustrate areas in the County that warrant additional review of transportation needs and priorities that may otherwise be somewhat overlooked due to relatively small population size, isolation and/or other factors. Many rural areas indicate high levels of multivariate transportation disadvantage and therefore need diversified transportation options.

Because factors and levels of disadvantage cannot be compared equally with basic Census data, these maps should be used as reference and not in isolation. For instance, the Willow Creek block group has a relatively high income and low rate of carless households, but moderately high levels of other potential disadvantages. This block group may not warrant the appearance of high level multivariate transportation when compared to the areas further north along SR 169 and SR 96. A table portraying Census numbers for each population is available for review in Appendix A.

## 2. MAJOR TRANSPORTATION CHALLENGES IN HUMBOLDT COUNTY

---

There are many transportation issues that rise to the surface around the County, no matter the geographic or service area discussed. Consistent themes include:

- **Access to key destinations** such as health care services and employment sites or workforce development centers are critical issues for the transportation disadvantaged.
- **Access to convenient transit** is consistently the top transportation issue with health and social services, workforce development and advocacy organizations. It is often noted that transit managers have worked with stakeholders in the past to adjust services and schedules after organized and concerted efforts to provide input – and that it is understood transit managers have limited resources to provide additional service. There is interest in an additional level of coordination, support and marketing for ‘micro’ transit services.

- **Pedestrian and bicycle safety** is generally poor in Humboldt County when compared to other rural counties. In particular, youth have, relatively, very high rates of ped- and bike-auto collisions. The U.S. 101 corridor in Eureka is the most dangerous place in the County for non- motorized transportation.
- **Tribal transportation challenges** are stark, particularly on reservations remote from public services and infrastructure. The Native American population, in many cases, experiences the greatest concentration of factors of transportation disadvantage in the County.

## 2.1 Access to Key Destinations

When planning for ‘access’ instead of ‘mobility,’ planners need more information about key travel destinations, especially for those who are transport-disadvantaged. Select key destinations were mapped (see [Appendix A](#)) and include:

- Large employers: those identified with 500+, 250+ and 100+ employees.
- Health services: data separated into categories for hospitals and clinics.
- Schools in the Eureka City Limits.

There are many more ‘key destinations’ than this list includes, however only these sites are mapped to reduce clutter and to focus on the most essential of destinations. Additional key destinations could be mapped for analysis. Some potential options include:

- Schools, grocery stores and commercial centers
- Human and social services: government and non-governmental service programs.
- Civic services: post offices, libraries, courthouse and DMV.

## Access to Health Care

### The State of Humboldt County Public Health

Humboldt County residents are in many ways less healthy than other Californians:

- Obesity rates for white females in Humboldt County are some of the highest in California. Humboldt County has one of the highest occurrences of diabetes-related deaths in the state – particularly among the Native American community (Houston, Davis and Lindsay, 2004). California ranked 31st in the U.S. in highest rate of adult obesity at 21.5 percent and prevalence of overweight in Californians has increased from 38 percent in 1984 to 57 percent in 2003 (California Department of Health and Human Services, 2005)
- A survey of heights and weights of school aged children (6-19 years) for the 2003–2004 school year found that in Humboldt County, 37% of children are overweight or at risk of being overweight, more than twice the national average of 15% (ibid.).
- Half of Humboldt County youth and 60% of adults are not regularly active; one quarter of adults are completely inactive (ibid.).
- In a summary of 2001-2003 California Health Interview Survey data, Humboldt County residents experience higher rates of cancer (11.8 percent) and heart disease (13.4 percent) than Californians in general (8.3 and 11.7 percent, respectively). In addition, 17.3 percent of Humboldt County residents note they delayed seeking medical care, compared with 12.7 percent of Californians.
- Humboldt County is ranked as one of the worst in the state for diabetes, suicide, unintentional, drug-related and cancer deaths. ([Table 7](#)).

**Table 7: Humboldt County causes of death 2001-2003.**

Cause of Death	Rank of 58 CA Counties 58 = worst	Humboldt County Rate Per 100,000 of 2001-2003 Yearly Average Deaths	California Rate Per 100,000 of 2001-2003 Yearly Average Deaths
Drug-Induced	57	29.6	9.4
All Cancers	56	220.5	169.6
Diabetes	53	31.7	21.3
Unintentional Injuries	55	71.2	28.6
Suicide	52	19.7	9.5
All Causes*	56	967.3	729.0

\*Includes more causes of death than are listed here.

Source: California Department of Health Services, County Health Status Profiles, 2005: [www.dhs.ca.gov/hisp/chs/ohir/reports/healthstatusprofiles/2005/](http://www.dhs.ca.gov/hisp/chs/ohir/reports/healthstatusprofiles/2005/)

Due to the very high rates of illness and death in the County (Table 7), health care professionals have been working to increase the level of care to those who need it. Providing increased levels of health care, however, presents many expensive challenges, most notably those associated with either the transportation system or with bringing services to the clients. Though the reasons and solutions for poor public health are many-faceted issues, one can assume that, in addition to improved walking and bicycling conditions noted above, improved access to health care services can only improve public health.

### Spatial Analysis of Access to Health Care

Most health care services in the County are centralized in Eureka, with two other hospitals located in Arcata and Fortuna. A few smaller clinics, ‘weekly’ clinic services at schools or community centers and ‘Mobile Medical’ services are located outside the population center of the county.

The Humboldt Bay region has the most transit service coverage in the County, which provides Bay region residents adequate access to most of the health care facilities (Figure 14). Those living outside the Bay region, however, face significant gaps in transportation services, and generally lack access to most health care facilities. Paratransit and other community services provide limited help to seniors and the disabled, but youth and other members of the community are not eligible to take advantage of these services.

**The Transportation Challenge: Access to Health Care**

“I’m not convinced which is better: bringing the services to the clients or bringing clients to the services.”  
- Director, Family Resource Centers

“I’m burned out trying to bring health service providers to clients in outlying areas and trying to find the money to do it.”  
- Director, Community Health Alliance

### Transportation Effects on Health Services

Though spatial analysis of transit service indicates that health facilities are generally accessible by people who live in the Bay region, health providers and health service coordination organizations consistently note challenges with access to health services to be a primary concern. Non-metropolitan region residents tend to rely more heavily on transit for access to medical care than do their urban counterparts (Table 8).

It is very difficult to provide residents in isolated areas with the care they need due to the costs and time required to take services to those areas. Emerging ‘Tele-Health’ programs are expected to slightly improve access to health service as well as ‘Mobile Medical’ and remote services of local clinics and hospitals. Still, national transit data indicates that in smaller communities, higher numbers of residents rely on transit for access to health care.

**Table 8. Purpose of transit trips by population group.**

Population	Work	School	Shopping	Medical	Social	Other
Under 50,000	26%	9%	8%	34%	27%	2%
50,000-199,999	39%	26%	12%	6%	9%	12%
200,000-500,000	46%	19%	13%	5%	8%	9%
500,000-999,999	51%	15%	11%	5%	6%	12%
1 million and more	55%	15%	9%	5%	9%	7%
National Average	54%	15%	9%	5%	9%	8%

Source: American Public Transit Association, [www.apta.com/research/stats/ridershp/purpose.cfm](http://www.apta.com/research/stats/ridershp/purpose.cfm)

Many health programs provide some type of transportation assistance (vouchers, drivers and/or vehicles), but these organizations generally feel that they do not have the expertise or adequate staff focus to meet these needs individually and that their resources spent to facilitate access to care are often spent inefficiently.

Most health professionals interviewed are interested in discussing increased support for rural ‘feeder’ transit services, coordination of limited transportation efforts and budgets by non-transportation organizations and/or increased marketing and information about transit services.

### Access to Employment

Access to employment is a key issue, and often the critical component for overcoming many of the transportation challenges noted above. For many, it is not just access to employment sites that is important, but also access to training and workforce development services.

In the spring of 2006 the Humboldt County unemployment rate stayed at 6.0 percent, higher than state and federal rates, but lower than many other northern CA rural counties, according to the state Employment Development Department’s Labor Market Information Division in Humboldt County (2006). Facilitating increased access to employment opportunities for people of all ages and abilities around the County can only improve employment rates.

### Spatial Analysis of Employment Access

In the Humboldt Bay region, the population and employment center of the County, most large employers are within a quarter-mile access of at least some level of transit service (Figure 14). Large employers that have limited transit access include Schmidbauer Lumber in Eureka and the Sun Valley Floral Farm in Arcata.

Non-drivers outside of the Bay region face significant challenges accessing the County’s employment center. Transit access is either unavailable or too infrequent to rely upon in many cases.

### Transportation Effects on Employment & Job Training

The following is a summary of input from programs that focus on workforce development in Humboldt County (individual summaries are provided in Attachment 2):

- The workforce development community notes a challenge with ‘employability’ of those residents with unreliable transportation or limited access to vehicles.

#### The Transportation Challenge: Access to Employment

“Many residents in very rural areas are not even eligible for some programs that could get them back to work -- due solely to lack of transportation.”

- Humboldt County CalWorks Staff

“Many entry level jobs are during nights and weekends when there is little or no transit. It makes it very difficult for youth, low-income residents or anyone without access to a vehicle to hold a job.”

- Workforce Investment Board Member

The Workforce Investment Board's (WIB) priority transportation issues include:

- Lack of affordable housing near Humboldt Bay region employment center;
  - Public transportation: does not seem worker-friendly, has a much unrealized ridership potential, has a lack of evening/weekend service, lack of shelters, and information can be unreliable or difficult to obtain;
  - Broadband service is needed in rural regions;
  - Youth access to employment increases their success as adults, especially youth at risk; public transport is often their only choice;
  - Improved access for mobility-impaired; and
  - Access to medical service and overall needs of rural areas.
- Rural area Family Resource Center coordinators note the likelihood that more geographically isolated residents would work if there were increased transportation options – right now it is cost-prohibitive for many to work, due to transportation costs, and many of these people cannot afford to move to the population center.
  - Challenges with limited transportation options have sparked the interest of at least one large employer to discuss the possibility of specialized transportation services.
  - According to County CalWorks staff, there are potentially hundreds of people in rural parts of the County who are exempted from the CalWorks program due to a lack of transportation.

## 2.2 Access to Convenient Transit

Relative to other rural regions in California, Humboldt County has a high level of fixed transit and paratransit services (Lucas, 2006). Research for this report indicates, however, that there is a consistent call to improve:

- Coordination of limited transportation efforts and budgets by non-transportation organizations such as health/social services and employment development programs;
- Support for rural 'feeder' transit services; and
- Marketing and information about both existing and new or trial transit services.

It should be noted that this 'call' includes interest on the part of most organizations and agencies to assist with creatively and cooperatively developing transit solutions to access needs.

Nearly all organizations and agencies consulted identified needs for increased fixed route services – such as increased frequency, evening and weekend service – to improve access for their clients or constituencies and simultaneously understand the financial constraints that make such improvements challenging in a rural region.

Some of the organizations interviewed noted past efforts to work with a willing Humboldt Transit Authority (HTA) to improve access to services or employment; others noted a perceived lack of interest in working with community organizations and needs.

Currently, transit providers in the County face many challenges that make it difficult to increase service. Rising fuel costs coupled with limited funding has forced all local providers to dip into reserve or general funds to continue existing service. While transit managers are aware of the needs for new or increased service, current trends and funding would require a reduction in existing routes in order to provide new service. There is an interest in providing better service with the caveat that any new service needs to come with new or additional funding.

## Major 'Fixed-Route' Public Transit Services

The regional Redwood Transit System (RTS) provides commuter service to the central County from Trinidad to Scotia and East to Willow Creek with 39 weekday trips (17 south bound, 18 north bound and 4 east bound). Saturday service is also offered south bound and north bound with 18 trips (9 trips each direction). Half of RTS ridership is students from Humboldt State University and College of the Redwoods. When College of the Redwoods is in session RTS provides an express bus from the Arcata Transit Center to CR. In the 2004/2005 fiscal year, RTS tallied 319,162 passenger trips – an 8 percent increase from the previous year. The Willow Creek to Arcata route served 7,447 passengers in 2004/2005. Currently RTS effectiveness as commuter service is somewhat reduced by efforts to serve localities with large populations and no other transit service. For example, commuter service is slowed by multiple stops in the community of Fortuna and McKinleyville.

The Cities of Eureka and Arcata also have public transit systems (Figure 12), the Eureka Transit Service (ETS) and Arcata & Mad River Transit System (A&MRTS). The Humboldt Transit Authority manages RTS and ETS (as well as 'The Quail', addressed below).

During fiscal year 04/05 ETS tallied 247,170 passenger trips and the A&MRTS had 178,327 trips. Transit use for work commutes is highest in Arcata (2.4 percent), Eureka (1.9 percent), the Pine Hill suburb of Eureka (1.7 percent), and Trinidad (1.2 percent).

According to the *Five-Year Transit Development Plan Final Report for Redwood Transit System and Southern Humboldt Rural Transit Service* (Transit Resource Center, 2002), 52 percent of all weekday RTS bus boardings are in five locations, including the Arcata Transit Center, College of the Redwoods, Bayshore Mall, Humboldt State University, and Fourth/Fifth and D Streets in Eureka. Since most trips have a return trip usually from the same location, that means almost all trips start or end in one of those five most boarded locations. A&MRTS is the regional transit hub with transfers from most other transit services. Students represent 53 percent of all passengers.

For more detailed information on transit routes and ridership, refer to the 2006 Humboldt County Regional Transportation Plan and 2006 Transit Development Plan.

## Paratransit

Demand-response, curb-to-curb (or door-to-door) services exist most extensively in the Humboldt Bay region and to a more limited extent between Eureka and the southern County border, between Blue Lake and Arcata, and between Willow Creek (SR 299), Orleans (SR 96) and Johnson's Hunting Ground (SR 169). Independent transit systems provide limited service to eastern and southern parts of the county (Figure 12).

Humboldt Community Access and Resource Center (HCAR) is the 'CTSA' (or Coordinated Transportation Service Authority) for Humboldt County and offers Dial-A-Ride/Dial-A-Lift services for seniors and the disabled within many communities around the Humboldt Bay Area.

The Quail is a demand-response, door-to-door, shared-ride mini-bus service in rural southern Humboldt County has been provided for the elderly and disabled since 1979. It operates on weekdays to specific locations in Fortuna and Eureka for meals, shopping and medical needs. IN 2005 the quail served 3,355 passengers.

Many other organization-specific, paratransit programs also provide client-specific transit services – not mapped or significantly addressed herein – and include Senior Resource Center, Community Cornerstone, United Indian Health Services, and others.

Numerous other health, social, education and employment development programs provide either vouchers or tickets, have a van or other vehicle and a driver to provide transportation assistance to clients. In

addition, a substantial number of these programs note that their staff personally provide rides to clients for lack of other transportation choices.

### Small Non-Emergency Transit Services

Localized transport needs, especially in rural areas, are spurring development of rural community ‘feeder’ systems that provide access to fixed route services and/or access to essential services in Fortuna and Eureka (Figure 12).

#### **Klamath/Trinity Non-Emergency Transportation (K/T Net)**

has been providing service to rural northeastern county residents for over two years with a fixed-route service between Hoopa and Willow Creek and a demand-response ParaNet service offered from Orleans to Big Bar. Use of this service has been steadily rising. A primary connection for this service is with the RTS route between Willow Creek and Arcata.

#### **K/T Net Annual Ridership**

2003:	1107 passengers
2004:	2179 passengers
2005:	2779 passengers
2006:	638 passengers (as of March 23)

**Blue Lake Rancheria Transit System** is a fixed route and dial-a-ride service from Blue Lake to Arcata Transit Center with stops in . This service is gaining in popularity and saw an increase in ridership from 292 in September 2002 to 15,981 passenger trips in 2005 (HCAOG, 2006).

**Bridgeville Community Center** operates a seven-passenger van service available to anyone in the community and surrounding area, based on reservations and availability (seats are prioritized for medical needs). Fridays, the van travels into Fortuna and/or Eureka for medical appointments, shopping and general errands. There is no fixed route, though medical appointments are given priority.

**Ferndale ‘Bridge-the-Gap’** curb-to-curb van service is operated by the Ferndale Senior Resource Agency, accommodating Ferndale seniors (62+). Operates Monday through Friday, 9:00 a.m. to 5:00 p.m. Normal operation is within Ferndale limits, but on Tuesdays and Thursdays, the bus goes to Eureka for appointments and errands and on MWF, the bus goes into Fortuna for appointments and errands.

**Fortuna Senior Bus** is a Dial-A-Ride service within Fortuna city limits for qualified Fortuna riders (by age or disability) operating Monday-Friday; two buses are available from 8:30-4:30 p.m. and on Saturdays, one bus is available from 8:30-4:30 p.m. In 2005 this service had 15,710 passengers.

**Redwood Coast Transit** provides twice daily service routes from Crescent City (Del Norte County) to McKinleyville and Arcata for a fee of approximately \$20 round-trip or \$30 per week for the round-trip daily if you buy in advance. Service is also provided from Orick to Arcata for \$2 round-trip.

### Transit Needs Input

As noted throughout the document, transit needs are the primary issue for stakeholder groups when asked to identify transportation priorities and to identify the greatest challenges. Service providers and community organizations generally note primary transit needs to be:

- Extended weekend and evening services and increased ‘commuter’ service frequency;
- Coordination between transportation services provided by non-transportation organizations (health, social services, community programs, ESL and workforce development programs, and potential employers);
- Weekly service for rural areas; and
- Increased marketing of existing and new services.

In a comparison of the last five HCAOG reports on ‘Unmet Transit Needs’ (summarized in [Table 9](#) and in more detail in [Attachment 1](#)), these issues and a few others show up as consistent public needs.

As a result of needs expressed in the City of Arcata 2001 Transit Development Plan and Unmet Transit Needs public hearings, A&MRTS expanded service hours an additional three hours until 10:00 p.m. and added an express shuttle bus to increase frequency of bus service when HSU is in session.

In addition, the Dial-A-Ride and Dial-A-Lift service area was expanded February 1st, 2006 as a result of information obtained via the unmet needs hearing process. The new service boundaries include Humboldt Hill (excluding Fields Landing and King Salmon), 3/4 of a mile on either side of Old Arcata Road, as well as the towns of Samoa and Manila. There has been some call to expand to adjacent communities and transit providers are currently discussing this possibility.

**Table 9: Unmet Transit Needs Summary by Year and Issue**

<b>Identified Need (During City/ County Hearings)</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>	<b>2004-05</b>	<b>2005-06</b>
Extended Hours of Service	x	x	x	x	x
Expanded Service (to outer reaches of area)	x	x	x	x	x
Service along Old Arcata Road	x	x	x	x	x
More frequent service	x	x	x	x	x
Sunday Service	x	x	x	x	x
Service to Alder Grove, Arcata Marsh, United Indian Health C	x	x	x	x	
More weekend service	x	x	x	x	
Inter-community Trip needs	x	x			
Intra-community Trip needs	x				x
More Stops	x	x	x		
More/ Better connections to other Trans. Providers	x	x	x		
More frequent service from Mck. To HSU			x	x	x
Publicized info. regarding DAR customer service issues			x	x	x
HSU Shuttle to off campus parking lots/ downtown		x	x	x	

Source: Humboldt County Association of Governments

## Spatial Analysis of Transit Access

Most Humboldt County transit services were mapped ([Figure 12](#)) and are illustrated based on two primary types: 1) public, fixed route service and 2) specialized paratransit routes. Dial-A-Ride/Dial-A-Lift curb-to-curb service was not mapped.

Transit routes were mapped with multivariate transportation disadvantage ([Figure 13](#)). This map may help decisionmakers and service providers explore opportunities to improve or expand services for disadvantaged populations.

Transit access – not including frequency – was mapped to illustrate walkability, residential locations, health care facilities and employment sites ([Figure 14](#)). In the Humboldt Bay region transit services were mapped with a 1/4-mile ‘walkability access sphere’ (or 5-minute walk) around each fixed transit stop. When these spheres overlap, the shading is darker, indicating more choices of transit stop access (such as in Eureka and Arcata). Two forms of key destinations (health care facilities and large employers, discussed above in Section 2.1) are also mapped to indicate accessibility from transit stops. Additionally, estimated residential locations are included to identify concentrations of population that are not served by transit.

There is generally good transit access to those services in the Humboldt Bay region with the exception of a few areas with concentrated populations (such as south of Eureka and between Eureka and Arcata). Another notable gap between transit access and population concentration is in the Carlotta-Hydesville area. Generally, in rural areas where transit services are more costly and challenging to provide, analysis indicates very limited service.

## 2.3 Pedestrian & Bicycle Safety

When a moving vehicle collides with a pedestrian or cyclist, the odds for injury or fatality are high, resulting in a relatively high casualty rate per travel mile compared with automobile travel (Bounlanger, et al., 2003; Chu, 2003). Understanding pedestrian and bicycle safety issues is important to ensure that these modes and facilities are attractive, convenient, safe and well-planned.

Humboldt County is, in some ways, a dangerous place for pedestrians and cyclists, as noted by the Statewide Integrated Traffic Records System (SWITRS). Discussions of this data in recent HCAOG planning documents and in a comparison of other rural counties by the California Highway Patrol (Table 10 and Graphs 1-4) are summarized below.

Table 10. Humboldt County 2003 bicycle and pedestrian collisions by City, County and road classification.

	Pedestrian Involved Fatal	Pedestrian Involved Injury	Bicycle Involved Fatal	Bicycle Involved Injury
Humboldt County Total	5	46	1	66
Arcata	0	4	0	20
Eureka	3	28	0	32
Fortuna	0	2	0	1
Unincorporated	2	12	1	13
State Highways	2	5	1	3
County Roads	0	7	0	10

Source: Statewide Integrated Traffic Records System: [www.chp.ca.gov/switrs](http://www.chp.ca.gov/switrs)

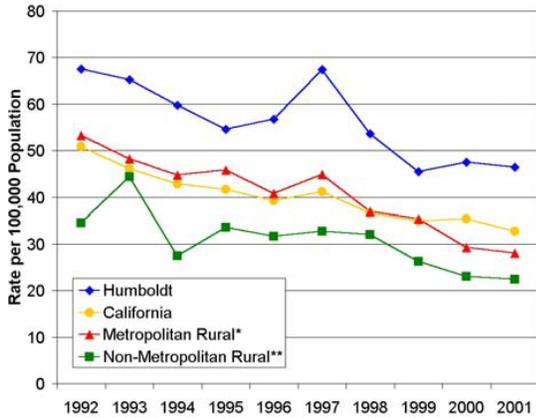
The 2003 HCAOG Regional Pedestrian Needs Assessment Update notes that in the years of 1999-2002, there were 163 collisions involving pedestrians, including 10 fatalities. In general, very high rates of pedestrian collisions occur along the US 101 corridor in Eureka, as well as along other two-way couplet streets in Eureka (Figure 15). The most concentrated location of pedestrian collisions in Humboldt County is western and northern Eureka (particularly the US 101 Broadway corridor and downtown Eureka), where there are also high densities of low-income and minority residents. Over the past decade, approximately 61 bicycle and pedestrian collisions occur in Eureka annually (SWITRS, 2005). Other notable collision locations are on one-way couplet streets like Sixth, Seventh, H, I, Harris and Harrison Streets. The site with the most collisions in the County is on U.S. 101 near the County Courthouse.

### Rural County Pedestrian & Bicycle Collision Comparison 1992-2001

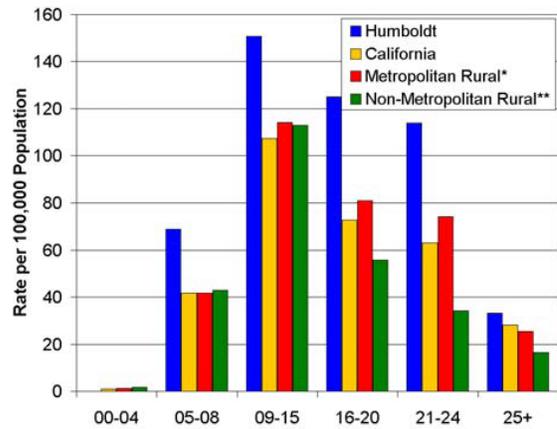
The California Highway Patrol compared Humboldt County pedestrian and bike collision data over a ten-year period with eight other metropolitan and non-metropolitan California counties that exhibit some similar population characteristics (Graphs 1-4, Source: California Highway Patrol, 2002.). The 'metropolitan rural' counties include El Dorado, Napa, Butte and Placer and the 'non-metropolitan' rural counties include Mendocino, Nevada, Tehama and Lake.

In Graphs 1 and 2, Humboldt County shows substantially higher bicycle injuries and fatality rates than all other rural areas in California. Bicycle injury and fatality rates are also significantly higher than the state average, particularly for youth and the 05-24 age groups. The good news is that when looking at trends, bicycle and pedestrian injuries and fatalities are decreasing in Humboldt County.

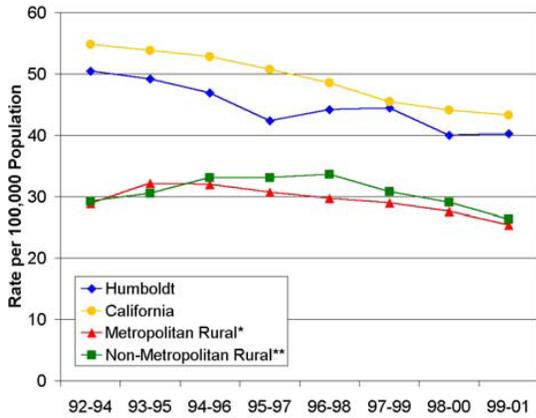
With the exception of the 16 -20 year old age group, Graphs 3 and 4 show that rates of pedestrian collisions tend to be lower than the state on average. However, when compared to other ‘rural’ counties in the state Humboldt County tends to have high rate of pedestrian collisions.



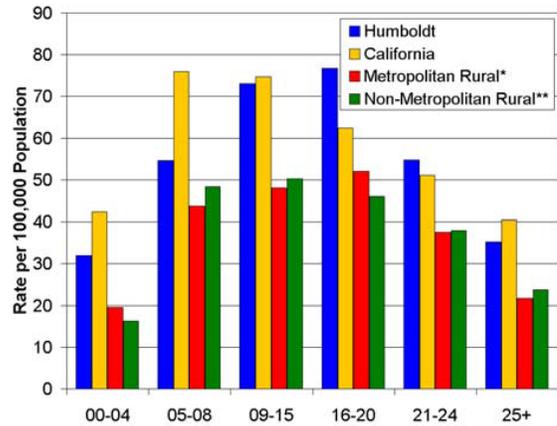
Graph 1. Bicyclist injuries and fatalities from motor vehicle collisions in eight non-metropolitan California counties, 1992-2001.



Graph 2. Bicyclist injuries and fatalities from motor vehicle collisions by age group in eight non-metropolitan California counties, 1992-2001.



Graph 3. Pedestrian injuries and fatalities from motor vehicle collisions in eight non-metropolitan California counties, 1992-2001.



Graph 4. Pedestrian injuries and fatalities from motor vehicle collisions by age group in eight non-metropolitan California counties, 1992-2001.

It is likely that Humboldt County has a higher number of bicyclists than some other rural counties, and this fact may influence the sheer total of collisions. Two potential reasons for this include: 1) presence of both California State University and community college campuses within ten miles of each other in the Humboldt Bay region; and 2) the Pacific Coast Bike Route on U.S. 101 attracts many touring cyclists every year.

Until 2000, the City of Eureka still had many ‘uncontrolled intersections’ without stop or yield signs, which may have also contributed to a high number of collisions.

Regardless of the potential reasons for high numbers of pedestrian- and bicycle-auto collisions, it can be assumed that residents and decision-makers in the county would like to have both high numbers of non-automobile travel as well as low numbers of ped/bike-auto collisions.

## Analysis of Pedestrian & Bicycle Facilities Access

A comparison was made between the recommendations of HCAOG's Regional Bicycle Transportation Plan and Pedestrian Needs Assessment (2003) and the identified multivariate transportation disadvantaged populations highlighted in this report (Figures 11a and 11b). In general, the Pedestrian Needs Assessment priorities for incorporated cities are consistent with high multivariate transportation disadvantage. The one-way couplets, including Sixth, Seventh, Henderson and Harris Streets, as well the US 101 corridor through Eureka, are generally in neighborhoods that experience a high concentration of transportation disadvantage. The three pedestrian projects in incorporated areas with the highest priority rankings are located in these areas of Eureka.

*The City of Eureka was the only jurisdiction in Humboldt County with a disproportionate ranking; #9 for pedestrian collisions statewide, #2 in its population group (25,001 - 50,000). This ranking system only evaluates the data contained in the SWITRS database and does not take into consideration the size of a community's pedestrian population, which may account for higher incident rates.*

- HCAOG Regional Pedestrian Needs Assessment, 2003

For unincorporated areas, the analysis is similar. Hoopa, Manila, Southeastern Eureka (Cuttan and Myrtle town), Southern Humboldt and areas of McKinleyville all show relatively high multivariate transportation disadvantage and have high-ranking pedestrian projects. The three highest-ranked priority pedestrian projects in the County are in Hoopa and Manila.

In HCAOG's Regional Bicycle Transportation Plan (2004), there are a variety of 'Priority Projects' listed. Most of the smaller projects are located in areas with medium concentrations of disadvantage. The projects in McKinleyville and the Hoopa Path along SR 96 correlate with higher multivariate transportation disadvantage. However, the high-cost projects, most notably the Eureka-Arcata Corridor and the Annie & Mary Rail Trail are located in areas with low concentrations of disadvantage.

## Spatial Analysis of Pedestrian & Bicycle Collisions in Eureka

As mentioned above, Eureka has the highest number of bicycle and pedestrian collisions with vehicles in the County and one of the highest rates of pedestrian collisions in the state. Maps of collision locations in Eureka were developed using 1999 - June 2004 data from the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS). For more information on data and methods refer to [Appendix A](#). Because this pilot mapping effort was time-intensive, only collisions in Eureka were mapped because it was known to be of significant concern regionally. Other areas in the County also experience bicycle and pedestrian collisions – utilizing these methods to develop maps for the rest of the County is recommended for upcoming Bicycle Transportation Plan and Pedestrian Needs Assessment update efforts.

Figure 15 illustrates locations of pedestrian and bicycle collisions with vehicles, locations of schools and 'Class II' bicycle lanes in the City of Eureka. The majority of ped- and bike-auto collisions are between Broadway (US 101) and 'P' Street and between Harris Street and 4<sup>th</sup> Street (US 101), with the exception of a number of collisions along Broadway south of Harris, 'S' Street/West Avenue, 'F' Street south of Harris and a few around Washington School. In particular, US 101 and some of the other one way couplets, particularly Harris Street, experience the highest numbers of collisions – many at what are or were uncontrolled intersections.

Figure 16 illustrates locations of pedestrian-auto collisions by the age and race of the victim. Very high numbers of collisions are shown around the County Courthouse area on 4<sup>th</sup> and 5<sup>th</sup> Street (US 101) between 'H' and 'N' Streets. Recently City and County employees who work near the courthouse and walk there frequently have begun a dialogue about what they can do to improve the pedestrian environment in the area. Other intersections of concern include 5<sup>th</sup> and 'P' Streets, McCullens Avenue and Broadway (US 101)

and Wabash Avenue and Broadway (US 101). Addressing these issues will require collaboration between Caltrans and the City of Eureka.

Figure 17 illustrates the location of bicycle-auto collisions by age and race of the victim. Harris Street from Fairfield to Pine Street is an area of particular concern. The Eureka Mall and Lincoln School are both key destinations for residents of the area. There are multiple collisions shown involving youth age 0 -14 along the Harris corridor. Additional research should be conducted regarding the situations of these collisions (crossing or traveling along Harris, day or night, level of inebriation) and to assess safety of Lincoln School access. It should also be noted that there is a Class II bike lane on Harris Street, which may attract numbers of cyclists but should also provide a measure of alert to motorists that cyclists will be present. The cluster of four bike-auto collisions with victims age 0 -14 years on 'S' Street near Zane middle school is also notable and should be examined further. The intersections around where Myrtle Avenue, SR 255, US 101 and 'R' Street come together indicate clusters of collisions – the SR 255/US 101 intersection was recently reconstructed and it should be noted whether collision rates reduce as a result or not.

Clusters of both bike and ped collisions involving youth are not common around schools with the exception of Lincoln Elementary School and Zane Middle School. In general, however, collisions involving youth on bicycles are more common in the neighborhoods of west Eureka.

While race data (Figures 16 and 17) is difficult to analyze due to many victims 'not stated', the data was mapped to illustrate a potential additional tool for assessing the correlation between transportation-disadvantage and ped- and bike-auto collisions.

Figure 18 illustrates locations of all vehicle collisions (1999-June 2004) with bicyclists and pedestrians compared with the location of low-income households. The highest numbers of collisions occur in areas with the highest percentages of low income households. The most significant clusters noted earlier (Harris Street, Broadway, 4<sup>th</sup> and 5<sup>th</sup> Streets) are almost all within or border census block areas with low income households totaling 72 – 91 percent of the population. Census blocks in north and western Eureka which show high numbers of ped- and bike-auto collisions (Blocks 1, 2, 4 8-13 and 18-22) also have high levels of multivariate disadvantage including low income households (for more detail, refer to Figures 9a – 11b).

It is important to note that the SWITRS database includes much more additional information than was mapped for this effort. Depending on the type of analysis desired, additional accident attribute information could be mapped. For example, in reviewing bicycle collisions on Harris, the reasons for and circumstances of the collisions may provide critical information in determining an appropriate intervention.

Analysis of these maps brings up a number of questions to consider:

- Are pedestrian zones clear for both drivers and pedestrians?
- Are they located where people want to cross often?
- What are average motorist speeds in areas with high numbers of collisions?
- Is the bike lane network utilized? Are more bike lanes or different routes needed?
- Are bicyclists practicing safe riding techniques (e.g. lights at night, riding with traffic, correct direction in the bike lane, sober)?
- Are there safe routes to all schools?
- Are there key destinations that need better bicycle and pedestrian access?

## 2.4 Tribal Transportation Challenges

Native American communities in Humboldt County face two particular transportation challenges:

- Multivariate transportation disadvantage in areas with high percentages of native residents (Section 1.3 and Figures 6a, 6b, 10a, 10b 11a and 11b); and
- Participation in the existing transportation decisionmaking process.

### Multivariate Transportation Disadvantage in Native Communities

Tribal communities around the County and those particular to the northeast ‘rivers country’ experience substantial transportation challenges in regards to access to health care and employment. It is noted that many people move away from their cultural centers because of transportation challenges on Reservation or Rancheria lands – an issue that has significant negative effects on the fabric of the Native community.

Areas with high densities of native peoples tend to exhibit multivariate transportation disadvantage (Figures 6a, 6b, 11a and 11b).

### Tribal Transportation Consultation

In recent years, Humboldt County Tribes have been seeking representation on the Humboldt County Association of Governments Board. Many of the Tribes feel that they can bring funding, partnerships and coordination opportunities to the COG, state and local jurisdictions. They will, however, need technical assistance in preparation of transportation planning efforts and program/project development, since most Tribes have very limited planning and/or transportation staff. Though they largely feel that government-to-government consultation about transportation (and other) matters could be improved, many Tribal representatives also feel that positive strides have been made in recent years.

## 2.5 Public Participation Issues

Many of the issues affecting transportation-disadvantaged populations are the very issues that make it difficult for people to attend public participation events. For instance, low income families that work long shifts may not be able to take time for meetings or people with low English proficiency may not understand the arrangements or processes. Attending any public participation event can be a challenge for those people that do not have access to an automobile or those with a mobility impairment.

### Identification of Stakeholder Groups

Appendix C is a summary of organizations and individuals contacted, including stakeholder organizations representing health, workforce development, senior services, mobility-impaired services, rural services, minorities, youth, education, low-income programs, and others.

During interviews and meetings, some of these groups noted what works and does not work for their constituencies to participate in the planning process.

### Going to Them

Organizations such as the Family Resource Centers, LatinoNet, Workforce Investment Board and A1AA Seniors Task Force consistently suggest attending their existing meetings, especially in rural areas. Though it is difficult and costly to go to rural areas, it is also difficult for community members, particularly the transportation-disadvantaged – for whom it can be nearly impossible – to get to town for a meeting to share input.

## Evening Meetings Are a Challenge, But Still the Best Option

Input consistently noted that transportation-disadvantaged populations are faced with many challenges preventing them from easily attending standard evening meetings, including:

- Lack of transit access;
- Child care;
- Lack of digestible information about key issues and about how to effectively participate; and
- Poor public information and marketing about meetings.

Most transportation-related public input opportunities are currently an evening meeting format. Some transportation planning input opportunities exist during the workday for those who understand the process, such as HCAOG Technical Advisory, Social Service Transportation Advisory and Services Coordination Committees, however these types of meetings do not function well for general public attendance or input.

This information indicates a need to diversify public participation opportunities: evening meetings may still be the primary mechanism to provide input access for most people, but there is interest in and a need for other forms of participation (which will be addressed in the forthcoming *Opportunities to Improve Transportation Equity in Humboldt County*).

## 3. NEED FOR FUTURE RESEARCH

---

### 3.1 Data Gaps

As an initial effort to compile information about transportation disadvantage in Humboldt County, there is a lack of specific documented need for many of these populations. Notable exceptions include the disabled and seniors. Very little is written about the transportation needs of minorities, youth or geographically isolated populations in Humboldt County. More data is needed about their specific transportation challenges.

Gaps in pedestrian infrastructure are widespread – and difficult and costly to map. Most communities do not have this data in a GIS format, if it exists at all.

Opportunities for expanded GIS efforts are discussed below.

### 3.2 Additional Access Issues

Though this report has focused on access to health and education, Tribal transportation issues, non-motorized transportation and transit needs, there are other significant access themes that should be explored in the future, including:

- Access to social and legal services, noted to be a very significant issue for many low-income and geographically isolated communities.
- Access to education, including opportunities to reduce congestion around schools and encourage more bike/ped school commuting (some related information is summarized in Attachment 2); and
- Access to outdoor activities and opportunities for active transportation.

### 3.3 Regional GIS Analysis

Additional mapping possibilities include:

- Plotting of transportation project type and cost with areas of multivariate transportation disadvantage (to assess opportunities for transportation service investments in the future);
- Mapping of pedestrian and bicycle collisions Countywide;
- Mapping of significant pedestrian facility gaps (data is sparse and/or not in GIS format as noted above);
- Mapping of transit service frequency;
- Improvement of ‘key destination’ data;
- Mapping of spheres of walkability, bicycle-ability and busing around schools (to help schools promote non-automotive modes of transport to targeted populations);
- Identification of the total number of households per block group and mapping based on the number of households experiencing certain types of disadvantage (e.g. 230/410 households are low-income); and
- Mapping of Census characteristics per capita instead of per block group.

As mentioned in the Introduction, maps for this report were generated with information per Census block group rather than per capita. The project team feels that this information is likely to be of the most use to localized planning efforts and instructive for regional efforts. However it is likely that, in the team’s initial analysis of mapping results, mapping transportation-disadvantage by block group based on Countywide per capita numbers might be of more use for regional planning and investment prioritization efforts.

No comparison of Humboldt County data has been made to other non-metropolitan rural counties, since no other documents and compilation of data like this effort exist to date. However, some Census data could relatively easily be compared to other counties.

## 4. RESOURCES FOR MORE INFORMATION

---

American Public Transportation Association. The Benefits of Public Transportation: Mobility for America’s Small Urban and Rural Communities. Undated. Accessed at <http://www.apta.com/research/info/online/rural.cfm>.

Area 1 Agency on Aging (A1AA). 2005. *Planning and Service Area Plan Del Norte and Humboldt Counties: July 2005 – June 2009*. Eureka, California.

Bailey, Linda. *Aging Americans: Stranded Without Options*. American Public Transportation Association. 2004. Accessed at [http://www.apta.com/research/info/online/aging\\_stranded.cfm](http://www.apta.com/research/info/online/aging_stranded.cfm).

Boulanger, T., C.S. Maciejewski and R.S. McCourt. 2003. *Vancouver WA Traffic Management Plan: Street Design to Serve Both Pedestrians and Drivers*. Walk21 IV Conference Proceedings. Portland, Oregon.

California Department of Finance, *Population Projections by Race/Ethnicity for California and Its Counties 2000–2050*, Sacramento, California, May 2004.

California Department of Health Services, *County Health Status Profiles, 2001-2003*: [www.dhs.ca.gov/hisp/chs/ohir/reports/healthstatusprofiles/2005/](http://www.dhs.ca.gov/hisp/chs/ohir/reports/healthstatusprofiles/2005/).

California Department of Transportation. 2002. *Civil Rights Title VI Program: Guidelines*. Sacramento, California.

California Department of Transportation. 2005. *Main Streets: Flexibility in Design and Operations*. Sacramento, California.

California Employment Development Department. 2006. Labor Market Information Division. March Industry Employment and Labor Force Release.

- California Highway Patrol. 2002. Safe Communities Analysis of CHP SWITRS Data, Humboldt County, 1992-2001: A Comparison Analysis of Humboldt County, California, Metropolitan Rural & Non-Metropolitan Rural Counties.
- Chu, Xuehao. 2003. *The Fatality Risk of Walking In America: A Time-Based Comparative Approach*. Walk21 IV Conference Proceedings. Portland, Oregon.
- Dyett & Bhatia. 2002. Humboldt County General Plan Update: Building Communities, A Discussion Paper for Community Workshops. Prepared for the Humboldt County Department of Community Development Services.
- Engwicht, David. *Reclaiming Our Cities and Towns: Better Living with Less Traffic*. 1993. Philadelphia: New Society Publishers.
- Frumkin, Howard, Lawrence Frank and Richard Jackson. 2004. *Urban Sprawl and Public Health; Designing, Planning and Building for Healthy Communities*. Island Press: Washington D.C.
- Humboldt County Association of Governments. 2003. *Humboldt County Regional Pedestrian Needs Assessment Update*. Prepared by Alta Planning + Design and Redwood Community Action Agency. Eureka, CA.
- Humboldt County Association of Governments. 2005. *Humboldt County Regional Transportation Plan*. Prepared by Arthur Bauer & Associates, Inc. and VRPA Technologies, Inc.
- Humboldt County Association of Governments. 2006. Draft *Humboldt County Regional Transportation Plan*. Prepared by Planwest Partners.
- Litman, Todd (2004), *Evaluating Transportation Equity*, Victoria Transport Policy Institute. Accessed at [www.vtpi.org](http://www.vtpi.org).
- Litman, Todd (2004), *Evaluating Public Transit Benefits and Costs*, Victoria Transport Policy Institute. Accessed at [www.vtpi.org](http://www.vtpi.org).
- Lucas, Michael. (2006) Personal Communication. March 2<sup>nd</sup>.
- President, Proclamation, 1994. *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. Executive Order 12898. Federal Register, Vol. 59, No. 2 (February 16), pp. 7629-7633. Washington D.C.
- Sanchez, Thomas W., Rich Stolz, and Jacinta S. Ma. 2003. *Moving to Equity: Addressing Inequitable Effects of Transportation Policies on Minorities*. A joint report of The Civil Rights Project and the Center for Community Change. Cambridge, MA: Harvard College.
- St. Josephs Health System. 2005. *Humboldt County Community Needs Assessment*. Eureka, California.
- Tolley, Rodney et. al. *Beyond public health: benefits of walking on children's social development*. Undated. Accessed at [http://americawalks.org/PDF\\_PAPE/Tolley2.pdf](http://americawalks.org/PDF_PAPE/Tolley2.pdf)
- Transportation Research Board, Cambridge Systematics, Inc. and Akin, Gump, Strauss, Hauer & Field, L.L.P. 2002. *National Cooperative Highway Research Program Project 8-36 (11): Technical Methods to Support Analysis of Environmental Justice Issues. Final Report*. Washington D.C.
- University of California Body Weight and Health Working Group. Accessed at <http://groups.ucanr.org/bdh/volunteer.htm>.

## APPENDICES

---

- A. GIS Methods
- B. Public Participation Methods
- C. Interview & Outreach List

### A. GIS Methods

#### Census Data

Census data from the 2000 decennial was used extensively. To better understand the maps and project reporting, Census definitions are provided from the U. S. Census Bureau American Fact Finder web site (<http://factfinder.census.gov/>). Project team definitions follow for further clarity.

**Block Group (BG):** A subdivision of a census tract (or, prior to 2000, a block numbering area), a BG is the smallest geographic unit for which the Census Bureau tabulates sample data. A block group consists of all the blocks within a census tract with the same beginning number. Example: BG 3 consists of all blocks within a 2000 census tract numbering from 3000 to 3999. In 1990, BG 3 consisted of all blocks numbered from 301 to 399Z.

**100-Percent Data:** Information based on a limited number of basic population and housing questions collected from both the short form and the long form for every inhabitant and housing unit in the United States.

**Sample Data:** Population and housing information collected from the census long form for a one in six sample of households in the United States and Puerto Rico, and on a continuous basis for selected areas in the American Community Survey.

**Disability:** A long-lasting physical, mental, or emotional condition. This condition can make it difficult for a person to do activities such as walking, climbing stairs, dressing, bathing, learning, or remembering. This condition can also impede a person from being able to go outside the home alone or to work at a job or business. Disability data is available from the Census Department *only* for the civilian, non-institutionalized population 5 years old and older.

**Hispanic or Latino Origin:** For Census 2000, American Community Survey: People who identify with the terms "Hispanic" or "Latino" are those who classify themselves in one of the specific Hispanic or Latino categories listed on the Census 2000 or ACS questionnaire - "Mexican," "Puerto Rican," or "Cuban" - as well as those who indicate that they are "other Spanish, Hispanic, or Latino." Origin can be viewed as the heritage, nationality group, lineage, or country of birth of the person or the person's parents or ancestors before their arrival in the United States. People who identify their origin as Spanish, Hispanic, or Latino *may be of any race*.

**Household:** A household includes all the people who occupy a housing unit as their usual place of residence.

**Housing Unit:** A house, an apartment, a mobile home or trailer, a group of rooms, or a single room occupied as separate living quarters, or if vacant, intended for occupancy as separate living quarters. Separate living quarters are those in which the occupants live separately from any other individuals in the building and which have direct access from outside the building or through a common hall. For vacant units, the criteria of separateness and direct access are applied to the intended occupants whenever possible.

**Occupied Housing Unit:** A housing unit is classified as occupied if it is the usual place of residence of the person or group of people living in it at the time of enumeration.

**Universe:** The total number of units, e.g., individuals, households, businesses, in the population of interest.

#### Project Team Definitions

**Minorities:** For the purpose of this project, minorities were defined as anyone who did *not* report himself/herself as White only, not Hispanic or Latino.

**Mobility-Impaired:** Any person over five years of age who has a disability according to the Census disability definition.

**Latino-** For the purpose of this project, Latinos were defined as anyone who did report himself/herself as Hispanic or Latino but *not* Native American and/or Alaska Native alone or in combination with one or more other races

**Native American-**For the purpose of this project, Native Americans were defined as anyone who reported himself/herself as Native American and/or Alaska Native alone or in combination with one or more other races and *not* Hispanic or Latino.

**Latino-Native American-**For the purpose of this project, Latino-Native Americans were defined as anyone who reported himself/herself as Latino or Hispanic *and* Native American and/or Alaska Native alone or in combination with one or more other races.

**Low-Income:** Gross household income below \$35,000. This number was determined by the following considerations:

- HHS 185% of poverty level for a family of four is \$35,798. Fed. Reg., Vol. 70, No. 33, Feb. 18, 2005, pp.8373-5.
- Census data indicates median income in Humboldt County is \$31,226 – the Housing & Urban Development Department (HUD) median for U.S. citizens, \$46,660, is significantly higher;
- Though HUD income limits are used to determine eligibility for low-income (Section 8) housing, most officials use HHS numbers (however land use planners use HUD numbers); and
- Families below 130% HHS level are eligible for food stamps and free school meals. Families below 185% HHS level are eligible for Women, Infants & Children program eligibility and other social service programs.

**Estimated Residential Locations:** Occupied parcels which have Humboldt County Use Codes:

0090	Manufactured Home Park
0093	Licensed MH in Park
0094	Licensed MH in Park w/taxable accessories
0095	Taxable MH in Park
0096	Taxable MH on fee parcel
0097	Licensed MH on fee parcel
0098	Taxable MH on Fee Parcel under different owner
0099	LicMHw/taxable accessories/differentowner
1100	Improved Single Family Residential
1300	Residential Care Home
2110	Improved, 10+ Units
2120	Improved, 2-4 Units
2150	Improved, 5-9 Units
2236	Low Income, Sec 236 Housing
2515	Low Income, Sec 515 Housing
3100	Improved, Rural Residential, up to .99 ac
3101	Improved, Rural Residential, 1 to 5 ac
3102	Improved, Rural Residential, 5+ to 10 ac
3103	Improved, Rural Residential, 10 to 20 ac
3104	Improved, Rural Residential, 20+ to 40 ac
3105	Improved, Rural Residential, 40+ac
3211	Rural, Agricultural, Residence, Unrestricted
3311	Ag Preserve, Res Imps
5603	Manufactured Home Park
9911	Single Family Res - Improved
9921	Multi-Family Res - 2-4 Units
9922	Multi-Family Res - 5-9 Units
9923	Multi-Family Res - 10+ Units
9931	Rural – Improved

### Parcel Layer

Parcels chosen as residential parcels were each assigned a point, located in the center of the parcel. The downloadable, free, third-party add-on program ETGeoWizards(c), point to polygon function, center point conversion option, was used to accomplish this.

From the point parcel layer, single family residential parcels were selected and then exported to a new layer. The same thing was done with the multi-family residential parcels.

### Jenks Natural Breaks

The Jenks optimization method is also known as the goodness of variance fit (GVF). It is used to minimize the squared deviations of the class means (SDBC). Optimization is achieved when the quantity GVF is maximized:

1. Calculate the sum of squared deviations between classes (SDBC).

$$GVF = \text{-----}$$

2. Calculate the sum of squared deviations from the array mean (SDAM).
3. Subtract the SDBC from the SDAM (SDAM-SDBC). This equals the sum of the squared deviations from the class means (SDCM).

The method first specifies an arbitrary grouping of the numeric data. SDAM is a constant and does not change unless the data changes. The mean of each class is computed and the SDCM is calculated. Observations are then moved from one class to another in an effort to reduce the sum of SDCM and therefore increase the GVF statistic. This process continues until the GVF value can no longer be increased. ("HowTo: Use the Jenks Optimization Method to Determine Natural Breaks in ArcView Legends", Article ID: 11961, ESRI Knowledge Base

<http://support.esri.com/index.cfm?fa=knowledgebase.techarticles.articleShow&d=11961>.

### Figures and Tables

Tables A1, A2, and A3, below, were created to provide a concentrated, tabular reference to the data represented graphically on the project maps. In all three tables, the column heading 'path number' is the project team's abbreviated identifier for Census Tract/Block Group. These path number identifiers are depicted on Figures 1a and 1b.

**100-Percent Data Table (Table A1):** The 100% Data Table includes minorities, Latinos, Native Americans, Latino-Native Americans, Elders, and Youth. The data is listed by Humboldt County Census block groups. For each block group, counts for individuals, households, and the categories above, are given. Percentages were calculated by dividing the block group count by the total number of individuals in that block group, based on the category of interest.

- 100% data were derived from the following Census tables and are available from <http://factfinder.census.gov/home/saff/main.html>:
- Elders - P12. Sex By Age [49] - Universe: Total population.
- Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data
- Youth - P14. Sex By Age For The Population Under 20 Years [43] - Universe: Population under 20 years. Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data
- Latinos, Native Americans, and Latino-Native Americans - P4. Hispanic Or Latino, And Not Hispanic Or Latino By Race [73] - Universe: Total population. Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data
- Minorities - P4. Hispanic Or Latino, And Not Hispanic Or Latino By Race [73] - Universe: Total population. Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data

- Households - P15. Households [1] - Universe: Households.
- Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data
- Housing Units - H1. Housing Units [1] - Universe: Housing units.  
Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data
- Occupied Housing Units - H3. Occupancy Status [3] - Universe: Housing units.  
Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data
- Individuals - P1. Total Population [1] - Universe: Total population.
- Data Set: Census 2000 Summary File 1 (SF 1) 100-Percent Data

**Sample Data Table (Table A2):** The Sample Data Table includes the Disabled, Carless Households, and Low Income Households. The data is listed by Humboldt County Census block groups. For each block group, sample counts for individuals, households, and the categories above, are given. The Disabled percentages were calculated by dividing the Disabled block group count by the civilian noninstitutionalized population 5 years and over block group count. Note: Disability data is available from the Census Department *only* for the civilian, non-institutionalized population 5 years old and older. Carless Households percentages were calculated by dividing Carless Households block group counts by the sample Occupied Housing Units block group counts. Low Income percentages were calculated by dividing Low Income Households block group counts by sample Households block group counts.

Sample data were derived from the following Census tables and are available from <http://factfinder.census.gov/home/saff/main.html>:

- Carless Households - - H44. Tenure By Vehicles Available [15] - Universe: Occupied housing units.  
Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data
- Disabled - P42. Sex By Age By Disability Status By Employment Status For The Civilian Noninstitutionalized Population 5 Years And Over [49] - Universe: Civilian noninstitutionalized population 5 years and over.  
Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data
- Low Income - P52. Household Income In 1999 [17] - Universe: Households.  
Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data
- Households – P52. Household Income In 1999 [17] - Universe: Households  
Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data
- Occupied Housing Units - H44. Tenure By Vehicles Available [15] - Universe: Occupied housing units.  
Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data
- Individuals - P1. TOTAL POPULATION [1] - Universe: Total population.  
Data Set: Census 2000 Summary File 3 (SF 3) - Sample Data

**Multivariate Transportation Disadvantage Data Table (Table A3):** The scores data table lists the scores for each of the six multivariate transportation disadvantaged characteristics for each block group. Combined characteristic scores, 100% data scores, and sample data scores were calculated for each block group. For a discussion of how scores were derived, refer to section, Maps of Multivariate Transportation Disadvantage, below.

Table A1: 100 Percent Data

Census Tract	Block Group	Path Number	Individuals 100% Data	Households 100% Data	Total Housing Units 100% Data	Occupied Housing Units 100% Data	Vacant Housing Units 100% Data	Minorities Count	Minorities Percent	Latinos Count	Latinos Percent	Native Americans Count	Native Americans Percent	Latino-Native Americans Count	Latino-Native Americans Percent	Youth Count	Youth Percent	Senior Count	Senior Percent
1	1	1	1473	645	690	645	45	434	29.46	187	12.70	130	8.83	22	1.49	264	17.92	114	7.74
1	2	2	1149	559	610	559	51	318	27.68	131	11.40	101	8.79	7	0.61	252	21.93	99	8.62
1	3	3	686	303	319	303	16	144	20.99	51	7.43	30	4.37	3	0.44	156	22.74	65	9.48
1	4	4	959	410	434	410	24	293	30.55	103	10.74	100	10.43	16	1.67	174	18.14	75	7.82
2	1	5	968	428	455	428	27	220	22.73	82	8.47	67	6.92	5	0.52	117	12.09	179	18.49
2	2	6	764	351	379	351	28	105	13.74	18	2.36	49	6.41	4	0.52	153	20.03	159	20.81
2	3	7	758	324	340	324	16	177	23.35	64	8.44	60	7.92	3	0.40	148	19.53	135	17.81
2	4	8	1446	531	557	531	26	374	25.86	106	7.33	137	9.47	12	0.83	335	37.00	159	11.00
2	5	9	801	282	285	282	13	306	38.20	119	14.86	75	9.36	8	1.00	142	17.73	74	9.24
2	6	10	1290	492	526	492	34	354	27.44	100	7.75	99	7.67	12	0.93	368	28.53	128	9.92
3	1	11	810	317	338	317	15	165	20.37	49	6.05	56	6.91	8	0.99	242	29.88	132	16.30
3	2	12	646	244	254	244	10	146	22.60	56	8.67	38	5.88	6	0.93	89	13.78	97	15.02
3	3	13	875	324	346	324	22	332	37.94	39	4.46	76	8.69	3	0.34	349	39.89	95	10.86
3	4	14	1633	677	703	677	26	256	15.68	73	4.47	90	5.51	4	0.24	330	20.21	238	14.57
3	5	15	1370	572	606	572	34	238	17.37	64	4.67	77	5.62	7	0.51	288	21.02	243	17.74
4	1	16	1129	440	450	440	10	114	10.10	46	4.07	28	2.48	3	0.27	245	21.70	197	17.45
4	2	17	1024	398	411	398	13	189	18.46	60	5.86	75	7.32	7	0.68	235	22.95	163	15.92
4	3	18	1648	683	722	683	39	367	22.27	122	7.40	133	8.07	9	0.55	343	20.81	235	14.26
5	1	19	1356	502	547	502	45	395	29.13	162	11.95	116	8.55	8	0.59	175	12.91	93	6.86
5	2	20	930	504	542	504	38	136	14.62	34	3.66	41	4.41	6	0.65	174	18.71	309	33.23
5	3	21	777	330	350	330	20	139	17.89	61	7.85	34	4.38	3	0.39	140	18.02	92	11.84
5	4	22	1045	437	485	437	48	207	19.81	62	5.93	77	7.37	4	0.38	174	16.65	114	10.91
6	1	23	853	301	313	301	12	140	16.41	49	5.74	61	7.15	4	0.47	212	24.85	204	23.92
6	2	24	793	340	362	340	22	108	13.62	35	4.41	39	4.92	5	0.63	58	7.31	224	28.25
6	3	25	775	347	360	347	13	108	13.94	35	4.52	34	4.39	4	0.52	238	30.71	170	21.94
6	4	26	1206	540	577	540	37	141	11.89	59	4.89	34	2.82	6	0.50	105	8.71	217	17.99
6	5	27	1196	487	507	487	20	174	14.67	76	6.41	60	5.06	4	0.34	163	13.74	211	17.79
7	1	28	1127	456	480	456	24	135	11.98	43	3.82	35	3.11	16	1.42	218	19.34	326	28.93
7	2	29	1619	667	703	667	36	281	17.36	81	5.00	86	5.31	27	1.67	275	16.99	235	14.52
7	3	30	1414	566	584	566	18	170	12.02	73	5.16	59	4.17	5	0.35	386	27.30	254	17.96
7	4	31	888	377	384	377	7	96	10.81	37	4.17	25	2.82	7	0.79	79	8.90	210	23.65
8	1	32	1051	424	473	424	49	144	13.70	34	3.24	64	6.09	9	0.86	161	15.32	332	31.59
8	2	33	1623	639	655	639	16	258	15.90	84	5.18	83	5.11	8	0.49	340	20.95	244	15.03
8	3	34	1867	760	803	760	43	199	10.66	61	3.27	82	4.39	11	0.59	397	21.26	296	15.85
9	1	35	1810	739	754	739	15	210	11.60	64	3.54	47	2.60	3	0.17	254	14.03	263	14.53
9	2	36	1114	424	439	424	15	114	10.23	29	2.60	34	3.05	0	0.00	199	17.86	162	14.54
9	3	37	2040	826	865	826	39	207	10.15	50	2.45	82	4.02	6	0.29	411	20.15	276	13.53
10	1	38	1452	714	734	714	20	324	22.31	117	8.06	51	3.51	5	0.34	69	4.75	102	7.02
10	2	39	823	154	165	154	11	169	20.53	64	7.78	12	1.46	7	0.85	28	3.40	15	1.82
10	3	40	795	365	373	365	8	108	13.58	27	3.40	32	4.03	4	0.50	95	11.95	110	13.84
10	4	41	929	567	589	567	22	209	22.50	78	8.40	24	2.58	12	1.29	105	11.30	61	6.57
10	5	42	1349	635	667	635	32	283	20.98	121	8.97	44	3.26	14	1.04	121	8.97	69	5.11
11	1	43	1380	571	627	571	56	238	17.25	68	4.93	100	7.25	17	1.23	235	17.03	138	10.00
11	2	44	1598	665	677	665	12	369	23.09	102	6.38	122	7.63	19	1.19	341	21.34	153	9.57
11	3	45	1422	605	612	605	7	328	23.07	154	10.83	72	5.05	9	0.63	170	11.95	117	8.23
11	4	46	1653	669	679	669	10	285	17.24	80	4.84	64	3.87	1	0.06	322	19.48	224	13.55
11	5	47	1564	653	671	653	18	220	14.07	49	3.13	73	4.67	10	0.64	283	18.09	344	21.99
12	1	48	2227	782	793	782	11	344	15.45	153	6.87	52	2.33	5	0.22	214	9.61	142	6.38
12	2	49	1084	392	432	392	40	88	8.12	42	3.87	29	2.68	0	0.00	161	14.85	142	13.10
12	3	50	1367	643	700	643	57	309	22.60	95	6.95	115	8.41	17	1.24	286	20.92	107	7.83
101.01	1	51	1404	452	543	452	91	1264	90.03	15	1.07	1192	84.90	48	3.42	468	33.33	144	10.26
101.01	2	52	1229	377	458	377	81	1071	87.14	19	1.55	1011	82.26	31	2.52	424	34.50	135	10.98
101.02	1	53	1168	500	682	500	182	262	22.43	78	6.68	149	12.76	5	0.43	239	20.46	233	19.95
101.02	2	54	449	174	233	174	59	314	69.93	6	1.34	273	60.80	19	4.23	145	32.29	55	12.25
101.02	3	55	595	239	327	239	88	220	36.97	16	2.69	192	32.27	4	0.67	165	27.73	97	16.30
101.02	4	56	532	282	430	282	148	110	18.58	8	1.35	76	11.8	95	16.05	180	30.41		
102	1	57	1305	597	663	597	266	208	15.94	49	3.75	112	8.58	9	0.69	222	17.01	243	18.62
102	2	58	709	334	431	334	97	137	19.32	21	2.96	86	12.13	8	1.13	118	16.64	147	20.73
102	3	59	811	356	384	356	28	92	11.34	29	3.58	40	4.93	1	0.12	107	13.19	96	11.84
103	1	60	918	338	350	338	12	107	11.66	32	3.49	50	5.45	7	0.76	207	22.55	79	8.61
103	2	61	615	252	262	252	10	66	10.73	22	3.58	31	5.04	0	0.00	125	20.33	84	13.66
103	3	62	688	300	326	300	26	128	18.60	12	1.74	93	13.52	2	0.29	128	18.60	100	14.53
103	4	63	790	371	410	371	39	105	13.29	20	2.53	50	6.33	1	0.13	101	12.78	133	16.84
103	5	64	597	221	258	221	37	64	10.72	9	1.51	35	5.86	3	0.50	129	21.61	58	9.72
104	1	65	1879	683	727	683	44	245	13.04	95	5.06	101	5.38	15	0.80	511	27.20	153	8.14
104	2	66	1609	632	656	632	24	257	15.97	49	3.05	150	9.32	15	0.93	386	22.75	203	12.62
105.01	1	67	1929	779	823	779	43	259	13.43	129	6.47	125	6.48	6	0.31	366	18.97	240	12.63
105.01	2	68	1226	498	509	498	11	243	19.82	56	4.57	137	11.17	5	0.41	346	28.22	116	9.46
105.01	3	69	1085	398	414	398	16	149	13.73	19	1.75	66	6.08	5	0.46	254	23.41	119	10.97
105.01	4	70	1348	509	527	509	18	199	14.76	52	3.86	102	7.57	8	0.59	344	25.52	145	10.76
105.02	1	71	1701	701	726	701	25	212	12.46	44	2.59	102	6.00	14	0.82	353	20.75	337	19.81
105.02	2	72	1440	592	612	592	20	197	13.68	75	5.21	63	4.38	7	0.49	336	23.33	205	14.24
105.02	3	73	1765	640	664	640</													

Table A2: Sample Data

Census Tract	Block Group	Path Number	Individuals Sample Data	Households Sample Data	Occupied Housing Units Sample Data	Civilian noninstitutionalized population 5 years old and over: Total Sample Data	Below \$35,000 Count	Below \$35,000 Percent	Disability Count	Disability Percent	Carless Count	Carless Percent
1	1	1	1478	622	647	1367	491	78.94	457	33.43	251	38.79
1	2	2	1218	540	573	1132	398	73.70	359	31.71	132	23.04
1	3	3	652	294	291	619	170	57.82	157	25.36	60	20.62
1	4	4	919	462	406	867	400	86.58	281	32.41	111	27.34
2	1	5	970	484	428	924	251	51.86	261	28.25	69	16.12
2	2	6	661	297	335	645	206	69.36	132	20.47	8	2.39
2	3	7	699	257	315	685	147	57.20	190	27.74	40	12.70
2	4	8	1605	510	541	1398	397	77.84	265	18.96	53	9.80
2	5	9	724	286	264	684	216	75.52	234	34.21	54	20.45
2	6	10	1368	565	525	1295	413	73.10	398	30.73	48	9.14
3	1	11	819	280	317	712	178	63.57	185	25.98	16	5.05
3	2	12	603	274	246	593	184	67.15	121	20.40	16	6.50
3	3	13	932	319	321	818	228	71.47	263	32.15	74	23.05
3	4	14	1626	691	684	1562	298	43.13	347	22.22	34	4.97
3	5	15	1354	572	566	1267	315	55.07	363	28.65	38	6.71
4	1	16	1138	466	440	1058	152	32.62	216	20.42	9	2.05
4	2	17	952	390	379	904	216	55.38	164	18.14	30	7.32
4	3	18	1711	673	702	1560	440	65.38	421	26.99	106	15.10
5	1	19	1396	539	516	1020	408	75.70	367	35.98	139	26.84
5	2	20	924	486	502	855	313	64.40	356	41.64	127	25.30
5	3	21	775	339	318	704	222	65.49	213	30.26	66	20.75
5	4	22	1014	416	437	958	270	64.90	318	33.19	143	32.72
6	1	23	816	287	301	662	153	53.31	85	12.84	0	0.00
6	2	24	784	339	321	770	176	51.92	267	34.68	15	4.67
6	3	25	891	325	364	846	138	42.46	95	11.23	12	3.30
6	4	26	1100	560	521	1037	339	60.54	335	32.30	30	5.76
6	5	27	1222	498	508	1196	219	43.98	308	25.75	17	3.35
7	1	28	1120	439	457	1027	193	43.96	199	19.38	25	5.47
7	2	29	1593	670	651	1518	347	51.79	311	20.49	61	9.37
7	3	30	1551	627	590	1436	279	44.50	191	13.30	10	1.69
7	4	31	784	330	368	752	144	43.64	159	21.14	27	7.34
8	1	32	1019	428	421	840	233	54.44	152	18.10	54	12.83
8	2	33	1731	643	645	1635	270	41.99	373	22.81	20	3.10
8	3	34	1791	771	757	1662	372	48.25	362	21.78	12	1.59
9	1	35	1842	741	736	1775	266	35.90	208	11.72	23	3.13
9	2	36	1082	433	427	1054	151	34.87	125	11.86	5	1.17
9	3	37	2040	832	826	1956	329	39.54	240	12.27	28	3.39
10	1	38	1406	771	716	1399	581	75.36	130	9.29	179	25.00
10	2	39	817	111	153	800	79	71.17	113	14.13	41	26.80
10	3	40	849	345	367	837	171	49.57	142	16.97	33	8.99
10	4	41	988	568	579	932	518	91.20	194	20.82	135	23.32
10	5	42	1288	639	620	1225	499	78.09	232	18.94	111	17.90
11	1	43	1355	580	554	1292	331	57.07	268	20.74	45	8.12
11	2	44	1527	647	627	1433	451	69.71	242	16.89	74	11.80
11	3	45	1443	598	630	1363	400	66.89	216	15.85	82	13.02
11	4	46	1603	625	633	1516	372	59.52	342	22.56	25	3.95
11	5	47	1689	718	719	1679	410	57.10	253	15.07	49	6.82
12	1	48	2305	824	804	2230	482	58.50	194	8.70	56	6.97
12	2	49	1001	346	368	983	126	36.99	95	9.66	9	2.17
12	3	50	1372	630	645	1284	476	76.40	371	28.99	81	12.56
101.01	1	51	1404	453	452	1262	323	71.30	217	17.19	73	16.15
101.01	2	52	1229	374	377	1096	223	59.83	229	20.89	43	11.41
101.02	1	53	1117	504	500	1064	326	64.68	309	29.04	12	2.40
101.02	2	54	465	174	175	433	154	88.51	138	31.87	44	25.14
101.02	3	55	601	239	231	552	149	62.34	114	20.65	20	8.66
101.02	4	56	621	280	289	600	112	40.00	178	29.67	0	0.00
102	1	57	1305	595	597	1250	374	62.86	313	25.04	49	8.21
102	2	58	706	340	332	666	171	50.29	148	22.22	9	2.71
102	3	59	814	352	358	786	170	48.30	122	15.52	10	2.79
103	1	60	918	340	338	872	114	33.53	107	12.27	10	2.96
103	2	61	628	251	250	698	119	47.41	120	20.03	7	2.90
103	3	62	677	305	302	643	163	53.44	146	22.71	20	6.62
103	4	63	770	376	366	737	212	56.38	133	18.05	18	4.92
103	5	64	617	217	226	589	76	35.02	70	11.88	5	2.21
104	1	65	1897	701	682	1757	296	42.23	312	17.76	12	1.76
104	2	66	1591	626	633	1487	249	39.78	238	16.01	33	5.21
105.01	1	67	2066	844	801	1954	351	41.59	521	26.66	9	1.12
105.01	2	68	1206	463	502	1039	298	64.36	262	25.22	21	4.18
105.01	3	69	1031	385	381	966	188	48.83	161	16.33	22	5.77
105.01	4	70	1285	480	500	1207	246	51.25	238	19.72	15	3.00
105.02	1	71	1701	693	701	1611	264	38.10	267	16.57	34	4.85
105.02	2	72	1469	605	581	1346	332	54.88	248	18.42	34	5.85
105.02	3	73	1736	626	651	1627	234	37.38	284	17.46	17	2.61
106	1	74	1235	495	505	1179	181	36.57	242	20.53	30	5.94
106	2	75	698	279	268	675	79	28.32	78	11.56	5	1.87
107	1	76	858	326	327	790	152	46.63	145	18.35	15	4.59
107	2	77	1777	735	711	1707	280	38.10	281	16.46	8	1.13
107	3	78	2437	806	825	2222	288	35.73	399	17.96	8	0.97
107	4	79	688	277	297	670	171	61.73	238	35.52	29	9.76
107	5	80	815	393	377	786	264	67.18	293	37.28	35	9.28
108	1	81	1181	480	479	1096	295	61.46	218	19.89	34	7.10
108	2	82	1435	566	532	1327	288	50.88	303	22.83	29	5.45
108	3	83	841	374	393	795	185	49.47	154	19.37	39	9.92
108	4	84	1240	488	510	1116	295	60.45	294	26.34	69	13.53
109	1	85	893	340	404	759	206	60.59	288	37.94	100	24.75
109	2	86	1938	759	714	1733	590	77.73	394	22.74	78	10.92
109	3	87	2013	762	745	1911	323	42.39	482	25.22	53	7.11
109	4	88	1366	522	521	1308	225	43.10	253	19.34	20	3.84
109	5	89	760	275	282	709	118	42.91	152	21.44	22	7.80
109	6	90	731	293	291	694	180	61.43	180	25.94	27	9.28
110	1	91	1759	608	659	1615	189	31.09	350	21.67	6	0.91
110	2	92	1330	661	617	1251	415	62.78	379	30.30	40	6.48
110	3	93	725	283	276	690	143	50.53	122	17.68	9	3.26
111	1	94	1017	418	408	953	247	59.09	257	26.97	54	13.24
111	2	95	1296	507	502	1243	314	61.93	335	26.95	61	12.15
111	3	96	1164	428	440	1072	227	53.04	239	22.29	13	2.95
111	4	97	1282	428	433	1178	189	44.16	150	12.73	12	2.77
112	1	98	846	390	392	751	203	52.05	113	15.05	26	6.63
112	2	99	1122	439	440	1051	178	40.55	151	14.37	27	6.14
112	3	100	1238	473	471	1180	234	49.47	209	17.71	9	1.91
113	1	101	1075	584	525	1034	290	49.66	198	19.15	17	3.24
113	2	102	1147	447	497	1102	281	62.86	271	24.59	47	9.46
113	3	103	1100	300	353	939	164	54.67	112	11.93	0	0.00
113	4	104	1329	514	517	1120	359	69.84	263	23.48	41	7.93
113	5	105	1167	658	579	1131	400	60.79	224	19.81	79	13.64
113	6	106	877	360	373	839	196	54.44	146	17.40	38	10.19
113	7	107	740	257	289	682	107	41.63	58	8.50	0	0.00
Totals			126518	51235	51238	118237	28219		25116		4479	

**Table A3: Multivariate Transportation Disadvantage Scores**

Census Tract	Block Group	Path Number	Minority Score (100%)	Car Score (Sample)	Youth Score (100%)	Low Income Score (Sample)	Elder Score (100%)	Disabled Score (Sample)	100% Score	Sample Score	Total Score
1	1	1	2	3	2	3	1	3	5	9	14
1	2	2	2	3	2	3	1	3	5	9	14
1	3	3	2	3	2	2	1	2	5	7	12
1	4	4	2	3	2	3	1	3	5	9	14
2	1	5	2	2	1	2	2	3	5	7	12
2	2	6	1	1	2	3	2	2	5	6	11
2	3	7	2	2	2	2	2	3	6	7	13
2	4	8	2	2	3	3	1	2	6	7	13
2	5	9	2	3	2	3	1	3	5	9	14
2	6	10	2	2	3	3	1	3	6	8	14
3	1	11	2	1	3	2	2	2	7	5	12
3	2	12	2	1	1	3	2	2	5	6	11
3	3	13	2	3	3	3	1	3	6	9	15
3	4	14	1	1	2	1	2	2	5	4	9
3	5	15	1	1	2	2	2	3	5	6	11
4	1	16	1	1	2	1	2	2	5	4	9
4	2	17	1	2	2	2	2	2	5	6	11
4	3	18	2	2	2	2	2	3	6	7	13
5	1	19	2	3	1	3	1	3	4	9	13
5	2	20	1	3	2	2	3	3	6	8	14
5	3	21	1	3	2	2	1	3	4	8	12
5	4	22	2	3	2	2	1	3	5	8	13
6	1	23	1	1	2	2	3	1	6	4	10
6	2	24	1	1	1	2	3	3	5	6	11
6	3	25	1	1	3	1	2	1	6	3	9
6	4	26	1	1	1	2	2	3	4	6	10
6	5	27	1	1	1	1	2	2	4	4	8
7	1	28	1	1	2	1	3	2	6	4	10
7	2	29	1	2	2	2	2	2	5	6	11
7	3	30	1	1	3	1	2	1	6	3	9
7	4	31	1	1	1	1	3	2	5	4	9
8	1	32	1	2	1	2	3	2	5	6	11
8	2	33	1	1	2	1	2	2	5	4	9
8	3	34	1	1	2	1	2	2	5	4	9
9	1	35	1	1	1	1	2	1	4	3	7
9	2	36	1	1	2	1	2	1	5	3	8
9	3	37	1	1	2	1	2	1	5	3	8
10	1	38	2	3	1	3	1	1	4	7	11
10	2	39	2	3	1	3	1	1	4	7	11
10	3	40	1	2	1	2	2	1	4	5	9
10	4	41	2	3	1	3	1	2	4	8	12
10	5	42	2	2	1	3	1	2	4	7	11
11	1	43	1	2	2	2	1	2	4	6	10
11	2	44	2	2	2	3	1	1	5	6	11
11	3	45	2	2	1	3	1	1	4	6	10
11	4	46	1	1	2	2	2	2	5	5	10
11	5	47	1	1	2	2	2	1	5	4	9
12	1	48	1	1	1	2	1	1	3	4	7
12	2	49	1	1	1	1	2	1	4	3	7
12	3	50	2	2	2	3	1	3	5	8	13
101.01	1	51	3	2	3	3	1	2	7	7	14
101.01	2	52	3	2	3	2	1	2	7	6	13
101.02	1	53	2	1	2	2	2	3	6	6	12
101.02	2	54	3	3	3	3	1	3	7	9	16
101.02	3	55	2	2	3	2	2	2	7	6	13
101.02	4	56	1	1	2	1	3	3	6	5	11
102	1	57	1	2	2	2	2	2	5	6	11
102	2	58	2	1	2	2	2	2	6	5	11
102	3	59	1	1	1	1	1	1	3	3	6
103	1	60	1	1	2	1	1	1	4	3	7
103	2	61	1	1	2	1	2	2	5	4	9
103	3	62	1	1	2	2	2	2	5	5	10
103	4	63	1	1	1	2	2	2	4	5	9
103	5	64	1	1	2	1	1	1	4	3	7
104	1	65	1	1	3	1	1	2	5	4	9
104	2	66	1	1	2	1	1	1	4	3	7
105.01	1	67	1	1	2	1	2	3	5	5	10
105.01	2	68	2	1	3	2	1	2	6	5	11
105.01	3	69	1	1	2	2	1	1	4	4	8
105.01	4	70	1	1	3	2	1	2	5	5	10
105.02	1	71	1	1	2	1	2	1	5	3	8
105.02	2	72	1	1	2	2	2	2	5	5	10
105.02	3	73	1	1	2	1	1	2	4	4	8
106	1	74	1	1	2	1	2	2	5	4	9
106	2	75	1	1	2	1	1	1	4	3	7
107	1	76	1	1	3	1	2	2	6	4	10
107	2	77	1	1	2	1	2	1	5	3	8
107	3	78	1	1	2	1	2	2	5	4	9
107	4	79	2	2	2	2	2	3	6	7	13
107	5	80	1	2	2	3	3	3	6	8	14
108	1	81	2	1	2	2	2	2	6	5	11
108	2	82	1	1	2	2	2	2	5	5	10
108	3	83	1	2	1	2	2	2	4	6	10
108	4	84	2	2	2	2	2	3	6	7	13
109	1	85	2	3	2	2	3	3	7	8	15
109	2	86	2	2	3	3	1	2	6	7	13
109	3	87	1	1	2	1	2	2	5	4	9
109	4	88	1	1	2	1	2	2	5	4	9
109	5	89	1	2	2	1	2	2	5	5	10
109	6	90	1	2	2	2	2	2	5	6	11
110	1	91	1	1	3	1	2	2	6	4	10
110	2	92	1	1	2	2	3	3	6	6	12
110	3	93	1	1	2	2	2	2	5	5	10
111	1	94	1	2	2	2	2	3	5	7	12
111	2	95	2	2	2	2	2	3	6	7	13
111	3	96	1	1	3	2	2	2	6	5	11
111	4	97	1	1	3	1	1	1	5	3	8
112	1	98	1	1	2	2	2	1	5	4	9
112	2	99	1	1	2	1	2	1	5	3	8
112	3	100	1	1	2	2	2	2	5	5	10
113	1	101	1	1	1	2	2	2	4	5	9
113	2	102	1	2	2	2	2	2	5	6	11
113	3	103	1	1	3	2	1	1	5	4	9
113	4	104	1	2	2	3	1	2	4	7	11
113	5	105	1	2	1	2	2	2	4	6	10
113	6	106	1	2	2	2	2	2	5	6	11
113	7	107	1	1	2	1	2	1	5	3	8

## Maps of Multivariate Transportation Disadvantage

To determine where the transportation disadvantaged are within the county the project team selected six characteristics considered to have the strongest impact on transportation access: minorities, low income households, carless households, people 15 years of age and under, people 62 years old and older, and disabled people 5 years old and older.

GIS vector layers were created for each of these six characteristics. For each layer, the data was divided up into three classes using the Jenks natural breaks algorithm in ArcMap. All six vector layers were converted to GIS raster layers, (ESRI GRIDS) for ease of use with map algebra and for later analysis. Using the numbers derived from Jenks, the six GRIDS were each reclassified, with each homogeneous group of pixels given a value of 1, 2, or 3 with 3 being the highest transportation disadvantaged class.

All six reclassified GRIDS were added together to create a new, combined GRID layer. Potential values ranged from 6 to 18. In this analysis, the highest value (16) represented the most concentrated level of transportation disadvantage.

All Block Group individual characteristic scores were entered into an Excel spreadsheet for later analysis and exporting to a dbf file.

The Block Group vector layer was given an additional field to accommodate combined scores for each block group. The combined scores were derived from the combined GRID layer. Individual characteristic scores were joined from the dbf file.

## Mapping Public Transit & Rural Para-Transit Routes

The project team obtained existing GIS data for some transit and para-transit routes. For unmapped routes, the team contacted service providers to obtain descriptions of service, frequency, eligible riders, locations of services and fee structures. Caltrans provided the project team with GIS layers for Greyhound, Amtrak and Del Norte County's Redwood Coast Transit, to which the project team added updated services and locations (though the team decided to leave out Greyhound and Amtrak data from final maps). The Humboldt County Community Development Department provided the project team with GIS layers for Eureka Transit Service, Redwood Transit System, Arcata & Mad River Transit System and the Blue Lake Rancheria Transit System. In some instances, printed bus schedules were used to determine and update locations and frequency of operation. The routes and service areas were summarized and mapped using ArcMap.

The project team determined it to be important to separate transit from para-transit layers based on eligible riders and types of service. Some of the services are designed specifically for seniors or those with disabilities or for those who, for various reasons, cannot use fixed route transportation to meet their non-emergency medical appointment needs, and do not allow the general public to use their services. These services were categorized as "limited access," whereas the services open to the general public were categorized as "public transit."

To define adequate access to fixed-route public transit, the project team mapped a 1/4-mile 'sphere', or 5-minute walk, around each bus stop. Other mapping efforts show this sphere from transit routes, however the project team decided to map access areas around stops only because the fixed-route public transit will pick up and let off riders *only* at designated bus stops.

Project mapping efforts and analysis do not include casino shuttles (Trinidad, Rohnerville, Blue Lake), private transportation services (such as taxi-cabs), or issue-specific services, such as transportation to/from dialysis or cancer treatments, unless they are contracted through HCAOG or a social service agency/non-profit for coordinated services.

## Key Destinations

Key service destinations, or 'trip generators' were mapped that, in any community on any given day, will generate a substantial need for public access including: health care facilities such as hospitals, health clinics and care centers; social and human services such as shelters, employment agencies, family resource centers and food

distribution centers; major employers; educational institutions; fresh food grocery stores; and civic services such as libraries, post offices and the California Department of Motor Vehicles.

There are a variety of additional services and facilities that generate access demand as well, but they vary widely with population groups. For example, youth may consider recreational facilities (parks, playgrounds, skateparks), teen centers, and schools as their principal services, but seniors may consider pharmacies, senior centers and churches their main trip generators. For the purposes of this project, these services and facilities have been intentionally omitted to reduce map clutter and focus on sites that have more broad access demand for transportation-disadvantaged populations and the public in general.

**Pedestrian & Bicycle Collisions: Statewide Integrated Traffic Records System (SWITRS)**

SWITRS raw data in ASCII fixed record length was provided to NRS by Humboldt County Public Health. Collision data covers the calendar years 1992-2003 and January to June of 2004. Each year’s data is divided into three tables: collisions, party, and victim. The tables are related by case number. Along with the raw data, NRS received SWITRS instructions and templates to link the raw data tables in Microsoft Access.

Tables were linked in Access. Pedestrian and bicycle accident records from the collision, party, and victim tables, for Eureka, California only were selected and exported to Microsoft Excel.

Point locations for pedestrian and bicycle collisions for the years 1999-2003, and for January – June of 2004 were digitized to create GIS layers for each of 5.5 years, using ESRI ArcMap software and the verbal descriptions of the locations provided in the SWITRS data tables.

Excel tables were joined to the GIS layers. Each year’s GIS layer was then divided into pedestrian and bicycle collision layers.

Only 2002-2004 data included race of people involved in the collision. Age data was incomplete for the people involved in the collision. Locations of a few of the collisions were indeterminate. For example, the location, US Route 101 and R Streets, could be located at 4<sup>th</sup> and R Street or at 5<sup>th</sup> and R Street as US Route 101 is divided into two one-way streets through part of Eureka. When a location was indeterminate, it was noted as such in the attribute table associated with the GIS layer.

**GIS Data Details**

<b>Data Layer</b>	<b>Data Source</b>	<b>Process</b>	<b>Notes and Assumptions</b>
<b>Residential Parcels</b>	Humboldt County GIS	<ul style="list-style-type: none"> <li>Residential parcels were selected from the parcel polygon GIS layer based on land use codes... See estimated Residential Locations list above</li> <li>The polygons were converted to points for display purposes using the point to polygon function, center point conversion option, of the third-party add-on program ETGeoWizards©.</li> </ul>	<ul style="list-style-type: none"> <li>The center point of each polygon is shown on the maps</li> <li>Each point represents one polygon.</li> <li>The center point of each residential polygon is shown on the maps.</li> <li>Each point represents one polygon. Multi-family units and single-family units are distinguished by different colored dots.</li> </ul>
Humboldt County Roads	Original Data from US Census Tiger files – Humboldt County GIS made improvements and corrections to Humboldt County	<ul style="list-style-type: none"> <li>Used as base layer for transit routes.</li> </ul>	<ul style="list-style-type: none"> <li>There are some spatial inaccuracies in the data.</li> </ul>

	portion.		
Transit Routes	Humboldt County GIS, Caltrans	<ul style="list-style-type: none"> <li>• Transit operators provided route descriptions and schedules upon request</li> <li>• GIS point and line layers were edited to reflect current bus routes.</li> <li>• Transit operator web sites, printed schedules, and personal communications as well as web based MapQuest were used to locate bus stops and determine route paths.</li> </ul>	<ul style="list-style-type: none"> <li>• Bus schedules/routes change periodically. GIS bus route layers should be checked for updates twice a year.</li> </ul>
Para-transit Routes	Redwood Community Action Agency (RCAA) Natural Resources Services	<ul style="list-style-type: none"> <li>• Bus route point and line layers were created using the roads layer as a base layer. Transit operator web sites, printed schedules, and personal communications as well as web based MapQuest© were used to locate bus stops and determine route paths.</li> </ul>	<ul style="list-style-type: none"> <li>• Bus schedules/routes change periodically. GIS bus route layers should be checked for updates twice a year.</li> </ul>
Census Block Groups	US Census 2000	<ul style="list-style-type: none"> <li>• Downloaded Census 2000 TIGER GIS block group boundary file</li> </ul>	
Carless Households	US Census 2000	<ul style="list-style-type: none"> <li>• Downloaded Census 2000 spreadsheet data for all Block Groups in Humboldt County.</li> <li>• Added numbers for renters and owners together in spreadsheet</li> <li>• Calculated percentages in spreadsheet</li> <li>• Joined Census data to GIS block group boundary file and created new GIS layer</li> </ul>	<ul style="list-style-type: none"> <li>• See above for Census definitions.</li> <li>• Census data based on a 1 of 6 households sample.</li> <li>• Census Table H44 – sample data.</li> </ul>
Low Income	US Census 2000	<ul style="list-style-type: none"> <li>• Downloaded Census 2000 spreadsheet data for all Block Groups in Humboldt County.</li> <li>• Added income groups together in spreadsheet to obtain “under \$35,000” group.</li> <li>• Calculated percentages in spreadsheet</li> <li>• Joined Census data to GIS block group boundary file and created new GIS layer</li> </ul>	<ul style="list-style-type: none"> <li>• See above for Census and project team definitions.</li> <li>• Census data based on a 1 of 6 households sample.</li> <li>• Census Table P52 – Sample Data</li> </ul>
Minority	US Census 2000	<ul style="list-style-type: none"> <li>• Downloaded Census 2000 minorities spreadsheet data for all Block Groups in Humboldt County.</li> <li>• Added together all groups other than White only, not Hispanic or Latino.</li> <li>• Calculated percentages, by block group in spreadsheet.</li> <li>• Joined Census data to GIS block group boundary file and created new GIS layer</li> <li>• Calculated percentages, by block group in spreadsheet</li> <li>• Joined Census data to GIS block group boundary file and created new GIS layer</li> </ul>	<ul style="list-style-type: none"> <li>• See above for Census and project team definitions</li> <li>• Census data is 100% data.</li> <li>• Census Table P4 – 100% data</li> </ul>
Seniors	US Census 2000	<ul style="list-style-type: none"> <li>• Downloaded Census 2000 spreadsheet data for all Block Groups in Humboldt</li> </ul>	<ul style="list-style-type: none"> <li>• See above for Census and project team definitions.</li> </ul>

		<ul style="list-style-type: none"> <li>County.</li> <li>Added together age groups for males and females to obtain total population age 62 or over</li> <li>Calculated percentages, by block group, in spreadsheet</li> <li>Joined Census data to GIS block group boundary file and created new GIS layer</li> </ul>	<ul style="list-style-type: none"> <li>Census data is 100% data</li> <li>Census Table P12 – 100% data</li> </ul>
Youth	US Census 2000	<ul style="list-style-type: none"> <li>Downloaded Census 2000 spreadsheet data for all Block Groups in Humboldt County.</li> <li>Added together age groups for males and females to obtain total population age 15 and under</li> <li>Calculated percentages, by block group, in spreadsheet</li> <li>Joined Census data to GIS block group boundary file and created new GIS layer</li> </ul>	<ul style="list-style-type: none"> <li>See above for Census and project team definitions.</li> <li>Census data is 100% data</li> <li>Census Table P14 – 100% data</li> </ul>
Disability	US Census 2000	<ul style="list-style-type: none"> <li>Downloaded Census 2000 spreadsheet data for all Block Groups in Humboldt County.</li> <li>Added together age groups for males and females to obtain total population over age 5 with a disability</li> <li>Calculated percentages, by block group, in spreadsheet</li> <li>Joined Census data to GIS block group boundary file and created new GIS layer</li> </ul>	<ul style="list-style-type: none"> <li>See above for Census and project team definitions.</li> <li>Census data based on a 1 of 6 households sample</li> <li>Disabilities are generally over-reported in Census data due to problems with the design of the Census form.</li> <li>Disability data available only for civilian, non-institutionalized population 5 years old and older.</li> <li>Census Table P42 – Sample data</li> </ul>
Trip Generators - Schools	Humboldt County Office of Education	<ul style="list-style-type: none"> <li>Developed spreadsheet with names and addresses</li> <li>Created a point layer using ArcMap, with locational help from MapQuest</li> <li>Joined spreadsheet and GIS layer</li> </ul>	<ul style="list-style-type: none"> <li>Includes all public elementary, middle, high schools and colleges in Humboldt County.</li> </ul>
Trip Generators - Employers	ALMIS Employer Database, 2006 1st Edition: provided by the local Labor Market Information Division of the Employment Development Department with interest in promoting access to employment in Humboldt County.	<ul style="list-style-type: none"> <li>Upon request, the Employment Development Department provided a list of County’s largest employers</li> <li>Developed spreadsheet with names and addresses</li> <li>Created a point layer using ArcMap, with locational help from MapQuest</li> <li>Joined spreadsheet and GIS layer</li> </ul>	<ul style="list-style-type: none"> <li>Employers were broken up into three categories – those with 100+, 250+, and 500+ employees.</li> <li>For those obvious employers not listed on the above database, the project team made phone calls to verify numbers of employees.</li> <li>Those employers with high numbers of employees, but a dispersed workforce were omitted.</li> </ul>
Trip Generators – Civic Services	RCAA Natural Resources Services and SBC November 2005	<ul style="list-style-type: none"> <li>Developed spreadsheet with names and addresses</li> <li>Created a point layer using ArcMap,</li> </ul>	<ul style="list-style-type: none"> <li>Not included in the final mapping effort.</li> </ul>

	Humboldt County, CA phone directory	<ul style="list-style-type: none"> <li>with locational help from MapQuest</li> <li>• Joined spreadsheet and GIS layer</li> </ul>	
Trip Generators – Human and Social Services	RCAA Natural Resources Services and SBC November 2005 Humboldt County, CA phone directory and consultations	<ul style="list-style-type: none"> <li>• Developed spreadsheet with names and addresses</li> <li>• Created a point layer using ArcMap, with locational help from MapQuest</li> <li>• Joined spreadsheet and GIS layer</li> </ul>	<ul style="list-style-type: none"> <li>• Not included in the final mapping effort.</li> </ul>
Trip Generators – Health Services	RCAA Natural Resources Services and SBC November 2005 Humboldt County, CA phone directory and consultations	<ul style="list-style-type: none"> <li>• Developed spreadsheet with names and addresses</li> <li>• Created a point layer using ArcMap, with locational help from MapQuest</li> <li>• Joined spreadsheet and GIS layer</li> </ul>	<ul style="list-style-type: none"> <li>• Public health clinics, urgent care facilities and hospitals included.</li> <li>• Private practices and specific-care medical facilities were not included.</li> </ul>
Concentrated Transportation Disadvantage	US Census 2000	<ul style="list-style-type: none"> <li>• Converted Minorities, Low Income, Disabled, Youth, Elders, Carless Households vector layers to raster (GRID) layers</li> <li>• Reclassified GRID layers based on Jenks natural breaks classification</li> <li>• Added all GRID layers together</li> <li>• Assigned combined scores from GRID layers to Block Group vector layer.</li> <li>• Joined Block Group individual characteristics scores database file with vector layer</li> <li>• 100% data – demographics layer was created by selecting out and exporting that data from combined vector layer , above.</li> <li>• Sample data – characteristics layer was created by selecting out and exporting that data from combined vector layer , above.</li> </ul>	
SWITRS - Bicycle and Pedestrian Collisions	Statewide Integrated Traffic Records System (SWITRS) and Humboldt County Public Health?	<ul style="list-style-type: none"> <li>• Linked tables from SWITRS raw ASCII fixed record length data using Microsoft Access and the Access tables formatting and instructions SWITRS provided with the data.</li> <li>• Selected records for Eureka, CA only and exported those records to Microsoft Excel.</li> <li>• Digitized points for pedestrian and bicycle collisions per the locational information contained in the Excel spreadsheets.</li> <li>• Joined the spreadsheets and the collision point layers.</li> <li>• Separated the combined bicycle and pedestrian point layers to create both bicycle and pedestrian layers.</li> </ul>	<ul style="list-style-type: none"> <li>• Only 2002-2004 included race data for collision participants.</li> <li>• Age data for collision participants was incomplete.</li> <li>• Some collision locations were indeterminate.</li> <li>• Assume that not all collisions were reported.</li> </ul>

Bicycle Lanes	Data pending from HCAOG Bicycle Transportation Plan Update	<ul style="list-style-type: none"> <li>Data was received from project consultant</li> </ul>	
Latinos	US Census 2000	<ul style="list-style-type: none"> <li>Downloaded Census 2000 Latinos spreadsheet data for all Block Groups in Humboldt County.</li> <li>Joined Census data to GIS block group boundary file and created new GIS layer.</li> <li>Calculated percentages, by block group in spreadsheet</li> </ul>	<ul style="list-style-type: none"> <li>See above for Census and project team definitions.</li> <li>Census data is 100% data</li> <li>Census Table P4 – 100% data</li> </ul>
Native Americans	US Census 2000	<ul style="list-style-type: none"> <li>Downloaded Census 2000 Native Americans spreadsheet data for all Block Groups in Humboldt County.</li> <li>Joined Census data to GIS block group boundary file and created new GIS layer.</li> <li>Calculated percentages, by block group in spreadsheet.</li> </ul>	<ul style="list-style-type: none"> <li>See above for Census and project team definitions.</li> <li>Census data is 100% data</li> <li>Census Table P4 – 100% data</li> </ul>
Latino-Native American	US Census 2000	<ul style="list-style-type: none"> <li>Downloaded Census 2000 Latinos spreadsheet data for all Block Groups in Humboldt County.</li> <li>Joined Census data to GIS block group boundary file and created new GIS layer.</li> <li>Calculated percentages, by block group in spreadsheet</li> </ul>	<ul style="list-style-type: none"> <li>See above for Census and project team definitions.</li> <li>Census data is 100% data</li> <li>Census Table P4 – 100% data</li> </ul>

## B. Public Participation Methods

The project team collected information from transportation stakeholders around the County in a number of ways, starting in the fall of 2005 through the spring of 2006, including:

- Three ‘Transportation Roundtables’ in November of 2005:
  - Health services and community organization representatives;
  - Land use and economic development professionals; and
  - Transportation facility and services planning, construction and management professionals.
  - Summary of major issues included in report Attachment 2: ‘Summary of Information from Interviews, Meetings & Existing Documents’.
- A transportation ‘Forum’ in December, 2005. Presentations were made by visiting transportation experts Jeff Hobson (Transportation & Land Use Coalition) and Todd Litman (Victoria Transport Policy Institute). Small, multi-disciplinary groups explored solutions to some of the County’s significant, recurring transportation challenges. Summary available at [www.nrsrcaa.org/path/pdfs/PATHForumSummaryDec05.pdf](http://www.nrsrcaa.org/path/pdfs/PATHForumSummaryDec05.pdf)
- Members of the project team attended number of existing meetings and sought input from groups of stakeholders focused on particular issue areas (workforce development, Latino community, active living, seniors, rural resource and community needs).
- Interviews were conducted with a cross-section of key individuals from stakeholder organizations representing health, workforce development, senior services, mobility-impaired services, rural services, minorities, youth, education, low-income programs, and others.

The groups and individuals consulted in this effort are summarized in Appendix C.

Interview questions included:

- Experience with transport issues: what’s holding you back from accomplishing your work?
- Currently documenting transportation issues? Potential to expand? Have staff focused on or knowledgeable about transportation?
- Interest in/capacity to feed information into transport planning process?
- Any known efforts to collaborate between organizations with similar needs?
- Interest in/capacity to collaborate with other stakeholders? Interest in a mid-April Workshop to seek solutions?
- Suggested Public Participation techniques to reach your population? (where appropriate)
- Others we should contact?
- Meeting topics included:
  - Explanation of the project objectives;
  - Identification of the most significant transportation issues facing the particular group of stakeholders; and
  - Sources of potential information: documents, data collection efforts, additional people to contact.

## C. Interview & Outreach List

The following list will be updated to include position titles: each listing represents a distinct individual who participated as noted.

Organization/Affiliation	Roundtable	Forum	Interview/Meeting	Workshop
Arcata and Mad River Transit System (A&MRTS)	X	X		X
Arcata Economic Development Corporation	X	X		
Area 1 Agency on Aging	X		X	X
Bear River Band of Rohnerville Rancheria				
Blue Lake Rancheria and Dial-A-Ride		X	X	
Blue Lake & Ferndale Public Works Dept. Contractor		X		
Bridgeville Community Center Van		X		X
Caltrans District 1	X	X		X
Caltrans District 1		X		
Caltrans District 1		X		
Caltrans District 1		X		X
Caltrans District 1	X			
City of Arcata	X			
City of Arcata Community Development		X		
City of Arcata Public Works	X	X		
City of Arcata, Transportation Safety Committee	X			
City of Eureka Community Development		X		
City of Eureka Engineering Department		X		
City of Rio Dell	X			
Community Health Alliance			X	
EDD, County Labor Market Information Devt.			X	
Dean of Community & Economic Development			X	
Eureka Adult School			X	
Eureka City Schools, Family Resource Center Homeless Ed. Project			X	
Eureka Police Department		X		
Eureka Transit Service		X		
Even Start	X		X	
Family Resource Centers			X	X
Ferndale - "Bridge the Gap" program				X
First Five Humboldt			X	
Food for People			X	
Fortuna Senior Bus				
HCAOG Citizens' Advisory Committee				X
HCAOG Citizens' Advisory Committee				X
Hoopa Tribe			X	
Hoopa Tribe			X	
HSU CA Center for Rural Health Policy			X	
HSU CA Rural Health Policy Institute			X	
Humboldt Area Foundation				X

Humboldt Bay Bicycle Commuters' Association		X		
Humboldt Community Access and Resource Center (HCAR)	X		X	X
Humboldt Council of the Blind			X	X
Humboldt County Association of Governments	X	X		
Humboldt County CalWorks			X	
Humboldt County Community Development Department	X	X		
Humboldt County Community Development Department		X		
Humboldt County Economic Development	X		X	
Humboldt County Employment & Training Dept.			X	
Humboldt County Environmental Health	X	X		
Humboldt County Health and Human Services, Public Health Branch			X	
Humboldt County Human Rights Commission			X	
Humboldt County Injury Prevention		X		
Humboldt County Mental Health			X	
Humboldt County Office of Education				
Humboldt County Office of Emergency Services				
Humboldt County Public Health		X		
Humboldt County Public Works	X			X
Humboldt County Public Works		X		
Humboldt County Public Works				X
Humboldt Partnership for Active Living				
Humboldt Senior Resource Center				
Humboldt Senior Resource Center -Linkages Program		X	X	X
Humboldt State University, NRPI		X		
Humboldt Transit Authority (HTA)	X	X		
K/T Net (Klamath Trinity Non Emergency Transportation)	X	X		X
LatioNET		X		
Lighthouse of the North Coast			X	
Manila Community Services District		X		
Mary Bendle Health Resource Center				
Mendocino Council of Governments				
Mobile Medical			X	
Newcomer Center		X	X	X
Northern Humboldt Union High School District				
North Coast Clinic Network			X	
North Coast Nutrition & Health Collaborative		X		
Northern CA Indian Dev't Council			X	
One Stop/ Job Market			X	
Open Door Clinics			X	X
Open Door Clinics			X	
Open Door Clinics				X
Orick Community Resource Center	X			
Planwest Partners	X	X		X
Public Health - Art				
Redwood Community Action Agency	X	X		X
RCAA Multiple Assistance Center (MAC)			X	
Redwood Region Economic Development Commission	X			
Redwoods Rural Health Clinic			X	
SHUSD, Redway FRC			X	
So. Trinity Health Services			X	
Southern Humboldt Rural Transit Service (the "Quail")			X	

St. Joe's Annual Needs Assessment			X	
St. Joseph's Eureka Resource Center	X		X	X
St. Joseph's Home Health			X	
Sun Valley Bulb Farm HR Dept.			X	
Tri County Independent Living	X	X	X	
United Indian Health Services, Inc. (UIHS)		X		
WISH			X	
Wiyot Tribe- Table Bluff Reservation			X	
Workforce Investment Board			X	
Youth Services Bureau		X		
Yurok Tribal Planning Department			X	
Yurok Tribal Planning Department			X	
Caltrans District 1				X
Humboldt County CalWorks				X
Humboldt County Supervisor				X