

# **TRANSIT ACCESS STUDY**

**STUDY FUNDED BY A  
TECHNICAL PLANNING ASSISTANCE GRANT  
FROM THE  
FEDERAL TRANSIT ADMINISTRATION**

**TEHAMA COUNTY TRANSPORTATION COMMISSION  
9380 SAN BENITO AVENUE  
GERBER, CA 96035**

**APRIL 6, 2010**

**FOR QUESTIONS REGARDING THIS STUDY, PLEASE CONTACT ADAM HANSEN,  
ASSOCIATE TRANSPORTATION PLANNER (530) 385-1462 EXT. 3028 OR  
BY EMAIL [AHANSEN@TCPW.CA.GOV](mailto:AHANSEN@TCPW.CA.GOV)**

## Acknowledgements

Special thanks to Garth Hopkins, Chief of the Office of Regional and Interagency Planning, the working partners of his staff and the Department of Transportation, for securing the funding and supporting the amendments which resulted in a completed study.

We recognize and appreciate the interest and efforts of the below listed, consultants, and citizens for their participation in the development of this plan:

Federal Transit Administration

Caltrans District 2

Caltrans, ORIP

Tehama County Department of Social Service

Tehama County Health Partnership

Tehama County Health Services Agency

Tehama County Head Start

CalWORKS

Women, Infants and Children (WIC)

Tehama County Public Works

Tehama Rural Area Express

Tehama County Social Service Transportation Advisory Council (SSTAC)

Tehama County Transportation Commission & Tehama County Transit Agency Board

Cities of Corning, Red Bluff, and Tehama

Elder Services Coordinating Council of Tehama County

North Valley Services

Paratransit Services

Rural Counties Task Force

St. Elizabeth Community Hospital

All the members of the public who participated and provided the information that made this Access to Transit study possible

# Transit Access Study

## I. Introduction

The Tehama County Transportation Commission submitted a grant application to conduct a study to achieve three objectives; 1) Identify and map origins of transit dependent/Americans with Disabilities Act (ADA) riders and social service clients. 2) Use GIS to identify the relationship between client origins and transit facilities (Tehama County Access to Transit Rider Facilities Study, 2006-07). 3) Use GIS to identify locations of transit facilities and identify deficiencies to create a facility upgrade plan. By carrying out these three objectives, a plan would be created to improve the transit facilities in Tehama County. The focus of the improvements is to increase the amenities available at bus stops. Tehama County lacks the funds to update all stops concurrently, but a plan to focus resources to improve the bus stops on areas located closest to the most potential ADA clients.

Tehama County is located in the North Central Valley and consequently has a hot dry climate. The climate has extreme weather that often hinders members of the public from using public transit. Extreme summer temperatures can be potentially dangerous for the elderly population that is more sensitive to it. Rain, wind and cold weather can also impact ridership. Better bus stop amenities than what currently exist will be needed to allow a greater proportion of transit users to access transit safely for a greater portion of the year.

In 2007, TCTC staff submitted a 5311 Discretionary Subsidy Funding grant application for Category 2-Bus Stop Improvements. Tehama County was awarded \$98,000 to improve the amenities offered at bus stops system wide. The grant funds were used to purchase 20 bus shelters from Tolar Manufacturing. These shelters contain a shade structure, bench, trash receptacle, recycling container and a map case for posting information and route maps. ARRA funds have provided the opportunity to purchase 24 more shelters. Once these shelters are installed in spring of 2010, 50 of the 78 TRAX bus stops will have the amenities that the Coordinated Human Services Plan listed as high priority. Data produced such as a mapped locations of each stop, photographs of each stop that shows access and surrounding uses, and an inventory of current amenities at each bus stop was instrumental in the placement of these improvements.

**II. Data Collection**

In the spring of 2008, surveys were distributed to county agencies and ParaTransit. Surveys were distributed to In-Home Health Services, CalWorks, Women, Infants and Children (WIC), Headstart, Tehama County Health Care, Tehama County Mental Health (MH), Social Services and Tehama County Department of Education. The returned surveys were tabulated in excel and checked for quality and completeness before being plotted on the map. Fewer than expected surveys were completed, so In-Home Health Services was contacted and asked to share their database for the study. Detailed information such as apartment numbers were not needed as only the general location of the address was needed for this study.

Table 1- Source of addresses uses to conduct study

<u>Source of data or survey</u>	<u># of Participants</u>
In Home Health Services	791
ADA Database	204
Women, Infants and Children (WIC)	129
Tehama Rural Area Express (TRAX)	65
Head Start	41
Tehama County Health Care (TCHC)	15
CalWorks	7
Various agencies/unknown	18

Total addresses: 1,270

In all 1,270 addresses were used from client lists or those that answered yes when asked if they rode public transit on the surveys. Funds from this grant were used to purchase TeleAtlas. The TeleAtlas software purchased enabled us to plot client locations on the map by geocoding their address. Using the geocoding tool in ARCInfo, client addresses were placed on a map. Staff then updated the Tehama County transit routes and bus stop locations and added the shapefiles to the map. With the data collected, geocoded and mapped, the study could proceed with an in-depth analysis. Questions can now be answered about access to transit such as: 1) what percentage of clients has access to bus stops with essential amenities? 2) What percentage of clients live with the ¼ mile limit that TRAX is legally required to deviate? 3) Where do clusters of clients exist that do not have access to transit?

Additional data was collected to be used in the analysis by doing a physical inspection of each bus stop on the transit system. During the inspection the exact location of the bus stop was recorded using a GPS device. Photographs of the shelters and vicinity were taken so that accessibility to the bus stop could be analyzed from the pictures. The photographs were taken

from all 4 angles so that the surrounding land uses could also be analyzed. From the photographs, an inventory of amenities provided at each bus stop such as garbage cans, bus stop signs, benches, shelters and ramps, type of surface around the bus stop, and existence of curbs, and conditions of sidewalk were noted.

Additional GIS data was created as each route was accurately mapped with the accompanying stops. The amenities that each stop has was gleaned from the photographs and added to the attribute table of the layers. By adding such attributes to the bus stop layer, the data was aggregated to one location for quick easy access for discussion and analysis. Then it could be determined what amenities are needed.

### III. Analysis

A total of 1,270 addresses were geocoded from the surveys. These addresses/origins of clients were then analyzed in relation to the transit routes. A  $\frac{3}{4}$  mile wide buffer was added to all transit routes which is the distance fixed route transit must deviate to accommodate an ADA certified rider. Many transit studies use .5 miles as the maximum walking distance that riders will travel to access transit, but more recent studies show that real or perceived obstacles are more of a factor than distance. Many of the surveys received or addresses used for this study are from people who would qualify for ADA and could request route deviation. If the rider does not qualify for ADA a  $\frac{3}{4}$  mile distance away from the transit route takes approximately 15 minutes to walk at a leisurely pace over level terrain. The TRAX service area consists of mostly flat terrain and has minimal obstacles except for streams with limited crossing points and railroad tracks. It was therefore determined that any point within  $\frac{3}{4}$  of a mile from a TRAX route would be considered to have access to transit.

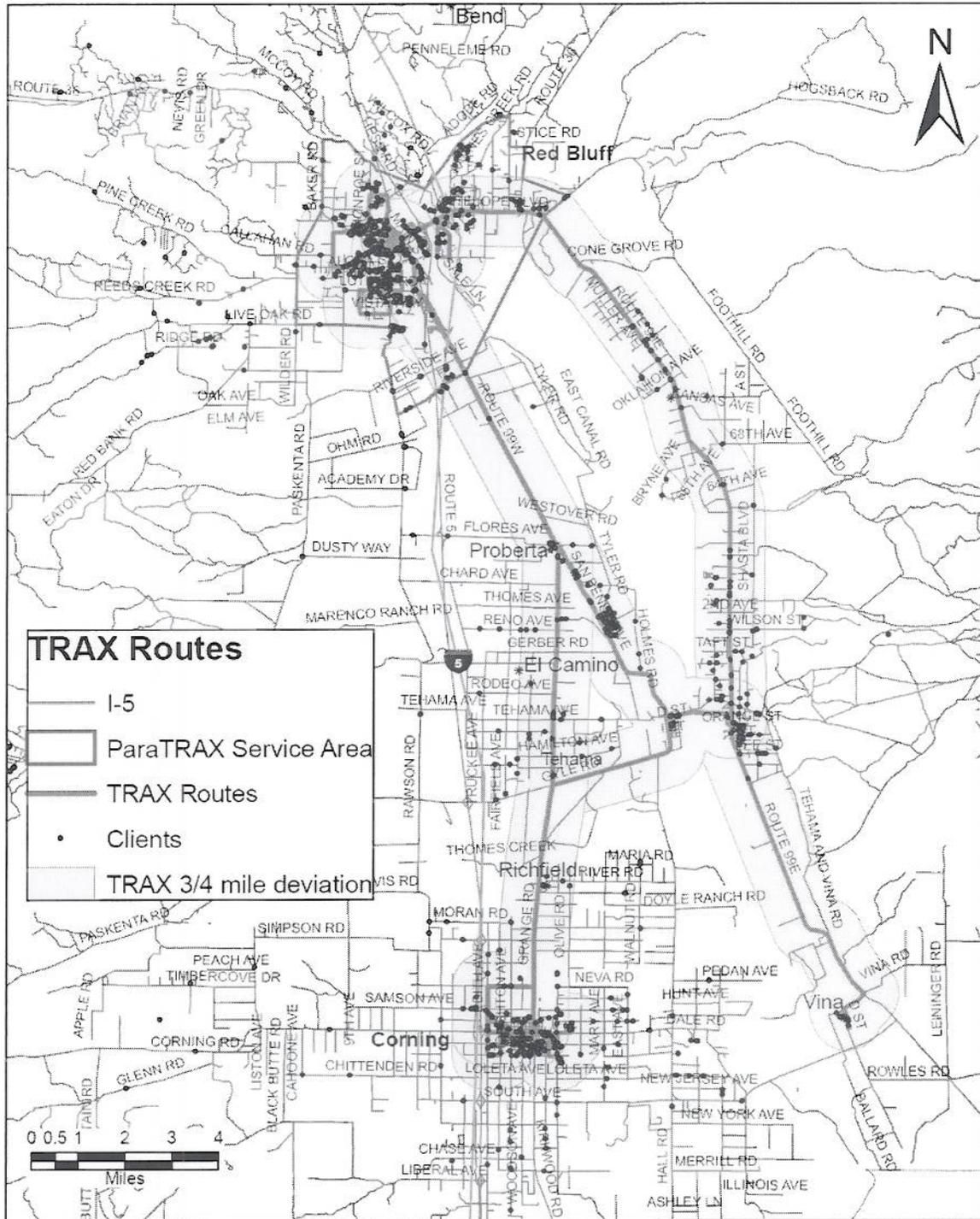
A total of 882 out of the 1,270 addresses/clients are located within this  $\frac{3}{4}$  of a mile buffer. These clients are within walking distance from the transit routes since TRAX policy allows a rider to flag down a bus at any location along the route that is safe to stop. This policy expands the access to more riders, decreases walking distance for many riders and makes transit use more convenient.

A second analysis was done to determine how many of the clients surveyed can take advantage of improved amenities at shelters. Out of the 1,270 clients surveyed, 785 or about 62% live within  $\frac{3}{4}$  of a mile from a bus stop. The 785 clients would be able to take advantage of the improved amenities at bus stops especially during extreme weather conditions. The distance clients are willing to travel will likely decrease during extreme weather but would have access to shelters while waiting for a bus. Shelters can also be used while waiting for transfers to other routes. This analysis is important because the clients in this study are the segment of the population that needs adequate access to the bus stop amenities.

A more detailed analysis was done with only the ADA database showed that 182 or 89% of the 204 addresses in the ADA database are eligible for route deviation since they live within  $\frac{3}{4}$  of a mile of a TRAX route. When the ParaTRAX service area is added to the map, 11 more ADA certified clients are provided access to transit. The 193 out of 204 or 94% of registered ADA clients that participated in the survey are included in the service area. This is exceptionally high considering the large size of the county and distribution of the population.

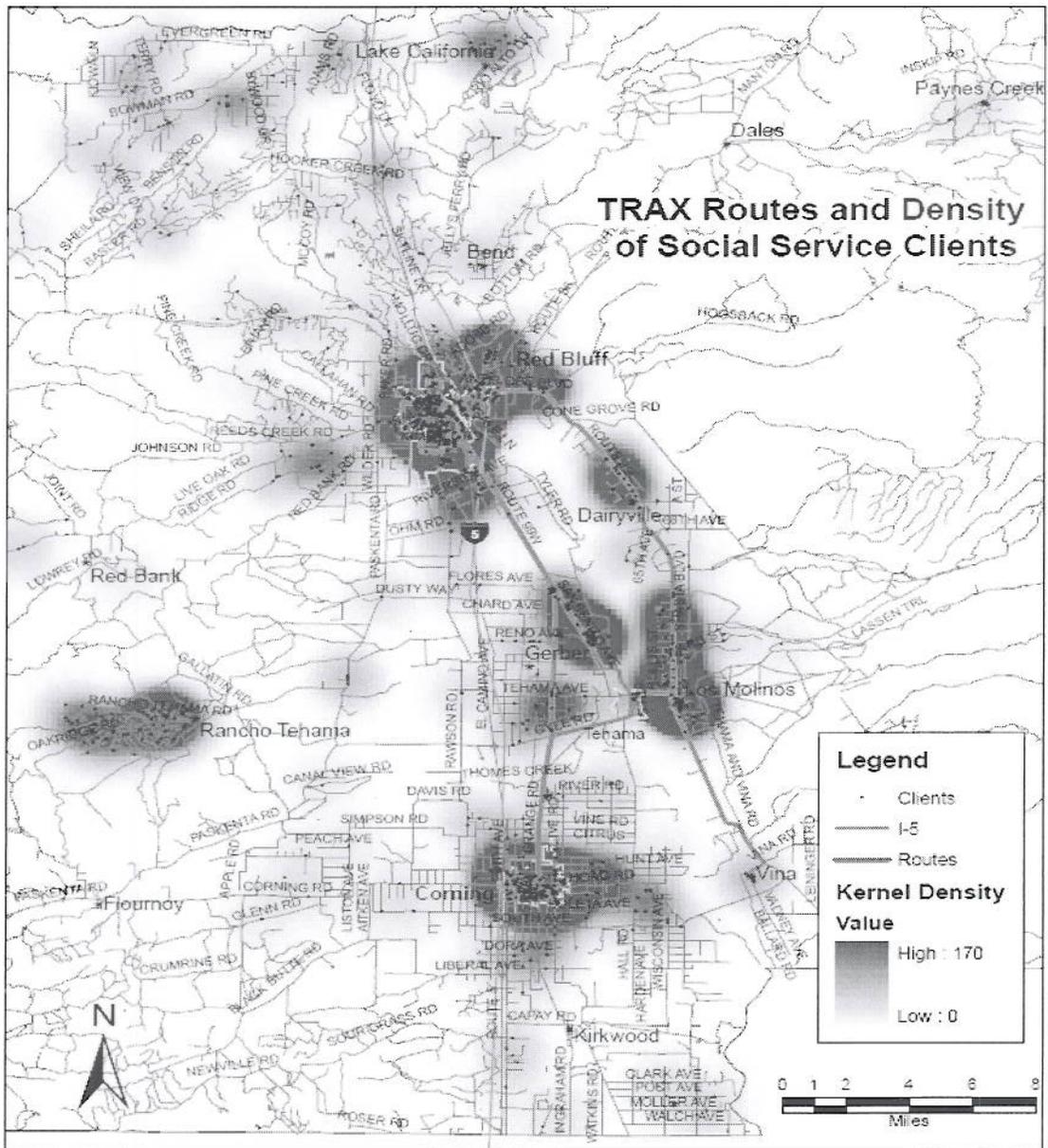
Currently, TRAX has expanded routes that are on a 90 day trial run as well as expanded service to the community of Vina. TRAX is scheduled to start new routes on February 1<sup>st</sup>, 2010 that will make the route to Vina permanent. The expansion has increased the number of TRAX riders and clients of county services that have access to TRAX.

ADA Clients within 3/4 TRAX Route Deviation or ParaTRAX Service Area

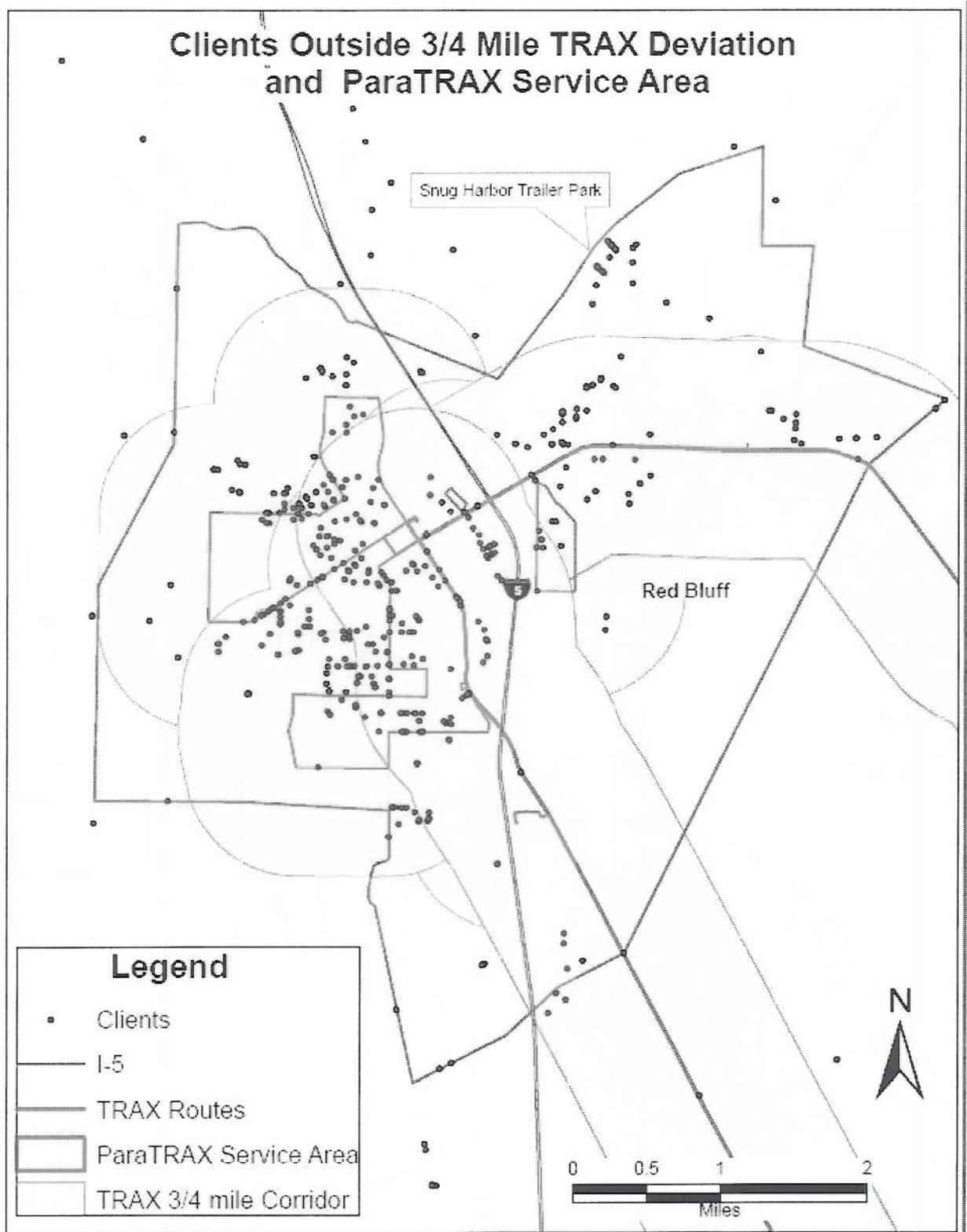


A. Clusters and Transit Routes

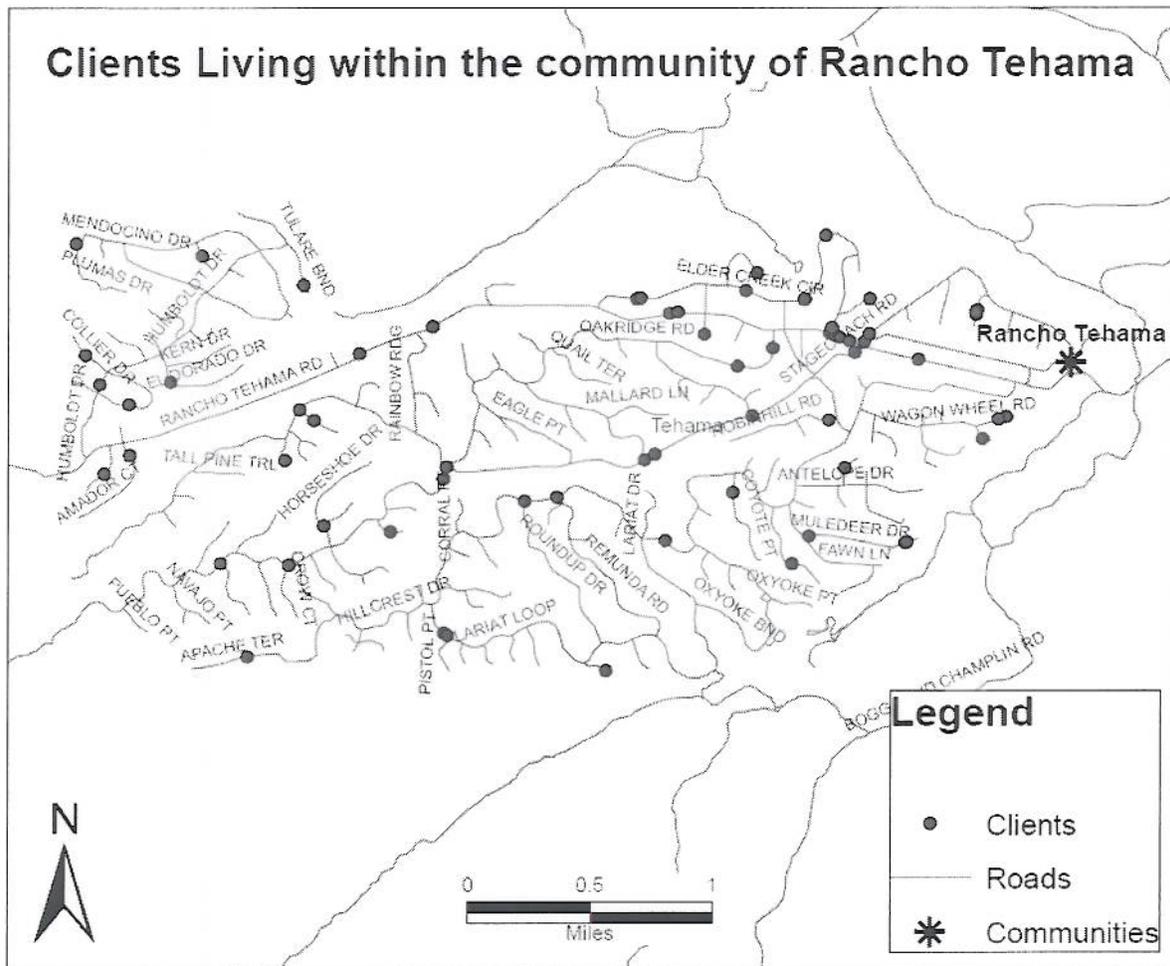
An analysis to find clusters of addresses that are not serviced by the transit system (TRAX and ParaTRAX) revealed several clusters in outlying areas. The graphic below was developed using a method called kernel density analysis which calculates the density of the points representing location of social service user. The darker the color is on the map, the higher the density of clients. As shown by the graphic below, the TRAX routes go through many of the areas with the highest densities.



One cluster of clients lacking services is an area north of Red Bluff on Rio Vista Avenue, Lucknow Avenue, and Casa Grande. There is a trailer park known as Snug Harbor with a residential subdivision beside it. This neighborhood built on the banks of the Sacramento River has 30 clients. A central location of the neighborhood was analyzed and found that 30 clients live within a half-mile radius of a central location in the neighborhood, nine of which are ADA certified. The ADA certified persons or persons 70 and older may use ParaTRAX since they are within the ParaTRAX service area as shown by the blue line. Other clients in the neighborhood do not have access to transit because Sung Harbor since is located about 1.5 miles from the closest TRAX route which is on Antelope Boulevard. Historically transit was provided to this area, but lacked the ridership. This route was consequently canceled. There have been no requests to return this service by residents of Snug Harbor or the surrounding area during the unmet transit needs hearing held yearly.



Another cluster of addresses is located in Rancho Tehama. There are 67 clients from Rancho Tehama that participated in the study. To provide a transit option, coordination is being done with Corning school district to see if transportation resources can be shared to provide transportation for the elderly and disabled. By sharing transportation a link can be provided to the TRAX system from a remote location with the use of current transportation options. It is anticipated that access to the TRAX system will first be provided to the segments with the most urgent need, the elderly and disabled, and at a future date may be expanded to include the general public.



The entrance of Rancho Tehama is located approximately 20 miles from the Red Bluff Bus and Ride and 18 miles from the Corning Transit Center. From the entrance of Rancho Tehama a network of private roads covers 21.6 square miles. Clients are dispersed throughout the community and consequently it would be difficult to provide transit to clients in the community.

Other options such as a community bus route as mentioned in the Coordinated Public Transit-Human Services Transportation Plan. Volunteer drivers from the community could be utilized to provide 2-3 daily trips from Rancho Tehama into the nearby cities. This would eliminate many deadhead miles needed to provide transit to the area and decrease the cost to an acceptable level.

The third cluster of addresses can be found off of Bowman Road and Evergreen Road in far northern Tehama County. There are 55 addresses in the area spread out over a 10 miles area. This area is far removed from the transit system and contains many unpaved roads which prohibit public transit. These addresses are also all spread out which prohibits a central location for transit services.

B. Placement of Shelters and Benches

As mentioned in the introduction, Tehama County received a FTA 5311 grant to purchase shelters and make improvements to bus stops. This money was used to purchase 20 shelters for bus stops. A meeting was held to discuss placement of the newly acquired shelters and was attended by the General Manager and Maintenance Manager of Paratransit Services, Deputy Director of Public Works-Transportation, and TCTC staff. GIS data, pictures of each bus stop, and a table of amenities at each location were created specifically examine each location. From this data and ridership data from each route, bus stop placement was determined (See attachment A). It was decided that placement of shelters should be focused first on Red Bluff (12 shelters) the county seat with many social services accessed by the ridership. Second, to increase the ridership in Corning and provide amenities at stops such as the Corning Senior Center, some of the shelters should be placed in Corning (7 shelters). The last remaining shelter was placed in the County in the community of Gerber (1 shelter).



TRAX stop in Red Bluff in front of Social Services Bluff, Tehama County



New shelter installed in Red Bluff at Tehama County Social Services Building bus stop

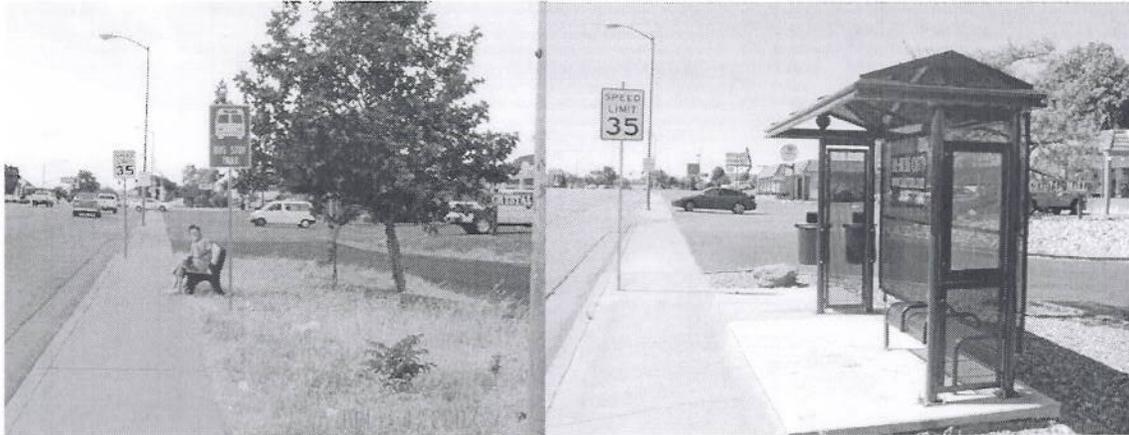
During the physical inspection of the bus stop and vicinity surface type surrounding bus stop, grade separation between pedestrian path and roadway, existence of a ramp, bench or sign, width of sidewalk, light source at bus stop and if it is urban or rural was recorded. These characteristics were recorded because they determine the usability and accessibility of the bus stops.

This study will not only be used to determine where but stops need to be installed, but what other additional improvements are needed to improve accessibility. Not only will these shelters be installed but minor improvements will be made around the shelters to ensure they are ADA compliant. Other minor improvements include pouring cement pads behind the sidewalk in cases where the sidewalk is too narrow for the shelter. Shelters are also being moved away from obstacles or other objects that block the sidewalk. Below is a typical bus stop located on South Main Street in Red Bluff before improvements.

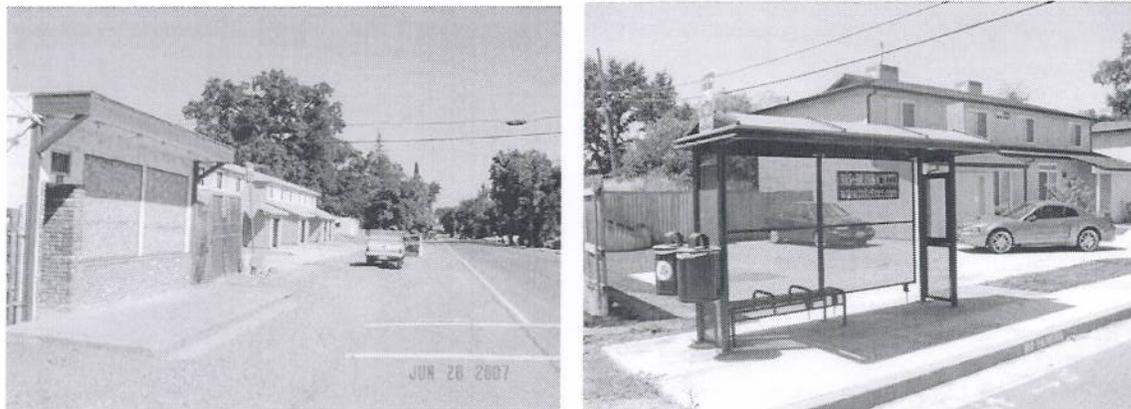
In all 22 shelters will be placed. Twenty new shelters purchased with a FTA 5311 Discretionary Funding grant and two shelters that were being stored at the Public Works yard waiting to be placed. When analyzed using GIS and points of clients from the dataset, 451 or 36% of participants live within 1/2 miles from a proposed shelter location. There are 604 participants or 48% that live within 3/4 miles of a proposed shelter location. If the existing transit hubs (Red Bluff Bus & Ride and Corning Transfer Station) and the 8 existing shelters are added to the 22 shelters that will be installed, the number of clients that live within .5 miles is 533 and 699 live within 3/4 miles. That is over 55% of the participants in the survey that are within a reasonable walking distance of an improved bus stop.

Tehama County Transportation Commission- Access to Transit Facilities Study

Below are some before and after pictures of stops that have received shelters and other improvements. The before pictures were taken during the summer of 2007. The after pictures were taken in the fall of 2009.



Bus stop on South Main Street across the street from Tehama County Social Services in the City of Red Bluff



Before and after of TRAX bus stop where shelters were installed after the townhouses were completed in Gerber, CA



Before and after of the shelter on South Main in Red Bluff in front of Dutch Bro's Coffee



Bus stop in front of bowling alley/miniature golf course on South Main Street in Red Bluff

Bus stop located in the community of Gerber during construction of low income townhouses. After picture shows completion of townhouses and shelter that was installed.

An application was submitted to use American Reinvestment and Rehabilitation Act (ARRA) to purchase 24 shelters. An analysis will be done to determine where these shelters should be installed. Using the results of this study using statistics showing the high ridership routes, bus stops will be selected to receive the improved amenities. Some shelters will need sidewalk, barriers, curb, or retaining walls installed to provide the room necessary to comply with ADA and ensure the shelters are accessible to all. Many of the shelters are being installed in the incorporated cities of Corning and Red Bluff.

A table has been made taking note of the safety and access characteristics of each stop. The amenities analyzed include surface type, visibility, grade separation, and ramp, lighting and proper width. These characteristics were analyzed to determine the safety and access features that exist, and show which ones need to be improved. When bus shelters are installed at stops,

other safety and access features can be included. This planning will make it easier to prioritize improvements for a PTMISEA bus stop improvement project. See Attachment A for chart.

The clients that live within  $\frac{3}{4}$  miles of the planned improvements will have the opportunity to use the shelters to access transit and be protected from the elements such as rain or extreme temperatures in the summer. The benches that are being displaced by the shelters will be relocated to stops that currently only have a sign designating them as stops. This will create a more defined visible bus stop location and encourage use. Tehama County will continue to strive to improve the bus stop and acquire more shelters. It is a goal to have shelters installed at all well-established stops on the transit route.

### Results

This study achieved many objectives that will help improve access to Transit in Tehama County. Benefits to the TRAX system and lessons learned are as follows.

- Every bus stop on TRAX system has been photographed and can be analyzed from office
- Information on location of Tehama County Residents who use social services can be referenced in the future
- Additional analysis can be done to determine which transportation services need to be expanded to specific population clusters
- 20 Bus stops were able to be selected using pictures of all stops on system as well as ridership data. Additional stops will be improved as 24 shelters will be installed this year purchased with ARRA funds.
- Lack of access to Transit can be prioritized and addressed.
- Improvements such as sidewalk, curb/gutter, signage, benches, ADA loading areas and shelters can be planned now that need is known.