

Institute of Transportation Studies  
University of California at Berkeley

**Reverse Commuting and Job Access in California: Markets, Needs  
and Policy Prospects**

**Robert Cervero, Yu-Hsin Tsai, Joulia Dibb, Andrew Kluter,  
Cornelius Nuworsoo, Irina Petrova, M. Reinur Pohan,  
Martin Wachs and Elizabeth Deakin  
University of California, Berkeley**

RESEARCH REPORT  
UCB-ITS-RR-2002-7

September 2002  
ISSN 0192 4095

*Funding for this study was provided by the California Department of Transportation,  
State Planning and Research program (80% Federal Highway Administration  
and 20% State transportation funds).*

**Disclaimer**

The views and positions expressed in this report are those of the research team and not necessarily those of any other individuals or organizations involved in this study. We alone are responsible for any errors or omissions that may be contained in this report.

**Copyright Information**

The text of this document and any images (e.g., photos, graphics, figures, and tables) that are specifically attributed (in full, or in coordination with another group) to the California Department of Transportation may be freely distributed or copied, so long as full credit is provided.

Project Staff:

***California Department of Transportation***

Brian Smith, Deputy Director,  
Planning and Modal Programs

Thomas McDonnell, Chief, Division of Mass Transportation  
Kazem Attaran, Chief Economist, Division of Planning  
Ayalew Adamu, Research Manager II, Caltrans TSIP

James Ogbonna, Project Manager,  
Division of Mass Transportation

## **Members of the Policy Advisory Committee**

### **Business, Housing and Transportation Agency**

John Ferrera, Assistant Secretary,

### **California Transit Association**

Josh Shaw, Executive Director

### **California Department of Transportation Transportation**

Brian Smith, Deputy Director  
Planning and Modal Programs

### **Metropolitan Transportation Agency, Los Angeles**

Jim McLaughlin, Director  
Transit Services Coordination

### **Tulare County Association Of Governments**

Bob Stocker, Assistant Director

### **Sacramento Urban League**

James Shelby, President and CEO

### **Tomas Rivera Policy Institute**

Claremont Graduate University  
Waldo Lopez-Agueres, Director

### **Southern California Association of Governments**

Cheryl Collier, Manager

### **Hispanic Chamber of Commerce Oakland**

Joe Partida, President

### **Department of Social Services**

Bruce Wagstaff, Deputy Director

### **Department of Transportation (Caltrans) Planning and Modal Programs**

Brian Smith, Deputy Director

### **Department of Social Services**

Garth, Manager  
Work Services and Demonstration Project

**Facilitator: Caltrans, Gale McIntyre, Supervising Transportation Planner**

### **Business, Housing and Transportation Agency**

Rick Vargas, Assistant Secretary,

### **Metropolitan Transportation Commission SF Bay Area**

Dianne Steinhauser, Manager

### **California Department of**

Joan Sollenberger, Chief  
Division of Transportation Planning

### **Metropolitan Transportation Agency, Los Angeles**

Larry Torres, Manager  
Transit Services Coordination

### **Automobile Club Southern California**

Steve Finnegan, Manager

### **San Diego Association of Governments**

Bob Parrott, Deputy Director

### **Caltrans District 3**

Jody Lonergan, Director

### **Southern California Association of Governments**

Sina Zarifi

### **Asian Americans for Community Involvement-San Jose**

Amor Santiago, President & CEO

### **Department of Social Services**

Jo Weber, Manager

### **Department of Transportation Transportation Planning Program**

Joan Sollenberger, Program Manager

### **Department of Rehabilitation Venus**

Dan Clark, Manager

## **Acknowledgement**

Robert Cervero was the Principal Investigator of this study, designing the research and directing all phases of the work. He was the principal author of the report and contributed to all chapters. Yu-Hsin Tsai was a Research Associate on the project, helping with directing the work of graduate researchers and contributing to Chapters 2, 3, 7, and 11. Martin Wachs and Elizabeth Deakin were co-investigators, contributing to Chapters 7 and 9, and Chapter 9, respectively. Graduate Student Researchers working on the project (along with the Chapters they contributed to) were: Joulia Dibb (4,5), Andrew Kluter (2,3,10,11), Corenlius Nuworsoo (2,3,6,12), Irina Petrova (2,3,4,5,7,10), and M. Pohan (2,3,6,11).

Many other individuals contributed to the study. First and foremost, we thank the panel members who oversaw the work and very thoughtfully and ably provided suggestions and comments throughout the course of the research. While space does not allow us to list the many individuals who assisted us along the way in conducting this research, several individuals deserve special mention for their generous help: Larry Torres of the Los Angeles Metropolitan Transportation Authority, Vincent Lorenzo of the Los Angeles Department of Transportation, Linda Culp and Bill McFarlane of the San Diego Association of Governments, Elliot Hurwitz of the San Diego Metropolitan Transit Development Board, Marjie Kirn of Merced County, Nancy Schlou of the Yolo County Department of Employment and Social Services, and Martie Dote of the Yolo County Transportation District.

## Table of Contents

LIST OF TABLES.....	v
LIST OF FIGURES.....	vii
LIST OF MAPS.....	x
LIST OF PHOTOS.....	xii
EXECUTIVE SUMMARY.....	ES1
PART ONE: THE DEMAND FOR REVERSE COMMUTING IN CALIFORNIA.....	1
Chapter One - Reverse-Commuting in California: Policy and Study Context.....	3
1.1 INTRODUCTION .....	3
1.2 PAST RESEARCH ON REVERSE-COMMUTING.....	4
1.3 STUDY PURPOSE AND REPORT ORGANIZATION.....	8
Notes.....	9
Chapter Two - Reverse-Commuting in California: Its Scope and Profile.....	11
2.1 INTRODUCTION.....	11
2.2 DEFINITIONS.....	11
2.3 APPLYING DENSITY CRITERIA.....	14
2.4 DEFINED CENTRAL-CITY AREAS.....	14
2.5 REVERSE-COMMUTE MARKET SHARES.....	21
2.6 MARKET SHARES BY MODE OF TRAVEL.....	24
2.7 MARKET SHARES BY TIME-OF-DAY.....	29
2.8 MARKET SHARES BY DURATION OF COMMUTE TRIP.....	30
2.9 SPATIAL PATTERNS OF TRIP-MAKING.....	33
2.10 SOCIO-DEMOGRAPHIC BREAKDOWNS.....	37
2.11 CLASSIFICATION OF REVERSE-COMMUTERS: DISCRIMINANT ANALYSIS...	48
2.12 SUMMARY.....	50
Notes.....	52
Chapter Three - Demand-Side Analyses of Reverse Commuting in California.....	55
3.1 INTRODUCTION.....	55
3.2 EFFECTS OF REVERSE COMMUTING ON MODE CHOICE.....	55
3.3 EFFECTS OF REVERSE COMMUTING ON TIME-OF-DAY CHOICE.....	61
3.4 COMPARATIVE TRAVEL TIMES AND COSTS.....	64
3.5 DIRECTIONAL TRENDS ALONG RADIAL CORRIDORS.....	68
3.6 SUMMARY.....	69
Notes.....	72

PART TWO: MOBILITY INITIATIVES FOR SERVING CALIFORNIA'S REVERSE-COMMUTE AND JOB-ACCESS NEEDS.....	75
Chapter Four - California's Inventory of Job-Access and Reverse-Commute Initiatives.....	77
4.1 INTRODUCTION.....	77
4.2 INVENTORY OF ACTIVITIES.....	78
4.3 SUMMARY.....	104
Notes.....	106
Chapter Five - Menus of Mobility Options: Santa Cruz and Contra Costa Counties.....	107
5.1 INTRODUCTION.....	107
5.2 SANTA CRUZ COUNTY.....	107
5.3 CONTRA COSTA COUNTY.....	117
5.4 SUMMARY.....	122
Notes.....	123
Chapter Six - Fixed-Route Transit Reverse-Commute Services in Los Angeles County.....	125
6.1 INTRODUCTION.....	125
6.2 REVERSE-COMMUTE BUS SERVICES IN LOS ANGELES COUNTY.....	126
6.3 COMPARATIVE RIDERSHIP PROFILES .....	133
6.4 ATTITUDES TOWARD SERVICES.....	137
6.5 SPATIAL ATTRIBUTES OF DEMAND ON ROUTE 422.....	142
6.6 SUMMARY.....	148
Notes.....	151
Chapter Seven - Fixed-Route Service Expansions: San Diego and Alameda Counties.....	153
7.1 INTRODUCTION.....	153
7.2 SAN DIEGO.....	153
7.3 ALAMEDA COUNTY.....	159
7.4 SUMMARY.....	161
Notes.....	163
Chapter Eight - Car Access and Welfare-to-Work: Research Insights and Case Experiences in California.....	165
8.1 INTRODUCTION.....	165
8.2 RESEARCH FINDINGS.....	166
8.3 SAN MATEO COUNTY: CAR LOAN PROGRAM.....	170
8.4 VENTURA COUNTY: CAR DONATION PROGRAM.....	172
8.5 POTENTIAL ROADBLOCKS.....	172
8.6 SUMMARY.....	173
Notes.....	174
Chapter Nine - Challenges of Implementing Job-Access and Reverse-Commute Programs in Smaller and Rural Counties.....	175
9.1 INTRODUCTION.....	175

9.2	STANISLAUS COUNTY.....	175
9.3	MERCED COUNTY.....	180
9.4	MENDOCINO COUNTY.....	188
9.5	SUMMARY.....	192
	Notes.....	193
Chapter Ten - Specialized Reverse Commute Services in Small County Settings:		
	California's Indian Casino Bus Runs.....	195
10.1	INTRODUCTION.....	195
10.2	YOLO COUNTY: CACHE CREEK CASINO BUS SERVICE.....	195
10.3	TULARE COUNTY: EAGLE MOUNTAIN CASINO BUS SERVICE.....	204
10.4	SUMMARY.....	207
	Notes.....	209
PART THREE: RESPONDING TO UNMET NEED AND LATENT DEMAND.....		211
Chapter Eleven - Exploring Latent Demand: Mobility Needs and Preferences of		
	CalWORKs Clients.....	213
11.1	INTRODUCTION.....	213
11.2	YOLO COUNTY.....	214
11.3	SAN DIEGO COUNTY.....	219
11.4	SUMMARY.....	224
	Notes.....	226
Chapter Twelve - Transit Service Gap Analysis: Accessibility to Low-Wage Jobs		
	in the San Francisco Bay Area.....	227
12.1	INTRODUCTION.....	227
12.2	METHODS AND MEASURES.....	227
12.3	GAP ANALYSIS RESULTS.....	228
12.4	VEHICLE AVAILABILITY BY INCOME LEVELS.....	236
12.5	SUMMARY.....	236
	Notes.....	238
PART FOUR: POLICY INITIATIVES AND CHALLENGES.....		239
Chapter Thirteen - Institutional Factors Influencing of Reverse-Commute and		
	Job-Access Activities in California.....	241
13.1	INTRODUCTION.....	241
13.2	STAKEHOLDERS AND PARTNERSHIPS.....	241
13.3	INSTITUTION BUILDING AND PLANNING.....	244
13.4	CONFRONTING AND OVERCOMING BARRIERS.....	246
13.5	STATEWIDE FORUMS.....	249
13.6	SUMMARY.....	250
	Notes.....	251

Chapter Fourteen - Meeting Reverse-Commute and Job-Access Needs in California: Rising to the Challenge.....	253
14.1 INTRODUCTION.....	253
14.2 INSIGHTS AND POLICY INFERENCES.....	253
14.3 AN ACTION AGENDA.....	261
Notes.....	263
APPENDIX A: LOS ANGELES QUESTIONNAIRES: ENGLISH AND SPANISH VERSIONS....	265
APPENDIX B: MERCED QUESTIONNAIRE .....	271
APPENDIX C: YOLO AND SAN DIEGO COUNTIES QUESTIONNAIRES: EMPLOYED AND UNEMPLOYED VERSIONS .....	275
Appendix C.1 - Yolo and San Diego Counties Questionnaires for the Employed: English, Spanish, and Russian Versions.....	277
Appendix C.2 - Yolo and San Diego Counties Questionnaires for the Unemployed: English, Spanish, and Russian Versions.....	289

## List of Tables

Table 2.1	Shares of Regional Population and Employment in Designated Central City and Non-Central City Areas, 1990 and 2000 Data.....	20
Table 2.2	Shares of Journeys-to-Work Across the Commute Sub-Markets for Four California Metropolitan Areas, 1991-2000 Data.....	22
Table 2.3	Normalized Reverse-Commute Indices for Four Metropolitan.....	24
Table 2.4	Reverse-Commute Car Dependence in Metropolitan California.....	28
Table 2.5	Shares of Commutes that are Drive-Alone, by Sub-Market and Across Metropolitan Areas.....	29
Table 2.6	Other Attributes of Low-Income Reverse Commuters in California's Largest Metropolitan Areas.....	40
Table 2.7	Percent of Commute Trips by Non-Professional and Non-Management Workers Among Sub-Markets, Two Metropolitan Areas.....	46
Table 2.8	Percent of Commute Trips by Part-Time Workers Among Sub-Markets, Three Metropolitan Areas.....	46
Table 2.9	Percent of Commute Trips by Workers in Zero- or One-Car Households Among Sub-Markets, Four Metropolitan Areas.....	48
Table 2.10	Metropolitan Los Angeles Discriminant Analysis Results: Factors that Significantly Classify Reverse Commuters, 1991.....	49
Table 2.11	San Francisco Bay Area Discriminant Analysis Results: Factors that Significantly Classify Reverse Commuters, 1990.....	49
Table 2.12	San Diego County Discriminant Analysis Results: Factors that Significantly Classify Reverse Commuters, 1995.....	50
Table 2.13	Metropolitan Sacramento Discriminant Analysis Results: Factors that Significantly Classify Reverse Commuters, 2000.....	51
Table 3.1	Percent of Commutes by Transit, by Persons from Low-Income vs. Non-Low-Income Households, Among Four Metropolitan Areas and Commute Submarkets.....	57
Table 3.2	Metropolitan Los Angeles Mode-Choice Logit Model: Probability Commute by Private Automobile, 1991.....	58
Table 3.3	San Francisco Bay Area Mode-Choice Logit Model: Probability of Drive-Alone Commute, 1991.....	59
Table 3.4	San Diego Mode-Choice Logit Model: Probability Commute by Private Automobile, 1995.....	60
Table 3.5	Probabilities that "Typical" Person Commuted by Private Automobile: Reverse Commute Versus Non-Reverse Commute Scenarios.....	61
Table 3.6	Percent of Commute Trips During Off-Peak, by Sub-Market.....	62
Table 3.7	Percent of Commutes in Off-Peak Period for Persons from Low-Income Households, by Sub-Market.....	62
Table 3.8	Metropolitan Los Angeles Peak-Period Logit Model: Probability Commute During Peak Period, 1991.....	63
Table 3.9	San Diego County Peak-Period Logit Model: Probability Commute During Peak Period, 1995.....	63

Table 3.10	Comparison of Travel Times and Costs for Three Low-Income Reverse-Commute Corridors in the San Francisco Bay Area.....	66
Table 3.11	Comparison of Travel Times and Costs for Three Low-Income Reverse-Commute Corridors in San Diego County.....	67
Table 3.12	Comparison of Travel Times and Costs for Three Low-Income Reverse-Commute Corridors in metropolitan Sacramento.....	68
Table 3.13	Summary of Peak-Period Directional Splits at Three Bay Area Screenlines, 1991-1998.....	71
Table 4.1	Inventory of Job Access and Reverse Commute Initiatives in California, 2002.....	79
Table 6.1	Potential Reverse Commute Routes.....	127
Table 6.2	Weekday and Weekend Ridership of Reverse-Commute Routes in Los Angeles County, Fiscal Year 2001.....	129
Table 7.1	AC Transit Supplemental Bus Services.....	162
Table 7.2	Performance of AC Transit Supplemental Bus Services.....	162
Table 8.1	Multinomial Logit Model for Predicting Probability of Employment and Welfare Outcomes; San Bernardino, 1993-1995.....	169
Table 10.1	Contrast in Factors Influencing Performance Outcomes Between Yolo County's Fixed Route Casino Shuttle Route and the now-defunct Warehouse District Route.....	202
Table 12.1	Region-wide Averages of Numbers of Low-income Jobs that can be reached by Low-Income Households within Travel-Time Isochrones, 2000.....	231

## List of Figures

Figure ES-1	Relative Frequency of Job Access and Reverse Commute in California, Early-2002.....	ES3
Figure 2.1	Population Density Distribution across Traffic Analysis Zones (TAZs), Sacramento Metropolitan Area, 1990.....	15
Figure 2.2	Employment Density Distribution across Traffic Analysis Zones (TAZs), Sacramento Metropolitan Area, 1990.....	15
Figure 2.3	Percentages of Regional Population and Employment in Designated Central City.....	20
Figure 2.4	Schema of Commute Submarkets within Metropolitan Areas.....	22
Figure 2.5	Diagrams of Commute Market Shares in the Four Metropolitan Areas, 1990-2000 Data.....	22
Figure 2.6	Comparison of Actual and Normalized Reverse Commute Shares Across Four California Metropolitan Areas.....	24
Figure 2.7	1995 Modal Splits Among Commute Submarkets in Three Metropolitan Areas Combined: the San Francisco Bay Area, San Diego County, and Metropolitan Sacramento.....	25
Figure 2.8	1991 Modal Splits Among Commute Submarkets in Metropolitan Los Angeles.....	26
Figure 2.9	1990 Modal Splits Among Commute Submarkets in the San Francisco Bay Area.....	26
Figure 2.10	1995 Modal Splits Among Commute Submarkets in San Diego County.....	27
Figure 2.11	2000 Modal Splits Among Commute Submarkets in Metropolitan Sacramento.....	27
Figure 2.12	Percent of Reverse Versus Non-Reverse Commutes by Transit Among Four Metropolitan Areas.....	29
Figure 2.13	Distribution of Reverse-Commute Trips by Time-of-Day, Across Four California Metropolitan Areas.....	30
Figure 2.14	Distributions of Commute Trip Durations Among Submarkets, Metropolitan Los Angeles, 1991.....	31
Figure 2.15	Distributions of Commute Trip Durations Among Submarkets, San Francisco Bay Area, 1990.....	32
Figure 2.16	Distributions of Commute Trip Durations Among Submarkets, San Diego County, 1995.....	32
Figure 2.17	Distributions of Commute Trip Durations Among Submarkets, Metropolitan Sacramento, 1991.....	33
Figure 2.18	Percent of Commute Trips by Low-Income Households Among Sub-Markets, Four Metropolitan Areas.....	39
Figure 2.19	Percent of Commute Trips by Non-Whites Among Sub-Markets, Four Metropolitan Areas.....	46
Figure 2.20	Percent of Commutes by Women Among Sub-markets for the Four Metropolitan Areas.....	47
Figure 3.1	Percent of Reverse Commuters who Patronize Transit: Low vs. Non-Low Income Households, Across Four Metropolitan Areas.....	57
Figure 4.1	Relative Frequency of Job Access and Reverse Commute Initiatives Introduced in California, Early-2002.....	78

Figure 4.2	Relative Frequencies of Entities Taking Lead Initiative to Introduce Job Access and Reverse Commute Programs in California, Early-2002.....	104
Figure 5.1	Passenger Trips per Month for Transportation Assistance Programs in Santa Cruz County, 1998 to 2001.....	116
Figure 5.2	Share of Monthly Trips Supported by Transportation Assistance Programs in Santa Cruz County, 2001.....	116
Figure 6.1	Operating Costs per Rider, Five Reverse Commute and Los Angeles Metropolitan Area Systemwide Average, Fiscal Year 2001.....	130
Figure 6.2	Subsidies per Rider, Five Reverse Commute and Los Angeles Metropolitan Area Systemwide Average, Fiscal Year 2001.....	130
Figure 6.3	Operating Ratios, Five Reverse Commute and Los Angeles Metropolitan Area Systemwide Average, Fiscal Year 2001.....	131
Figure 6.4	Cost per Passenger-Mile, Five Reverse Commute and Los Angeles Metropolitan Area Systemwide Average, Fiscal Year 2001.....	132
Figure 6.5	Mean Operating Speed, Five Reverse Commute and Los Angeles Metropolitan Area Systemwide Average, Fiscal Year 2001.....	132
Figure 6.6	Trip Origins and Modes of Access for Reverse-Commute Routes in Los Angeles, 2001 Survey Responses.....	134
Figure 6.7	Trip Destinations and Modes of Egress for Reverse-Commute Routes in Los Angeles, 2001 Survey Responses.....	134
Figure 6.8	Fare Media Used by Surveyed Riders on Reverse-Commute Routes in Los Angeles, 2001 Survey Responses.....	136
Figure 6.9	Ethnic Compositions of Surveyed Riders on Reverse-Commute Routes in Los Angeles, 2001 Survey Responses.....	136
Figure 6.10	Household Income Profiles of Surveyed Riders on Reverse-Commute Routes in Los Angeles, 2001 Survey Responses.....	137
Figure 6.11	Passenger Opinions About Travel Times on Buses for Reverse-Commute Routes in Los Angeles County, 2001 Survey Responses.....	139
Figure 6.12	Passenger Opinions on Bus Punctuality for Reverse-Commute Routes in Los Angeles County, 2001 Survey Responses.....	139
Figure 6.13	Passenger Opinions on Convenience Levels of Reverse-Commute Routes in Los Angeles County, 2001 Survey Responses.....	140
Figure 6.14	Passenger Opinions About Bus Fares on Reverse-Commute Routes in Los Angeles County, 2001 Survey Responses.....	141
Figure 6.15	Passenger Opinions About Safety on Reverse-Commute Routes in Los Angeles County, 2001 Survey Responses.....	141
Figure 6.16	Passenger Opinions About Vehicle Cleanliness on Reverse-Commute Routes in Los Angeles County, 2001 Survey Responses.....	143
Figure 6.17	Passenger Opinions About Overall Bus Service on Reverse-Commute Routes in Los Angeles County, 2001 Survey Responses.....	143
Figure 7.1	Ridership of San Diego Transit Reverse-Commute Bus Routes, 1996-2001.....	157
Figure 7.2	Operating Costs of San Diego Transit Reverse-Commute Bus Routes, FY 2001.....	157
Figure 7.3	Subsidy per Rider for San Diego Transit Reverse-Commute Bus Routes, FY 2001.....	158
Figure 7.4	Passengers per Vehicle Mile of San Diego Transit Reverse-Commute Bus Routes, FY 2001.....	159

Figure 8.1	Sensitivity Analysis Results on Probability of an Alameda County Welfare Recipient Finding a Job and Getting Off AFDC.....	168
Figure 9.1	Attitudinal Responses to YARTS Highway 140 Bus Service, 2001.....	187
Figure 9.2	Breakdown of Attitudes on the Statement: “The Bus Schedule is Convenient”, by Peak and Non-Peak Commuters, YARTS Highway 140 Bus Service, 2001.....	187
Figure 9.3	Attitudinal Responses to Overall Satisfaction with YARTS Highway 140 Bus Service, by Travel Complexity Status .....	189
Figure 10.1	Attitudes Toward Route 215 Services by Annual Income Level.....	204
Figure 10.2	Trends in Eagle Creek Employee Bus Passes Sold, Regulator and “Emergency” Bus Passes.....	207
Figure 11.1	Desired Transportation Improvements of Yolo County Welfare Clients, by Job Status.....	216
Figure 11.2	Desired Improvements of Yolo County Welfare Clients, by Income Level .....	217
Figure 11.3	Attitudes Toward Transit of Yolo County Welfare Clients, by Job Status.....	217
Figure 11.4	Attitudes Toward Transit of Yolo County Welfare Clients, by Income Level.....	218
Figure 11.5	Desired Transportation Improvements of San Diego Welfare Clients, by Job Status.....	220
Figure 11.6	Desired Transportation Improvements of San Diego Welfare Clients, Transit Users vs. Non-Transit Users.....	221
Figure 11.7	Desired Transportation Improvements of San Diego Welfare Clients, by Transit Dependency.....	222
Figure 11.8	Desired Transportation Improvements of San Diego Welfare Clients, by Travel Complexity.....	223
Figure 11.9	Attitudes Toward Transit of San Diego Welfare Clients, by Job Status.....	224

## List of Maps

Map 2.1	Four Large California Metropolitan Areas Profiled in Terms of Reverse Commuting.....	12
Map 2.2	Distribution of Traffic Analysis Zones in Metropolitan Los Angeles Meeting Population and Employment Density Criteria, 1990.....	16
Map 2.3	Distribution of Traffic Analysis Zones in the San Francisco Bay Area Meeting Population and Employment Density Criteria, 1990.....	16
Map 2.4	Distribution of Traffic Analysis Zones in San Diego County Meeting Population and Employment Density Criteria, 1990.....	17
Map 2.5	Distribution of Traffic Analysis Zones in Metropolitan Sacramento Meeting Population and Employment Density Criteria, 1990.....	17
Map 2.6	Metropolitan Los Angeles: Designated Central City Area.....	18
Map 2.7	San Francisco Bay Area: Designated Central City Area.....	18
Map 2.8	San Diego County: Designated Central City Area.....	19
Map 2.9	Metropolitan Sacramento: Designated Central City Area.....	19
Map 2.10	Comparison of Desire Line Maps for Reverse Commute Trips (Top) and Radial Commute Trips (Bottom) in Metropolitan Los Angeles.....	34
Map 2.11	Desire Line Maps for Reverse Commute Trips in the San Francisco Bay Area.....	35
Map 2.12	Desire Line Maps for Reverse Commute Trips (Top) and Radial Commute Trips (Bottom) in San Diego County.....	36
Map 2.13	Desire Line Maps for Reverse Commute Trips (Top) and Radial Commute Trips (Bottom) in Metropolitan Sacramento.....	38
Map 2.14	Desire Line Maps for Low-Income Reverse Commute Trips (Top) and Radial Commute Trips (Bottom) in Metropolitan Los Angeles.....	41
Map 2.15	Desire Line Maps for Low-Income Reverse Commute Trips (Top) and Radial Commute Trips (Bottom) in the San Francisco Bay Area.....	42
Map 2.16	Desire Line Maps for Low-Income Reverse Commute Trips (Top) and Radial Commute Trips (Bottom) in San Diego County.....	43
Map 2.17	Desire Line Maps for Low-Income Reverse Commute Trips (Top) and Radial Commute Trips (Bottom) in Metropolitan Sacramento.....	45
Map 3.1	San Francisco Bay Area: Three Reverse-Direction Transit Corridors and Desire Lines of Trips by Low-Income Reverse-Commuters.....	65
Map 3.2	San Diego County: Three Reverse-Direction Transit Corridors and Desire Lines of Trips by Low-Income Reverse-Commuters.....	67
Map 3.3	Trends in Peak-Period Directional Volumes at Three Screenlines in the San Francisco Bay Area, By Direction and Peak Period, 1991 to 1998 Period.....	70
Map 5.1	County Connection's Route 114.....	120
Map 6.1	Reverse-Commute Routes Serving Los Angeles County.....	128
Map 6.2	Alignment and Stops of LADOT Route 422.....	144
Map 6.3	Desire Lines of Surveyed Trips on LADOT Route 422.....	145
Map 6.4	Distribution of Low-Income Job Establishments in Los Angeles County by Census Block, 2001.....	147
Map 6.5	Distribution of Low-Income Job Establishments in Relation to the Origins and Destination of Trips on Route 422, 2001.....	149

Map 7.1	Reverse-Commute Bus Routes in San Diego County.....	155
Map 7.2	Reverse-Commute Bus Routes and Distribution of Low-Income Jobs in Most Urbanized Portion of San Diego County.....	156
Map 9.1	Merced County and Incorporated Cities.....	181
Map 9.2	Merced County Transit Route #10.....	183
Map 9.3	Merced County Transit Route #5.....	184
Map 9.4	Mendocino County Communities.....	189
Map 10.1	Route 215: Yolobus's Cache Creek Casino Shuttle Run.....	196
Map 12.1	Concentrations of Low-Income Households in the San Francisco Bay Area, 2000.....	229
Map 12.2	Concentrations of Low-Wage Jobs in the San Francisco Bay Area, 2000.....	230
Map 12.3	60-Minute Auto Travel-Time Isochrone: Relative Level of Low-Wage Job Accessibility within 60 minutes Peak-Period Travel Time by Auto, 2000.....	231
Map 12.4	60-Minute Transit Travel-Time Isochrone: Relative Level of Low-Wage Job Accessibility within 60 minutes Peak-Period Travel Time by Transit, 2000.....	233
Map 12.5	90-Minute Auto Travel-Time Isochrone: Relative Level of Low-Wage Job Accessibility within 90 minutes Peak-Period Travel Time by Auto, 2000.....	234
Map 12.6	90-Minute Transit Travel-Time Isochrone: Relative Level of Low-Wage Job Accessibility within 90 minutes Peak-Period Travel Time by Transit, 2000.....	235

## **List of Photos**

Photo 9.1	MAX Commuter Express bus collects passengers at a rail station.....	178
Photo 10.1	Route 215 Clean Natural Gas bus picking up employees at front door of the Cache Creek Casino.....	201
Photo 10.2	Eagle Express Employee Shuttle at the entrance to Eagle Creek Casino.....	206
Photo 13.1	Collaborative Involvement of Stakeholders for the Reverse-Commute and Job-Access Study.....	249

## **EXECUTIVE SUMMARY**

### **Reverse Commuting and Job Access in California: Markets, Needs, and Policy Prospects**

#### **INTRODUCTION**

Getting to work, keeping appointments, and taking advantage of employment support services require suitable transportation. Many low-income Californians do not own cars and, outside of large metropolitan areas, public transit services are often sparse or non-existent, making it difficult for jobless individuals to make the transition from welfare-to-work. The challenges are especially great for those trying to get from central-city residences to suburban jobs, so-called reverse commuters, since public transportation services have traditionally been aligned in the opposite direction.

Propelling the growth in reverse commuting has been a number of powerful megatrends. Topping the list has been decentralization of employment, spawned by such factors as cheaper real estate prices on the outskirts and telecommunication advances that have allowed suburban back-offices to easily communicate with central-city core offices. Spatial mismatches have been blamed for the persistent problem of concentrated unemployment in California's inner cities. Those with minimal education and work skills are increasingly isolated from the many entry-level and service-sector jobs in the suburbs. Many inner-city residents with suburban jobs work late-hour shifts and on weekends, periods when many buses and trains do not operate.

This study: (1) defines the existing reverse-commute marketplace in California; (2) identifies and evaluates existing public transportation services in terms of their success and responsiveness in serving reverse-commute and job-access demands; (3) examines unmet mobility needs; and (4) proposes policy initiatives and strategies that hold promise for significantly improving reverse-commute services throughout the state.

#### **THE REVERSE-COMMUTE MARKETPLACE**

In California's four largest metropolitan areas – greater Los Angeles, the San Francisco Bay Area, San Diego County, and metropolitan Sacramento – reverse commutes constituted only 7 percent to 11 percent of all journeys-to-work in the 1990s. Some reverse-commute trips are no doubt suppressed because poor or non-existent public transit connections prevent needy inner-city residents from securing suburban jobs in the first place. With the exception of the Bay Area, 19 out of 20 reverse-commute trips are estimated to be by private car. In fact, more reverse commutes in California are by carpools than mass transit. For low-income reverse commuters, transit plays a much larger role, handling more than 10 percent of journeys-to-work in the case of San Diego County.

Empirical data revealed that two-thirds or more of reverse-commuters in large metropolitan areas occur during peak hours. Based on interviews of unemployed CalWORKs clients, there appears to be a sizable pent-up latent demand for off-peak travel. Limited transit services during non-traditional work periods suppress this demand. Also, most reverse commutes are made in less than 30 minutes, generally less time than that spent making traditional radial (i.e., suburb-to-downtown) commutes but more time than that devoted to most intra-urban and intra-suburban commutes.

Geographically, reverse commutes in California's big metropolitan areas are highly spread out. The diffusion of trip origins and destinations render fixed-route transit services impractical for many reverse-commuters.

### **REVERSE-COMMUTE PROFILES**

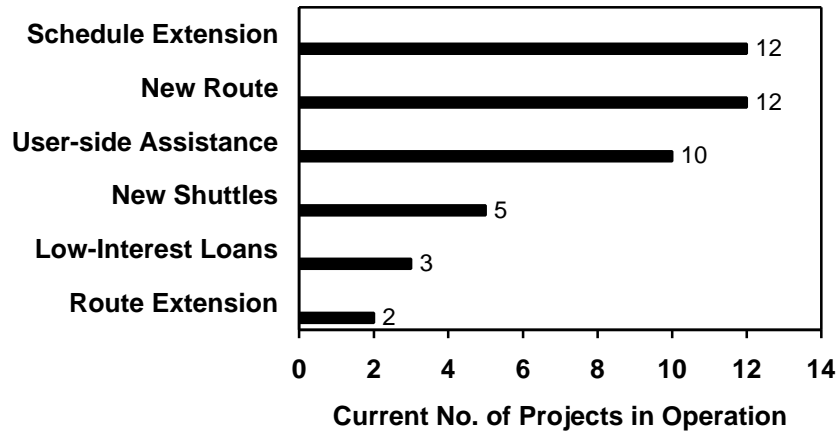
Around one out of five reverse-commuters in California's large metropolitan areas are from low-income households. Many are minorities, in particular Hispanic women. More than one out of five low-income reverse-commuters are from households with one or no cars. Almost all of these individuals are transit dependent. From an estimated mode-choice model, the odds of a low-income reverse commuter taking transit was found to be five times greater than that of a middle-income person traveling in the opposite-flow direction. Appreciable numbers of California's reverse commuters match the stereotype often portrayed – many are low-income, car-less, minority workers who have no choice but to take transit to reach outlying job sites.

The hardships many of California's low-income reverse-commuters face in using transit are underscored by comparing travel times and costs with those of private cars. For documented reverse-commute trips made by low-income workers in three of the large metropolitan areas, peak-period travel times by bus were three to four times longer than those by private cars. While taking transit saves money, this benefit is often overshadowed by the quantum increases in travel times faced in trying to get from the inner-city to suburban job sites via conventional bus transit.

### **JOB-ACCESS AND REVERSE-COMMUTE INITIATIVES**

As of early-2002, some 36 transportation programs aimed at serving the job-access and reverse-commute needs of CalWORKs (California Work Opportunity and Responsibilities to Kids) clients had been introduced in California. Transit agencies and county welfare departments launched the vast majority of these programs. In most instances, these initiatives were products of sustained and collaborative efforts among multiple organizations.

To date, the lion's share of CalWORKs transportation programs have focused on modifying traditional fixed-route bus services, either by adding new routes or extending the hours of operations of existing ones (Figure ES-1). Nearly one out of four job-access and reverse-commute initiatives have involved some form of assistance targeted at individual



**Figure ES-1 Relative Frequency of Job Access and Reverse Commute Introduced in California, Early-2002**

beneficiaries, like child-transportation services, guaranteed-ride home allowances, or the initiation of carpool-vanpool services. Other improvements introduced throughout the state include the initiation of shuttle connections to job centers, low-interest loan assistance for purchasing or upgrading cars, and the extension of bus routes farther out to connect job centers and community college campuses.

Case studies reviewed in this report highlighted “best practice” experiences and provided insight into impacts and outcomes. It is difficult to pass judgment on the many job-access and reverse-commute initiatives to date, however, because evaluation has never been a high priority. What little evaluation exists has generally been in the form of qualitative information (e.g., interview commentary) and has been more of an afterthought than a product of careful ex-post/ex-ante assessments. Many of the state’s CalWORKs programs are also still in their infancy, making impact assessment all the more difficult.

## **TRANSIT-BASED STRATEGIES**

The most common transit-based strategy introduced by California counties has been purchases of bus passes for CalWORKs clients. By itself, bus pass assistance is a passive strategy for, while it deals with affordability concerns, it fails to modify how transit services are delivered in ways that might enhance job access. With the support of Federal and State grant awards, however, a number of transit service modifications have been introduced in California in recent years. In larger areas like San Diego and Los Angeles Counties, brand-new reverse-commute services targeted at inner-city low-income communities have been mounted. In other areas, like Alameda County, the focus has been on extending the hours of bus operations. Some areas have opted to introduce door-to-door van services. So far, the near-term costs of these initiatives have been high. In most cases where door-to-door van services or late-night “graveyard shift” operations have been introduced, costs have exceeded \$10 per trip and in a few cases more than double this amount. Such figures begin to match what it would cost to hire private taxicabs to directly serve individual clients.

Small and rural counties have struggled the most to introduce consumer-responsive fixed-route transit services. Often, densities are too low and travel distances are too far to operate cost-effective bus services. The most successful programs to date in small and rural settings have involved active employer support and co-sponsorship. Of particular note have been several successful reverse-commute bus shuttles that serve gaming casinos at California Indian Reservations. Besides employer involvement, these shuttle services have been successful because of: (1) high employment densities – i.e., concentrated work sites; (2) limited numbers of work shifts that allow effective co-scheduling of bus runs; (3) high-speed, limited-stop services that make transit time-competitive with the private car; and (4) aggressive marketing by operators and employers. In the case of Yolo County’s casino shuttle run, ridership jumped 333 percent the first year of service. On-board surveys reveal most customers are very satisfied with the quality and price of service. Given that many were unemployed a year or so earlier, this employer-supported long-haul bus route is a bona fide reverse-commute success story.

While it is difficult to generalize given the state’s limited experiences with transit service innovations to date, some inferences regarding specific transit services strategies can be drawn:

- *New Targeted Bus Routes.* There have been a few successes to date with brand-new reverse-commute bus routes introduced in California. Most notable has been a long-distance, limited-stop service, Route 422, which connects several low-income, inner-city neighborhoods in the city of Los Angeles with suburban jobs in the San Fernando Valley. To date, Route 422 has been a productive, well-performing express bus service, covering relatively high shares of costs through fare receipts, experiencing steady ridership gains, and serving needy, transit-dependent populations. Customers, many of whom are Latino women from low-income households and who have no access to cars, are very satisfied with the service and most expect to continue patronizing in coming years. Many users have to make transfers to and from Route 422, however, meaning the service functions mainly as a mainline trunk route and suggesting that complementary feeder-distributor connections would be much-valued enhancements.

In San Diego County, three new reverse-commute bus routes have been introduced in recent years, with each enjoying steady ridership growth. Still, the costs per rider of these targeted services exceed those of all other fixed-route bus runs in the system, although compared to dial-a-ride vans and exclusive-ride taxis, they cost between 60 and 85 percent less per trip. While on-board surveys revealed passengers greatly value these new bus services, a common complaint was the absence of late-night and week-end services.

- *Schedule extensions.* In several San Diego and Alameda Counties, many CalWORKs clients and their caseworkers consider the absence of late-night and weekend bus services to be the most serious obstacle to job access. To date, most welfare-to-work transit services have focused on introducing new routes or lengthening existing ones as opposed extending service hours. A

universal problem with running late-night transit is the high cost relative to patronage levels. Double-digit costs per passenger are not uncommon. Owl services and late-night bus runs in Alameda County have provided much-valued access to jobs at major employment hubs, like the Oakland International Airport and the Port of Oakland, however some runs incur costs as high as \$24 per trip. Such outlays are unsustainable and a clear sign that localities should enter into contractual arrangements with local taxicab companies to provide late-night services, ideally in the form of shared-ride taxis funded through user vouchers.

A limitation of these transit case studies is that they overlook unmet needs, or “latent demand”. Surveys of CalWORKs clients in Yolo and San Diego Counties suggested a considerable pent-up demand for transit and job-access services tailored to individual mobility needs. In the case of San Diego County, many jobless CalWORKs clients expressed a need for new routes and extended schedules to assist with job searching, making interview appointments, and eventually commuting to work. Because most clients live and work in fairly urbanized settings, respondents from San Diego County were most interested in seeing traditional bus services expanded. In more sparsely populated Yolo County, the majority of unemployed CalWORKs recipients wanted help with purchasing and maintaining private cars. If and when they get jobs and make commutes, many of Yolo County’s survey respondents indicated they would be making chained, multi-legged trips to drop off and pick-up kids and attend job training. Joblessness and complex travel patterns reinforce each other in places like Yolo County. Many of the county’s jobless clients are women with children, and low-paying jobs make child-care too expensive. If they were to work, many would have to invest several hours a day aboard buses between home, day-care, and work, a scenario that prompts quite a few to stay unemployed. Many single parents living in semi-rural and non-urbanized settings strongly feel that car ownership provides the only realistic alternative for getting off of welfare and into full-time employment.

## **CAR ACCESS AND AUTOMOBILITY**

The working poor often need access to cars for the same reasons the non-poor do: public transit is unable to adequately serve multi-legged trips or late-night work schedules. In remote locations and even semi-rural settings like Yolo County, private cars can be the only viable means of mobility.

Statistical evidence from Alameda, Los Angeles, San Joaquin, and San Bernardino Counties shows that owning cars is more strongly associated with welfare-to-work transitions than any transportation variable. Experiences in San Mateo County demonstrated that car ownership reduces the amount of work time missed and increases job-training participation among CalWORKs clients. Surveys conducted of transit passengers as well as CalWORKs clients revealed a strong preference for car ownership among those living in rural and remote areas as well as among those making chained trips, such as between home, child care, and work.

Car-based strategies have not been without controversy. Buying, insuring, maintaining, and operating a car can be beyond the means of many low-income households. Many donated cars are gross-polluters and are only a year or so away from expensive repair bills. Because

vehicles owned by CalWORKs recipients are often aged and undependable, some have argued that interim transportation, like paratransit, should be made available until participants make enough money to purchase and maintain reliable cars. Another remedy might be to relax the \$4,650 ceiling on the value of cars that CalWORKs participants are allowed to own. Tax credits for donating cars in good running order, such as introduced in several other states, might also be considered.

Car-based strategies should not be viewed as substitutes or replacements for transit. They can enrich the palette of mobility options available to the poor. For example, car ownership has been known to spawn informal jitney services in inner-city areas, providing shared-ride door-to-door connections to job sites and retail centers at affordable yet market-clearing prices. In rural and remote settings, car-based strategies can also relieve financially strapped counties of high-cost transit services.

## **PARATRANSIT**

So far, there have been few instances in which shared-ride taxis, flexible-route jitneys, and other forms of small-vehicle, door-to-door paratransit services have been mounted to serve CalWORKs clients or reverse commuters. Of course, ADA paratransit services thrive in many parts of the state, however these are limited mainly to seniors and the physically disabled, groups to which most CalWORKs recipients do not belong. To date, the focus of welfare-to-work transportation has been on traditional fixed-route bus services. The absence of paratransit is in part due to local ordinances that ban shared-ride taxis, jitneys, and other more personalized forms of mass transportation.

Several California counties have made headway in designing and implementing door-to-door paratransit services. Butte and Santa Cruz Counties have purchased vehicles and trained CalWORKs clients to drive shuttles as work experience or on-the-job-training. Contra Costa County uses vans to carry kids of CalWORKs recipients to and from school and day-care centers each workday.

## **MENU OF MOBILITY OPTIONS**

Two areas in California that have gone the farthest in crafting menus of transportation options for meeting the mobility needs of welfare clients are Santa Cruz and Contra Costa Counties. In both instances, professionally trained social workers meet with clients to select the right mix of transportation services that best meet personal travel needs. While a buffet of options adds costs, the ability to custom-tailor transportation services to meet the individual mobility needs of each client is a huge benefit.

Santa Cruz's client-based approach toward job-access planning has given rise to a rich mix of mobility options, including door-to-door van services, emergency ride home provisions, carpool incentives, low-interest loans for car purchases, and work-related emergency payments. The County's van service "kills two birds with one stone" since CalWORKs recipients not only ride but also drive vans, enabling a number of previously unemployed individuals to find permanent jobs in the transportation business.

Contra Costa County's client-based approach resulted in the introduction of a door-to-door shuttle service that takes children of CalWORKs adults who have recently found jobs to and from day-care centers and schools. The service is over-subscribed, suggesting there is a large pent-up demand for children's transportation in other parts of the state. As in Santa Cruz County, Contra Costa County also offers door-to-door van services to adults, ridesharing incentives, and various bus-route expansions. Through a partnership of transit operators, the regional planning agency, and several large employers, the county's Employment and Human Services department saw to it that traditional bus services were better aligned to meet the mobility needs of low-income residents.

## **IMPLEMENTATION AND COORDINATION**

Experiences clearly show that successful job-access and reverse-commute programs depend upon successful collaborations. The many stakeholders – county welfare departments, transit service-providers, regional planning entities, faith-based and charitable organizations, among others – must build partnerships that coordinate efforts in ways that deliver suitable and cost-effective transportation services to clients. Partnerships can increase productivity by tapping into scale economies. Teaming multiple service-providers across multiple human-service agencies, for example, can create opportunities for centralized driver training, vehicle maintenance and inspection, vehicle scheduling, and insurance coverage.

Collaborations are sometimes easier said than done, however. Disagreements and “turf problems” between California's county welfare offices and local transit agencies have thwarted progress in some instances. In small and rural counties, a lack of institutional capacity and staff training to do short-term needs assessments and long-range transportation planning have also been impediments. Additionally, funding programs can pose barriers. While many one-year grant sources are available, the absence of sustained multi-year funding discourages many localities from pursuing ambitious job-access strategies. Restrictions also prevent a van purchased to provide mobility for the elderly from being used to transport a CalWORKs client to a job interview.

Institutional problems also create contradictions that make it difficult to rationalize job-access programs. Surveys of low-income and jobless CalWORKs participants in California underscored the need to keep transit fares affordable. One way to do this is to competitively contract out services so as to lower operating costs. Most private vendors hire non-unionized, low-wage drivers to keep costs down however this can also end up lowering service quality. Experiences show that contracted services can compromise reliability and on-time performance. Sometimes contracted buses do not show up or are well behind schedule. Reliability is of utmost importance to many CalWORKs clients in that if they arrive to work late more than once, they are usually let go, especially those who make a living serving customers in the restaurant, retail, and lodging industries. Additionally, efforts to introduce some door-to-door van services in the state have been stonewalled by organized labor out of fear that low-wage shuttle drivers will take away jobs from unionized workers or eventually depress salary levels. Such problems might be averted by enlarging partnerships to include union interests, private vendors, and others with a vested stake in job-access programs. Expanded partnerships can bring new people with fresh ideas and different perspectives to the table.

## AN ACTION AGENDA

Although not everyone agrees how job-access and reverse-commute needs are best met, one finds virtual unanimity among local interests on one thing: more money is needed. Many of the state's transit providers and county welfare departments are financially stretched to the limit and thus incapable of mounting ambitious transportation programs targeted at the mobility needs of disadvantaged populations. More funding assistance, they contend, would allow them to be pro-active rather than reactive. In truth, more money does not always translate into better transportation for needy individuals. The transportation field is littered with examples where provider-side subsidies and generous financial aid conferred few end-result benefits to consumers. On the other hand, aid that promotes and rewards efficiencies and goes to materially enhance services to intended beneficiaries – i.e., transportation-disadvantaged California – can be money well invested.

It is important that funds meant to enhance job-access and reverse-commute services be earmarked. If provided in the form of general transportation block grants or transfer payments, few dollars will likely end up going to van services, late-night transit schedule extensions, car-access loan programs, or other initiatives that enhance job access. With today's backlog of unfunded highway projects and the struggles many transit agencies face in keeping existing bus routes running, job-access and reverse-commute programs would inevitably lose in the heated competition for scarce financial resources. In a competitive environment, transportation programs that reach a broad constituency invariably win out over ones that serve a small set of beneficiaries, especially those with little political clout.

In light of the state's unmet job-access needs and empirical evidence demonstrating that well-designed transportation services can stimulate welfare-to-work transitions, California policy-makers should seriously consider introducing a state-wide version of the Federal Job Access and Reverse Commute (JARC) program. Monies could go to supplement as well as provide local matches to Federal JARC funding. Block-grant awards spanning at least three to five years should be provided. Longer term funding guarantees would prompt county welfare departments and local transit agencies to pursue transportation programs that are more ambitious and creative than those introduced to date. State JARC grants should encourage localities to form the kinds of partnerships that increase the odds of job-access programs being custom-tailored to local needs.

To further encourage creative job-access and reverse-commute programs, a pilot-demonstration program should also be considered. This program would fund well-conceived, "cutting edge" initiatives, such as the combining of smart paratransit with user-side subsidies and local paratransit deregulation or the formation of community-based mobility enterprises that get inner-city neighborhoods into the business of designing, operating, managing, and maintaining job-access services. Set asides should also go for evaluation. Only through controlled experimental studies will it be possible to ferret out the value and roles of different transportation programs in inducing welfare-to-work transitions. Ideally, evaluations should be based on outcome-based measures of performance (e.g., job creation) as opposed to output-based measures (e.g., transit service deployment).

The state should also play a stepped-up role in institutional strengthening. Resources should go toward building in-house expertise and perhaps even a cadre of para-transportation

professionals – e.g., caseworkers who are knowledgeable about and trained in designing transportation programs to satisfy individual mobility and job-access needs. To encourage mutual learning and the sharing of experiences, the formation of a statewide advisory committee of CalWORKs transportation coordinators should also be considered. Such a committee could play an important role in advising state policy-makers on matters related to job access and reverse commuting. Sponsorship of statewide conferences and workshops that bring caseworkers and others working “in the trenches” together to share experiences, identify best practices, and learn from each other could also aid localities in mounting and managing successful job-access and reverse-commute programs.



## **PART ONE**

### **THE DEMAND FOR REVERSE COMMUTING IN CALIFORNIA**

Getting from inner-city residences to outlying jobs, or reverse commuting, is not easy for all Californians. Difficulties in reaching jobs on the outskirts, some maintain, leads to unemployment, particularly among those with low skills and responsibilities like raising a child as a single parent.

Part One of this report examines the many dimensions of today's reverse-commute marketplace in California. Chapter One, the Introduction, sets a policy context by outlining key problems and issues, and reviewing the literature on reverse-commuting. Chapter Two profiles reverse commuting in the state's four largest metropolitan areas. Market shares of commute trips that are in the reverse direction are defined, as are other dimensions of reverse-commuting, including modes and times-of-day of travel, trip origin-destination patterns, and the socio-demographic make-up of those commuting between central-city residences and outlying job sites. Chapter Three builds upon these profiles by examining factors that influence modes and times-of-day of reverse-commute trips. The relative costs of traveling by car versus transit are compared. Collectively, these chapters paint a portrait of contemporary reverse-commuting in California, providing an entrée for examining experiences with special job-access and reverse-commute services that have been introduced in the state, the focus of Part Two of the report.



## Chapter One

### Reverse-Commuting in California: Policy and Study Context

#### 1.1 INTRODUCTION

Reverse commutes -- work trips that flow in the opposite direction of the traditional downtown-oriented radial commute -- have increased steadily over the past two decades and continue to capture a growing share of the total journey-to-work “travel pie”. In 1990, reverse commutes made up over 10 percent of metropolitan trips nationwide, a share that most observers agree has steadily risen over the past decade.<sup>1</sup> Between 1980 and 1990, Southern California recorded the second largest relative increase in share of commutes from central-cities to suburban counties in the country.<sup>2</sup> Today, the majority of commute trips within U.S. metropolitan areas both begin and end in the suburbs.

Propelling the growth in reverse commuting has been a number of powerful megatrends. Topping the list has been decentralization of employment, spawned by such factors as cheaper real estate prices on the outskirts and telecommunication advances that have allowed suburban back-offices to easily communicate with central-city core offices. More and more of today’s workers can handle routine communications and obtain information electronically from remote, less costly locations. Additionally, as more and more Americans live outside of central cities, employers are locating closer to labor markets. Job decentralization has set the stage for increases in non-traditional commuting patterns.

Yet left out in the shuffling of jobs to the suburbs are the many Americans who continue to reside in core areas and who have few transportation options to reach increasingly far-flung jobs. The increasing isolation of many inner-city residents from suburban employment opportunities has been called “spatial mismatch”, blamed for, among other things, joblessness and concentrated poverty. In California, many entry-level and service-sector jobs are in the suburbs, and many wanting such jobs live in older inner-city areas. Public transit is not always up to the task of connecting central-city residents to suburban jobs because reverse-commute services tend to be sparse and sometimes non-existent. Reverse commutes can span multiple transit service jurisdictions, complicating the ability to coordinate timetables, routes, and fares.

The challenges posed by reverse and non-traditional commutes are sometimes even greater for low-income Californians living in rural counties. Many ruralites receive no public transportation services at all. For those without cars, employment choices can be extremely limited.

Reverse-commute problems are not just spatial in nature. Besides “spatial mismatches” are “temporal mismatches”. Many inner-city residents with suburban jobs work late-hour shifts and on weekends, periods when many buses and trains do not operate. Because large numbers of low-skilled inner-city residents have part-time jobs, contingency employment,

and irregular, odd-hour work schedules, matching services with demand can be an immense challenge.

Reverse-commute mass transportation services have over the years been viewed as important means of enhancing the mobility and job prospects for inner-city residents. In addition to public transit, other potential providers of reverse-commute services include vanpools, private subscription buses, employer-sponsored shuttles, and neighborhood-initiated jitneys and shared-ride taxis. Among the policy initiatives that might be considered for spurring reverse-commute services are “commuter vouchers” for low-income inner-city residents, employer tax credits for sponsoring services, guaranteed ride home programs, and deregulation of free-market paratransit services like jitneys and door-to-door commercial vans.

To date, relatively little empirical research has been carried out to evaluate California’s reverse-commute marketplace and its unmet needs. This study aims to fill this gap. Through empirical analysis of travel needs in different parts of the state and evaluation of existing programs, the state-of-practice is assessed and strategies for enhancing future reverse-commute and job-access services are proposed. The study examines existing gaps and barriers to meeting reverse-commute and job-access needs as well as opportunities for overcoming these hurdles. It also identifies the many stakeholders with a vested interest in reverse-commuting and welfare-to-work, and suggests institutional reforms that hold promise for improving service coordination and integration. The work concludes with a set of recommendations that state agencies and others should consider in developing future policies aimed at improving reverse-commute and job-access needs throughout the state.

## 1.2 PAST RESEARCH ON REVERSE-COMMUTING

Reverse commuting first arose as a policy concern in the wake of the urban riots of the late 1960’s. The McCone Commission established to advise the Johnson Administration on the cause of the riots identified inadequate public transportation as one of several main contributors to high unemployment rates amongst central-city blacks.<sup>3</sup> Various reverse-commute demonstration bus services were introduced in the late 1960s and early 1970s, and because of disappointing ridership results, policy support for specialized transit runs began to wane. The 1980s were marked by a period of transit subsidy cuts and efforts to privatize services. By the early 1990s, interest in reverse-commuting once again gained momentum, in part due to expanding welfare rolls, growing inner-city problems, and worsening suburban traffic congestion. Heightened interest was also spawned by public policy directives that sought to introduce work incentives and set limits on welfare dependence, notably the Federal governments setting of a five-year lifetime limit on cash assistance. “Workfare” programs introduced in the 1990s, notably California’s *CalWORKs* and the Federal government’s *Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA)*, fully embraced the argument that access to suburban jobs, and in particular, improved public transportation services, are crucial toward reducing inner-city joblessness.<sup>4</sup> Federal programs like *Access to Jobs* under the Transportation Equity Act (TEA-21) and multi-agency *Bridges to Work* provided tens of millions of dollars for expanding transit connections between inner-city areas and suburban jobs.<sup>5</sup> Within California, the Governor’s 15 percent discretionary program similarly provided funding for mounting specialized transportation services.

## National Context

The forty years following World War II saw rapid population growth in America's suburbs, comprised mostly of white households. While the U.S. population grew by 56.1 percent over this period, central cities grew by 49.9 percent and suburbs by over 200 percent.<sup>6</sup> By 1990, suburban residents outnumbered city residents.<sup>7</sup> Suburbanization has been far from uniform -- minorities and low-income individuals have migrated to the suburbs at a far slower rate than whites. In 1990, the percentage of Chicago's population made up of African-Americans was 6.5 times the percentage found in the suburbs. The same study found that among twelve large U.S. metropolitan areas they studied, the percentages of urban residents who were African-Americans was two to four times as high as in the suburbs.<sup>7</sup>

Though minorities predominantly reside in the cities, the fastest rates of job growth have been in the suburbs. Between 1980 and 1990, 70 percent of metropolitan job growth across the United States occurred outside of central cities. Today, some 70 percent of all jobs in manufacturing and trade, sectors employing large numbers of entry-level workers, are in the suburbs.<sup>8</sup> The geographic gap between where many low-income Americans live (inner-city) and where more and more jobs are being created (the suburbs) has been labeled *spatial mismatch*. The scope of America's spatial-mismatch problem is revealed by the fact that more than half of households receiving financial assistance are in central cities.<sup>9</sup> More and more inner cities have become the employment centers for highly skilled professional office workers, jobs that are either outside the reach of many low-income individuals or do not offer upward mobility for low skilled workers.

Not all analysts agree that spatial mismatch is a root of job access problems facing the inner-city poor. Taylor and Ong found average commute times of minority residents in ten large U.S. cities did not increase between 1977 and 1985, either in absolute terms or relative to whites.<sup>10</sup> Instances of longer commute times by minorities were explained by their greater reliance upon public transit; discrepancies between minority and white commute-times were thus mainly due to modal speeds, not distance of trips. For Los Angeles County, Blumenberg and Ong found that average commute times for former AFDC (Aid for Families with Dependent Children) recipients were about half those of the general employed population in that city, casting doubt, in their view, over the saliency of the spatial mismatch hypothesis in California's largest urban setting.<sup>11</sup>

Several studies have attempted to measure the prevalence of reverse commuting nationally. A study by Pisarski, using census data from 1960 to 1990, found reverse-commute trips increased nationally from 9 percent in 1980 to 12 percent in 1990.<sup>12</sup> Another study of travel trends within large metropolitan areas found reverse commuting increased between 1980 and 1990 by a similar order of magnitude.<sup>13</sup> The largest increases in reverse commuting over this period occurred in Milwaukee (2.8 percent) and Los Angeles (2.5 percent). In 1990, 3.1 percent of Southern California's journeys-to-work were from central to suburban counties -- i.e., from Los Angeles County to Orange, San Bernardino, Riverside, or Ventura Counties. For San Francisco Bay Area, reverse-commuting (between San Francisco-Oakland and outlying counties) constituted 2.3 percent of commutes and in metropolitan Sacramento the share was 1.6 percent.<sup>14</sup> A limitation of these numbers is that they are based on county-level analyses and depend on how county lines are drawn. Rosenbloom contends the highly

aggregate geographic scale of the analysis results in an understatement of reverse-commuting as a share of metropolitan commutes. She contends that 25 percent is a more realistic estimate of market share – i.e., reverse-commutes make up around one-quarter of journeys-to-work made by inner-city residents.<sup>6</sup> In Chapter Two, reverse-commute as a share of total commutes is specifically examined for California's four largest metropolitan areas.

### Impacts

Past studies on reverse-commuting have generally focused on defining the scope of the problem as opposed to rigorously evaluating impacts. On the surface, transit service gaps appear to be huge. One estimate places the share of suburban entry-level jobs in the United States that are not on public transit routes at 40 percent.<sup>15</sup> A study of Cleveland, Ohio welfare recipients living in disadvantaged neighborhoods found a 40-minute commute by transit would bring only 8 to 15 percent of metropolitan jobs within reach, increasing to only 44 percent if the commute time were doubled to 80 minutes.<sup>16</sup> Studies in Atlanta and Boston similarly found existing public transit services were not up to the task of connecting most inner-city residents to job opportunities within a reasonable travel time.<sup>17</sup>

Results of specialized bus services targeted at poor inner-city areas underscore the limitations of transit in bridging the welfare-to-work gap. A series of Federal and State reverse-commute experiments – mainly special bus runs between minority neighborhoods and the suburbs – that were mounted in the late-1960s and early-1970s to help abate poverty met with minimal success. In the aftermath of racial riots that rocked American cities in the 1960s, the then newly created Urban Mass Transportation Administration (UMTA) spent \$7 million on 14 reverse-commute projects aimed at connecting jobless inner-city residents to suburban workplaces. An evaluation of these programs concluded that: the number of developable reverse-commute routes was limited, large shares of users were not from the ranks of targeted inner-city residents, institutional constraints (e.g., labor requirements, fragmentation of regional transit services, and inefficiencies in the practices of service-providers) hampered performance, and attrition rates were high. In most cases, ridership levels declined steadily with time as workers withdrew from the labor force or purchased cars and began solo-commuting. One study of reverse-commute services targeted at residents of Los Angeles' Watts community found little evidence they got people jobs or even better jobs.<sup>18</sup>

A number of specialized services involving private entrepreneurs, such as door-to-door van connections, that were initiated in the 1980s met a similar fate. In 1985, UMTA sought to revive the reverse-commute demonstration projects of some two decades earlier. Through the Entrepreneurial Services Program, which awarded \$.4 million for 53 projects across 40 U.S. cities, the agency sought to promote competitive transit services that linked the inner-city poor to suburban work sites.<sup>19</sup> The most successful and widely cited experience was Route 201 operated by the Southeastern Pennsylvania Transportation Authority (SEPTA) serving the Philadelphia area. Within six months of program initiation, daily ridership on this special reverse-commute service reached 240 passengers, double what was predicted. The service was able to cover operating costs through farebox receipts. No evidence was ever presented, however, that the route actually contributed to the reduction in inner-city unemployment. Other reverse-commute services introduced by SEPTA that operated in conjunction with light-rail transit services were less successful – ridership declined by 31

percent between 1991 and 1993, one route was eliminated, and another route was reduced to Saturday-only service.<sup>20</sup> One evaluation of UMTA's experiments with reverse-commute services throughout the United States found private carriers performed best at linking new job-seekers to employment opportunities whereas public transit operators were most successful at servicing those already employed. The study concluded there were few opportunities for free-market provision of profitable reverse-commute services.<sup>21</sup>

Notwithstanding the many failed reverse-commute experiments to date, there have nonetheless been some notable success stories. For example, in the early 1980s, transit planners from the Metropolitan Suburban Bus Authority (MSBA) in the New York City area noticed feeder bus services from Nassau County to the subways connecting to Queens were filling up in the reverse direction. Services were expanded to meet this burgeoning demand. By 1988, the number of reverse commuters going to industrial and service jobs on Long Island outnumbered inbound commuters.<sup>6</sup> Similarly, demand in the reverse commute direction for Route 150 in San Diego, a commuter service introduced to provide transportation between downtown and the fast-growing University Town Center, was so great that within two years of service initiation, extra-long articulated buses were introduced in the reverse direction. Both instances involved transit agencies noticing a rising market demand for reverse-commuting, and responding by expanding services. Other reverse commute programs have been more deliberate, with public entities taking the initiative to introduce new services in hopes of triggering ridership. For instance, Yuba-Sutter Transit in California extended their Americans with Disabilities Act (ADA) paratransit services into the late evenings and permitted the general public to use the service during this period. Because retailers provide many entry-level jobs and these jobs tend to involve late-night shift work, this late-night service provided much-valued access to jobs.

Success or failure of a reverse commute project depends largely on the objectives of the project and the agency operating the project. For social service agencies, the primary objective is getting unemployed people to jobs. For transit agencies, the primary objectives is gaining long term transit riders and achieving reasonable fare box recovery levels.

From a broader public-policy perspective, the aim of reverse-commute services is not so much to fill buses as to move the unemployed off of welfare rolls and into gainful employment. Accordingly, recent research has focused on employment outcomes rather than transit ridership levels. Studies have attached varying degrees of importance to public transit in successfully spurring inner-city employment.<sup>22</sup> A recent panel study of Alameda County residents receiving Assistance for Families with Dependent Children (AFDC) in the early 1990s found transit accessibility was positively associated with successful welfare-to-work transitions, however owning and having access to a car was even more important.<sup>23</sup>

While many low-skilled central-city residents face serious mobility problems, the unmet mobility needs of others – e.g., semi-skilled, working class individuals as well as the middle-class – who regularly make reverse commutes should not be overlooked. While most car-owning residents with suburban jobs drive to work, transit could potentially fulfill the mobility needs of “choice commuters” as well, helping to relieve traffic congestion and reduce tailpipe emissions. Importantly, attracting middle-income riders could form a critical mass of users that allow the kinds of services that meet the mobility needs of the inner-city

poor to be sustained. To date, little research has been conducted on the reverse-commute needs of the broader traveling public.

### **1.3 STUDY PURPOSE AND REPORT ORGANIZATION**

The purpose of this study is threefold: (1) define the existing reverse-commute marketplace in California; (2) identify and evaluate existing public transportation services in terms of their success and responsiveness in serving reverse-commute and job-access demands; and (3) identify unserved needs and define policy initiatives and strategies that hold promise for significantly improving reverse-commute and job-access services throughout the state.

This report presents the core analyses, methodologies, results, and conclusions of the study. The study is broken into four Parts. Part One sets the public-policy context of California's reverse-commute challenges – an introduction to the topic (this chapter), coverage of the scope of reverse-commuting in California's four largest metropolitan areas (Chapter Two), and analyses of factors that explain the demand for reverse-commuting in the state (Chapter Three). Part Two reviews the various forms of reverse-commute and job-access programs introduced in California in recent years, followed by a series of case-study summaries of various initiatives and, where measurable, their impacts (Chapter Four). Case studies are presented for: Santa Cruz and Contra Costa Counties – two counties that have pursued a menu of job-access options for social-services clients (Chapter Five); Los Angeles, San Diego, and Alameda Counties, providing experiences with targeted reverse-commute services using fixed-route public buses (Chapters Six and Seven); analyses of effects of car ownership on welfare-to-work transitions in San Bernardino, San Mateo, and Ventura Counties (Chapter Eight); materials on the challenges of mounting job-access bus services in predominantly rural county settings, notably Merced, Mendocino, and Stanislaus Counties (Chapter Nine) and two cases where rural job-access programs have worked extremely well, Yolo and Tulare Counties, both featuring successful employer-sponsored reverse-commute bus runs to rural Indian Casinos (Chapter Ten). Collectively, these experiences paint a portrait of contemporary programs and initiatives aimed at improving access to jobs for California's low-income residents. Part Three shifts the focus from experiences in serving those already with jobs making work trips to studying the mobility needs of those who have yet to enter the labor force. Surveys of unemployed individuals receiving aid in San Diego and Yolo Counties identifies the kinds of transportation improvements that many would like to see introduced (Chapter Eleven). This is followed by an analysis of where poor households live and jobs they are most eligible for exist in the San Francisco Bay Area (Chapter Twelve). Part Four concludes the study with discussions on the current institutional landscape surrounding reverse-commute and job-access programs (Chapter Thirteen) and conclusions and recommendations based on the collective research findings (Chapter Fourteen).

---

Notes

- <sup>1</sup> A. Pisarski, *Commuting in America II: The Second National Report on Commuting Patterns and Trends*, Washington, D.C., Eno Transportation Foundation, 1996.
- <sup>2</sup> M. Rossetti and B. Eversole, *Journey to Work Trends in the United States and Its Major Metropolitan Areas, 1960-1990*, U.S. Department of Transportation, Federal Highway Administration, 1993.
- <sup>3</sup> R. Cervero, O. Sandoval, J. Landis. *Transportation as a Stimulus to Welfare-to-Work: Private Versus Public Mobility*.
- <sup>4</sup> Federal workfare initiatives are part of the July 1996 Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) that replaced the Aid to Families with Dependent Children (AFDC), which was an entitlement program for poor families, with Temporary Assistance for Needy Families (TANF), administered as block grants by the states. TANF fundamentally differs from AFDC in that: (1) it provides states with a lump sum for their welfare programs, regardless of changes in the number of families needing assistance; (2) assistance is time limited (TANF funds cannot go to a family that includes an adult who has received benefits for 60 months, whether or not consecutive; and (3) states must require that parents or caretakers engage in work within 24 months of receiving assistance.
- <sup>5</sup> Bridges to Work was a four-year \$11 million grant program funded by the U.S. Housing and Urban Development department, the Federal Transit Administration, and various foundations. Five cities – Baltimore, Chicago, Denver, Milwaukee, and St. Louis – initiated various programs aimed at promoting welfare-to-work transitions.
- <sup>6</sup> S. Rosenbloom. *Reverse Commute Transportation: Emerging Provider Roles*. Washington, D.C., Urban Mass Transportation Administration, U.S. Department of Transportation, 1992.
- <sup>7</sup> M. A. Hughes. A Mobility Strategy for Improving Opportunity, *Housing Policy Debate*, Vol. 6, No. 1, 1995.
- <sup>8</sup> USDOT Federal Highway Administration. *Journey-to-Work trends and its metropolitan areas 1960-1990*.
- <sup>9</sup> USDOT Bureau of Transportation Statistics. Welfare reform and access to jobs in Boston. January 1998.
- <sup>10</sup> B. Taylor and P. Ong, Racial and Ethnic Variations in Employment Access: An Examination of Residential Location and Commuting in Metropolitan Areas, Berkeley, University of California Transportation Center, UCTC Working Paper 17, 1993.
- <sup>11</sup> E. Blumenberg and P. Ong, Can Welfare Recipients Afford to Work Far from Home? *Access*, No. 10, 1997, pp. 15-19.
- <sup>12</sup> He defined any city with a population greater than 25,000 inside a metropolitan area as a central city and metropolitan areas outside the central city as suburban areas.
- <sup>13</sup> USDOT Federal Highway Administration. *Journey-to-Work trends in the United States and its major metropolitan areas 1960-1990*.
- <sup>14</sup> The report uses census boundary definitions and defines metropolitan areas as large populous nucleus surrounded by adjacent communities that have a high degree of economic and social integration with that nucleus. Only metropolitan areas with populations over 1,000,000 were included in the study. From these metropolitan areas, the *largest place* was designated a central county. All other counties in the metropolitan area were considered suburban counties
- <sup>15</sup> K. Orski, Welfare to Work, *Innovation Briefs*, Vol. 2/3, pp. 1-2.
- <sup>16</sup> N. Bania, C. Coulton, and L. Leete, Welfare Reform and Access to Job Opportunities in the Cleveland Metropolitan Area, Washington, D.C., paper presented at the Annual Fall Research Conference of the Association for Public Policy Analysis and Management, November, 1999.
- <sup>17</sup> J. Coughlin, Access to Work and Welfare Reform: Demographics, Jobs and Transportation Challenges, Cambridge, Massachusetts, Volpe National Transportation Center, 1998; A. Lacombe, Welfare Reform and Access to Jobs in Boston, Washington, D.C., Bureau of Transportation Statistics, U.S. Department of Transportation, BTS98-A-02, 1998; M. Rich, Access to Opportunities: The Welfare-to-Work Challenge in Metropolitan Atlanta, paper presented at the

- 1999 Annual Fall Research Conference of the Association for Public Policy Analysis and Management, November 1999.
- <sup>18</sup> J. Crane, *The Reverse Commute Experiment: A \$7 Million Demonstration Program*, Menlo Park, California: Stanford Research Institute, study prepared for the Urban Mass Transportation Administration, December 1970.
- <sup>19</sup> J. Crain, *The Reverse Commute Experiment: A \$7 Million Demonstration Program*, Washington, D.C., Urban Mass Transportation Administration, U.S. Department of Transportation, September, 1970.
- <sup>20</sup> American Public Transit Association, *1999 Access-to-Work Best Practices Survey: Summary Report*, Washington, D.C., 1999. <http://www.apta.com/govt/other/99wtwnet.htm>.
- <sup>21</sup> S. Rosenbloom, *Reverse Commute Transportation: Emerging Provider Roles*, Washington, D.C., U.S. Department of Transportation, Federal Transit Administration, March, 1992.
- <sup>22</sup> T. Sanchez, The Connection Between Public Transit and Employment: The Cases of Portland and Atlanta, *Journal of the American Planning Association*, Vol. 65, 1999, pp. 284-296; E. Blumenberg and P. Ong, Job accessibility and Welfare Usage: Evidence from Los Angeles, *Journal of Policy Analysis and Management*, Vol. 17, 1998, pp. 639-65; R. Cervero, O. Sandoval, and J. Landis, Transportation as a Stimulus to Welfare-to-Work: Private Versus Public Mobility, Berkeley, UCTC Working Paper, 2000.
- <sup>23</sup> Cervero, et al., op cit., 2000.

## Chapter Two

### Reverse-Commuting in California: Its Scope and Profile

#### 2.1 INTRODUCTION

How significant is reverse commuting in California? What proportion of the commute pie is made up of those seeking to get from the inner city to jobs in the suburbs? What modes do reverse commuters use relative to other travelers? Are the demographic profiles of reverse commuters any different than other submarkets? This chapter probes these questions by examining empirical data on reverse-commuting in California's four largest metropolitan areas, shown in Map 2.1: the Los Angeles Metropolitan Area; the San Francisco Bay Area; San Diego County; and the Sacramento Metropolitan Area.<sup>1</sup> Besides defining market shares, this chapter aims to draw a wide-ranging profile of who constitutes reverse commuters in California's biggest metropolitan areas – in terms of not only socio-demographics, but also modes, time-of-day, durations, and origin-destination patterns of trips.

Examining existing patterns of reverse-commuting, of course, does not tell the whole story. In particular, statistics on the current incidence of reverse-commuting says nothing about reverse-commute trips that Californians would like to make but cannot – whether for reasons they have no car, public transit is non-existent, physical disabilities, child-care responsibilities, or other factors. These pent-up, unmade trips are often called *Latent Demand*. Understanding the scope of latent demand is also important. This matter is not treated in this chapter, but rather is taken up later in the report.

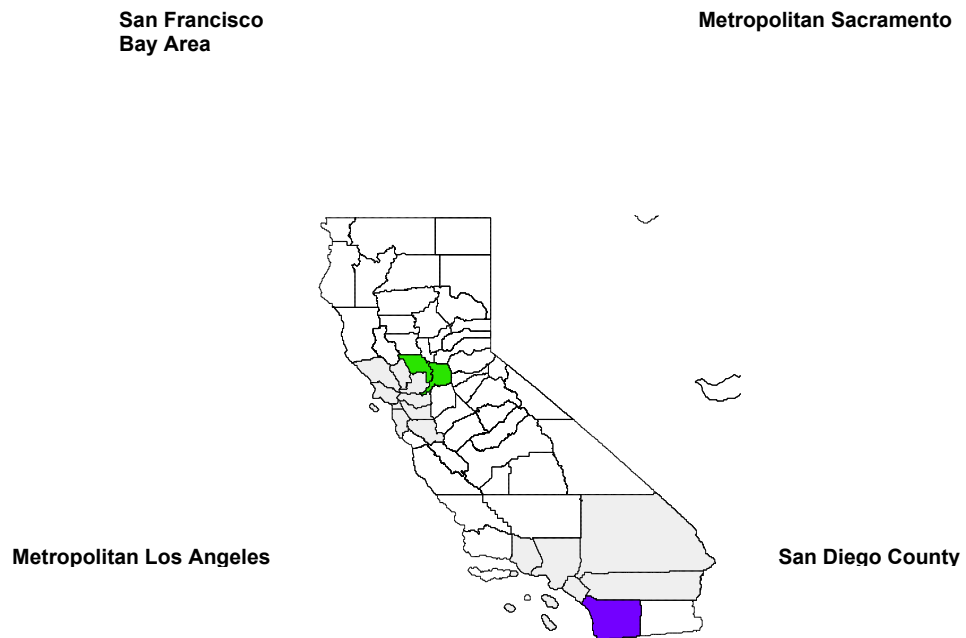
#### 2.2 DEFINITIONS

This section provides two definitions, one of “reverse commuting” and one on location -- specifically whether a place is in the “central city” or “non-central city”. These definitions are used in identifying market shares of journeys-to-work in California's largest metropolitan areas that are reverse commutes.

##### **Reverse Commute**

A “reverse commute” describes work trips of central-city residents to suburban jobs, counter to the predominant direction of traffic flows. Accordingly, reverse commutes represent “contra-flow” or “against-the-grain” work trips, stereotypically from the central city to the suburbs (and sometimes beyond) during morning peak hours.

In this report, reverse commutes contrast with three other types of metropolitan commuting defined along spatial lines: radial, intra-urban, and intra-suburban. Radial flows represent the “traditional commute” from suburbs to central-city jobs each weekday morning. Intra-urban commutes describe work trips that take place solely within central cities – i.e. central-city



**Map 2.1 Four Large California Metropolitan Areas  
Profiled in Terms of Reverse Commuting**

residents going to central-city jobs. Intra-suburban commutes constitute suburb-to-suburb trips – i.e., from a suburban residence to a suburban job site.

## Central-City

The definitions outlined above beg the question: what constitutes a “central city”? Instinctively, a central city represents the older, built-up part of region, characterized by relatively high population and employment densities. For purposes of this study, we sought to define central cities by first examining the population and density profiles in California’s largest metropolitan areas. Population and employment densities were obtained using 1990 census data from the Census Transportation Planning Package (CTPP)-Urban Element, which contained demographic characteristics of traffic analysis zones (TAZ) or census tracts.<sup>2</sup>

Thresholds of “high” densities for population and employment needed to be determined to distinguish which TAZs were situated within a central city. For this, we turned to past empirical research. One California study used the threshold of seven or more workers per gross acre as a basis for identifying employment centers in San Francisco Bay Area.<sup>3</sup> Several other studies conducted in California have adopted a similar or even higher benchmark.<sup>4</sup> A preliminary investigation revealed that a minimum threshold of seven workers produced too many eligible TAZs, and after consultation with panel members overseeing the study and local professional planners who were knowledgeable about their regions, it was agreed that minimum thresholds would vary across metropolitan areas: metropolitan Los Angeles – 15 persons or workers per acre; San Francisco Bay Area and San Diego County – 12 persons or workers per acre; and metropolitan Sacramento – 10 persons or workers per acre. These variations represent, in part, the fact that average densities vary across the four regions, with Los Angeles being the state’s densest urbanized area, and that density thresholds correspondingly also needed to vary.

In determining the boundaries of central cities, we added to the density criteria the requirement that a TAZ had to lie within or adjacent to the historical center of a region. When applying this threshold, it became evident that TAZs that met this criterion did not collectively make up a contiguous area in and around the downtown and historical center of a region. For example, some abandoned or lightly used industrial zones near downtowns have very low employment densities and no residences at all, yet everyone would agree they are part and parcel of the central city. Thus, we also treated TAZs as being part of a central city as long as they were within or contiguous to the “historical center” of a metropolitan area, even if they did not meet the minimum threshold.<sup>5</sup>

The above criteria for defining a central city are somewhat different from those used by the U.S. Census Bureau definition. The census’s bureau’s definition is based to large degree on political boundaries of the largest city or the city with the historical central business district (CBD) of a region. Key factors in the census bureau’s definition are: municipality size (i.e., population or employment), levels of jobs/housing balance (i.e., the ratio of employment to residence,) and degree to which residents work locally.<sup>6</sup> The census bureau’s definition was not adopted in this study because it includes areas that are geographically remote from the historical center and also tends to be an artifact of political boundaries. In the case of metropolitan Los Angeles, for example, parts of the outlying San Fernando Valley – what in

the context of reverse-commuting clearly represents a suburban setting – would be treated as a central city using the census bureau’s definition.

## **2.3 APPLYING DENSITY CRITERIA**

The criteria outlined above were applied to each of the four large California metropolitan areas using 1990 census data. Figures 2.1 and 2.2 illustrate the application of the criteria for metropolitan Sacramento. Figure 2.1 shows population densities among the region’s TAZs ranged from a high of around 65 persons per acre to a low of zero. Using the threshold of 10 persons per acre yielded 150 TAZs (out of the region’s 1,200 TAZs) that met the minimum criteria. Figure 2.2 reveals employment densities ranged from zero to more than 300 workers per acre (in downtown Sacramento), and 60 TAZs met the minimum employment density criteria.

Maps 2.2 through 2.5 summarize the results by mapping population and employment density data among TAZs. Darker areas represent dense TAZs. While most dense TAZs are in and around the core cities and CBDs of each metropolitan area, dense nodes are also found in the suburbs and outlying areas. This reflects the polycentric nature of contemporary urban California. These maps underscore the fact that other criteria, in addition to density, need to be applied in identifying central-city areas.

## **2.4 DEFINED CENTRAL-CITY AREAS**

Adding the criterion that TAZs belonging to the central city can have low densities as long as they are within or contiguous to historical centers produced contiguous clusters that visually and intuitively resemble inner-city settings. Maps 2.6 through 2.9 present the “designated” central-city areas based on these “relaxed” criteria. As noted, central-city definitions were settled upon by also obtaining feedback and soliciting suggestions from staff of local planning agencies as well as members of the panel overseeing this study.

The central-city area of metropolitan Los Angeles comprised much of the built-up, “flat-land” area of the city of Los Angeles as well as clusters of zones comprising Anaheim-Santa Ana-Irvine in Orange County and Oxnard-Ventura in Ventura County (Map 2.6). In the case of the Bay Area, the central city comprised much of the built-up shoreline area that rings the San Francisco Bay, spanning the densest parts of the City of San Francisco and the Counties of Alameda, Contra Costa, San Mateo, and Santa Clara (Map 2.7). For San Diego County, the defined central city represented the highly urbanized portions of the City of San Diego, situated in the southwest portion of the County (Map 2.8). And in the case of metropolitan Sacramento, contiguous TAZs constituting the densest and oldest parts of the City of Sacramento made up the designated central city (Map 2.9).

In most instances, designated central-city areas comprised less than 20 percent of the total land area of each metropolitan area. As a percentage of total population and employment, however, central-city shares were far higher (Table 2.1 and Figure 2.3). In terms of population, defined central cities ranged from a low of 25 percent of the regional total in the

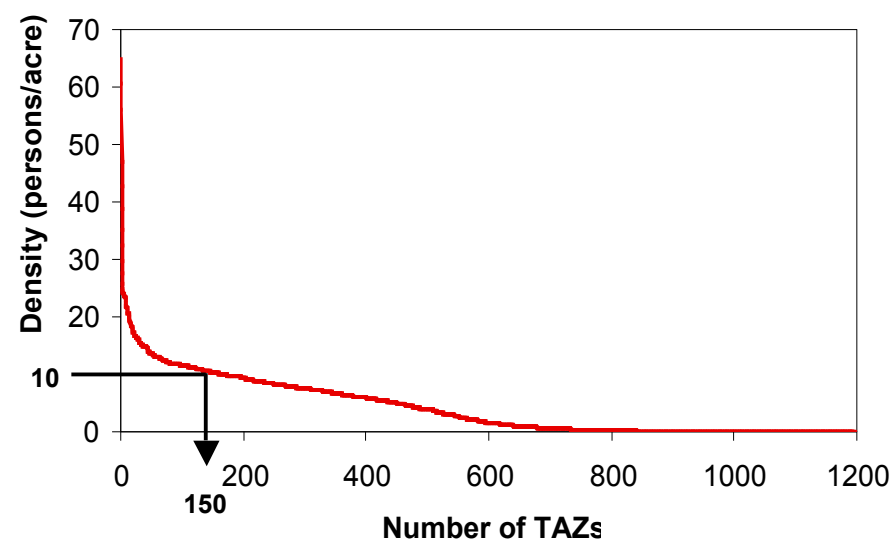


Figure 2.1 Population Density Distribution across Traffic Analysis Zones (TAZs), Sacramento Metropolitan Area, 1990

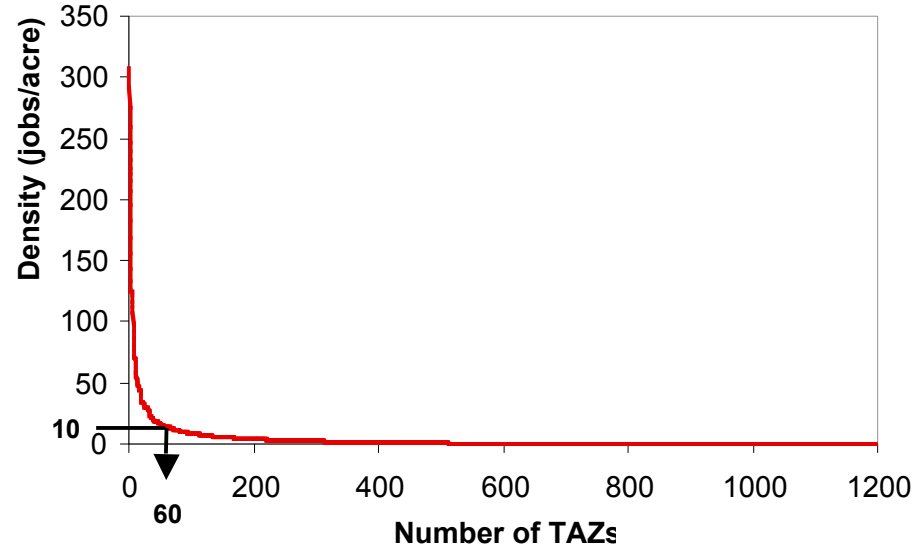
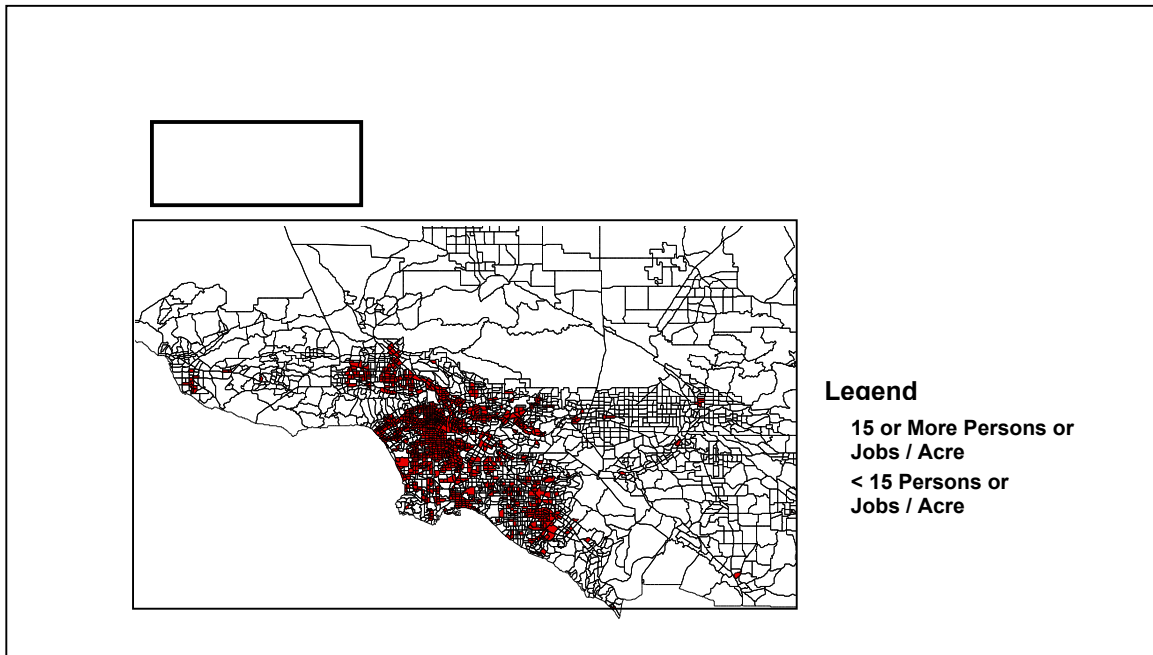
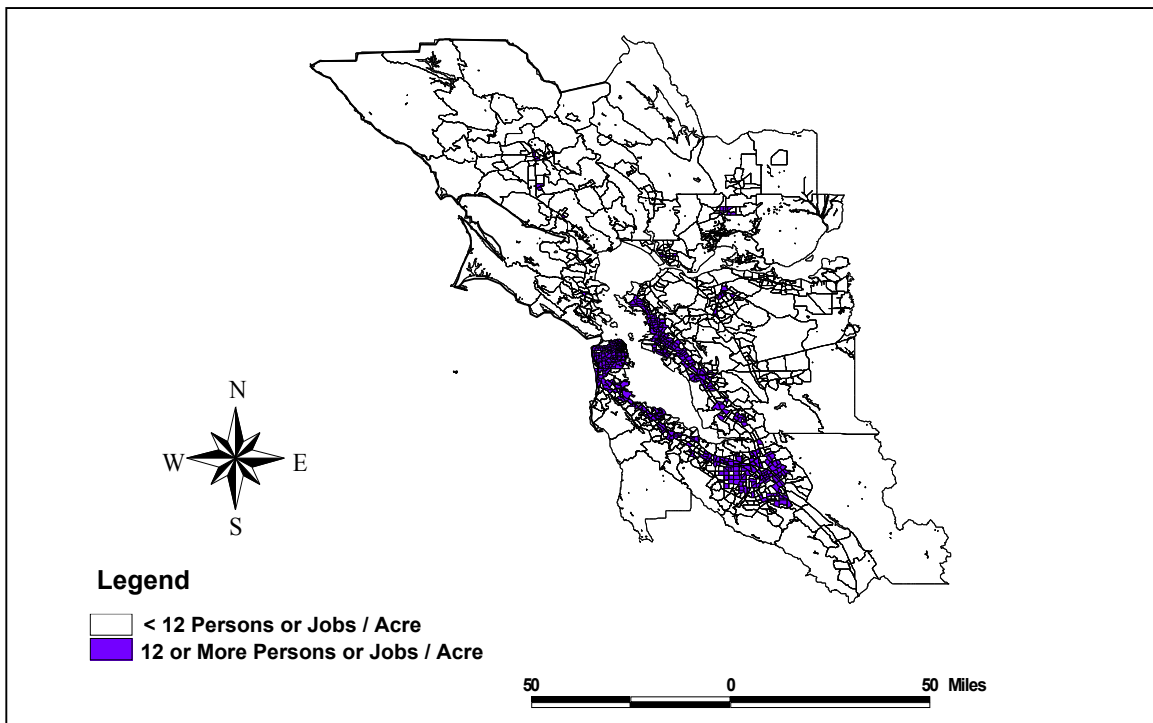


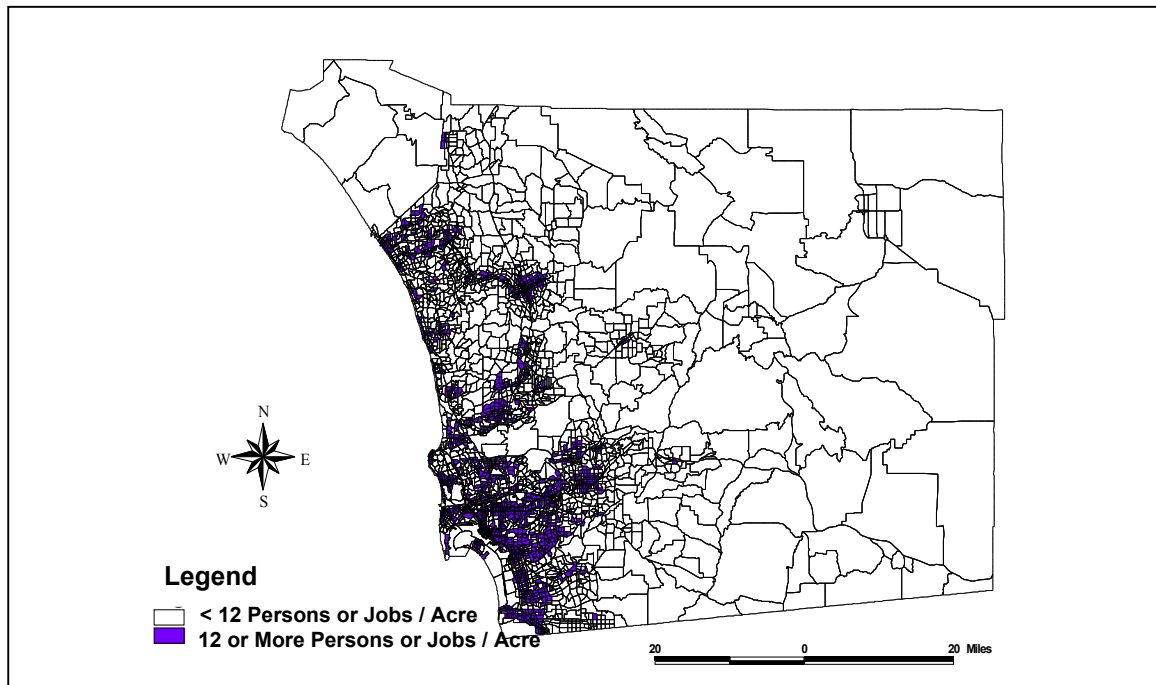
Figure 2.2 Employment Density Distribution across Traffic Analysis Zones (TAZs), Sacramento Metropolitan Area, 1990



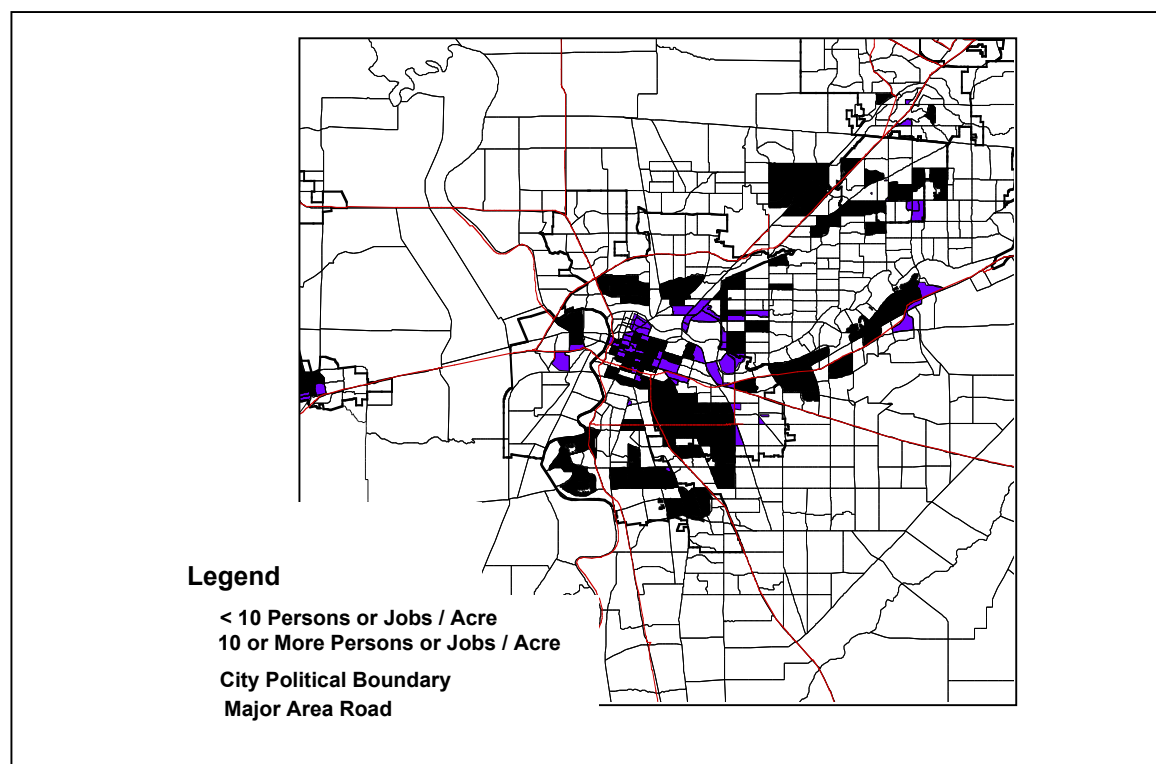
**Map 2.2** Distribution of Traffic Analysis Zones in Metropolitan Los Angeles Meeting Population and Employment Density Criteria, 1990



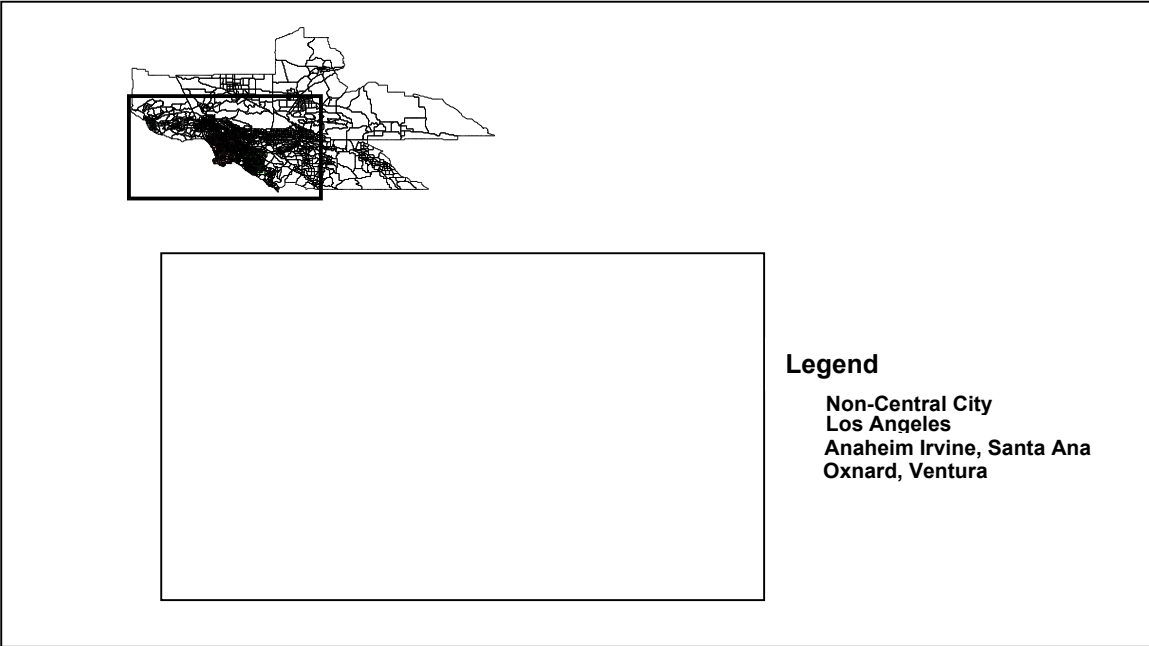
**Map 2.3** Distribution of Traffic Analysis Zones in the San Francisco Bay Area Meeting Population and Employment Density Criteria, 1990



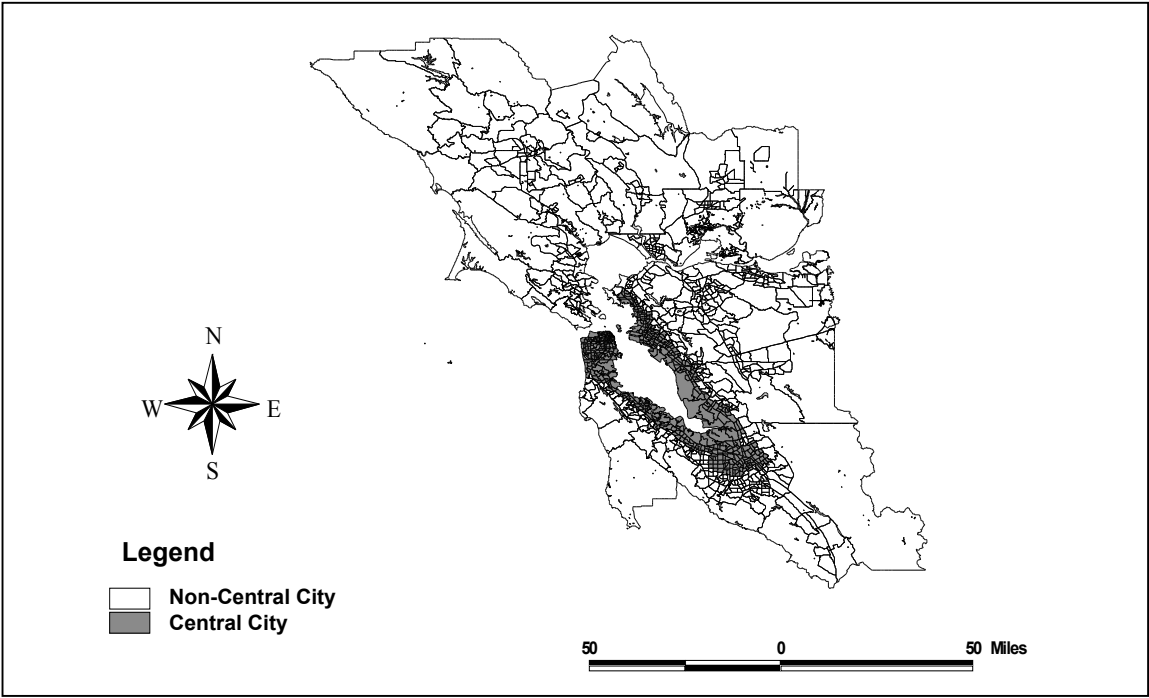
**Map 2.4 Distribution of Traffic Analysis Zones in San Diego County Meeting Population and Employment Density Criteria, 1990**



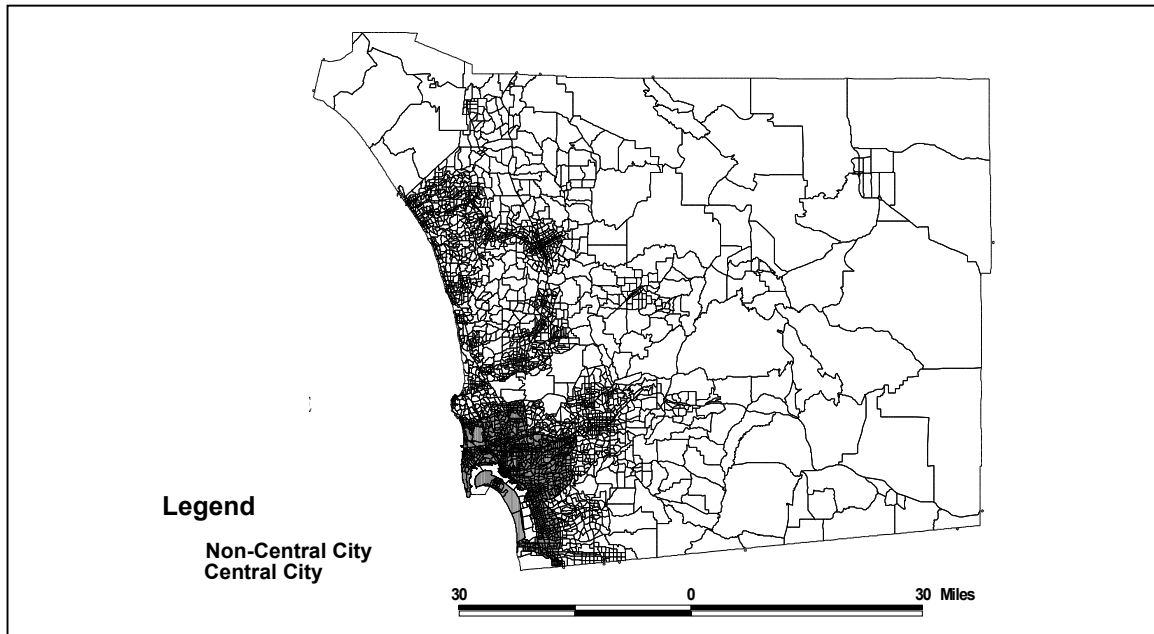
**Map 2.5 Distribution of Traffic Analysis Zones in Metropolitan Sacramento Meeting Population and Employment Density Criteria, 1990**



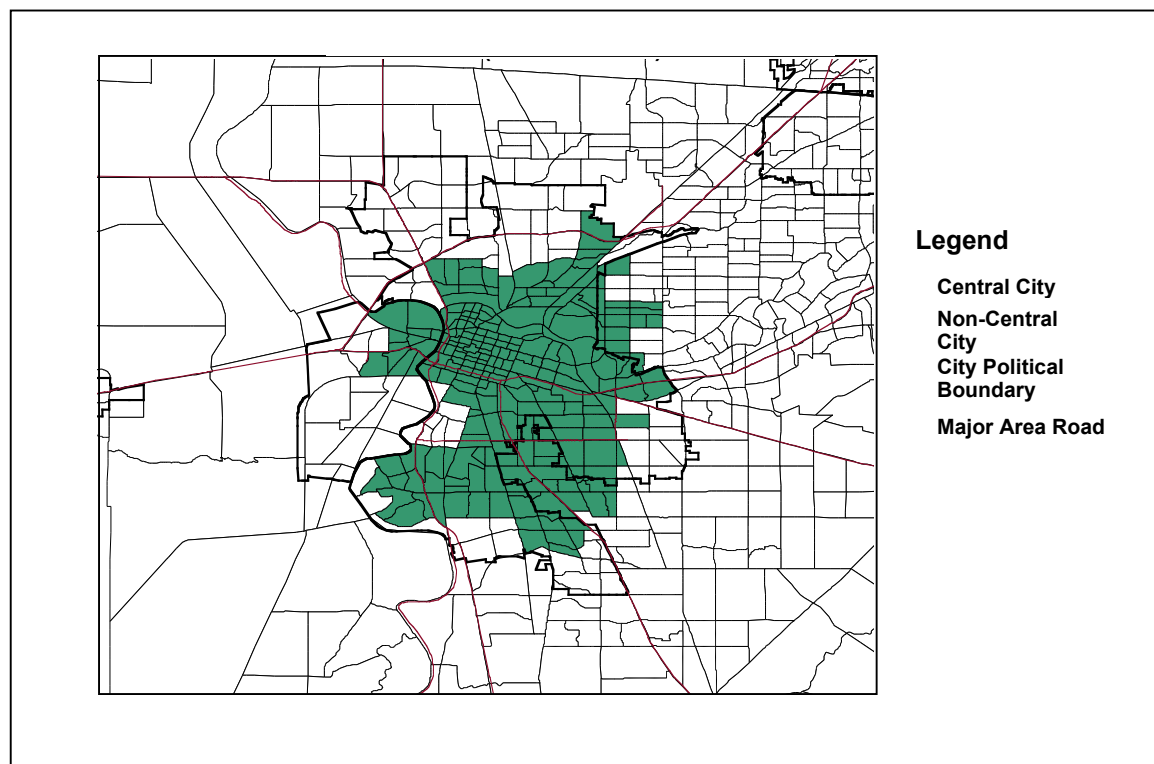
Map 2.6 Metropolitan Los Angeles: Designated Central City Area



Map 2.7 San Francisco Bay Area: Designated Central City Area



Map 2.8 San Diego County: Designated Central City Area



Map 2.9 Metropolitan Sacramento: Designated Central City Area

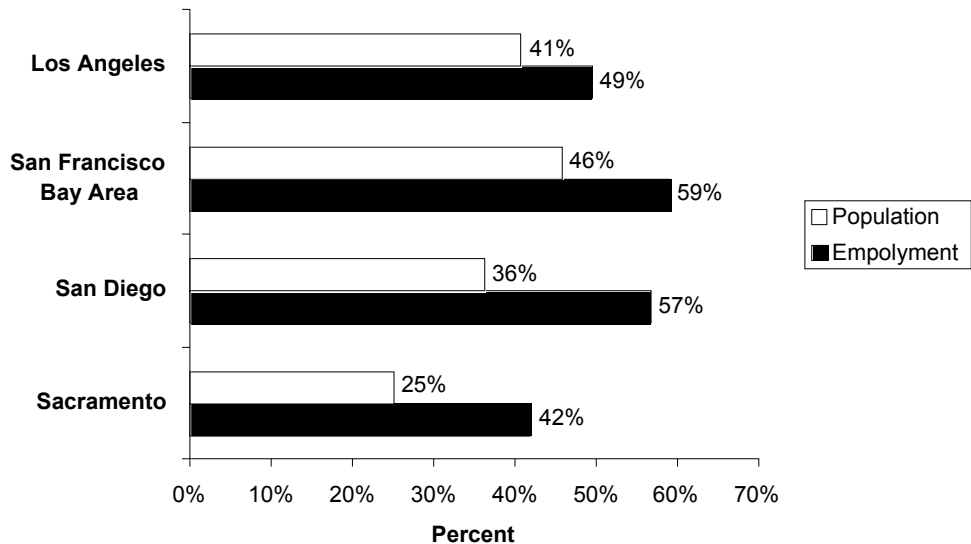
**Table 2.1 Shares of Regional Population and Employment in Designated Central City and Non-Central City Areas, 1990 and 2000 Data**

		<b>Central City</b>	<b>Non-Central City</b>	<b>Total</b>	<b>Data Source</b>
<b>Los Angeles</b>	<b>Population</b>	5,972,147	8,668,685	14,640,832	1990 CTPP*
	Percent	41%	59%	100%	
	<b>Employment</b>	3,385,673	3,464,380	6,850,053	1990 CTPP
	Percent	49%	51%	100%	
<b>San Francisco Bay Area</b>	<b>Population</b>	2,760,250	3,263,327	6,023,577	1990 MTC**
	Percent	46%	54%	100%	
	<b>Employment</b>	1,907,168	1,320,221	3,227,389	1990 MTC
	Percent	59%	41%	100%	
<b>San Diego</b>	<b>Population</b>	1,056,517	1,854,951	2,911,468	1995 SANDAG***
	Percent	36%	64%	100%	
	<b>Employment</b>	672,796	514,041	1,186,837	2000 SANDAG
	Percent	57%	43%	100%	
<b>Sacramento</b>	<b>Population</b>	379,199	1,135,296	1,514,495	1990 CTPP
	Percent	25%	75%	100%	
	<b>Employment</b>	252,470	349,442	601,912	1990 CTPP
	Percent	42%	58%	100%	

\* Census Transportation Planning Package-Urban Elements

\*\* Metropolitan Transportation Commission

\*\*\* San Diego Association of Governments

**Figure 2.3 Percentages of Regional Population and Employment in Designated Central City**

case of greater Sacramento to a high of 46 percent in the San Francisco Bay Area. Central cities generally constituted an even larger share of regional population – from a low of 42 percent in greater Sacramento to a high of 59 percent in the Bay Area. In general, metropolitan Los Angeles had the closest balance of jobs and housing within the designated central city and San Diego had the widest imbalance – specifically, far more jobs than residences.

## 2.5 REVERSE-COMMUTE MARKET SHARES

Given these designations of central-city areas, what shares of commute trips are reverse across the four metropolitan areas?<sup>7</sup> As noted earlier, commute data were stratified into four “submarkets”, diagrammed in Figure 2.4. Reverse-commutes – journeys-to-work from central-city to non-central city areas during morning periods – flow in the opposite direction of radial commutes. Intraurban and intrasuburban commutes stay within the boundaries of the central city and non-central city, respectively.

We turned to surveys of regional travel to examine shares of commutes across the four submarkets. Regional travel surveys, comprised of person-level data on the mode, origin address, destination address, time-of-day, and other information of each commute trip, were preferable to census journey-to-work statistics. Regional travel surveys provided not only more recent commuting data than the 1990 census but also provided detailed information about attributes of trip makers (e.g., occupation and gender), their households (e.g., annual incomes), and their car-ownership levels (e.g., vehicles per household).<sup>8</sup>

Table 2.2 and Figure 2.5 show that during the 1990 to 2000 period, reverse commutes comprised a relatively small share of regional journeys-to-work across the four metropolitan areas – from a low of 6.7 percent in the San Francisco Bay Area to a high of 10.9 percent in the greater Sacramento area.<sup>9</sup> Generally twice as many commutes were radial and even larger numbers were intra-urban – particularly in the Bay Area where five times as many surveyed journeys-to-work occurred within the central city as from the central city to the suburbs. By far, the largest share of journeys-to-work were intrasuburban, comprising over half of commute trips in metropolitan Los Angeles, San Diego, and Sacramento. The dominance of suburb-to-suburb commuting reflects the effects of job migration to the suburbs in step with the migration of households over the post-war period.<sup>10</sup> Over the past three decades, employment decentralization has been as pronounced in California as anywhere in the United States.<sup>11</sup>

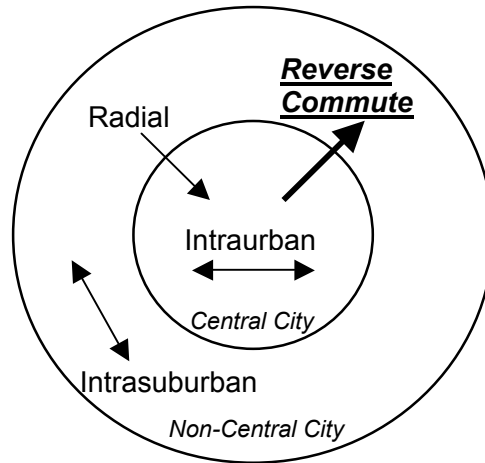


Figure 2.4 Schema of Commute Submarkets within Metropolitan Areas

Table 2.2 Shares of Journeys-to-Work Across the Commute Sub-Markets for Four California Metropolitan Areas, 1991-2000 Data

	Commute Sub-Markets				Data Source
	Reverse	Radial	Intra-Urban	Intra-Suburban	
Los Angeles	8.7%	16.0%	18.0%	57.4%	1991 SCAG
SF Bay Area	6.7%	17.4%	33.2%	42.7%	1990 Bay Area Travel Survey
San Diego	7.9%	19.2%	20.2%	52.6%	1995 Travel Behavior Survey
Sacramento	10.9%	18.3%	18.9%	51.9%	2000 SACOG Travel Survey

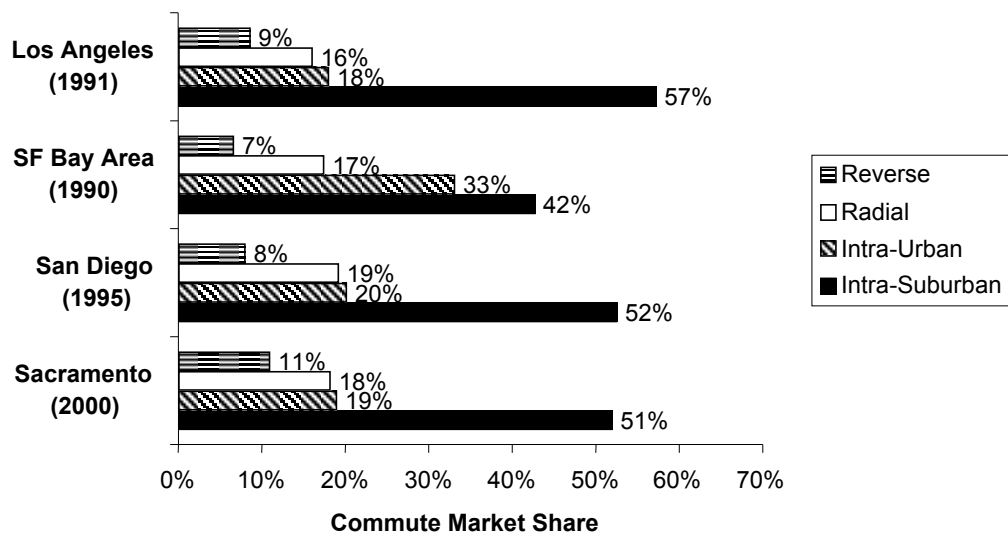


Figure 2.5 Diagrams of Commute Market Shares in the Four Metropolitan Areas, 1990-2000 Data

A shortcoming of the market-share results presented above is they are a product, in part, of how the geographic boundaries of “central city” were drawn. A liberal definition of central city, for example, will result in relatively high shares of intraurban trips and smaller shares of intrasuburban trips.

One way to get around this problem is to create a *normalized* index of reverse-commuting. This was done based on the assumption that reverse-commute shares should be proportional to the share of regional population living in the central city and regional jobs located in non-central areas. This represents the “expected” reverse-commute share. The normalized index is the actual share divided by the expected share, as shown in Equation (2.1). If, for example, 40 percent of a region’s population lives in the central-city and 60 percent works outside the central city, the expected reverse-commute share is 24 percent (40 \* .60). If reverse-commutes actually make up 18 percent of commutes, then the normalized index is 0.75 (18/24), or three-quarters of expectations.

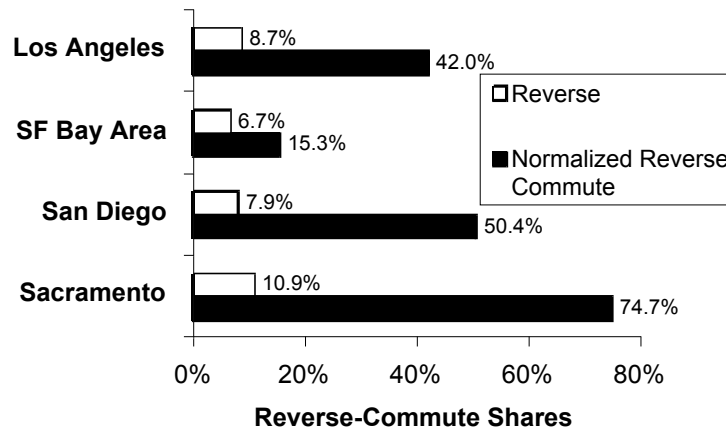
$$\text{Normalized Index} = \frac{(\% \text{ Work Trips that are Reverse Commute})}{(\% \text{ Regional Population in Central City} * \text{Proportion of Employment in Non-Central City})} \quad (2.1)$$

Table 2.3 and Figure 2.6 present the normalized reverse-commute index values. As with any benchmark, the index provides a comparative measure of the relative degree of reverse commuting given the distributions of population and employment across the defined central-city and non-central-city areas. Greater Sacramento is shown to have the largest degree of reverse-commuting in relative terms. Given the distribution of regional population and employment, we would expect 14.5 percent of all journeys-to-work in the Sacramento area to be reverse-commutes. In actuality, the share was 10.9 percent. Thus, the normalized index was 0.75, or three-quarters of expectation. The least degree of reverse-commuting was in the San Francisco Bay Area – actual shares were only 15 percent of what could be expected. It is noted that actual shares were below expected shares in all four metropolitan areas (i.e., all normalized indices were below 1). This suggests reverse-commuting is less than what could be expected given the distribution of residences and jobs in the state’s urbanized areas. Sub-one values likely also reflect the fact that higher shares of inner-city residents are unemployed, thus diminishing the incidence of any form of commuting where trip origins are in the core area, including reverse commuting.

**Table 2.3 Normalized Reverse-Commute Indices for Four Metropolitan Areas**

	<b>Reverse</b>	<b>Expected Share</b>	<b>Normalized Index*</b>
<b>Los Angeles</b>	8.7%	20.6%	<b>0.42</b>
<b>SF Bay Area</b>	6.7%	43.9%	<b>0.15</b>
<b>San Diego</b>	7.9%	15.7%	<b>0.50</b>
<b>Sacramento</b>	10.9%	14.5%	<b>0.75</b>

\* Normalized Index = (Percent Work Trips that are Reverse Commutes) / (Population percent in Central City \* Employment proportion in Non-Central City).

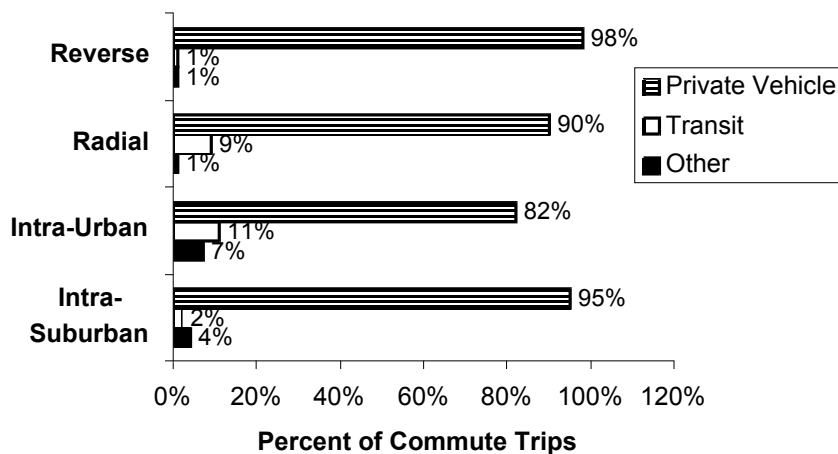
**Figure 2.6 Comparison of Actual and Normalized Reverse Commute Shares Across Four California Metropolitan Areas**

## 2.6 MARKET SHARES BY MODE OF TRAVEL

Conventional wisdom holds relatively few reverse-commute trips in the United States are by public transit since bus runs from inner-city to outlying areas tend to be sparse or non-existent. If they exist, operations are often limited to weekdays and peak periods.

Based on the 1995 Nationwide Personal Travel Survey (NPTS) results for the Bay Area, San Diego County, and metropolitan Sacramento combined, Figure 2.7 shows that transit's poor showing in the reverse-commute market is borne out in California. Transit captured only around one percent of reverse-commutes across these three metropolitan areas – nearly all opposite-flow commutes were by private vehicles, whether in the form of solo-commutes, carpools, or vanpools. Transit's highest share was for intraurban commutes – around 11 percent of journeys-to-work across the three metropolitan areas.

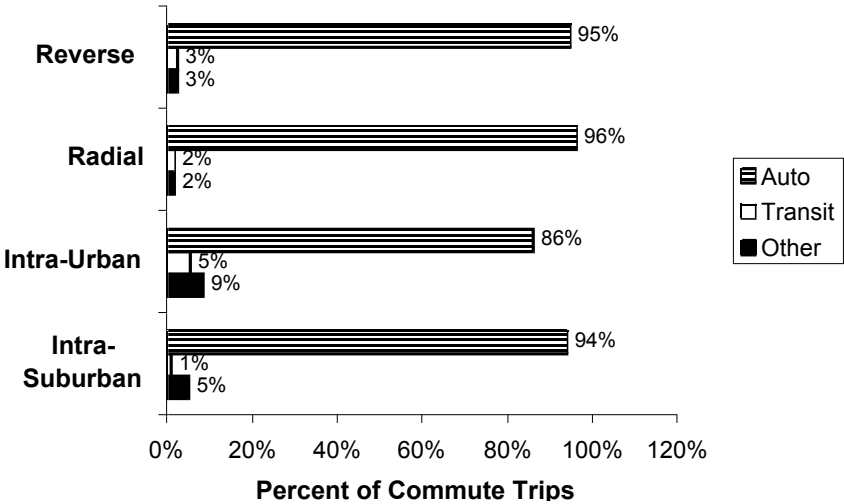
Breaking modal split data down for each of the four metropolitan areas, based on regional travel surveys (versus 1995 NPTS), further underscores the importance of private “automobility” in the reverse-commute submarket, with a few exceptions. Figures 2.8 through 2.11 reveal transit comprised 3 percent or less of all work trips across the four



Source: 1995 Nationwide Personal Travel Survey (NPTS)

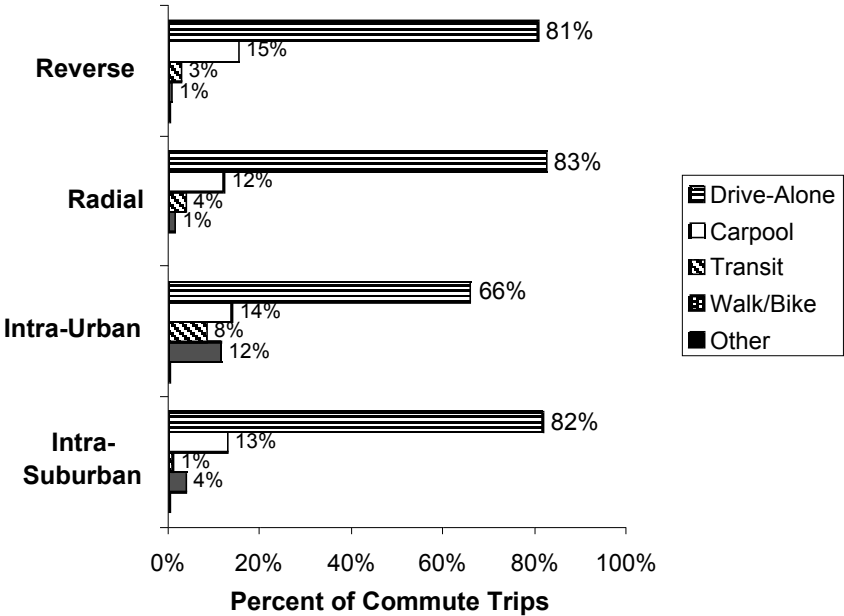
**Figure 2.7 1995 Modal Splits Among Commute Submarkets in Three Metropolitan Areas Combined: the San Francisco Bay Area, San Diego County, and Metropolitan Sacramento**

metropolitan areas based on regional travel survey data. Since regional travel surveys recorded modal information differently, there are some inconsistencies in how modal data are expressed across the metropolitan areas. In the case of the Bay Area, private-vehicle statistics were further stratified by drive-alone versus rideshare (carpools and vanpools). Interestingly, there were larger shares of Bay Area carpools and vanpools in the reverse-commute direction than the radial direction (or intraurban or intrasuburban directions). In greater Sacramento, 5.4 percent of reverse-commuters shared rides to work, a higher share than those who took public transit. These statistics suggest smaller scale, more flexible forms of “mass transportation” might be more suitable for reverse commutes than traditional large-bus transit services in many instances. Whether occupied by a lone driver or five occupants, the private car clearly dominates California’s reverse-commute marketplace (Table 2.4).



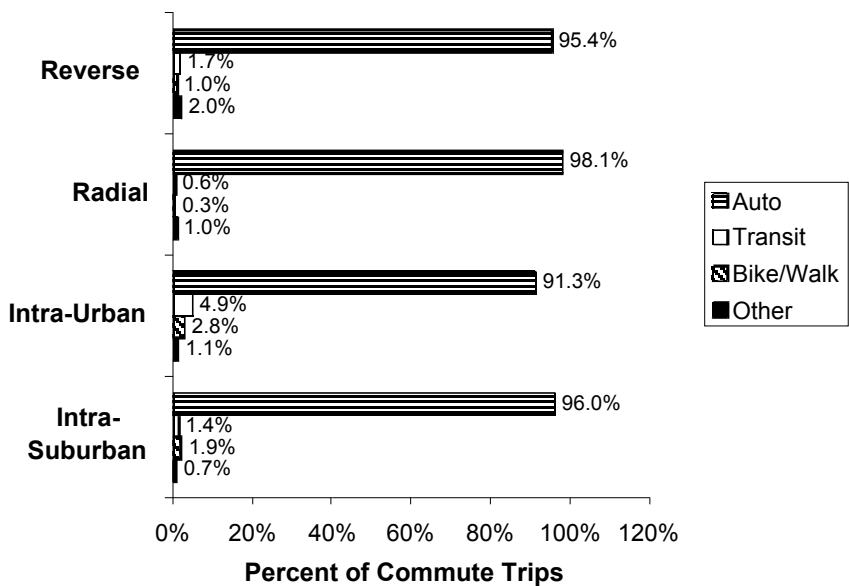
Source: 1991 SCAG regional travel survey

Figure 2.8 1991 Modal Splits Among Commute Submarkets in Metropolitan Los Angeles



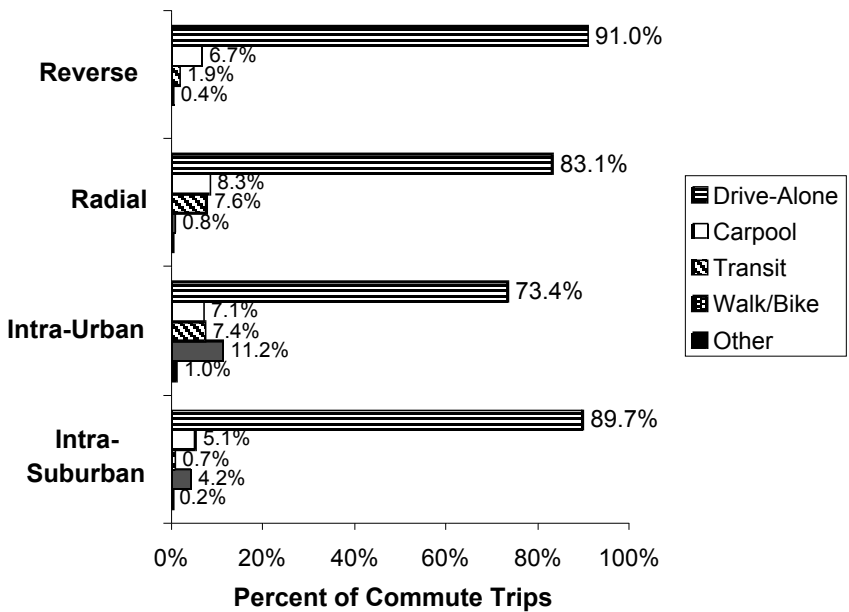
Source: 1990 BATS

Figure 2.9 1990 Modal Splits Among Commute Submarkets in the San Francisco Bay Area



Source: 1995 SANDAG travel survey

**Figure 2.10 1995 Modal Splits Among Commute Submarkets in San Diego County**



Source: 2000 SACOG travel survey

**Figure 2.11 2000 Modal Splits Among Commute Submarkets in Metropolitan Sacramento**

Table 2.4 Reverse-Commute Car Dependence in Metropolitan California

**In all four Metropolitan Areas:**

- Over 90 percent of Reverse Commutes by Car for:
  - *All Racial & Ethnic Groups (except African-American reverse-commuters in San Diego County)*
  - *Peak & Off-Peak Commuters*
  - *Persons Living in Large Households with Dependents*
  - *Females & Males*
  - *Short & Long Reverse Commutes*
- Over 85 percent of Reverse Commutes by Car for:
  - *Lowest-Income Group of Reverse Commuters*
  - *Car-Ownning Households, even if just one car is owned*

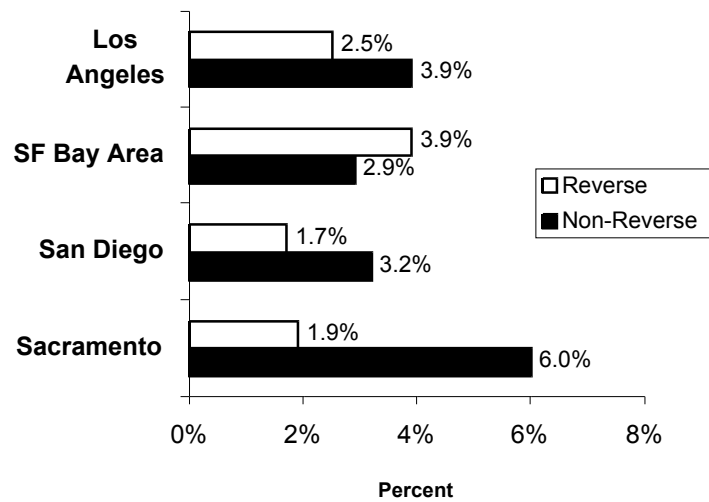
Table 2.5 and Figure 2.12 provide further insights into the dominance of automobility and modest role of public transit not only for reverse commutes but in most instances for other commute sub-markets as well. In all but the Bay Area, more than nine out of ten reverse commuters drove alone. In metropolitan Sacramento, the reverse-commute sub-market captured the highest share of solo-commuters. The only sub-market for which over a third of commuters did not drive alone was intra-urban travel within the San Francisco Bay Area.

Figure 2.12 reveals transit was generally a modest player in commuter sub-markets. Only in the case of the Bay Area did public transit capture larger shares of reverse commutes than non-reverse commutes. In greater Sacramento, transit grabbed more than three times the share of commutes in the radial, intraurban, and intrasuburban sub-markets combined relative to the share it captured in the reverse commute sub-market.

It deserves mentioning, as discussed in the next chapter, transit's importance to low-income workers who reverse commute is far greater than revealed by these statistics. In San Diego County, for instance, 10.5 percent of surveyed low-income reverse commuters take transit, 26 times as high as the percent for non-low-income reverse commuters. Also, one-third of the County's African-American reverse-commuters rely on transit.

**Table 2.5 Shares of Commutes that are Drive-Alone, by Sub-Market and Across Metropolitan Areas**

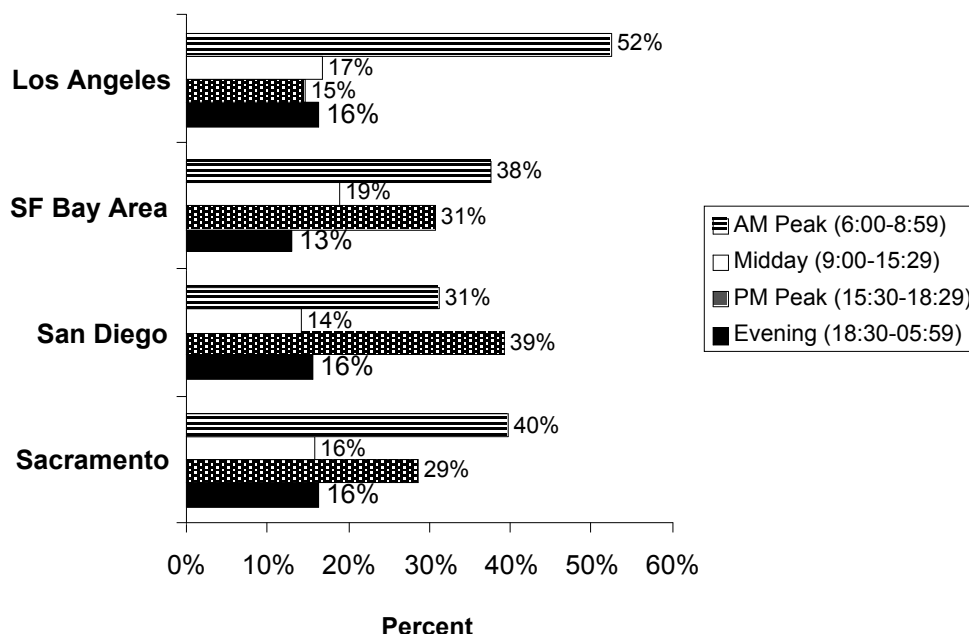
	Commuting Sub-Market			
	Reverse	Radial	Intra-Urban	Intra-Suburban
<b>Los Angeles</b>	93.7%	93.6%	94.8%	81.8%
<b>SF Bay Area</b>	80.7%	82.6%	66.0%	94.6%
<b>San Diego</b>	95.4%	98.1%	91.3%	96.0%
<b>Sacramento</b>	91.0%	83.1%	73.4%	89.7%

**Figure 2.12 Percent of Reverse Versus Non-Reverse Commutes by Transit Among Four Metropolitan Areas**

## 2.7 MARKET SHARES BY TIME-OF-DAY

Reverse commuting is commonly viewed as a peak period phenomenon. Figure 2.13 shows this was the case across the four California metropolitan areas. Between 67 percent (metropolitan Los Angeles) and 70 percent (San Diego County) of reverse commutes occurred during morning and evening peak hours.<sup>12</sup> These shares were similar for the other three sub-markets of commuting – radial, intraurban, and intrasuburban trips.<sup>13</sup>

Figure 2.13 also shows that around one out of six reverse-commutes occurred during evenings or early mornings – non-traditional hours when many bus services are curtailed or suspended altogether. These were slightly higher shares of evening, late-night, and early-morning commutes than was the case for radial, intraurban, or intrasuburban sub-markets. The Bay Area averaged the highest share of midday reverse-commuting – around one out of five of the region’s reverse-commutes occurred between 9 A.M. and 4 P.M.



**Figure 2.13 Distribution of Reverse-Commute Trips by Time-of-Day, Across Four California Metropolitan Areas**

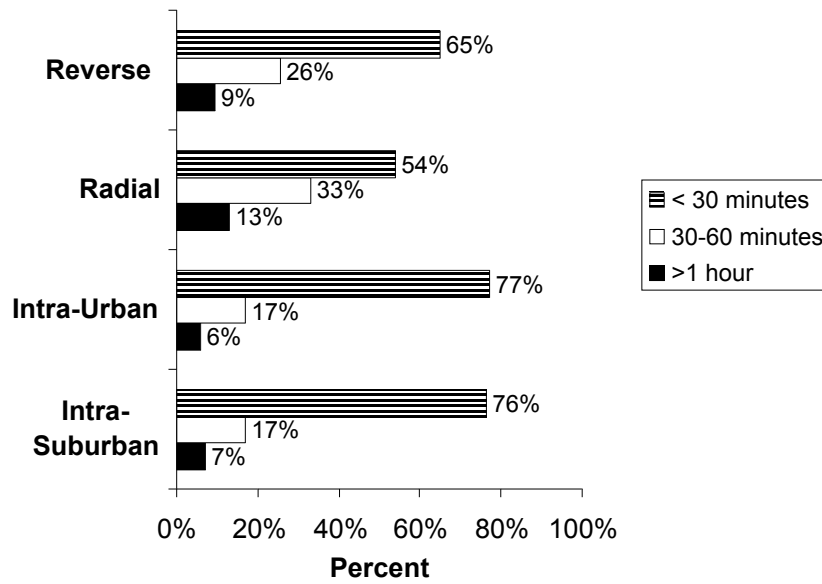
As reviewed in the next chapter, low-income persons who reverse-commuted tended to travel during peak hours more than low-income persons making radial, intraurban, or intrasuburban commutes. In the Bay Area, for example, 82 percent of reverse-commutes made by low-income persons were in the peak period. For low-income workers making radial commutes, the share of peak commutes was just 52 percent.

## 2.8 MARKET SHARES BY DURATION OF COMMUTE TRIP

According to the 1995 NPTS, the mean journey-to-work travel time in the United States was 20.7 minutes (up from 19.7 minutes in 1990).<sup>14</sup> Because congestion levels are higher and many metropolitan areas are relatively large, commute durations tend to be longer in California – in the case of the Bay Area, for example, the mean journey-to-work took 25.6 minutes in 1990 (up from 24.3 minutes in 1980).<sup>15</sup>

Figures 2.14 through 2.17 show the distribution of commute durations, broken down by the four sub-markets, for the four metropolitan areas. While reverse-commutes generally took less time than radial ones, in each case they took longer than intraurban and intrasuburban commutes. Higher congestion levels explain the longer duration of radial commutes, and the longer distances traversed typically account for the longer time spent making reverse-commutes relative to intraurban and intrasuburban ones.

The majority of reverse-commutes were under 30 minutes in all cases except the San Francisco Bay Area. There, 71 percent of reverse-commutes took more than 30 minutes.



**Figure 2.14 Distributions of Commute Trip Durations Among Submarkets, Metropolitan Los Angeles, 1991**

Almost one out of three reverse-commutes in the Bay Area took more than one hour each way – considerably higher than the 9 percent, 5 percent, and 3 percent recorded for metropolitan Los Angeles, San Diego County, and greater Sacramento, respectively. We suspect longer travel times could reflect the higher reliance upon transit for reverse-commuting in the Bay Area, which in 1990 was the only metropolitan area in the state with a substantial regional metropolitan rail system (Bay Area Rapid Transit, or BART) in place.

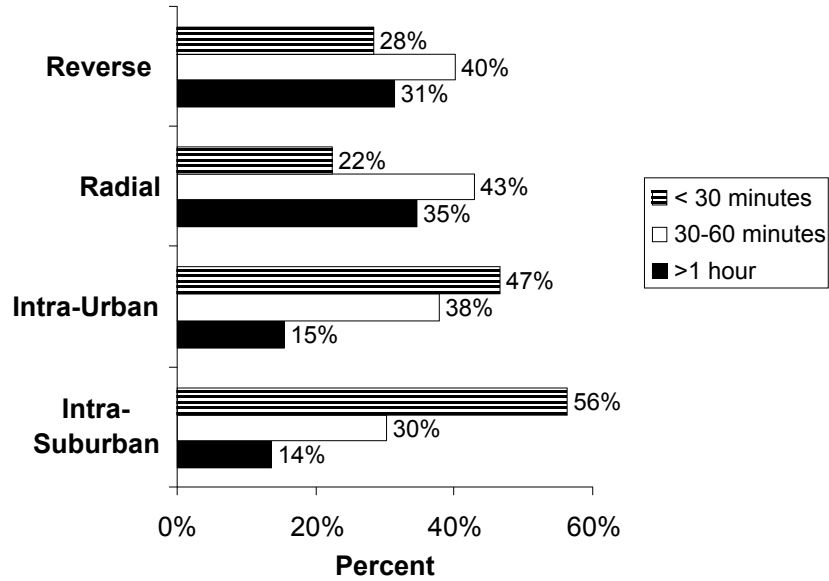


Figure 2.15 Distributions of Commute Trip Durations Among Submarkets, San Francisco Bay Area, 1990

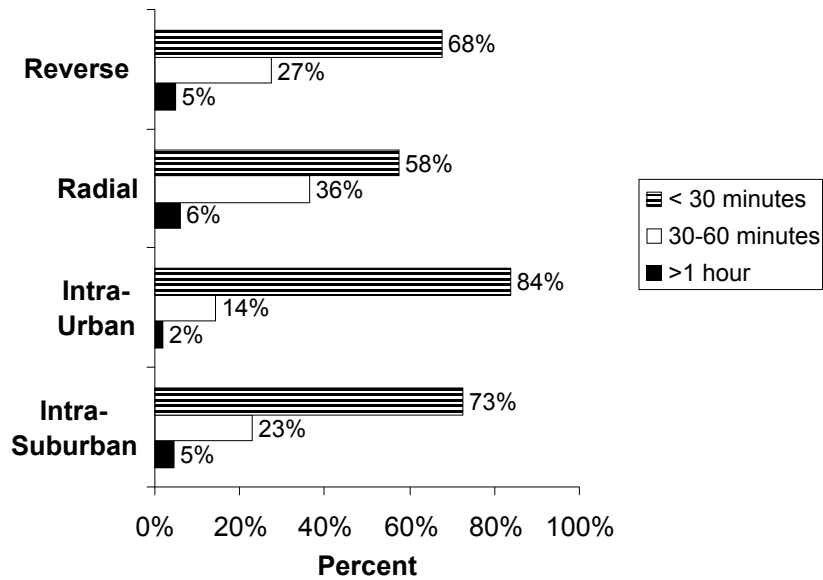
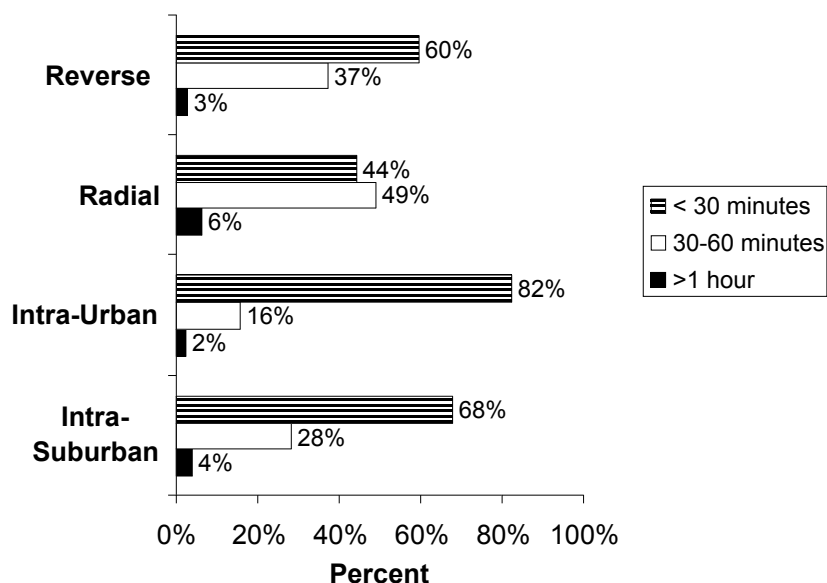


Figure 2.16 Distributions of Commute Trip Durations Among Submarkets, San Diego County, 1995

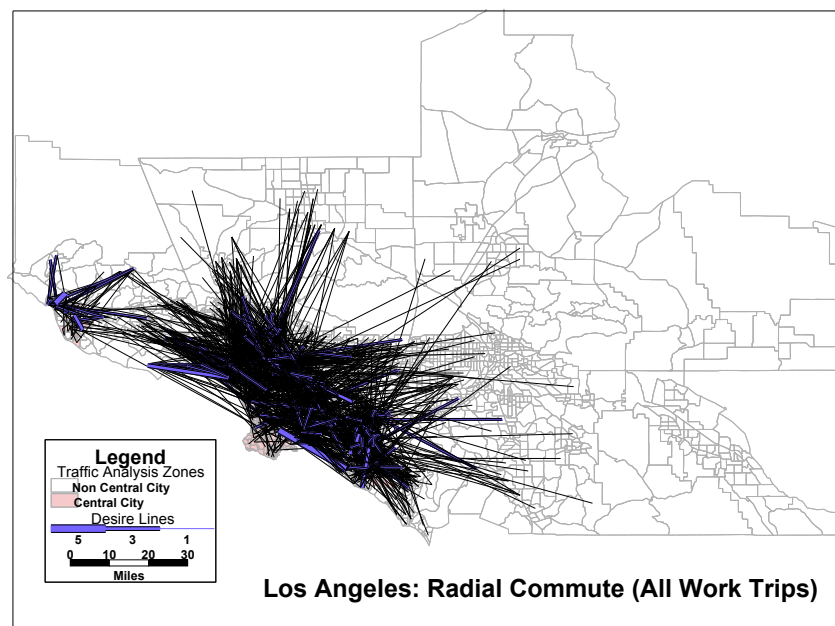
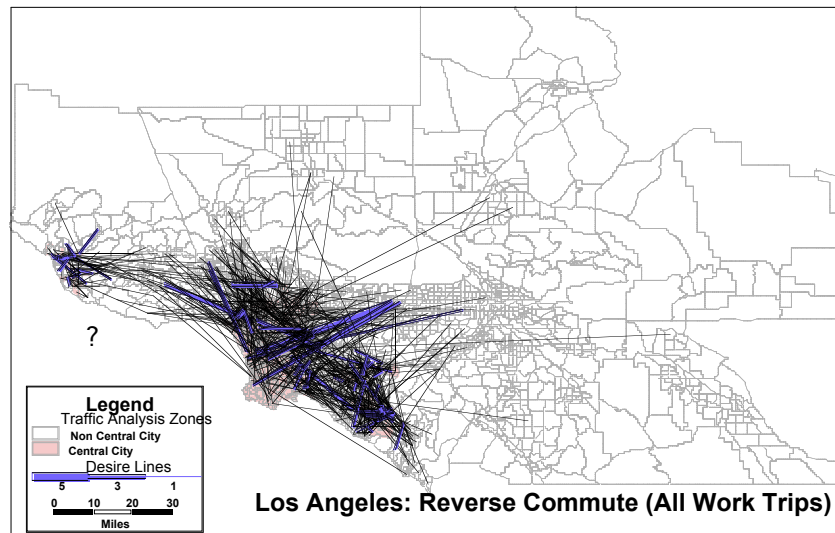


**Figure 2.17 Distributions of Commute Trip Durations Among Submarkets, Metropolitan Sacramento, 2000**

## 2.9 SPATIAL PATTERNS OF TRIP-MAKING

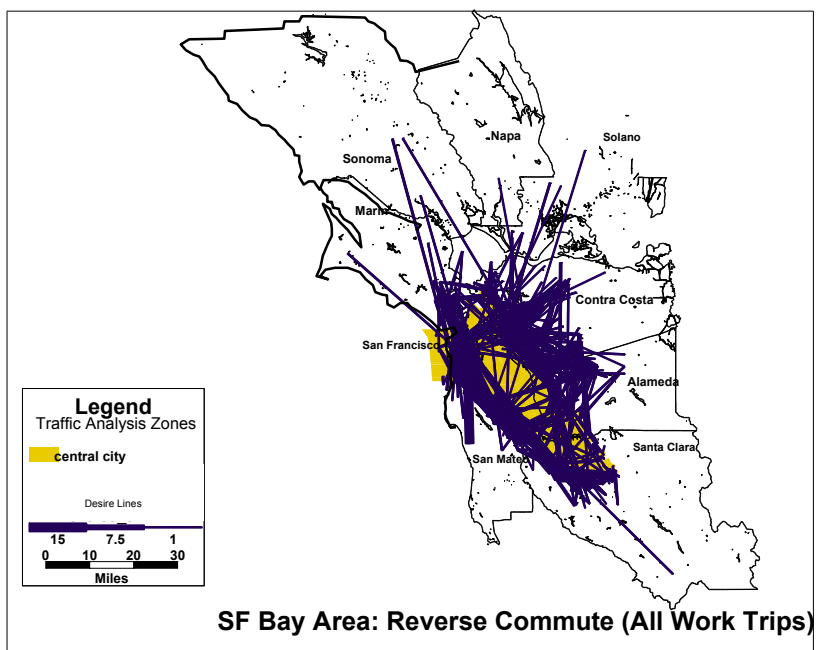
In addition to profiling the modes, times-of-day, and durations of trips among reverse-commuters, another important aspect of travel is the origin-destination patterns. Of course, this is somewhat tautological in that the very definition of reverse-commuting tells us this (i.e., trips from central-city origins to suburban destinations). However, to gain a finer-grain perspective into the spatial dimensions of reverse-commuting, it is useful to break trip origin and destination data down to a greater level of detail – i.e., the TAZs of trip ends. Also, it is useful to portray spatial patterns of commuting using “desire line” maps – i.e., the straightline point-to-point trips people would like to make if a road facility directly connected origins and destinations. Actual trips, of course, tend to be more circuitous, dependent upon the configuration of road networks. Desire line maps portray the major axes that commuters would like to take if only they could.

Map 2.10 compares spatial patterns of reverse-commutes versus radial commutes in metropolitan Los Angeles, using 1991 SCAG journey-to-work data. In general, the patterns are similar. Partly because there are far more radial commutes in number, there is a somewhat more geographically dispersed pattern to radial than reverse-direction commutes. The more limited geographic distribution of reverse commutes could also hint at some degree of unfilled latent demand – i.e., not as many connections are made from inner-city neighborhoods to suburban jobs sites than might otherwise occur because of poor or non-existent public transit services. Still, the map reveals some incidences of very-long reverse-direction commutes, although in the grand scheme of things, these constitute a small fraction of Southern California’s reverse-commute marketplace.



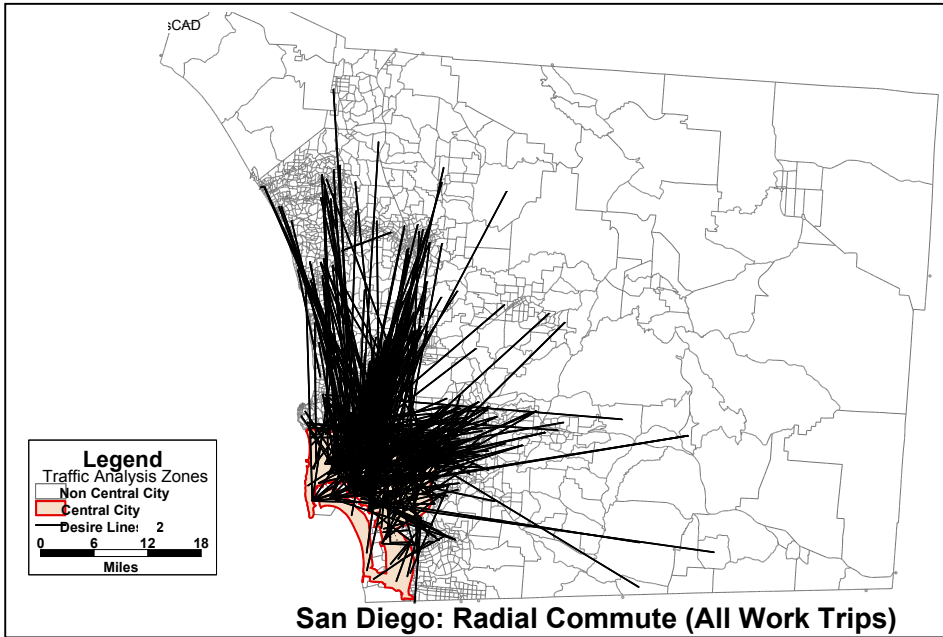
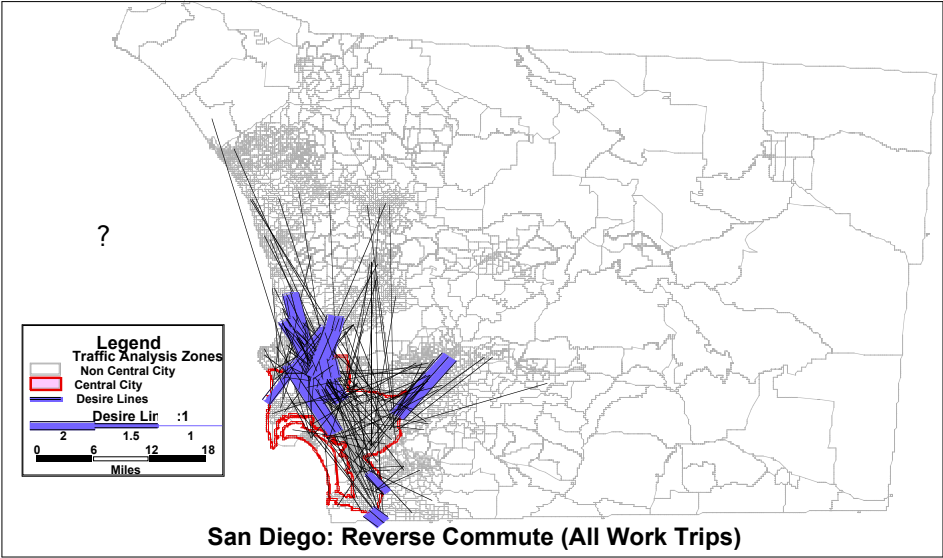
**Map 2.10** Comparison of Desire Line Maps for Reverse Commute Trips (Top) and Radial Commute Trips (Bottom) in Metropolitan Los Angeles

For the San Francisco Bay Area, Map 2.11 reveals a healthy distribution of reverse-commute trips throughout the nine-county region. While the map gives the appearance of spread-out reverse-commuting, in truth the vast majority of reverse commutes in the Bay Area fall along several dominant axes, between: San Francisco and Marin Counties; San Francisco and central Contra Costa Counties; San Francisco and western Alameda Counties; San Francisco and central San Mateo Counties; San Francisco and western San Mateo Counties; western Alameda and central Contra Costa Counties; western and central Alameda County; western Alameda and northern Santa Clara County (home to the Silicon Valley); San Mateo and northern Santa Clara County; eastern San Mateo and southwestern Alameda Counties; and within Santa Clara County. These major axes constituted over 80 percent of all reverse-commutes within the region. Radial commutes tended to follow a similar spatial pattern (and thus are not shown), though as in the case of metropolitan Los Angeles, they tended to be far greater in total numbers and fanned out over a larger geographic area. As in Southern California, the wider geographic distribution of radial commutes reflects, in part, the fact that suburban residences tend to be more dispersed than suburban work sites.



**Map 2.11** Desire Line Maps for Reverse Commute Trips  
in the San Francisco Bay Area

For San Diego County, a somewhat similar pattern is seen in the desire lines of reverse versus radial commute trips (Map 2.12). There, dominant reverse-direction commutes flow between: central-city San Diego and the north-central county (e.g., Mission Valley); the southwest portion of the county (e.g., National City, Chula Vista) and the central county (e.g., El Cajon); the southwest area and western county (e.g., La Jolla); pockets of lower-income communities in the eastern part of the City of San Diego-La Mesa to the job-rich



**Map 2.12** Desire Line Maps for Reverse Commute Trips (Top) and Radial Commute Trips (Bottom) in San Diego County

Mission Valley area, the southwest area and the Mexican border (e.g., San Ysidro), and across the international border itself (one of the world's busiest international border crossings). Because of how the central city was defined, no reverse commutes show up in the eastern or far northern parts of San Diego County, though without question contra-flow commutes occur in these areas as well. As was the case with metropolitan Los Angeles and the Bay Area, radial commutes tend to be geographically more dispersed than reverse ones in California's southernmost county.

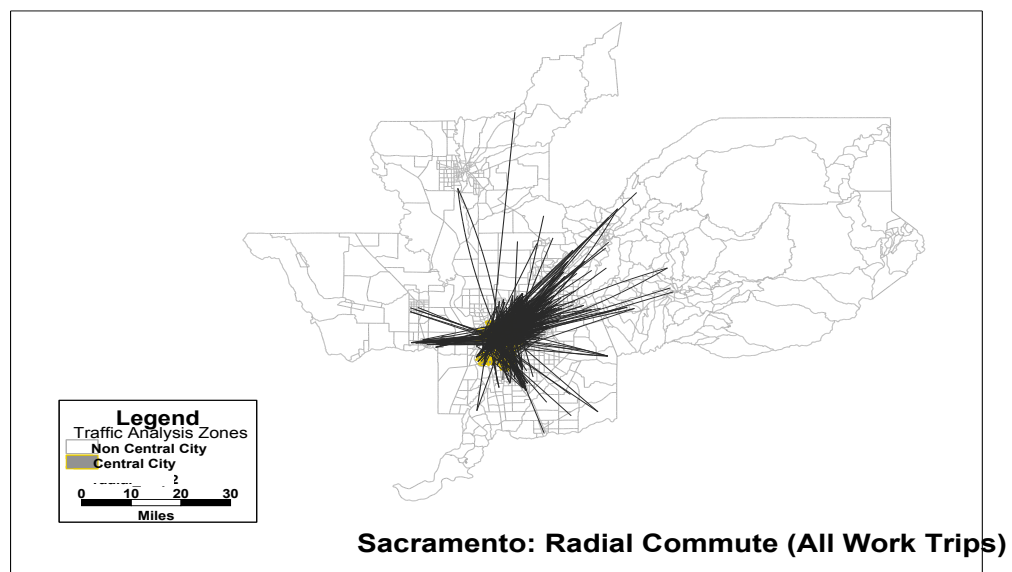
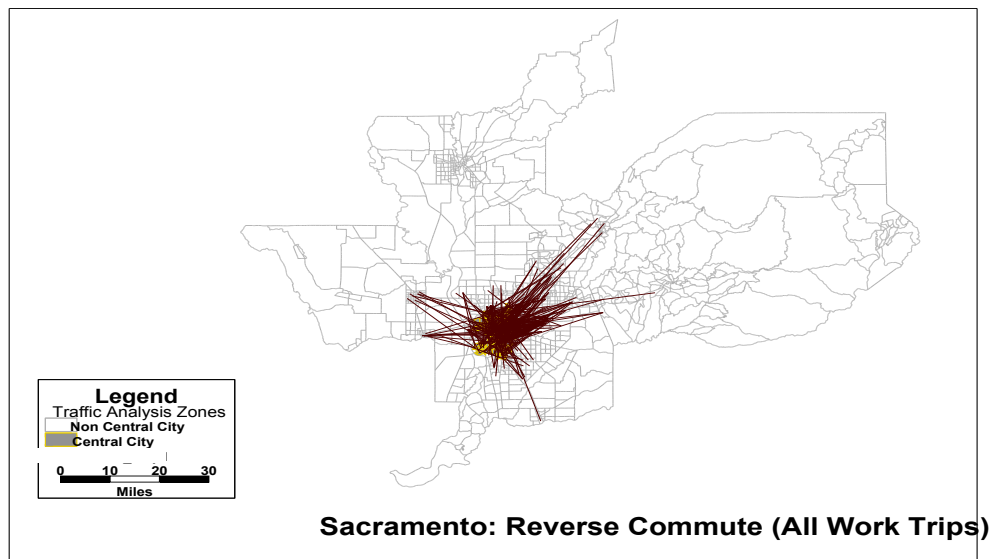
In the case of metropolitan Sacramento, Map 2.13 suggests that, in contrast to the other three metropolitan areas, reverse commutes in and around the state's capital city are at least as geographically dispersed as radial ones. Radial journeys-to-work (bottom of the map) show a strong convergence of trips to the core, reflecting a high degree of centrally located employment primacy in the region. Besides trips from central-city Sacramento to other parts of the city, notable axes of reverse commutes include journeys from the core to major industrial centers in Auburn and points east, Davis, Woodland, and other outlying communities.

## **2.10 SOCIO-DEMOGRAPHIC BREAKDOWNS**

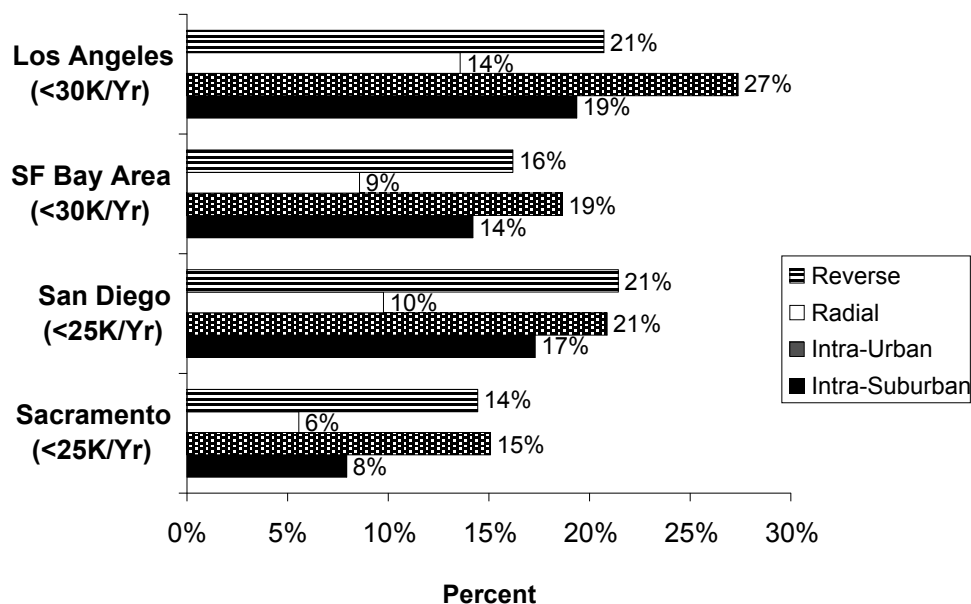
Besides spatial, temporal, and modal attributes, what about the socio-demographic characteristics of those who reverse commute? This section extends the profile to identify the income, racial, occupational, gender, and other relevant attributes of reverse-commutes across the four metropolitan areas. Again, a comparative context is used, contrasting attributes of reverse-commuters versus radial, intraurban, and intrasuburban commuters.

### **Household Income**

Conventional wisdom holds many reverse-commuters come from disadvantaged neighborhoods, thus household incomes of this cohort are generally thought to be toward the lower end of the spectrum. Figure 2.18 shows this is largely borne out empirically. In the three biggest metropolitan areas, more than one out of five reverse-commuters come from the ranks of low-income households, defined as annual incomes of \$30,000 or less for metropolitan Los Angeles and the Bay Area and under \$25,000 for San Diego County.<sup>16</sup> Except for intraurban commuters, higher shares of reverse-commuters were from low-income households than were radial or intrasuburban commuters in each of the four metropolitan areas. In that intraurban commuters tended to have lower household incomes than reverse commuters, from an ability-to-pay standpoint, an argument can be made for focusing on the job access needs of those traveling within central cities as much as on those trying to get from central cities to outlying areas.



**Map 2.13** Desire Line Maps for Reverse Commute Trips (Top) and Radial Commute Trips (Bottom) in Metropolitan Sacramento



**Figure 2.18 Percent of Commute Trips by Low-Income Households Among Sub-Markets, Four Metropolitan Areas**

To provide further insights into who comprised low-income reverse-commute, data were further stratified. Table 2.6 highlights other features of low-income reverse-commuters. In metropolitan Los Angeles, more than one out of ten low-income reverse-commuters were captive, coming from carless households. In the Bay Area, appreciable shares were Hispanic women living in large households. San Diego County's low-income reverse-commuters were also predominantly Hispanic, though most were men and many endured long commutes exceeding one hour each way. In addition, San Diego County had the largest share (8.3 percent) of reverse-commuters who came from households with very low-incomes (below \$10,000 per year). In metropolitan Sacramento, the most distinguishing features of low-income reverse-commuters were that they were not at their peak earning years (i.e., the middle-stages of life-cycle) and they tended to be men.

The origin-destination patterns of low-income reverse-commuters, relative to low-income radial commuters, were also examined. From Map 2.14, what is most prominent is the fact that more sampled low-income residents in Southern California commute in the reverse than in the radial, dominant-flow direction. Incidences of long-haul commutes from west Los Angeles to San Fernando and San Gabriel Valleys (to the north and east, respectively) are seen. In the Bay Area, reverse-commutes made by low-income persons are fewer in number and generally shorter than radial commutes (Map 2.15). In San Diego County, relatively few of surveyed reverse-direction or radial commute trips were by low-income individuals (Map 2.16). Of the recorded trips, low-income reverse-commuters appeared to generally travel

Table 2.6 Other Attributes of Low-Income Reverse Commuters  
in California's Largest Metropolitan Areas

**Relatively high shares of low-income reverse-commuters:**

*In Metropolitan Los Angeles:*

- *Live in car-less households (11.8 percent)*
- *Are men (62.7 percent)*

*In the San Francisco Bay Area:*

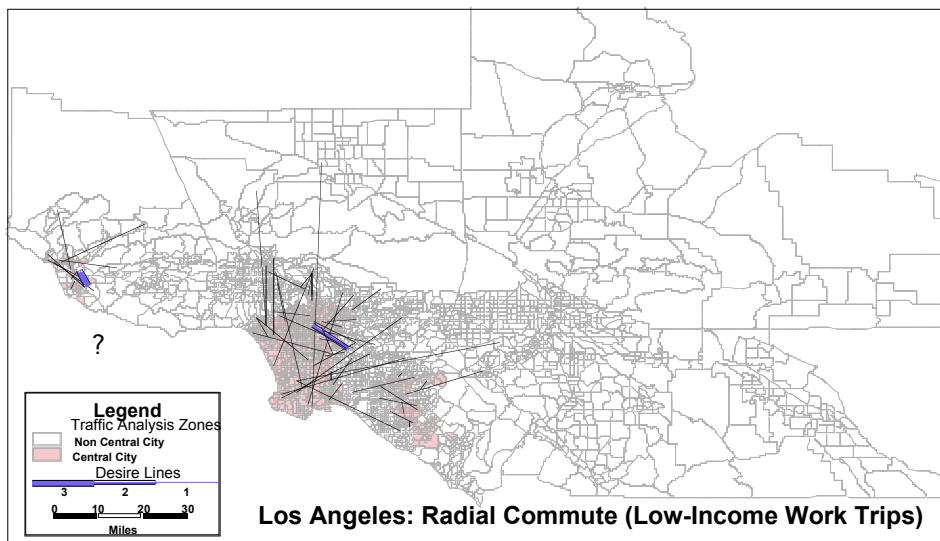
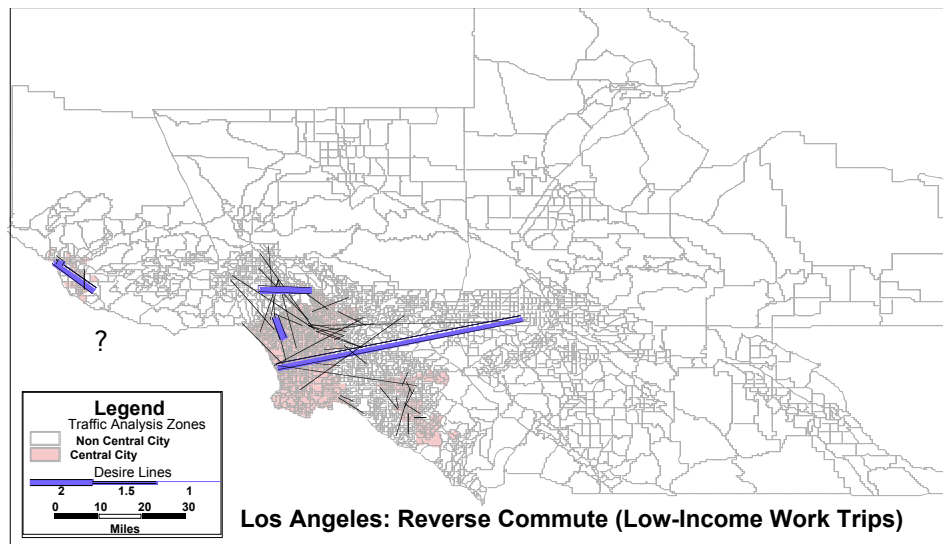
- *Are Hispanics (28.4 percent)*
- *Live in large households of 5 or more inhabitants (44.7 percent)*
- *Are Women (71.8 percent)*

*In San Diego County:*

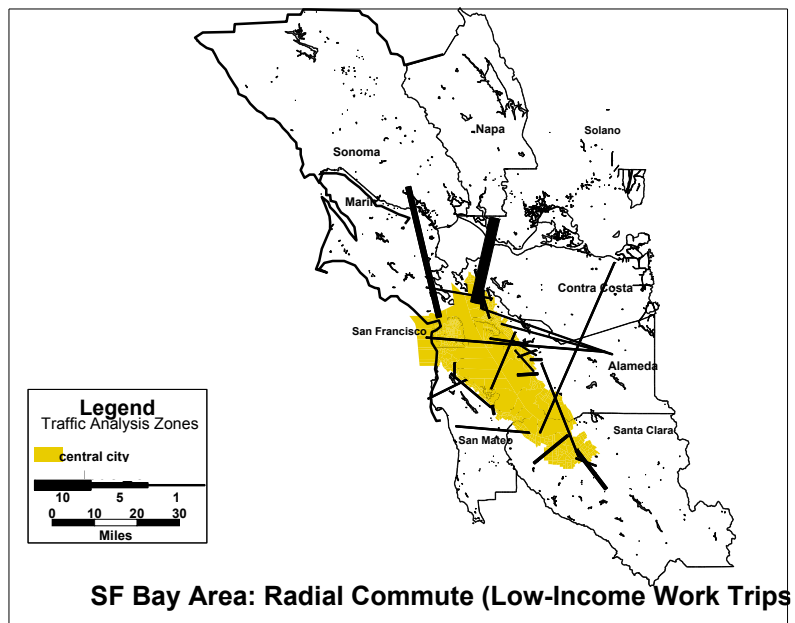
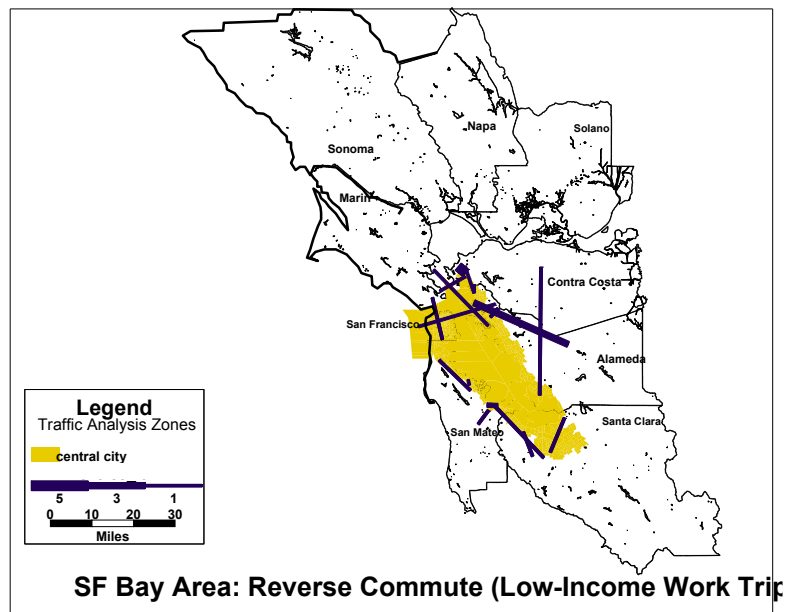
- *Are Hispanic (57.9 percent)*
- *Commute more than one hour (23.2 percent)*
- *Work full-time (88.9 percent)*
- *Are Men (68.4 percent)*

*In Metropolitan Sacramento:*

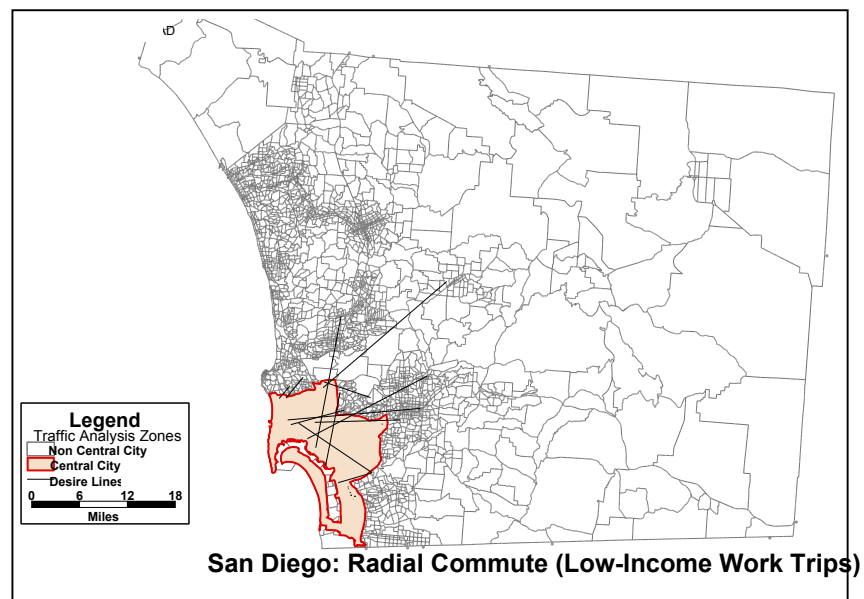
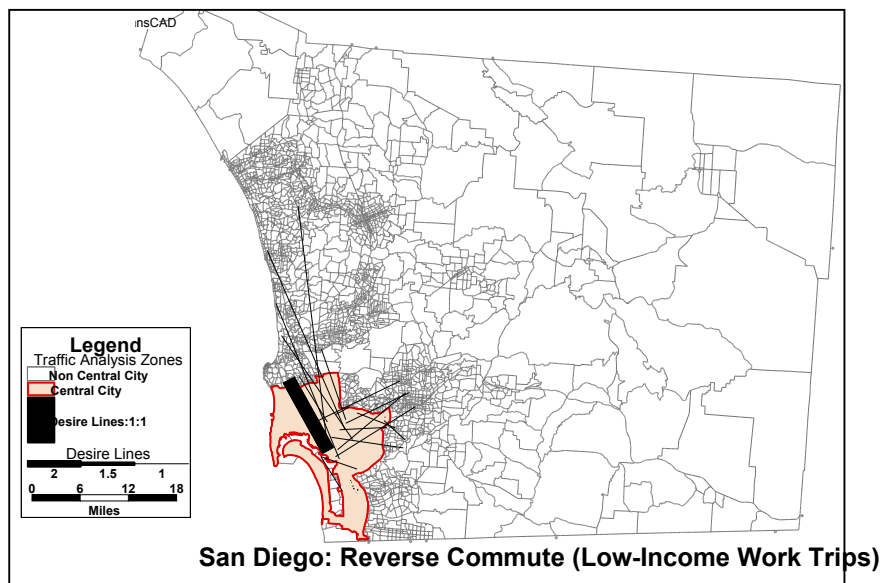
- *Are Young (below 22 years of age) or  
Old (above 60 years of age) (47.1 percent)*
- *Are Men (64.4 percent)*



**Map 2.14** Desire Line Maps for Low-Income Reverse Commute Trips (Top) and Radial Commute Trips (Bottom) in Metropolitan Los Angeles



Map 2.15 Desire Line Maps for Low-Income Reverse Commute Trips (Top) and Radial Commute Trips (Bottom) in the San Francisco Bay Area



Map 2.16 Desire Line Maps for Low-Income Reverse Commute Trips (Top) and Radial Commute Trips (Bottom) in San Diego County

farther than higher income ones. In metropolitan Sacramento, there appears to be larger numbers of reverse commuters versus radial commuters with low incomes, though since sample sizes are low (possibly representing an under-sampling of low-income households, not uncommon in travel-diary surveys), it is difficult to infer much from these results (Map 2.17).

### **Racial/Ethnicity Composition**

Parallel to the findings on income characteristics, minorities made up larger shares of reverse commuters than in the case of radial or intrasuburban sub-markets (Figure 2.19). For the three metropolitan areas for which racial data were available, non-whites constituted one third or more of all reverse-commuters. Significant shares of these non-white reverse commuters were Latinos and African-Americans, particularly in San Diego and (somewhat less so) in the Bay Area. Except for metropolitan Sacramento, non-whites made up higher shares of intra-urban commuters than reverse commuters.

The 1995 Nationwide Personal Travel Survey (NPTS) further substantiated the prominence of Latinos in California's reverse-commuter sub-market. For the four largest California metropolitan areas combined, the 1995 NPTS revealed 22 percent of reverse-commuters were Latinos compared to 12 percent to 15 percent for the other commuter sub-markets.

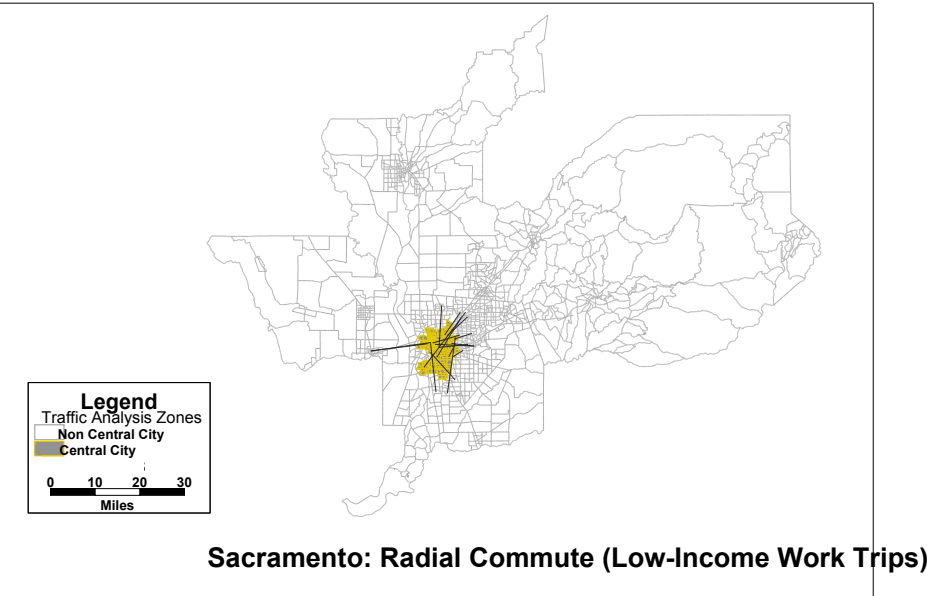
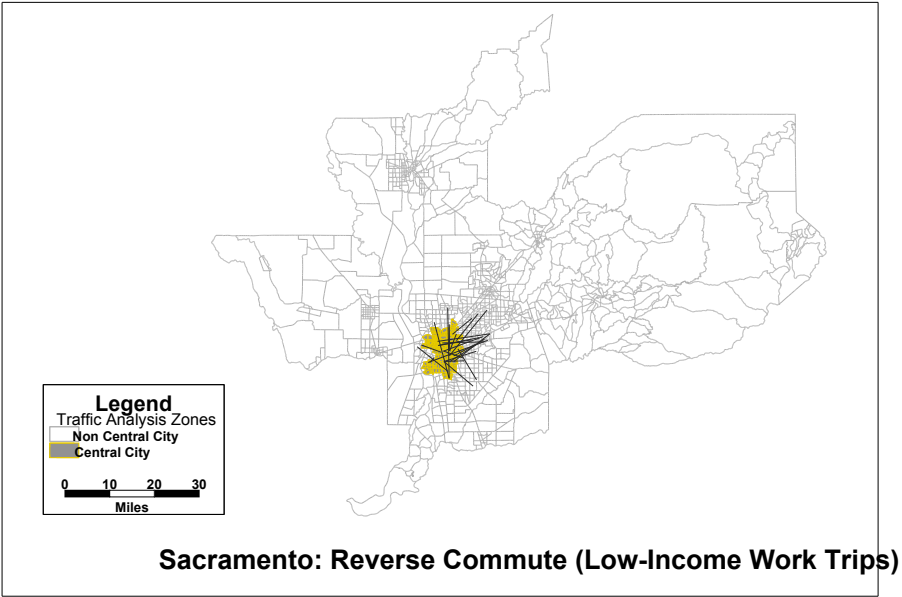
### **Occupation and Employment Status**

For the two metropolitan areas for which occupational data were available, relatively high shares of reverse-commuters came from the ranks of non-professional/non-management workers – i.e., employed in sales, services, labor, and other predominantly semi-skilled and low-skilled lines of work (Table 2.7). In the Bay Area, 11 out of 20 reverse-commuters were non-professionals and in San Diego County, more than two out of three were. Predictably, the highest skilled (i.e., professional and managerial) workers tended to make radial (suburb-to-downtown) commutes.

In three of the metropolitan areas for which data were available, reverse-commuters were more likely to have part-time jobs than were radial commuters (Table 2.8). Part-time status often correlates with low wages and unstable employment. It also reflects the trend toward contingent and contract employment within the low-skilled labor force. Table 2.8 shows part-time employment was actually more prevalent among intraurban and intrasuburban commuters than reverse commuters for all three metropolitan areas.

### **Gender**

In all four metropolitan areas, reverse commutes are predominantly made by men (Figure 2.20). Male dominance was particularly pronounced, relative to other commute sub-markets, in the case of San Diego County, where around two-thirds of reverse-commuters were men. The highest share of commutes made by women was generally for intrasuburban journeys-to-work.



**Map 2.17** Desire Line Maps for Low-Income Reverse Commute Trips (Top) and Radial Commute Trips (Bottom) in Metropolitan Sacramento

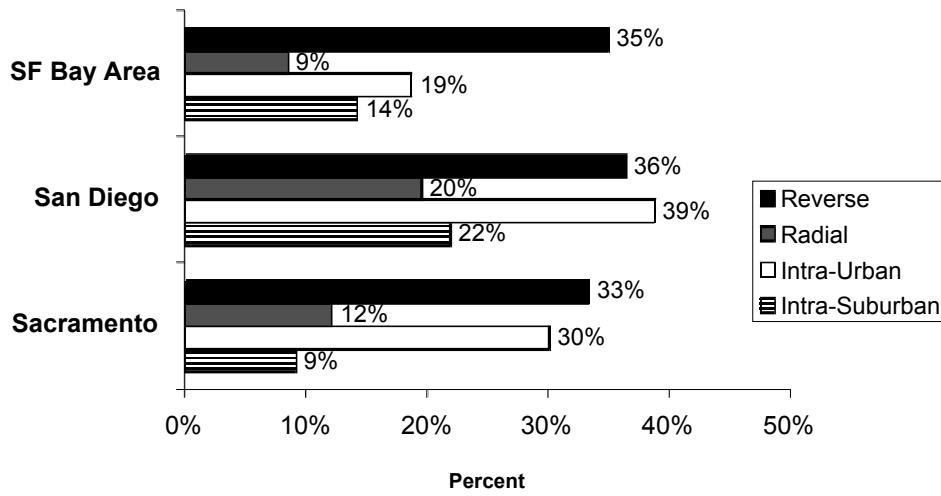


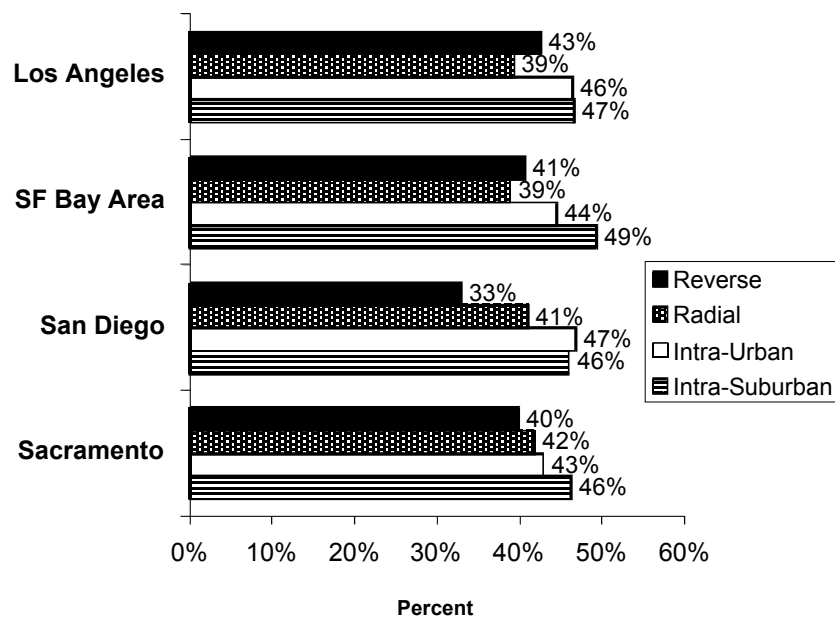
Figure 2.19 Percent of Commute Trips by Non-Whites Among Sub-Markets, Three Metropolitan Areas

Table 2.7 Percent of Commute Trips by Non-Professional and Non-Management Workers Among Sub-Markets, Two Metropolitan Areas

	Commuting Sub-Market			
	Reverse	Radial	Intra-Urban	Intra-Suburban
<b>SF Bay Area</b>	68.7%	53.0%	65.0%	55.1%
<b>San Diego</b>	55.9%	41.0%	53.0%	49.1%

Table 2.8 Percent of Commute Trips by Part-Time Workers Among Sub-Markets, Three Metropolitan Areas

	Commuting Sub-Market			
	Reverse	Radial	Intra-Urban	Intra-Suburban
<b>San Diego</b>	9.9%	8.7%	13.5%	13.0%
<b>Los Angeles</b>	10.7%	7.9%	12.3%	13.3%
<b>Sacramento</b>	15.3%	11.4%	21.2%	22.1%



**Figure 2.20 Percent of Commutes by Women Among Sub-markets for the Four Metropolitan Areas**

### Vehicle Ownership

Having access to a private automobile strongly influences mode of travel. Those living in households without cars are often transit-dependent, having few other options than taking bus or trains to reach job sites.

Consistent with the findings on household income and racial composition, reverse-commuters tend to be more disadvantaged with respect to auto-ownership than radial or intrasuburban commuters (Table 2.9). In all four metropolitan areas, more than 20 percent of reverse-commuters come from households with one or no cars. The Bay Area had the highest share of reverse-commuters from car-less or one-vehicle households. Intraurban commuters tended to be more transit-dependent than even reverse commuters – in the Bay Area, four out of ten workers commuting within the central city were from zero or one-car households.

**Table 2.9 Percent of Commute Trips by Workers in Zero- or One-Car Households Among Sub-Markets, Four Metropolitan Areas**

	Commuting Sub-Market			
	Reverse	Radial	Intra-Urban	Intra-Suburban
<b>Los Angeles</b>	20.4%	17.0%	30.9%	15.9%
<b>SF Bay Area</b>	26.9%	17.2%	40.2%	19.6%
<b>San Diego</b>	22.2%	14.7%	26.6%	21.7%
<b>Sacramento</b>	23.0%	13.1%	34.4%	13.6%

## 2.11 CLASSIFICATION OF REVERSE-COMMUTERS: DISCRIMINANT ANALYSIS

Attributes of reverse-commuters were presented in the previous section, one variable at a time. A robust, multivariate approach to characterizing and classifying social phenomena, including reverse commuting, is Discriminant Analysis. This technique can be used to identify variables that, in combination, best account for the difference between reverse-commuters and others (radial, intraurban, and intrasuburban commuters). Statistically, it involves identifying the linear combination of variables whose mean discriminant scores, when summed between groups relative to within groups, are maximized.<sup>17</sup>

Tables 2.10 through 2.13 present the discriminant analysis results for metropolitan Los Angeles, the Bay Area, San Diego County, and metropolitan Sacramento, respectively. Models were estimated using stepwise entry, with variable entering based on their ability to significantly reduce the Wilks Lambda statistic. Coefficients in the tables are standardized, revealing the relative discriminatory (i.e., classification) power of variables. All variables were statistically significant at the 0.05 probability level. The best-performing discriminant model was estimated for the San Francisco Bay Area, revealed by the relatively low Wilks Lambda value and the model's ability to correctly classify nearly 90 percent of reverse-commute cases.<sup>18</sup>

For all four models, low-household income was a strong predictor of someone being a reverse-commuter. Other significant socio-demographic traits were: non-white race (Bay Area and San Diego); male gender (San Diego and Sacramento); non-professional/non-management employment (Los Angeles and San Diego); and full-time status (Los Angeles and Sacramento). Travel attributes that helped in classifying reverse commuters were: long durations (Bay Area, San Diego, and Sacramento); peak-period travel (Bay Area); and an absence of transit subsidies (San Diego).

Overall, the discriminant analysis results reveal reverse-commuters in California's largest metropolitan areas come from the ranks of low-income, and minority commuters in low-paying jobs. These discriminant-analysis results clearly speak to the need to ensure adequate mobility options for the state's many disadvantaged reverse commuters.

**Table 2.10 Metropolitan Los Angeles Discriminant Analysis Results:  
Factors that Significantly Classify Reverse Commuters, 1991**

	<b>Standardized Coefficient</b>
<b><i>Socio-Demographic Attributes</i></b>	
Low Income Household (<\$30,000/Year) (0-1)	0.235
Own Car (0-1)	0.431
Mid-Age, 22-59 years (0-1)	0.616
Management/Professional Occupation (0-1)	-0.129
Full-Time Employment (0-1)	0.180
Student (0-1)	-0.559
<b><i>Summary Statistics</i></b>	
No. of Cases = 8,714	
Wilks Lambda = .998	
Chi-Square (prob.) = 18.33 (.000)	
Canonical Correlation = .056	
% Reverse Commute cases correctly classified = 56.7%	

**Table 2.11 San Francisco Bay Area Discriminant Analysis Results:  
Factors that Significantly Classify Reverse Commuters, 1990**

	<b>Standardized Coefficient</b>
<b><i>Socio-Demographic Attributes</i></b>	
Low Income Household (<\$30,000/Year) (0-1)	0.038
Non-White (0-1)	0.037
<b><i>Travel Attributes</i></b>	
Travel Time (minutes)	0.788
Peak-Period Trip (0-1)	0.138
Travel Time Auto - Travel Time Transit (minutes)	0.181
Drive Alone (0-1)	-0.042
<b><i>Summary Statistics</i></b>	
No. of Cases = 14,161	
Wilks Lambda = .135	
Chi-Square (prob.) = 28,323 (.000)	
Canonical Correlation = .930	
% Reverse Commute cases correctly classified = 89.4%	

**Table 2.12 San Diego County Discriminant Analysis Results: Factors that Significantly Classify Reverse Commuters, 1995**

	<b>Standardized Coefficient</b>
<b><i>Socio-Demographic Attributes</i></b>	
Low Income Household (<\$25,000/Year) (0-1)	0.221
Low Income Household & African-American (0-1)	0.196
Male (0-1)	0.338
Age, years	-0.232
Management/Professional Occupation (0-1)	-0.267
White (0-1)	-0.109
Hispanic (0-1)	0.403
<b><i>Travel Attributes</i></b>	
Travel Time, minutes	0.479
Subsidized Parking (0-1)	-0.176
Subsidized Transit (0-1)	-0.051
<b><i>Summary Statistics</i></b>	
No. of Cases = 3,034	
Wilks Lambda = .974	
Chi-Square Statistic (prob.) = 78.23 (.000)	
Canonical Correlation = .160	
% Reverse Commute cases	
correctly classified = 56.7%	

## 2.12 SUMMARY

This chapter used empirical data from California's largest metropolitan areas to draw profiles of reverse commuters. Overall, reverse-commuting represents a fairly small share of the total metropolitan "commute pie" – in most instances, less than 10 percent of total journeys-to-work. Adjusting for the distribution of population and employment, metropolitan Sacramento had the relatively largest share of reverse commuters, based on the normalized index.

The vast majority of reverse-commutes in the state's big metropolitan areas are by private car. More reverse commutes are by carpools than mass transit. For low-income reverse commuters, transit plays a much larger role, handling more than 10 percent of journeys-to-work in the case of San Diego County.

**Table 2.13 Metropolitan Sacramento Discriminant Analysis Results:  
Factors that Significantly Classify Reverse Commuters, 2000**

	<b>Standardized Coefficient</b>
<b><i>Socio-Demographic Attributes</i></b>	
Low Income Household (<\$25,000/Year) (0-1)	0.149
Household Size, No. of persons	-0.280
Male (0-1)	0.344
Age, Young (<22) or Old (>59) (01)	-0.123
No. Vehicles in Household	-0.278
Full-Time Employment (0-1)	0.314
<b><i>Travel Attributes</i></b>	
Travel Time (minutes)	0.382
Parking Subsidy (0-1)	0.399
Parking Cost, \$	-0.575
<b><i>Summary Statistics</i></b>	
No. of Cases = 3,965	
Wilks Lambda = .984	
Chi-Square (prob.) = 62.72 (.000)	
Canonical Correlation = .125	
% Reverse Commute cases	
correctly classified = 63.3%	

Reverse commutes occur predominantly during peak periods, just as with radial and other commute sub-markets. Most are made in less than 30 minutes, generally less time than that spent making radial commutes but more time than that devoted to most intra-urban and intra-suburban commutes. In terms of origin-destination patterns, reverse commutes tend to be less geographically spread out than radial commutes, with some exceptions.

Consistent with what the literature says, reverse-commuters from California's big cities tend to have relatively low incomes, be non-white, and work in low-skilled, low-wage jobs. Far more men reverse-commute than do women. Reverse commuters also tend to be more transit-dependent than other commuter sub-markets – more than one out of five come from households with one or no cars.

While reverse commuters often share common traits, it would be wrong to characterize this sub-market as a monolith. There are exceptions to every generalization – some reverse-commuters have high incomes and good-paying jobs, some rely heavily upon public transit, some travel outside of traditional peak periods, and some make ultra-long commutes even though many of their peers make ultra-short ones. Still, appreciable numbers of California's reverse commuters match the archetypical image that is often portrayed – low-income, carless, minority workers relying upon transit to reach outlying job sites.

## Notes

- <sup>1</sup> Efforts were made to empirically study reverse-commute patterns in medium-size and smaller metropolitan areas of the state, however regional travel survey data were unfortunately not available from these areas. Because we had to rely upon secondary data sources to conduct the “profile” analyses, the investigations were necessarily limited to the four largest metropolitan areas.
- <sup>2</sup> For all analyses presented in this report, data were obtained from the most recent information source at the time analyses were conducted. In some cases, this was 1990. At the time the analyses of population and employment were conducted, the only available census data at a fine geographic level (like TAZ or tract) was from 1990. While 2000 census data became available toward the end of this study, the analyses already had been framed around the 1990 data. There is no reason to believe that relationships between variables, such as central-city and non-central city population densities, changed between 1990 and 2000. For analyses of travel demand presented in Chapter Two, regional travel-diary information was obtained from the most recent surveys at the time of the research: 2000 for metropolitan Sacramento, 1995 for San Diego County, 1991 for metropolitan Los Angeles, and 1990 for the San Francisco Bay Area.
- <sup>3</sup> R. Cervero and K. Wu, Polycentrism, Commuting, and Residential Location in the San Francisco Bay Area, *Environment and Planning A*, Vol. 29, 1997, pp. 865-886.
- <sup>4</sup> P. Gordon, H. Richardson, and H. Wong, The Distribution of Population and Employment in a Polycentric City: The Case of Los Angeles, *Environment and Planning A*, Vol. 18, 1986, pp. 161-173; G. Giuliano and K. Small, Subcenters in the Los Angeles Region, *Regional Science and Urban Economics*, Vol. 21, 1991, pp. 163-182.
- <sup>5</sup> In the San Francisco Bay Area, a TAZ with a population or employment density of seven or more per gross acre and that was part of the historical center and constituted a continuous area was defined as part of a central city. In metropolitan San Diego, Los Angeles and Sacramento, a neighboring TAZ (or census tract) of each city’s respective historical center was defined as central city when the sum of the two densities were no less than seven per gross acre. If a zone or tract was below the threshold but was within the historical center, it was treated as being within the central city as well.
- <sup>6</sup> According to Part III, Section 4 of Standards for Defining Metropolitan Areas in the 1990s of the U.S. Census Bureau, the central city (or cities) of a Metropolitan Statistical Area (MSA) constitutes: (1) the city with the largest population in the MSA; (2) each additional city with a population of at least 250,000 or with at least 100,000 persons working within its limits; (3) each additional city with a population of at least 25,000, an employment/residence ratio of at least 0.75, and at least 40 percent of its employed residents working in the city; (4) each city of 15,000 to 24,999 population that is at least one-third as large as the largest central city, has an employment/residence ratio of at least 0.75, and has at least 40 percent of its employed residents working in the city; and (5) the largest city in a secondary non-contiguous urbanized area, provided it has at least a population of at least 15,000, an employment/residence ratio of at least 0.75, and has at least 40 percent of its employed-residents working in the city.
- <sup>7</sup> For the analyses presented in this chapter, commuting statistics are presented only for journeys-to-work that take place within metropolitan areas. No attempt was made to examine external commutes – i.e., from metropolitan to non-metropolitan areas or between metropolitan areas (e.g., between the Bay Area and greater Sacramento) – due to the non-compatibility of data bases across metropolitan planning organizations (MPOs).
- <sup>8</sup> The latest available regional travel survey data were used in the analyses of commute patterns presented in this chapter. For metropolitan Los Angeles, 1991 regional travel data were obtained from the Southern California Association of Governments (SCAG). For the San Francisco Bay Area, the latest available and readily usable data were obtained from the 1990-1991 Bay Area Travel Survey (BATS), provided courtesy of the Metropolitan Transportation Commission (MTC). (2000 BATS data were also acquired, however at the time of the analysis, this data base

had yet to be cleaned and finalized, thus we opted to use the 1990-1991 BATS data base instead). For San Diego County, the most recent travel data base was for 1995, made available to us by the San Diego Association of Governments (SANDAG). The most recent data came from metropolitan Sacramento, comprised of a year-2000 travel diary survey that was obtained from the Sacramento Area Association of Governments (SACOG).

- <sup>9</sup> These estimated shares align reasonably closely to shares that were measured using data from the 1995 Nationwide Personal Travel Survey (NPTS) obtained from the Bureau of Transportation Statistics (BTS) of the U.S. Department of Transportation. The smallest geographic level for which NPTS data are broken down is zip codes. This necessitated the conversion of zip code level data to TAZs. This was done using Geographic Information System (GIS) techniques to overlay zip code polygons with TAZ polygons, allowing NPTS journey-to-work data to be examined in terms of origins and destinations between central cities and non-central cities using the definitions shown in Maps 2.5 through 2.8. This yielded reverse-commute market shares from the 1995 NPTS data base of 7.3 percent for the San Francisco Bay Area, 7.9 percent for San Diego County, and 16.5 percent for metropolitan Sacramento. (1995 NPTS were not available in a usable form for metropolitan Los Angeles.)
- <sup>10</sup> R. Cervero, *Suburban Gridlock*, New Brunswick, New Jersey, Center for Urban Policy Research, 1986; A. Pisarski, *Commuting in America*, Washington, D.C., Federal Highway Administration, U.S. Department of Transportation, 1991; J. Garreau, *Edge City: Life on the New Frontier*, New York, Doubleday Press, 1991.
- <sup>11</sup> Giuliano and Small, *op cit.*, 1991; Cervero and Wu, *op cit.* 1997; R. Cervero, *America's Suburban Centers: The Land Use-Transportation Link*, Boston, Unwin-Hyman, 1991; P. Gordon, H. Richardson, and M. Jun, Beyond Polycentricity: The Dispersed Metropolis, Los Angeles, 1970-1990, *Journal of the American Planning Association*, Vol. 62, 1996, pp. 416-420.
- <sup>12</sup> These shares partly reflect the distribution of travel-diary surveys across the day. One expects there to be comparable shares of AM and PM peak trips. The distribution of travel survey results suggests a tendency toward over-sampling morning peak trips and under-sampling evening peak trips.
- <sup>13</sup> Among the four metropolitan areas, shares of commutes occurring during peak hours ranged as follows among the other three sub-markets: 68.9 percent to 72.8 percent for radial commutes; 65.1 percent to 68.9 percent for intra-urban commutes; and 65.7 percent to 70.8 percent for intra-suburban commutes.
- <sup>14</sup> Bureau of Transportation Statistics, *Our Nation's Travel: 1995 NPTS Early Results*, Washington, D.C., U.S. Department of Transportation.  
[http://www.cta.ornl.gov/npts/1995/doc/NPTS\\_Booklet.pdf](http://www.cta.ornl.gov/npts/1995/doc/NPTS_Booklet.pdf)
- <sup>15</sup> Metropolitan Transportation Commission, *MTC 1990 Census Working Papers: Bay Area Travel and Mobility Characteristics*, Oakland, Metropolitan Transportation Commission, August 1992.
- <sup>16</sup> These household income benchmarks were set based on poverty thresholds established by the U.S. Department of Commerce for each metropolitan area based on the cost-of-living index (for the year of survey data), adjusted for household size. Threshold values were rounded up to the nearest \$5,000 income level and reflected mean household sizes of the samples for each of the four metropolitan areas.
- <sup>17</sup> W. Klecka, *Discriminant Analysis*, Beverly Hills, California, Sage Publications, Sage University Paper, 1980.
- <sup>18</sup> A correct classification represents the assignment of an observation to the correct group (i.e., reverse commute or non-reverse-commute) based on which of the two groups' mean discriminant score an individual observation's score comes closest to.



## Chapter Three

### Demand-Side Analyses of Reverse Commuting in California

#### 3.1 INTRODUCTION

The previous chapter described many dimensions of reverse commuting in metropolitan California. This chapter builds upon Chapter Two by presenting analyses that explain how reverse-commuting affects mode choice and time-of-day of travel, controlling for other relevant factors. The focus is on *explanation* rather than *description*. Also presented is an analysis that sheds additional light on why many reverse-commuters opt to drive than take transit – specifically, an analysis that compares expected travel times and costs by car versus public transit for several reverse-commute corridors in three of the metropolitan areas. The chapter ends with an analysis of trends in directional splits along radial corridors in the San Francisco Bay Area. Such information provides insights into the challenges traditional transit services face in serving California’s reverse-commute marketplace.

#### 3.2 EFFECTS OF REVERSE COMMUTING ON MODE CHOICE

How much more oriented to and dependent upon the private car are reverse-commuters versus other commuter sub-markets? This question can best be addressed by applying discrete-choice analysis that predicts the likelihood one will drive or take transit given he or she is making a reverse-commute, controlling for other factors (e.g., travel time, price) that influence mode choice. Such an analysis provides a sense of scale – in particular, insights into the degree to which the very act of reverse-commuting increases or lowers the odds of taking a bus or train to work. Given the fact that, as reviewed in Chapter One, transit has historically been looked upon to meet the mobility needs of low-income reverse commuters, empirical insights into the marginal influence of reverse-commuting on mode choice is insightful. Because of the dominance of private car travel in reverse commuting, as reviewed in the previous chapter, the predictive models presented in this chapter focus on automobile trips. By extension, factors that increase the odds of driving lower the likelihood of taking the chief competitor to the private car – transit. Based on mode-choice results, a sensitivity test is also conducted that identifies the probability of using a private car as the trip switches from a non-reverse-commute to a reverse-commute, holding all other factors constant. This sensitivity analysis provides a percentage-point estimate on the degree to which the act of reverse-commuting increases or decreases the likelihood of driving, or in the obverse, taking transit.

In the analyses presented in this section, binomial logit models were estimated to identify factors that explain work-trip mode choice, including whether a commute is in the reverse-direction or not. (Because of data availability, logit models were estimated and are presented only for the three largest metropolitan areas and not for greater Sacramento.) The models adopted traditional expressions of utility for mode of commute, namely in terms of comparative generalized costs (e.g., travel times and prices) of competing modes and socio-economic attributes of trip makers.<sup>1</sup>

Of particular importance are the signs on (and significance of) the dummy variables used to denote whether a particular trip was a reverse commute or not. In addition to multivariate predictive models, simple cross-tabulations of how mode varies by income levels and other possible predictors of travel choice are also presented.

### Household Income and Mode Choice

Income is often a factor that influences mode choice, and as noted in the previous chapter, this is particularly the case for reverse commutes. Table 3.1 further sheds light on the importance of income in shaping mode of commuting, particularly for reverse commutes. The table shows that workers from low-income households in California's biggest metropolitan areas are 2 to 26 times more dependent on transit to get to work than those from non-low-income families.<sup>2</sup>

In the three biggest metropolitan areas, those from low-income households making intra-urban commutes tended to be the most dependent upon transit to get to work. Thus, inner-city poor commuting within central cities tended to be more reliant on transit than those commuting to workplaces outside of central cities. This is likely due to the fact that quality of transit services within dense, built-up areas tends to be appreciably better than reverse-directional services. Only in greater Sacramento were low-income reverse commuters more transit dependent than their counterparts making intra-urban commutes.

While low-income commuters were more transit-dependent than non-low-income commuters across all four commute sub-markets, the differentials tended to be largest for reverse-commuters. This is more clearly revealed by Figure 3.1 wherein in metropolitan Sacramento the odds of transit riding among reverse-commuters with low household incomes (<\$25,000 per year) was 4.4 times higher than for non-low-income reverse-commuters. In the case of San Diego County, the differential was 26 times!

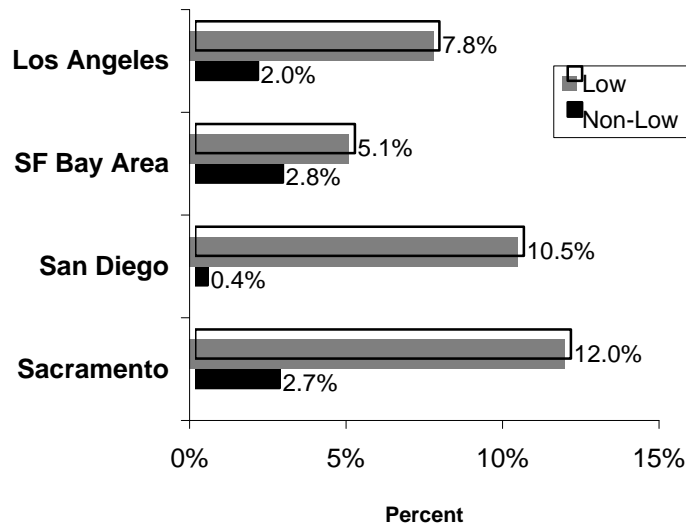
### Los Angeles Mode-Choice Model

In metropolitan Los Angeles, making a reverse commute trip *increased* the odds of driving to work, controlling for many other factors, however the relationship was not statistically significant (Table 3.2). Switching from a status of non-reverse to reverse commuting decreased the odds of driving to work by 9.5 percent. The model, which had good overall predictive powers, reveals that many of the control variables were highly statistically significant. The likelihood of taking a car to work increased as a function of key trip attributes: low travel time by auto relative to transit; short-duration trips; non-peak period travel; and low-cost parking at the workplace. Higher odds of commuting by car in metropolitan Los Angeles were also associated with several key socio-demographic factors: high incomes; presence of young kids; non-shortage of cars (relative to number of workers in the household); travelers who are older and female; and the presence of a driver's license. Interestingly, the likelihood of driving increased for low-income workers with young children (reflected by the positive sign on the interactive term), suggesting child-care responsibilities contributed to auto-dependence for low-income parents who otherwise could have been expected to take transit to work. The table also shows that

**Table 3.1 Percent of Commutes by Transit, by Persons from Low-Income vs. Non-Low-Income Households, Among Four Metropolitan Areas and Commute Submarkets<sup>1</sup>**

	Reverse		Radial		Intra-Urban		Intra-Suburban	
	Low	Non-Low	Low	Non-Low	Low	Non-Low	Low	Non-Low
<b>Los Angeles</b>	7.8%	2.0%	10.3%	1.5%	18.0%	3.2%	4.8%	0.8%
<b>SF Bay Area</b>	5.1%	2.8%	9.8%	3.7%	15.4%	7.8%	3.9%	1.2%
<b>San Diego</b>	10.5%	0.4%	0.5%	0.3%	15.3%	4.5%	6.0%	1.2%
<b>Sacramento</b>	12.0%	2.8%	6.7%	7.4%	9.9%	6.6%	2.3%	0.7%

<sup>1</sup> Low Income = \$25,000 annual household income or less in San Diego County and Metropolitan Sacramento, and \$30,000 annual household income or less in Metropolitan Los Angeles and the San Francisco Bay Area.



**Figure 3.1 Percent of Reverse Commuters who Patronize Transit: Low vs. Non-Low Income Households, Across Four Metropolitan Areas**

higher residential and employment densities (at the origins and destinations of trips) significantly lowered the odds of taking a car (and, implicitly, taking transit) to work in greater Los Angeles.

### San Francisco Bay Area Mode-Choice Model

For the Bay Area, data allowed the modeling of the most dominant form of car-commuting – drive-alone trips. Similar to the findings for metropolitan Los Angeles, reverse-commuting *increased* the likelihood of car commuting in the Bay Area, and unlike the Los Angeles case, the relationship was highly statistically significant (Table 3.3). Switching from a status of non-reverse to reverse commuting decreased the odds of driving to work by 25.2 percent. The

**Table 3.2 Metropolitan Los Angeles Mode-Choice Logit Model:  
Probability Commute by Private Automobile, 1991**

	<b>Coefficient</b>	<b>Std. Error</b>	<b>Prob.</b>
<b>Reverse Commute (1=Yes, 0=No)</b>	0.177	0.377	0.634
Travel Time [(Auto time - Transit time (auto access to transit)); peak highway network, min.	-0.006	0.003	0.029
Reported Trip Duration (Min.)	-0.007	0.002	0.000
Peak Hour Trip (1=Yes, 0=No)	-0.131	0.141	0.352
Parking Fee at Work (\$/hour)	-19.448	11.804	0.099
Low Income (1=HH Income<25K; 0=HH Income >=25K)	-0.510	0.146	0.001
With Kids under 5 (1=Yes, 0=No)	0.425	0.163	0.009
Low Income * With Kids under 5	0.970	0.833	0.244
Auto Shortage (1 = No. of HH vehicles<No. of HH workers; 0 = No auto shortage)	-1.308	0.146	0.000
Gender (1=Male; 0=Female)	-0.476	0.133	0.000
Driver's License (1=Yes, 0=No)	1.952	0.176	0.000
Age, years	0.013	0.005	0.013
Density of Place of Residence (10,000 Pop. & Emp. per Sq. Mile)	-0.200	0.044	0.000
Density of Place of Work (10,000 Pop. & Emp. per Sq. Mile)	-0.099	0.019	0.000
Constant	1.172	0.393	0.003
<b>Summary Statistics:</b>			
N = 5,104; $\chi^2$ (pseudo $R^2$ ) = .276;			
$\chi^2$ = 906.7; prob = .000; % of cases correctly predicted (relative to "flip of a coin") = 94.0%			

control variables match *a priori* expectations, and largely reinforce the findings from Southern California. From the model outputs, solo-commuting in the Bay Area generally increased: as travel-times by car versus transit declined; during the non-peak period; for non-low income households; with the number of vehicles per household; for those living in smaller size households; for commuters at the mid-stages of lifecycle; and for white males.

In sum, the model suggests that controlling for trip duration, time-of-day, and socio-demographic characteristics, the very act of commuting from the center city to the outskirts prompted Bay Area residents to drive alone. While poor quality transit no doubt partly explains this, the fact that travel-time by transit is represented in the model (relative to auto travel time) suggests that other factors (e.g., ease of parking at suburban workplaces) likely have a bearing on mode choice in the Bay Area's reverse-commute market as well.

**Table 3.3 San Francisco Bay Area Mode-Choice Logit Model:  
Probability of Drive-Alone Commute, 1991**

	<b>Coefficient</b>	<b>Std. Error</b>	<b>Prob.</b>
<b>Reverse Commute (1=Yes, 0=No)</b>	0.225	0.094	0.017
Travel Time [(Auto time - Transit time (auto access to transit)]; peak highway network, min.	-0.022	0.001	0.000
Peak-period Commute, 6-9 A.M. or 3:30-6:30 P.M. (1=Yes; 0=No)	-0.176	0.046	0.000
Low Income (1=Annual HH Income < \$30,000; 0=Annual HH Income >=\$30,000 per year)	-0.438	0.089	0.000
No. of Automobiles in Household	0.657	0.026	0.000
Household Size (persons per household)	-0.294	0.017	0.000
Age (1=24 to 59 years; 0=<24 years or >59 years)	0.563	0.056	0.017
White (1=yes; 0=no)	0.392	0.048	0.000
Gender (1=Male; 0=Female)	0.204	0.043	0.000
Constant	-0.730	0.093	0.000
<b>Summary Statistics:</b>			
N = 14,368; $\chi^2$ (pseudo R <sup>2</sup> ) = .205;			
$\chi^2$ = 2,073.2; prob = .000; % of cases			
correctly predicted (relative to "flip of a coin")			
= 80.2%			

### San Diego County Mode-Choice Model

As with the other two metropolitan areas, reverse-commuting increased the odds of car travel and lowered the likelihood of transit usage in San Diego County, controlling for factors like travel-time differentials between car and transit (Table 3.4). The odds ratio for the reverse commute dummy variable was 15.7 percent, meaning the odds of car-commuting rose by this rate if two people were otherwise identical except one reverse-commuted and the other did not. The overall model was fairly accurate, correctly predicting the mode of travel for 19 out of 20 surveyed cases.

In addition to the finding that reverse-commuting induces car travel, Table 3.4 also reveals the influences of other trip attributes on mode choice. Providing transit subsidies (e.g., discounted monthly passes) significantly lowered the likelihood of car commuting. On the other hand, making chained, or linked, trips increased the odds (due to travel complexity). Among the socio-demographic variables, consistent with expectations, the probability of car-commuting generally rose with: the presence of a driver's license; household income; vehicles per household; and occupation in a professional or management field. Interestingly, the one interactive term in the model reveals that professionals who reversed commuted were less likely to travel by car than non-professionals who reversed commuted. The reason for this is not immediately clear, however this could reflect such factors as the tendency of highly educated workers living in the core area and who work in outlying areas to take commuter rail (e.g., the Coaster), vanpools, or high-quality commuter buses.

**Table 3.4 San Diego Mode-Choice Logit Model: Probability Commute by Private Automobile, 1995**

	<b>Coefficient</b>	<b>Std. Error</b>	<b>Prob.</b>
<b>Reverse Commute (1=Yes, 0=No)</b>	0.658	0.485	0.175
Travel Time [(Auto time - Transit time (auto access to transit)); peak highway network, min.)	-0.009	0.003	0.010
Transit subsidy (1=Yes, 0=No)	-1.392	0.289	0.000
Linked work trip (1=Yes, 0=No)	0.416	0.281	0.139
Driver's License (1=Yes, 0=No)	2.187	0.312	0.000
Household Income (in \$10,000 per year)	0.020	0.001	0.000
Vehicle in HH (1=Yes, 0=No)	2.740	0.510	0.000
Professional Occupation (1=Yes, 0=No)	0.306	0.247	0.215
Reverse Commute * Prof. Occupation	-1.189	0.084	0.139
Constant	-3.594	0.583	0.000
<b>Summary Statistics:</b>			
N = 3,853; $\chi^2$ (pseudo $R^2$ ) = .265;			
$\chi^2$ = 1,022.1; prob = .000; % of cases			
correctly predicted (relative to "flip of a coin")			
= 95.62%			

### Sensitivity Analysis

Collectively, the mode-choice model results from California's three largest metropolitan areas clearly point out that reverse-commuting induces car travel, even when controlling for factors like income and travel time. While this is no doubt partly a product of transit's historically poor showing in the reverse-flow direction and in the suburbs, it could also be attributable to other factors, like the prevalence of free suburban parking. Only through case-study analyses, such as in Part Two of this report, can such nuances be teased out.

One way to gauge the marginal influences of reverse-commuting on mode choice is to conduct a sensitivity test based on the scenario of a "typical commuter", with the only variation being whether the commute-trip is in the reverse direction or not. In the scenarios, the mean (in the case of ratio-scale variables) and modal (i.e., most frequently-occurring cases for nominal-scale variables) values were inputted into respective mode-choice models for the three metropolitan areas. The initial scenario sets the value for the "Reverse Commute" dummy variable to zero, producing a probability estimate of auto-commuting for the "Non-Reverse" scenario. Then, the dummy variable was switched to one, retaining all other input values, yielding an estimate for the "Reverse Commute". The difference represents the marginal impacts of reverse-commuting on mode choice.

Table 3.5 presents the results. For the typical commuter, the odds of taking a car to work for non-reverse-direction commutes was the lowest in the Bay Area, followed by Metropolitan Los Angeles and San Diego County. If the same person makes a reverse-commute, the odds of

**Table 3.5 Probabilities that “Typical” Person Commuted by Private Automobile: Reverse Commute Versus Non-Reverse Commute Scenarios**

	<b>Non-Reverse</b>	<b>Reverse Commute</b>	<b><i>Change of Probability</i></b>
<b>Los Angeles</b>	94.1%	96.6%	<b>+2.5%</b>
<b>SF Bay Area</b>	87.5%	90.2%	<b>+2.7%</b>
<b>San Diego County</b>	95.6%	97.9%	<b>+2.3%</b>

taking a private automobile to work rises between 2.3 percentage points (in the case of San Diego County) and 2.7 percentage points (in the case of the San Francisco Bay Area). The slightly higher sensitivity of Bay Area workers to the directional flow of commute trips in deciding which mode to take could reflect the influences of a regional rail network like BART or more localized factors, like levels of congestion along main travel corridors.

### **3.3 EFFECTS OF REVERSE COMMUTING ON TIME-OF-DAY CHOICE**

Public transit is often viewed as being ill-suited for reverse-commuting not only because, spatially, routes do not match up with origin-destination patterns, but also temporally, services do not always operate when people need to get to work. The previous chapter revealed many reverse commutes take place during non-peak hours. Is this more so than other commute submarkets, and is reverse-commuting a statistically significant predictor of the time-of-day of a work trip? This section explores these questions.

#### **Off-Peak Commuting Among Sub-Markets and Income Groups**

Based on regional travel surveys, Table 3.6 suggests reverse-commute trips are no more oriented to off-peak hours than radial or other types of commutes. In metropolitan Los Angeles, one-third of reverse commutes occur during off-peak hours, only one to two percentage points above the shares for the other three sub-markets. These statistics suggest that reverse-commuting, itself, is likely to be a weak predictor of time-of-day of travel.

Among reverse-commuters from households with low-income, the share of journeys-to-work occurring during off-peak hours tended to be higher (relative to those from non-low-income households). Table 3.7 shows reverse-commuters from low-income households were 4 to 9 percent more likely to be non-peak commuters than their counterparts from higher income households. Thus, for the sub-population most often targeted for special transportation assistance – low-income reverse commuters – the odds of travel outside the peak, when transit services are the sparsest, are comparatively high.

**Table 3.6 Percent of Commute Trips During Off-Peak, by Sub-Market<sup>1</sup>**

	<b>Commuting Sub-Market</b>			
	<b>Reverse</b>	<b>Radial</b>	<b>Intra-Urban</b>	<b>Intra-Suburban</b>
<b>Los Angeles</b>	33.1%	31.1%	31.6%	32.6%
<b>SF Bay Area</b>	32.1%	28.9%	34.9%	34.3%
<b>San Diego</b>	29.8%	27.2%	29.3%	31.7%
<b>Sacramento</b>	30.2%	30.6%	26.1%	29.2%

<sup>1</sup>Off-peak is defined as hours outside of 6-9 A.M. and 3:30-6:30 P.M.

**Table 3.7 Percent of Commutes in Off-Peak Period for Persons from Low-Income Households, by Sub-Market<sup>1</sup>**

	<b>Commuting Sub-Market</b>			
	<b>Reverse</b>	<b>Radial</b>	<b>Intra-Urban</b>	<b>Intra-Suburban</b>
<b>Los Angeles</b>	37.9%	47.6%	34.4%	41.4%
<b>Bay Area</b>	36.0%	30.1%	32.4%	29.7%
<b>San Diego</b>	34.2%	28.1%	28.5%	32.4%
<b>Sacramento</b>	39.0%	50.0%	37.0%	43.1%

<sup>1</sup> Low Income = \$25,000 annual household income or less in San Diego County and Metropolitan Sacramento, and \$30,000 annual household income or less in Metropolitan Los Angeles and the San Francisco Bay Area.

### Time-of-Day Choice Model

For two metropolitan areas – Metropolitan Los Angeles and San Diego County – data allowed discrete-choice models to be estimated that predicted the probability that a commute occurred during peak hours. As with the mode-choice analysis, binomial logit models were estimated that enabled the influences of a reverse-commute trip on time-of-day of travel to be gauged.

The logit model results, shown in Tables 3.8 and 3.9, were not very successful, with the influences of reverse-commuting showing mixed signs and in neither case was the variable statistically significant at the 5 percent probability level. These results reinforce what was mentioned above – there is little difference in time-of-day of commute between reverse-commuters and other sub-markets. The control variables across the two models suggest the odds of peak-period commuting generally increased for higher-skilled workers living in smaller households. Full-time employment had contrasting effects on the likelihood of peak-hour commuting: negative in the case of metropolitan Los Angeles and positive in the case of San Diego County. Metropolitan Los Angeles also exhibited some localized effects, with workers living in Orange County cities tending to commute more frequently during peak hours and those living in Ventura County cities having a higher incidence of off-peak commuting.

Overall, the temporal distributions of commute trips by reverse-commuters appear to be very close to those of other sub-markets. There is some evidence of low-income reverse-commuters

**Table 3.8 Metropolitan Los Angeles Peak-Period Logit Model:  
Probability Commute During Peak Period, 1991<sup>1</sup>**

	<b>Coefficient</b>	<b>Std. Error</b>	<b>Prob.</b>
<b>Reverse Commute (1=Yes, 0=No)</b>	-0.087	0.092	0.346
Travel Duration < 30 minutes (1=Yes, 0=No)	0.495	0.080	0.000
Travel Duration 30-60 minutes (1=Yes, 0=No)	0.682	0.091	0.000
Trip Origin, Oxnard-Ventura (1=Yes, 0=No)	-0.393	0.174	0.025
Trip Origin, Anaheim-Irvine-Santa Ana (1=Yes, 0=No)	0.239	0.104	0.022
Parking Subsidies (1=Yes, 0=No)	0.396	0.132	0.003
Full-Time Employment (1=Yes, 0=No)	-0.592	0.323	0.070
Household Size, No.	-0.138	0.033	0.000
Manufacturing Job (1=Yes, 0=No)	-0.233	0.067	0.001
Constant	1.108	0.337	0.001

**Summary Statistics:**

N = 9,236;  $\chi^2$  (pseudo R<sup>2</sup>) = .042;

$\chi^2$  = 226.6; prob = .000; % of cases correctly predicted (relative to "flip of a coin") = 68.2%

<sup>1</sup> Peak is defined as the period of 6-9 A.M. and 3:30-6:30 P.M.

**Table 3.9 San Diego County Peak-Period Logit Model:  
Probability Commute During Peak Period, 1995<sup>1</sup>**

	<b>Coefficient</b>	<b>Std. Error</b>	<b>Prob.</b>
<b>Reverse Commute (1=Yes, 0=No)</b>	0.146	0.152	0.338
Travel Duration, Minutes	0.001	0.002	0.444
Subsidized Transit (1=Yes, 0=No)	0.186	0.175	0.289
Household Income (in \$10,000 per year)	0.101	0.020	0.000
Full-Time Employment (1=Yes, 0=No)	0.094	0.012	0.000
Professional-Management Employment (1=Yes, 0=No)	0.337	0.088	0.000
Household Size, No.	-0.081	0.032	0.011
Male (1=Yes, 0=No)	-0.323	0.087	0.000
Hispanic (1=Yes, 0=No)	0.456	0.131	0.000
Constant	0.124	0.291	0.669

**Summary Statistics:**

N = 3,853;  $\chi^2$  (pseudo R<sup>2</sup>) = .078;

$\chi^2$  = 566.3; prob = .000; % of cases correctly predicted (relative to "flip of a coin") = 70.5%

<sup>1</sup> Peak is defined as the period of 6-9 A.M. and 3:30-6:30 P.M.

being more inclined to travel to work during the off-peak, though this relationship is not particularly strong. The absence of highly significant associations suggests that case studies might yield better insights into the temporal dimensions of reverse commuting in California, and the mobility challenges that off-peak travel poses. Several case studies presented in Part Two of this report address time-of-day issues related to reverse commuting.

### **3.4 COMPARATIVE TRAVEL TIMES AND COSTS**

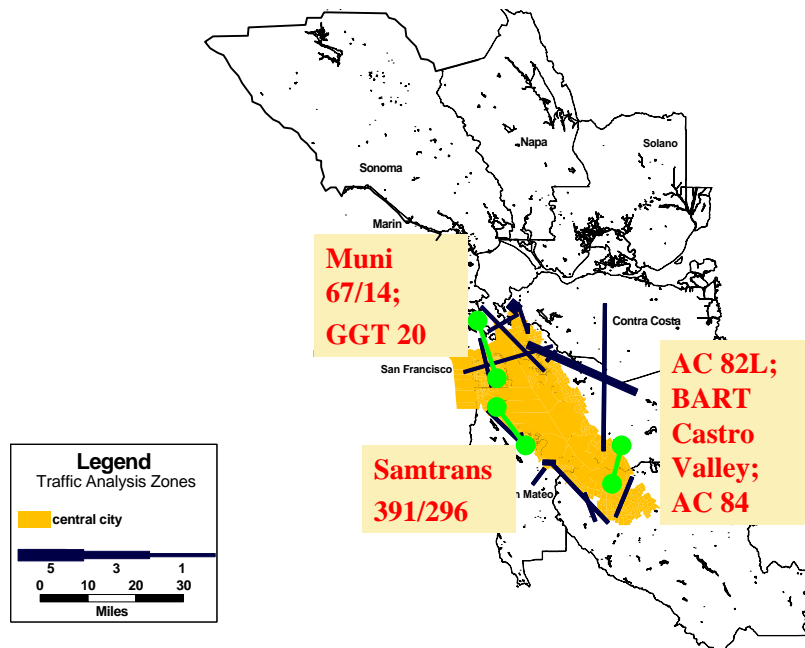
The previous sections presented predictive models of factors influencing mode and time-of-day choice. One of the key control variables introduced in the analyses, to allow the influences of reverse-commuting to be isolated, was travel times. It is the longer travel times via bus for many reverse commute trips that discourages transit usage.

This section further probes the travel-time implications of making reverse-commute trips via transit versus the private car. The relative costs of making a reverse commute by transit vis-à-vis automobile are also compared. As a supplement to the choice models presented earlier, these comparisons provide simple order-of-magnitude insights into the relative travel-time and cost expenditures of making reverse-direction trips along major travel axes in three of the metropolitan areas: the Bay Area, San Diego County, and metropolitan Sacramento.

Using the best available secondary information, we put ourselves in the position of an inner-city resident seeking to reach a suburban job.<sup>3</sup> We specifically chose corridors where we had empirical evidence showing that low-income workers take transit (based on the desire line maps presented in Chapter Two). During the peak period, how many minutes, how many physical transfers, and how much would it cost to get from point X to point Y via transit or bus transit? Estimated peak-period travel times were based on the fastest routes for car travel and the fastest itinerary for transit travel (based on the assumption of a one-eighth mile walk access distance and a one-eighth mile walk egress distance), and allowing for wait times according to route schedules.<sup>4</sup> Ratios of time commitments and dollar outlays for making one-way trips via transit versus bus are presented for the three metropolitan areas.

#### **San Francisco Bay Area: Comparative Travel Times and Costs**

For the Bay Area, three transit routes with a reverse-direction orientation, operated by four different transit properties, were chosen for the analysis: San Mateo Transit Authority (Samtrans) Route 391/296; a combined route operated by two different agencies – Route 67/14 operated by the San Francisco Municipal Railway (Muni) and Route 20 operated by the Golden Gate Transit Authority (GGT); and Route 82L/84 operated by the Alameda-Contra Costa County Transit Authority (AC Transit), in cooperation with the Bay Area Rapid Transit (BART) Authority. Map 3.1 is a representation of the general corridors of these routes in relationship to the desire lines of low-income reverse-commute trips in the Bay Area. The routes span intermediate to long distances, in the range of 8 to 22 miles, terminus-to-terminus.



**Map 3.1 San Francisco Bay Area: Three Reverse-Direction Transit Corridors and Desire Lines of Trips by Low-Income Reverse-Commuters**

The comparative results for these three Bay Area reverse-commute corridors are summarized in Table 3.10. Clearly, from a travel time perspective, transit is at a huge disadvantage in making these reverse-direction commutes. Accounting for waiting and other time expenditures, it generally takes 3 to 4 times as long to travel via transit as private car. These transit-trip scenarios also require 2 to 3 transfers. A long line of research has demonstrated that the transferring process is particularly onerous in the minds of commuters – every minute spent waiting and transferring is often perceived to be three times as long as every minute spent traveling inside a bus.<sup>5</sup> It is as if the “body clock” slows down by a factor of three when making a transfer – what takes 5 minutes is perceived to take 15 minutes.

From a cost perspective, Table 3.10 shows that transit users generally fare well. Making the hypothesized point-to-point trip on Samtrans Routes 391/296 is 80 percent less than what it would cost to drive. The reverse-commute from San Francisco to Marin County via Muni Route 67/14 and GGT Route 20 is also cheaper. Only the trip from Hayward to Castro Valley via AC Transit and BART is estimated to cost more by transit than private car. We note that perception again enters into the equation when comparing travel costs of car versus transit. Notably, many of the costs of using a car are “hidden” in the sense that they are perceived by motorists as sunk, foregone expenditures – once one has already paid for a car, insurance, and the like, the perceived marginal cost of using the car is less than true marginal costs. This is in contrast to out-of-the-pocket outlays for riding transit. Cash bus fares are conspicuous forms of payment that, studies show, weigh more heavily in the minds of transit riders.<sup>6</sup> The hidden cost of car use versus transparent, out-of-the-pocket bus payments gives car travel a “cognitive advantage”.

**Table 3.10 Comparison of Travel Times and Costs for Three Low-Income Reverse-Commute Corridors in the San Francisco Bay Area<sup>1</sup>**

<i>Routes:</i>	<b>Peak Travel Time (min.)</b>			<b>No. of Transit Transfers</b>	<b>Average Trip Cost (\$)</b>		
	<i>Car</i>	<i>Transit</i>	<i>Ratio: Transit/Car</i>		<i>Car</i>	<i>Transit</i>	<i>Ratio: Transit/Car</i>
<b>Samtrans 391/296</b>	38	125	<b>3.3</b>	2	\$9.12	\$2.20	<b>0.2</b>
<b>Muni 67/14; GGT 20</b>	31	107	<b>3.5</b>	3	\$5.95	\$4.10	<b>0.7</b>
<b>AC 82L/84 BART</b>	10	91	<b>4.0</b>	3	\$2.03	\$2.70	<b>1.3</b>

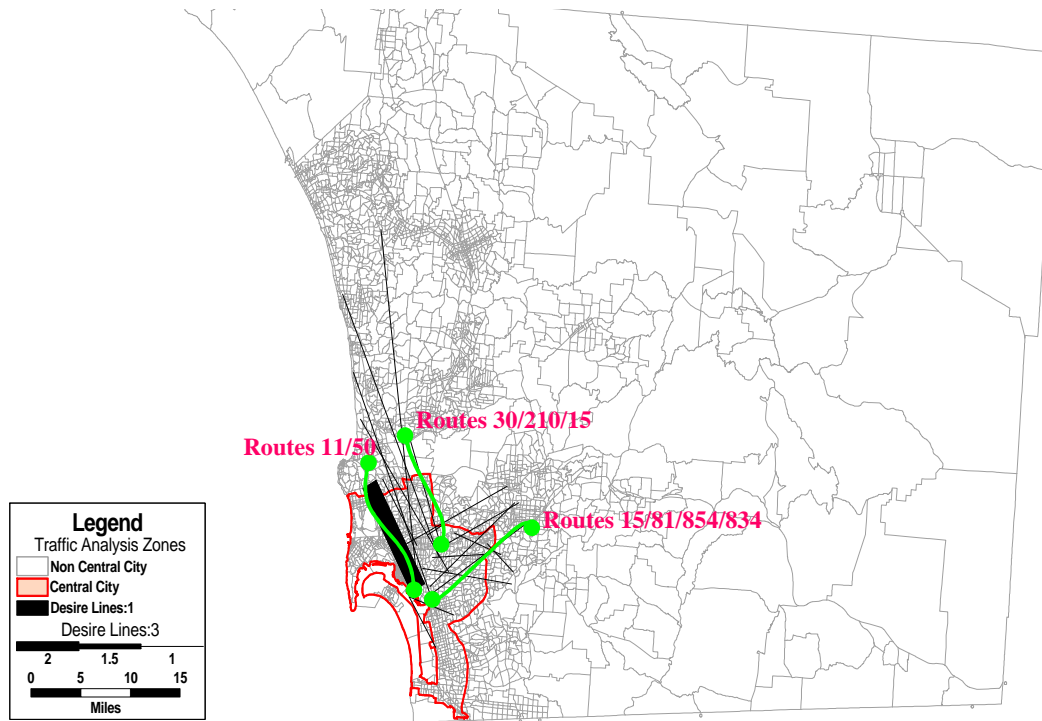
<sup>1</sup> See endnote 3 for the methods used and assumptions made in deriving these estimates.

While one might think the general cost-savings of transit riding might offset transit's higher travel-time expenditures, in truth most commuters are more time sensitive than price sensitive. In the United States, a general rule-of-thumb, based on empirical experiences, is that middle-class commuters are twice as sensitive to travel times as travel prices – e.g., transit service elasticities tend to be twice as high, in absolute terms, as fare elasticities.<sup>7</sup> While this differential is generally less for lower-income commuters, experiences suggest low-skilled workers tend to make more intermediate trips, such as dropping off and picking up kids at child care centers, which tends to elevate the relative importance of travel time (particularly given that making such chained trips by transit often means transferring and waiting).<sup>8</sup>

### **San Diego County: Comparative Travel Times and Costs**

A similar analysis was carried out for three transit corridors in San Diego County that are known to serve low-income workers heading from inner-city residences to suburban jobs. Map 3.2 shows the corridors traversed by three routes that are part of the Metropolitan Transit System overseen by the Metropolitan Transit Development Board (MTDB): 11/50 (from downtown to University Town Centre); 30/210/15 from the eastern part of the city of San Diego to Mira Mesa/Sorrento Mesa; and 15/81/854/834 from the National City area to El Cajon. Desire lines for commuter trips made by low-income reverse-commuters are also shown in the maps, indicating that these routes serve transit-dependent populations.

The comparative travel-time and price performances of these transit routes relative to car travel are fairly similar to what was found in the Bay Area. Table 3.11 shows it took between approximately 3 and 5 times longer to traverse these corridors during peak periods by transit than by private automobile. From a cost standpoint, however, transit riding tended to be substantially less, between 20 percent and 60 percent cheaper than making the trip by private automobile. Thus, as in the case of the San Francisco Bay Area, reverse-commuting via transit in San Diego County appears to offer cost savings relative to the car, however for many commuters these gains are likely overshadowed by the substantially higher travel-time outlays that are incurred. The mode-choice model results presented earlier in this chapter (Table 3.4) underscored the fact that longer travel-times via transit versus automobile substantially and significantly cuts into transit usage. Indeed, price variables failed to enter into the logit equation, suggesting that, consistent with the literature, San Diego County's reverse commuters weigh travel-time expenditures more heavily than fare expenditures. Such insights reinforce the idea



**Map 3.2 San Diego County: Three Reverse-Direction Transit Corridors and Desire Lines of Trips by Low-Income Reverse-Commuters**

**Table 3.11 Comparison of Travel Times and Costs for Three Low-Income Reverse-Commute Corridors in San Diego County<sup>1</sup>**

Routes	Peak Travel Time (min.)			No. of Transit Transfers	Average Trip Cost (\$)		
	Car	Transit	Ratio: Transit/Car		Car	Transit	Ratio: Transit/Car
11/50	19	58	3.1	1	\$3.29	\$2.25	0.7
15/81/854/834	24	86	3.6	3	\$4.96	\$2.00	0.4
15/30/210	19	91	4.8	3	\$3.26	\$2.50	0.8

<sup>1</sup> See endnote 3 for the methods used and assumptions made in deriving these estimates.

that if transit is to effectively compete in the reverse-commute marketplace, service revisions are needed that substantially lower door-to-door travel times.

### Metropolitan Sacramento: Comparative Travel Times and Costs

The findings from metropolitan Sacramento paralleled those of the two larger metropolitan areas. Three bus routes operated by the Sacramento Transit Authority that serve reverse-commute markets were examined: 490/900; 480/574; and 3811/567. Table 3.12 reveals travel-time differentials ranged between 2.5 and 3.7. These were partly attributable to the high degree of transferring that is required to traverse the three chosen transit routes, from terminus-to-terminus. As in the other two metropolitan areas, however, transit riding provided rewards at the farebox relative to car-commuting. However, the same relationships likely hold in metropolitan Sacramento – for many reverse-commuters, including those with lower incomes and particularly those with child-rearing responsibilities, travel-time expenditures probably weigh more heavily than monetary cost savings.

**Table 3.12 Comparison of Travel Times and Costs for Three Low-Income Reverse-Commute Corridors in metropolitan Sacramento<sup>1</sup>**

<i>Routes</i>	<b>Peak Travel Time (min.)</b>			<b>No. of Transit Transfers</b>	<b>Average Trip Cost (\$)</b>		
	<i>Car</i>	<i>Transit</i>	<i>Ratio: Transit/Car</i>		<i>Car</i>	<i>Transit</i>	<i>Ratio: Transit/Car</i>
<b>490/900</b>	19	59	<b>3.1</b>	3	\$3.50	\$1.50	<b>0.4</b>
<b>480/574</b>	19	70	<b>3.7</b>	3	\$3.32	\$1.50	<b>0.5</b>
<b>3811/567</b>	20	50	<b>2.5</b>	2	\$3.71	\$1.50	<b>0.4</b>

<sup>1</sup> See endnote 3 for the methods used and assumptions made in deriving these estimates.

### 3.5 DIRECTIONAL TRENDS ALONG RADIAL CORRIDORS

So far, we have focused on travel demand from the perspective of consumer behavior and choice, drawing upon empirical evidence from travel-diary surveys collected from the state's four largest metropolitan areas. Our emphasis has been on the mobility needs of inner-city residents heading to suburban jobs. Another demand-related issue that deserves attention is whether reverse-commuting has been placing greater loads on major freeway networks, translating into higher reverse-commute volumes on key links and perhaps even greater reverse-direction traffic congestion. As noted in Chapter One, the reverse-commute increased as a share of the total "commute pie" in the United States during the 1980s, and the general consensus is that this trend likely continued throughout the 1990s.<sup>9</sup> Is there any evidence this has translated in higher opposite-direction traffic volumes and a more even directional split on California's radial freeway corridors?

This section addresses this question by examining trends in average peak-hour traffic volumes, in both directions, at three screenline points along major radial freeways and highways in the San Francisco Bay Area.<sup>10</sup> (Time-series data on directional volumes were only available for the San Francisco Bay Area; screenline counts for other metropolitan areas in the state record two-way, versus one-way, volumes.) Directional data on traffic volumes were obtained from the California Department of Transportation for the three Bay Area screenlines over the 1991 to 1998 period.<sup>11</sup>

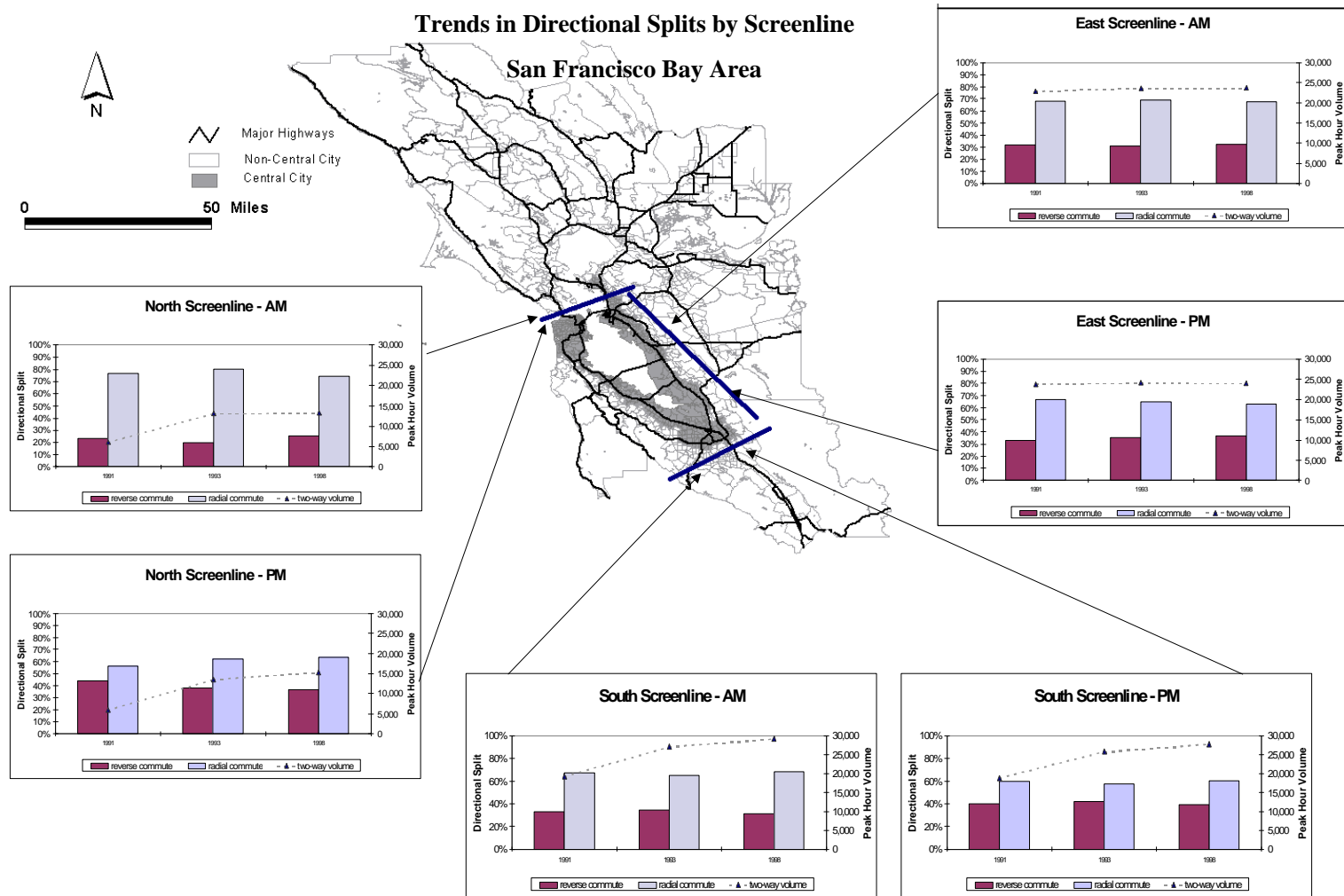
Map 3.3 shows the three designated screenlines that were studied for the Bay Area, along with trends in directional splits, and Table 3.13 summarizes the findings. In general, there was a slight trend toward more balanced directional flows at screenline points over this time period, although the trends were very modest and not consistent, and the dominance of radial-direction flows persisted for the most part. In the A.M. direction of the north screenline and the P.M. direction of the east and south screenlines, traffic volume increased at a faster, but not highly perceptible, rate in the reverse commute direction than in the radial commute direction. In addition, the Bay Area results suggest:

- Across the three screenlines, the directional splits were markedly different in the morning than the evening peak hour; and
- Peak traffic flows across the screenlines did not rise appreciably during the 1990s. This is likely due, in part, to the fact that conditions have grown to near-capacity, with little room to accommodate additional flows. Congestion has likely shifted some of the rising demand along these and other corridors to the shoulders of the peak.

While it is difficult to generalize based on longitudinal experiences across three screenlines in one metropolitan area, nonetheless these results cast some doubt over the popular view that reverse-commuting is gaining in relative importance. Regardless, trends in directional splits should be monitored over time to help gauge the degree to which reverse-commuting is gaining ascendancy in the commuting marketplace.

### 3.6 SUMMARY

This chapter extended the analysis of travel demand, measuring the degree to which reverse-commuting influences mode and time-of-day choice, and probing the degree to which travel-time, cost, and directional-split factors influence travel behavior in California's largest metropolitan areas. In general, reverse-commuting increases the odds of taking a car to work and lowers the likelihood of riding transit, all else being the same. This is thought to be substantially a product of the poorer quality of transit services in the reverse-commute direction as well as factors like the tendency toward free parking in the suburbs and chained travel patterns among those commuting from central cities to outlying areas. Case studies reviewed in Part Two of this report will seek to amplify these points. There was little empirical evidence that reverse commutes are more likely to occur during off-peak hours, though some evidence was found that this could hold for those from low-income households. This could be a self-fulfilling relationship: more limited transit service options during non-peak period could preclude some inner-city residents who are mainly eligible for low-skilled jobs with non-traditional work schedules from entering the labor force in the first place. Again, we rely on case studies in Part Two of this report to probe such possibilities.



Map 3.3 Trends in Peak-Period Directional Volumes at Three Screenlines in the San Francisco Bay Area, By Direction and Peak Period, 1991 to 1998 Period

**Table 3.13 Summary of Peak-Period Directional Splits at Three Bay Area Screenlines, 1991-1998**

<b>Screenline</b>	<b>A.M. Peak Hour</b>		<b>P.M. Peak Hour</b>	
	<b>Reverse</b>	<b>Radial</b>	<b>Reverse</b>	<b>Radial</b>
North	25%	75%	40%	60%
East	30%	70%	35%	65%
South	35%	65%	40%	60%

Reinforcing the mode-choice model results, evidence was presented in this chapter that reverse-commuters taking transit often incur peak-period travel times that are three to four times higher than if they made trips by private cars. While taking transit saves money, this benefit is thought to be far overshadowed by the quantum increases in travel times faced in trying to get from the inner-city to suburban job sites by bus. Lastly, evidence was presented for the San Francisco Bay Area that suggests despite the popular perception that peak-period travel is shifting increasingly to the reverse-direction, during the 1990s the dominant radial-direction of traffic flows largely retained its pre-eminence. This result suggests that the reverse-commute “issue” is still predominantly one of equity (i.e., tending to the mobility needs of the inner-city poor) versus one of efficiency (i.e., coping with rising shares of overall traffic volumes in the opposite-flow direction).

## Notes

<sup>1</sup> Estimated models took the form:

$$P_{niod} = \exp(V_{niod} = f(T_{iod}, SE_n, R_{iod})) / [\sum_{j \in C_{nod}} \exp(V_{njod} = f(T_{jod}, SE_n, R_{iod}))], \text{ where:}$$

$P_{niod}$  = probability of person n choosing mode i for traveling between origin o and destination d  
 $C_{nod}$  = choice set of modes available to person n traveling between origin o and destination d  
 $V_{niod}$  = utility function (systematic component) for person n traveling by mode i between origin o and destination d  
 $T_{iod}$  = trip interchange vector for trips by mode i from origin o to destination d -- including travel time and cost (i.e., generalized costs)  
 $SE_n$  = socioeconomic characteristics vector for trip-maker n -- attributes such as income and vehicle availability  
 $R_{iod}$  = Reverse-commute by mode i from origin o to destination d (0-1).

Model coefficients were derived using maximum-likelihood estimation and variable entry was based on a combination of travel-choice theory and testing specific variables of interest regarding reverse commuting.

- <sup>2</sup> As noted in Chapter Two, low-income households were identified on the basis of cost-of-living and household size factors. For metropolitan Los Angeles and the San Francisco Bay Area, the threshold for low-income households was set at \$30,000 annual income or less. For San Diego County and metropolitan Sacramento, the threshold was set at \$25,000.
- <sup>3</sup> The following secondary data were used and assumptions invoked in the analyses. For each metropolitan area, the points of trip origin and trip destination corresponded to street addresses close to the terminuses of each of the transit routes studied. Time and cost estimates were derived as follows. *Peak Travel-Times by Car*: given the terminus-to-terminus points of each corridor, the distances and travel times associated with recommended driving directions were obtained from maps obtained from the Yahoo web site, at <http://www.yahoo.com>; since these maps assume typical road operating conditions, adjustments were made to account for peak-hour conditions based on assumed average travel speeds. (Also, estimates were compared to zone-to-zone travel time information obtained from origin-destination (O-D) matrices under peak-period ("fully loaded") conditions for each of the three metropolitan areas – Metropolitan Transportation Commission (2000) O-D matrix for A.M. Peak, San Diego Association of Governments (1997) O-D matrix for A.M. Peak, and Sacramento Council of Governments (2000) O-D Matrix for A.M. Peak – and adjusted, as necessary.) *Peak Travel-Times (and other trip characteristics) by Transit*: for the Bay Area, the itinerary, travel times, travel distances, and waiting time travel times via transit were obtained using the "Take Transit Trip Planner", available at <http://www.transitinfo.org/cgi-bin/taketransit>; for San Diego County, information on itinerary, travel times, travel distances, and waiting times were obtained using the San Diego Online Transit Information System Trip Planner, available at [http://www.sdcommute.com/service/otis\\_start.asp](http://www.sdcommute.com/service/otis_start.asp); for metropolitan Sacramento, information on transit trips were obtained using hardcopy schedule information. *Cost of car trips*: for all three metropolitan areas, car costs were estimated by multiplying the trip distance by a unit cost (per mile) of car travel, based on the following: the cost per mile was set at \$0.299, reflecting outlays for gasoline, maintenance, tires, insurance, licensing, registration, taxes, and capital-depreciation for a mid-size 1996 sedan (e.g., Ford Taurus SEL) based on an assumed usage of 10,000 miles per year (source: Automobile Club of Southern California, *Your Driving Costs*, Los Angeles, 2001; <http://www.aaa-calif.com/members/corpinfo/costbrch.asp>). Input assumptions for vehicle miles traveled per person were based on 1990 averages for the United States (28.6 miles, or 10,439

- annual vehicle miles per person), obtained from the Bureau of Transportation Statistics, *Personal Mobility in the United States*, Washington, U.S. Department of Transportation, p. 151. *Cost of transit trips*: based on published fare information for each trip itinerary, assuming cash, adult fares and adding any transfer surcharges that applied.
- <sup>4</sup> In some cases, travel-time estimates had to be derived from hardcopy schedules and telephone inquiries with transit agencies. All transit data are based on published schedule information. Actual travel times will vary according to delays in schedules. It is assumed that schedules reflect average delay conditions.
  - <sup>5</sup> M. Wachs, Consumer Attitudes Toward Transit Service: An Interpretative Review, *Journal of the American Planning Association*, Vol. 42, No. 1, 1976, pp. 96-104.
  - <sup>6</sup> Wachs, *op cit.*; M. Ben-Akiva and S. Lerman, Discrete Choice Analysis: Theory and Application to Travel Demand, Cambridge, Massachusetts, The MIT Press, 1985.
  - <sup>7</sup> R. Cervero, Transit Pricing Research: A Review and Synthesis, *Transportation*, Vol. 17, No. 2, 1990, pp. 117-140.
  - <sup>8</sup> E. Blumenberg and P. Ong, Job Accessibility and Welfare Usage: Evidence from Los Angeles, *Journal of Policy Analysis and Management*, Vol. 17, 1998, pp. 639-657; A. Pisarski, Commuting in Context, *Urban Land*, Vol. 60, No. 5, 2001, pp. 68-78.
  - <sup>9</sup> A. Pisarski, *Commuting in America II: The Second National Report on Commuting Patterns and Trends*, Washington, D.C., Eno Transportation Foundation, 1996.
  - <sup>10</sup> Screenlines represent artificially designated points for recording traffic volumes. For our analyses, screenlines defined by the CalTrans District 4 office for the San Francisco Bay Area, that were closest to the points that demarcated the designated central city and non-central city of the region (see Map 2.6 in Chapter Two) were chosen. The three chosen screenlines captured travel between the central city and the northern, southern, and eastern outlying portions of the region.
  - <sup>11</sup> Directional peak-hour traffic counts were used for all freeways and state roads that cross each designated screenline.

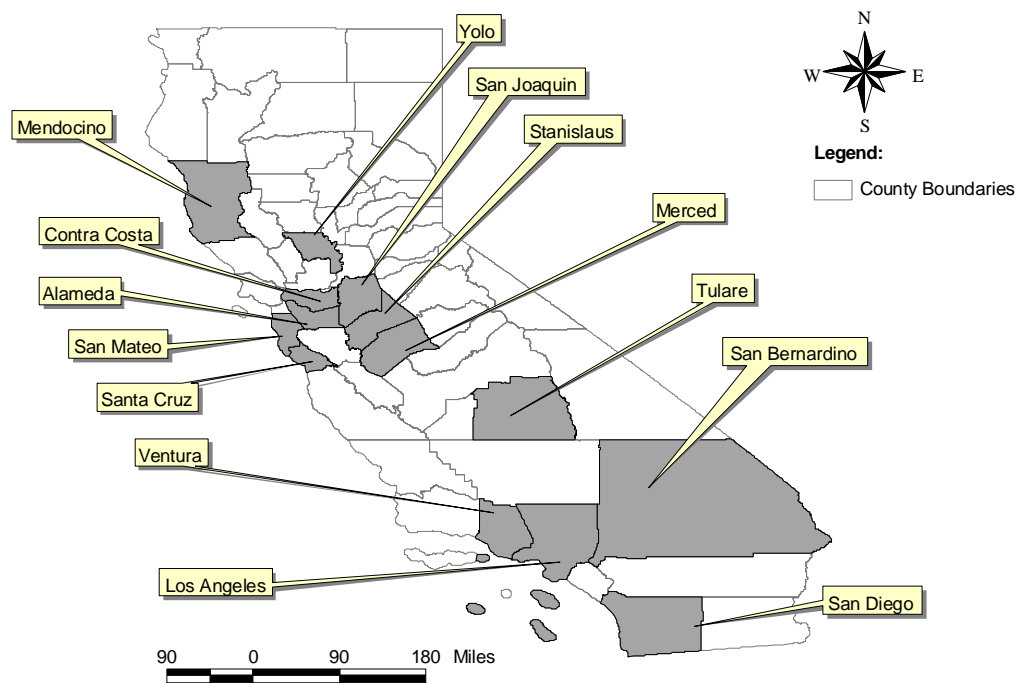


## **PART TWO**

### **MOBILITY INITIATIVES FOR SERVING CALIFORNIA'S REVERSE-COMMUTE AND JOB-ACCESS NEEDS**

Given the many dimensions of demand for reverse-commuting in California, how have municipalities, transit operators, social service agencies, and other stake-holders responded? Part Two presents an inventory of programs and initiatives introduced in the state to date to respond to reverse-commute and job-access needs. Following an overview of statewide initiatives (Chapter Four), a series of case studies are presented that reviews experiences, identifies unmet needs, and sets various policy challenges for doing a better job in this area. The case studies presented in Part Two aim to shed light on not only impacts and performance, but also to raise issues related to implementation and institutional coordination. Map II.1 shows the locations of case-study settings in the state.

Chapter Five presents case experiences for two California Counties – Santa Cruz and Contra Costa -- that have opted to provide a menu of options in seeking to serve the mobility needs of CalWORKs and special-needs clients. Chapter Six examines experiences with mounting a new reverse-commute bus service, Route 422, in Los Angeles County. The seventh chapter reviews experiences with transit service extensions: targeted route extensions in San Diego and schedule extensions mounted by AC Transit in the Oakland-East Bay Area. Chapter Eight focuses on increasing private-car ownership among low-income households as a form of job-access enhancement, drawing upon empirical evidence from four California counties of different sizes on how car-ownership increases the odds of successfully transitioning from welfare-to-work. Impacts of a well-designed loan program introduced in San Mateo County and public-private car assistance in Ventura County are also reviewed. The ninth chapter reviews the struggles experienced in three fairly small and substantially rural counties – Merced, Mendocino, and Stanislaus. The chapter points to the challenges of coping with job-access needs in low-density settings that are not transit's natural habitat. Chapter Ten builds upon the previous one by reviewing two successful transit programs in predominantly rural areas – both involving employer-sponsored bus runs to casinos on Indian reservations. While unique, these experiences provide insights into the conditions that are necessary for mounting successful transit services in predominantly rural settings.



Map II.1 Case-Study Settings Reviewed in Part Two

## Chapter Four

### California's Inventory of Job-Access and Reverse-Commute Initiatives

#### 4.1 INTRODUCTION

In an effort to respond to California's reverse-commute and job-access needs, various initiatives have been taken around the state over the past few years. Some have been prompted by the availability of Federal grants, under the competitive Job Access and Reverse Commute (JARC) program administered by the Federal Transit Administration.<sup>1</sup> Often, county social service agencies and local transit operators have received JARC grants, in cooperation with state and regional agencies. Other funding sources, including grants from private foundations and the Governor's 15 percent "discretionary" funding program (that sets aside monies for special transportation services introduced by local governments and private interests), have also gone toward jump-starting and underwriting mobility initiatives.<sup>2</sup> In addition, the state's CalWORKs (California Work Opportunity and Responsibilities to Kids) program has spawned various job access and reverse commute initiatives among county social services and welfare agencies. CalWORKs requires all county welfare departments to provide supportive services, including transportation, that are necessary for a welfare recipient to obtain and retain employment or to participate in other welfare-to-work activities (like job searches and job training).<sup>3</sup> Transit agencies have also played important roles. Some have voluntarily upgraded reverse-commute bus services that are available to the general public, not only to increase ridership but also as a public service to inner-city neighborhoods.

This chapter presents an inventory of job-access and reverse-commute services introduced to date in California, using the best information available. While the list of projects is constantly changing, the inventory is thought to provide a fairly accurate portrait of what existed in the state in the first half of 2002. A combination of secondary sources, literature reviews, and personal contacts with local agencies was relied upon in building the inventory.<sup>4</sup> Many initiatives, though not all, involve modifications to existing public transit services. Some initiatives focus on providing loans and others provide financial assistance to allow needy individuals to purchase or maintain private cars. Some areas have opted for a menu of options from which clients, in consultation with social workers, can custom-tailor strategies that best meet individual mobility needs. Initiatives reviewed in this chapter are classified by type. How programs break down among types of agencies is also presented.

The reader might note that we have shifted the focus from "reverse commutes" to a more inclusive framework that looks at not only services targeted at "city-to-suburb" commuting but more broadly "job-access" needs. In the course of conducting this phase of the study, it became clear very early that the distinction between reverse commute and job access is increasingly blurred, and that both sets of initiatives are fundamentally about responding to the critical and on-going mobility needs of disadvantaged Californians.

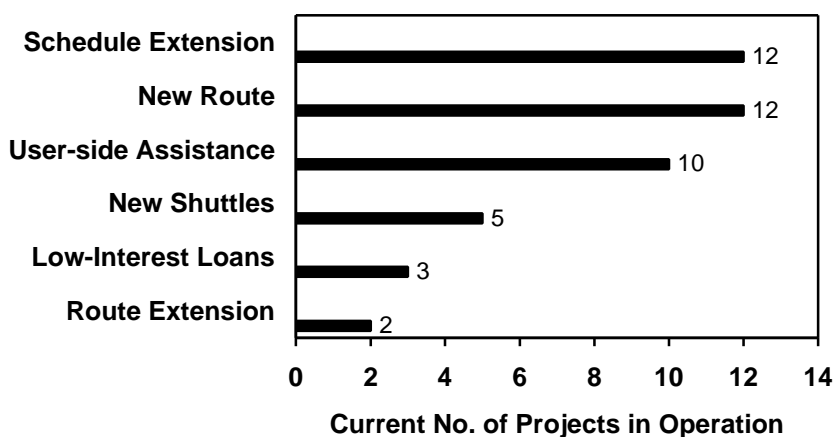
## 4.2 INVENTORY OF ACTIVITIES

As of early 2002, an estimated 36 different initiatives had been introduced in California, each aimed in some way at responding to and serving job-access and reverse-commute needs. Table 4.1 lists and reviews experiences with various projects and programs introduced to date, organized in terms of ten classes of initiatives, some of which involve multiple actions. Some programs are in the planning or pre-implementation stage, however most are well under way. (For each class of initiatives, Table 4.1 list activities first by those that are “on the ground”, followed by those which are still in the planning stage.)

Figure 4.1 presents the relative frequencies of each class of program that has been implemented to date. (Where multiple programs have been introduced, each element of the multi-prong program has been assigned to a specific initiative – e.g., the five cases of “schedule extensions and new or revised routes” added five cases to the eight instances of “schedule extensions” category in Table 4.1, producing a total count of 12.)

To date, one of the two most common initiatives has been to extend the schedule of existing bus services, mainly for the purposes of serving job sites, training centers, and other job-related activities in the evenings and on weekends. Schedule extensions have occurred mainly in northern California and have been funded primarily through FTA “Job Access and Reverse Commute” (JARC) grants. Chapter Seven provides insights into AC Transit’s experiences with schedule extensions and Chapter Five reviews some of the headway made in Contra Costa County with running bus services later in the evening.

Tying service extensions for the most frequently occurring initiative has been the inauguration of new routes. New routes have been supported through a combination of JARC, Governor’s 15-percent discretionary grants, and local-source funding. Most initiatives have been targeted at serving specific job centers or job-supportive destinations, such as adult-training centers and community colleges. Experiences with the introduction of Route 422 services in metropolitan Los Angeles are reviewed in Chapter Six.



**Figure 4.1 Relative Frequency of Job Access and Reverse Commute Initiatives Introduced in California, Early-2002**

**Table 4.1 Inventory of Job Access and Reverse Commute Initiatives in California, 2002**

<b>Responsible Agency</b>	<b>Brief Project Description</b>	<b>Project Phase</b>	<b>Funding Amount</b>	<b>Funding Source</b>
<b>1. SCHEDULE EXTENSIONS</b>				
Alameda County: Alameda Contra Costa Transit Authority	Grant was used to extend bus service on AC Transit Line #50 (Fruitvale BART-Alameda) from 9pm to midnight, seven days a week. Line #50 runs from Alameda Point to Fruitvale BART station, Oakland. Alameda Point is a former Naval Air Station which has been converted to housing. A high concentration of CalWORKs, low income and formerly homeless people reside in this housing complex.	Operations (August 2001)	LIFT \$60,000 (2001), matching funds from TANF	MTC LIFT, TANF
Alameda County: Alameda Contra Costa transit Authority	Grant was used to create the North Richmond night time shuttle (AC Transit bus line 376) and extend the hours of operation on route #83/86. Line 376 serves un-incorporated North Richmond, Parchester Village, the Iron Triangle and the Cutting Blvd area of Richmond (from Richmond BART station to El Cerrito Del Norte BART station). These neighborhoods include a disproportionate share of CalWORKs recipients in Contra Costa County. The service runs seven days a week, from 8pm-2am, with 30 minute headways. To increase passenger safety, buses deviate slightly from the normal route at the request of passengers. The service connects low income communities with employment centers and training sites in Richmond, San Pablo, Pinole and El Cerrito. On route #83/86, the hours of operation were extended and new stops were added.	Operations (August 2001)	\$143,000 (1999), \$294,900 (2000)	FTA JARC

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
	The grant was used to extend the hours of operation on several routes: #56, #315, #345, #354, and #362. As a result, the accessibility of residential and employment areas previously not served by transit during the late night hours was increased. Also, child-care and job training facilities became more accessible. The routes connected neighborhoods in West Oakland, Elmhurst, Fruitvale and East Oakland with commercial and employment centers near Oakland International Airport, Downtown, and along International Boulevard and San Pablo Avenue. The routes are in service seven days a week.	Operations (December 1999)		FTA JARC
	The grant was used to extend the hours of operation on several routes: #56, #315, #345, #354, and #362. As a result, the accessibility of residential and employment areas previously not served by transit during the late night hours was increased. Also, child-care and job training facilities became more accessible. The routes connected neighborhoods in West Oakland, Elmhurst, Fruitvale and East Oakland with commercial and employment centers near Oakland International Airport, Downtown, and along International Boulevard and San Pablo Avenue. The routes are in service seven days a week.	Operations (December 1999)		FTA JARC
Merced County: San Joaquin Regional Transit District	To provide transportation when fixed route transit is not available, a dial-a-ride service was established in May 2001. Service is available within and between cities and during the night and on weekends. The service is available to all members of the public and is targeted at low income people working non-traditional hours such as in the cannery.	Operations	\$75,000 (2000)	FTA JARC

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
San Mateo County: San Francisco Municipal Railway	<p>The grant was used to increase service frequencies to 10 minutes and expand services to 24 hours on the MUNI route serving Treasure Island (Route #108). All changes started in September 2001. In January 2002, an additional Peak-hour and 24-hour weekend service implemented.</p> <p>Treasure Island is a former naval base and now houses high concentrations of low income and homeless individuals. It also serves as a job training site for at risk youth (16-25 year olds) through the job corps training program. 850 trainees and over 200 staff participate in the job corps program. Job corps participants come throughout the Bay Area. Access to and from the island is limited to cars, taxis, and MUNI bus service. There is no direct access to Treasure Island by transit from the East Bay. East Bay passengers must first go to the San Francisco Trans Bay Terminal to ride Route #108.</p>	Operations (September 2001)	LIFT \$750,000 (2001), matched by Muni	MTC LIFT, Muni
Contra Costa County: Central Contra Costa Transit Authority	<p>Increased service frequency and extended service hours (including adding Sunday service), on County Connection's most utilized route, Route #114-Monument Blvd. Route #114 operates in an impoverished area of Concord and provides a connection to the Concord BART station. 366 CalWORKs households are within 1/4 mile of the route. Hours of operation were extended and service frequencies increased to reduce headways on # 314 and # 114. There is a significant number of welfare recipients and a large proportion of Hispanic population along these routes.</p>	Operations	LIFT \$330,330 (2001), matched by Measure C, Department of Labor, TANF, BART, CCCTA, Concord CDBG	MTC LIFT and many other organizations

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
San Mateo County: San Francisco International Airport	<p>The grant received in 2000 was supposed to be used to: (1) establish a graveyard shift (12:30am to 5:30am) airport express shuttle linking San Francisco zip codes 94124 (Bayview/Hunters Point) and 94134 (Visitacion Valley) to the San Francisco airport, and (2) extend hours of a neighborhood circulator bus. The neighborhood circulator is supposed to connect people with the airport express shuttle and transport them to San Francisco airport. Airport express shuttle service is to operate seven days per week. The original proposal specified a half hour frequency for the airport express shuttle, but SamTrans has recently initiated an hourly owl service covering a portion of the proposed service, so the airport express shuttle is instead to run every hour. Hours for the neighborhood circulator are to be extended to offer a flexible van service between 5:30am-8:00am and 4:00pm-7:00pm. The vans are to incorporate childcare pickup/drop-off when requested in advance, and would transport riders to designated stops where transfers can be made to Muni, SamTrans and Caltrain transit services.</p>	Planning	\$262,037 (2000)	FTA JARC
City of Davis	<p>The grant proposed to improve transportation services to 400 low-income families in Davis, West Sacramento, and Woodland by expanding the Davis Community Transit demand response service to augment fixed route service in the early and late hours and on weekends. The grant was also to be used to educate CalWORKs participants and staff about commute options. The project never proceeded because seed funding was viewed as insufficient.</p>	Discontinued	Funding not used: \$52,148 (1999)	FTA JARC

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
<b>2. ROUTE EXTENSIONS</b>				
City of San Luis Obispo: San Luis Obispo COG	The grant was used to extend an existing transit route (SLO route #3) south of San Luis Obispo city, to a one-stop job center, past a hospital, industrial parks and airport. Welfare recipients receive job training at the one-stop job center. This route is the only public transit available to the job center. After two years of operation, the route has now become a permanent fixed route service.	Operations	\$193,380 (1999), \$192,041 (2000)	FTA JARC, matching funds from the city.
<b>3. NEW ROUTES</b>				
Calaveras County: Calaveras County Council of Governments, Calaveras Transit	Calaveras Transit was established in Nov 1999. Prior to its establishment, the only available transit service consisted of a dial-a-ride service which focused on serving the needs of elderly participants in the senior nutrition program. The grant was used to expand existing bus services and establish new ones, providing Calaveras residents with access to employment centers in neighboring counties and a vocational training center Columbia College in Tuolumne County. Currently, there are six fixed routes in operation that provide service within the county and have connecting service with two other counties. The bus service has a little over 3% farebox return, whereas the requirement is 10%. Thus, the cost per ride is approximately \$11- \$12. Based on a low ridership rate and high operating cost, the decision has been made to discontinue funding of the service in June 2003. There are no taxis in the county. In the past, there have been several attempts to start a taxi service, but all of them failed. There are 40,000 residents in the county, and locations of residences and work are spread out.	Currently in Operations, but will be discontinued in June 2003.	\$184,014 (1999)	FTA JARC

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
Mendocino County: Mendocino Transit Authority and Mendocino Private Industry Council.	Two bus routes were introduced in Ukiah (Mendocino County) to transport CalWORKs recipients from a rural area to training, school and childcare, also in rural areas. The bus route from Laytonville to Willits (north end of the county along Hwy 101) was introduced in Oct. 1998, and Hopland to Talmage to Ukiah and beyond (south end of county) was started in Apr. 2001. Two buses were purchased for this purpose. The Laytonville-Willits route has been in operation for over three years. It runs three round trips a day along a fixed route (south bound-7am, 11am and 4pm). The service is available to the general public, but CalWORKs recipients have priority. CalWORKs recipients receive free-of-charge monthly bus passes. The Hopland area bus originally had one route. However, recently, the service was split in two different routes: one going from Ukiah to Hopland and to Rancheria (including Indian casino), and the other route running from Ukiah to Talmage. For CalWORKs recipients it provides a flexible drop-off and pickup service.	Operations	\$150,000 (1999) and \$79,368 (2001)	FTA JARC, County Department of Social Services, County Office of Education
Santa Cruz County: Human Service Agency of Santa Cruz, Community Bridges (formerly Food & Nutrition Services/Lift Line.)	Three job access programs were established using the grant. These are a: (1) carpool incentive program, (2) emergency ride home program, and (3) shuttle service and job training program. The shuttle service, Connections Shuttle, began operation in April 1999 and uses vans to transport CalWORKs recipients (mostly women and their children) free of charge to jobs, work -related activities, childcare centers, and school. The shuttle is a partially scheduled door-to-door service operating from 7:00am to 7:00pm Mon to Fri. Community Bridges, a community based organization, received the contract to provide the service. Drivers and dispatchers for the program are CalWORKs recipients who are referred to the program by the county and who obtain job training. Due to an agreement negotiated with the bus drivers union, training cannot exceed seven months. Half the wages for these drivers and dispatchers comes from the grant.	Operations	FTA JARC \$200,000	15% Department of Labor Welfare to Work grant (1999), CalWORKs, FTA JARC (1999)

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
San Diego County: San Diego Metropolitan Transit Development Board and San Diego Health and Human Services	<p>Routes #60 and #905 were established in year 2000. Route #60 is a commuter express service, running north-south on Interstate 15 in San Diego city. The service operates in the morning and afternoon, five days a week. Service is provided from the university town center (north) to Euclid Ave. trolley station (south). The University of California campus and shopping facilities are located in the town center, both providing opportunities for entry-level jobs. South San Diego has a high concentration of low-income people. The ridership figures have been so high, especially in the reverse direction, that in Sep. 2001 two additional round trips, one in the a.m. peak and the other in the p.m. peak, were introduced. Route #905 runs east-west, along the Mexican border from San Ysidro (near the Mexican Customs) to Otay Mesa border crossing (near U.S. Customs). The route passes the job rich Otay Mesa industrial park and provides a connection to the Irish Avenue Trolley station. San Ysidro has a high concentration of low income Hispanics. Service runs every half an hour, Mon to Fri from approximately 5am to 6pm.</p>	Operations	\$650,000 (2000)	FTA JARC
Sonoma County: Santa Rosa Department of Transit and Parking	<p>The grant was used to establish a new bus route (route #15) in Aug 1999 which runs north-south parallel to Hwy 101, serving the growing west side of Santa Rosa. This area of Santa Rosa has a high concentration of low-income people. Route #15 connects this neighborhood to a shopping center, two large business parks, social service agencies and a Native American health clinic. The route operates from 6am to 8pm. In 2000, ridership was 80,868 passenger trips and in 2001 it was 106,590 (for 11 months only).</p>	Operations	<p>\$200,000(1999), \$500,000 (2001), The city used a TAD grant to provide a \$300,000 matching grant.</p>	FTA JARC (1999), MTC LIFT (2001)

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
Alameda County: Alameda Contra Costa Transit Authority	Introduction of several new bus routes connecting low-income communities of South Hayward and West "A" Street with Hayward and South Hayward BART stations and existing AC Transit Lines including: Line #97, Transbay S Line to San Francisco, and proposed Transbay service to Foster City and San Mateo. Outside of Oakland, South Hayward and West "A" street have the largest concentrations of general assistance and CalWORKs recipients in Alameda. The new services will connect these low income communities with the Mt Eden/Eden Landing industrial area and the industrial parks west of Hwy 880, between Winton Blv and Tennyson Ave. AC Transit estimates the new service will assist 1,400 CalWORKs eligible households.	Planning	(2001) LIFT \$750,000, matching funds from TANF and local.	MTC LIFT, TANF, Local
City of San Leandro	Anew, peak hour shuttle service from the San Leandro BART station to an industrial area west of Hwy 880 started in 2002. There are 20,000 jobs and approximately 5,000 entry level-jobs available in this industrial area. The service is operated by a non-profit organization, San Leandro Transit Management organization. There are two 24-25 passenger buses that operate with a 15 minute headway. The service runs only during the peak hours: 6am-10am and 3pm-7pm. Average daily ridership during the last two weeks of March 2002 was 178 riders, twice the original projections. The service is free of charge and well received by the public. The current schedule is coordinated with BART's schedule.	Operations (January 2002)	LIFT \$375,000 (2001), matched by employers in the area.	MTC LIFT, City of San Leandro Redevelopment Agency, BART, employees in the area

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
Orange County: Orange County Transit Authority, Orange County Social Service Agency and UPS.	UPS has a warehouse in Aliso Viejo (south Orange County) and needs workers for the 3:00am-7:00am and the 5:00pm-9:00pm shifts. Transit from north and central Orange County to south Orange County is not available during these hours, so SSA partnered with UPS to plan a shuttle bus service during these hours free of charge to CalWORKs employees. UPS will provide 20hrs of work a week for CalWORKs recipients Mon-Fri. The shuttle service will provide transportation to the work site and back to CalWORKs recipients employed by UPS and their children. The sponsors are waiting on responses from the RFP to determine the number of runs that will be offered. There is to be a guaranteed ride home program for these employees.	Planning	\$62,500 (\$60,000 for shuttle, \$2,500 for guaranteed ride home program.) (1999)	FTA JARC \$31,250, UPS \$12,500 and the county pays remainder. UPS will increase its share once employees show consistency. RFP contract is for six months.
<b>4. NEW FEEDER SHUTTLES TO MAINLINE ROUTES</b>				
Alameda County: Alameda Contra Costa Transit Authority	The project focuses on communities in the Oakland Enhanced Enterprise Community (EEC) which includes West Oakland, East Oakland and Fruitvale/San Antonio districts. EEC neighborhoods are characterized by high unemployment and underemployment. A circulator which transports people from EEC neighborhoods to AC transit trunk lines, including the owl/late night services was established using this grant. The project is focused on linking low-income people with large, 24-hours-a-day employers, including the Oakland Airport and the Port of Oakland.	Operations		Started with Department of Labor money and then later earmarked FTA JARC funding.

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
San Diego County: All Congregation Together (ACT) - a collaboration of churches in San Diego	<p>In Jan 1999, ACT established a shuttle service which provides transportation assistance for welfare-to-work recipients and non-custodial parents. The clients are eligible for up to three rides per day within a six month period. The shuttle service is called Comlink and currently consists of two 15-passenger vans and one 7-passenger van. However, the fleet varies depending on demand. Assistance is targeted at people residing in southeast San Diego's Enhanced Enterprise Community (federally designated areas with high concentrations of low income people). Program participants are transported from their homes to a job training and childcare site (the Work First Center) in southeast San Diego. Service is also provided from San Diego to job and training sites as far north as Rancho Bernardo and Mira Mesa and as far south as Imperial Beach. The shuttle takes participants to training sites located in different parts of the city, UPS, Career-to-work training center and child-care. All but one drivers of the vans are CalWORKs recipients who receive training through RedCross.</p>	Operations		25% Department of Labor Welfare to Work grant, currently researching other sources

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
San Mateo County: Gateway shuttle (Caltrain project)	The Multi-City Transportation Systems Management Agency (MTSMA), a joint powers agency of eight California cities in northern San Mateo County consolidated six private shuttles operated by suburban employment sites into a system of three shuttles from BART train stations and Caltrain stations. The existing shuttles experienced low productivity and often overlapped. The most successful of these new consolidated shuttles is the Gateway Shuttle, a partnership between Genentech, a 2000 employee biomedical firm and Homart, a 2500 employee property management firm. Both sites are located east of freeway 101 and have no public transit service. The grant enabled MTSMA to consolidate the existing private shuttles, adding services from the Glen Park BART station for Homart and increasing headways to 20minutes from BART and 30minutes from Caltrain. As of Dec 1998 average monthly ridership was 5,100 passengers on the BART shuttle and 2,200 passengers on the Caltrain shuttle. Both shuttles run in the morning (BART 6-9:30am, Caltrain 6:50-9:30am) and afternoon (BART 3:30-7pm, Caltrain 3:25-6:10pm), are free and open to the public.	Operations	\$196,000 (1998)	CMAQ
Los Angeles County: Access Services under contract with The Metropolitan Transportation Authority (MTA)	County-wide Welfare-to-work Unanticipated Transportation Needs Services (U-TRANS). Planned to be a 24-hour, seven-day per week dispatching operation with trip assistance. Access Services, provider of ADA-required paratransit services throughout Los Angeles County, will use its multiple service providers to offer fully subsidized trips to participants with a U-TRANS program card. Using a toll free number, a participant can contact a dispatcher who will help with trip planning for travel via a combination of public transit and taxis. The program is a two year demonstration project.	Operations expected to commence July 2002.	\$1 million	\$500,00 from FTA via MTA and a 50% match from Department of Public Social Services (DPSS) CalWORKs

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
Monterey County: Monterey-Salinas Transit	The grant will be used to fund three programs: (1) A one year demonstration project van service for rural areas of Monterey, Salinas and Watsonville. The van will operate as a fixed- route service in the AM and PM peak period and as a dial-a-ride service during the non-peak period. Van service will be available to all members of the public and will either be free of charge or discounted for CalWORKs recipients. (2) A job training program for CalWORKs recipients to learn to drive and operate passenger vans. (3) A three year trip assistance program to provide transportation services for persons with disabilities who are denied ADA paratransit service because they live more than 3/4 miles from the fixed route transit system.	Planning	1) \$487,000; 2) \$488,000 (50% match by social service agency); and 3) \$148,683. (2000-2001)	FTA JARC
Los Angeles County: MTA and multi-passenger vehicle operators	Enhanced Job Search Transportation. Multi-passenger vehicle transportation to be arranged by the Job Club staff, GAIN Services Worker and/or job developer for eligible CalWORKs participants who need to file one or more job applications or one or more job interviews.	Operations expected to commence Oct. 2002.	\$1.5 million	CalWORKs Single Allocation Funds
Sonoma County: Sonoma County Human Services Department	The program has three elements: (1) a shuttle service for school aged children, (2) an off-peak shuttle service for low income persons to access shift work, and (3) a shuttle service for foster teens. Service will provide approximately 900 rides per week and operate in a service area from Windsor south to Petaluma, where a majority of CalWORKs recipients live.	Planning	\$325,000 (2001)	MTC LIFT

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
Los Angeles County: Transit agencies and providers, public agencies, non-profit agencies and community-based organizations under contract with the MTA	Shuttles, Vanpools and other Supplemental Transit Services to Improve Access to Work, Child Care and Health Care. Proposal to utilize existing capacity of multi-passenger vehicles of which there are several hundred shuttles. Services may include expansion of existing fixed route service, use of demand response services as connectors, community-based shuttles and employer-based services	Operations expected to commence Oct. 2002.	\$3.5 million	\$1.75 million from FTA via MTA and a 50% match from Department of Public Social Services (DPSS) CalWORKs
Los Angeles County: Nickerson Gardens Resident Management Corporation (NGRMC) - Los Angeles	NGRMC is a non-profit organization that manages a public housing project with over 5,000 tenants in south central Los Angeles. In the early 1990's NGRMC was awarded funding by LA MTA to organize a Vanpool to provide residents with low-cost transportation to training, interviews, childcare and job sites. Due to lower than expected participation, the service was expanded to include trips to the doctor, shopping and other personal needs. The idea was to create a community-based enterprise. Tenants were employed as drivers, dispatchers, mechanics and administrators for the van service. The program encountered administrative problems, and ultimately the project was not self-sustainable. LA MTA awarded the funds to NGRMC and then tried to incorporate mentoring and management assistance after the fact. By then control had shifted to people at NGRMC that had never managed this type of endeavor before. Although NGRMC were very open to working with the private sector mentors selected to assist in training and operations, project control was out of the sponsoring agency's hands. A better approach would have been to gradually transition control over to NGRMC.	Discontinued	--	--

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
<b>5. USER-SIDE ASSISTANCE</b>				
Contra Costa County: Contra Costa Employment and Human Services Department, Laidlaw Transit	<p>Started in August 2000, Children's Transportation Project provides transportation services to children of welfare recipients. There are 8 vans that take children to and from day-care center and school. This county-wide service is available from 6am to 6pm on weekdays. The program currently serves 100 children, and there are many children on the waiting list. The vans are operated by Laidlaw Transit operator.</p> <p>The service is available only to children, however if a child is younger than 5 years old, the parent can accompany him/her on the bus. Then the bus takes the parent to the nearest transit stop. For the safety of children, there are two adults on each bus: a driver and an aide. At the stop, while one adult stays on the bus, the other one escorts children to their final destination. The department is currently planning on getting two more vans with the financial help of MTC.</p>	Operations		Initially funded by 15% grant from EDD. Now funded by Contra Costa County Employment and Human Services Department
Contra Costa County: Contra Costa Employment and Human Services Department, Laidlaw Transit	<p>Rides-to-Success, a demand-response bus service for welfare recipients was implemented in September 2001 by the Contra Costa Employment and Human Services Department in collaboration with Laidlaw Transit operator. Every client can have fifty (50) free one-way rides within a six-month period. All the rides have to be employment or medical need related. The service is available from 5am until 8pm on weekdays and from 7am until 6pm on the weekend. However, if a client requests a ride 72 hours in advance, s/he can have a late-night ride even past 8pm as long as it is before 1am. Currently, the project offers 25 rides per day during the week and 24 rides on the weekend. It's being considered to extend the six month limit for the clients. Especially for those participants who sign up for a longer term employment related program (e.g., job training).</p>	Operations		Contra Costa County Employment and Human Services Department

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
Santa Clara County: Santa Clara Valley Transit Authority	Employers purchase eco passes for all their full time employees at a discounted rate compared to a standard monthly pass. Employees may then ride all VTA buses and light rail vehicles free. The aim of the program is to encourage transit use. In case of emergency or illness of eco pass holder or family member or if a employer requests eco pass holder to work overtime on that day, eco pass holder may obtain a "emergency ride home" in a taxi, paid for by VTA. This ride is only provided if there is no transit available to the required destination or ride is required outside of transit operating hours. To obtain a taxi ride the eco pass holder requests a ride from their company eco pass representative. This representative books a taxi ride from a list of taxis supplied by VTA and gives eco pass holder a taxi voucher also supplied by VTA. The taxi ride will be paid for even if the destination lies outside of Santa Clara county. 70,000 employees, 10% of the Santa Clara county workforce, are enrolled in the program.	Operations	--	--
Santa Clara County: OUTREACH	OUTREACH recently became the transportation broker for a guaranteed ride home program for CalWORKs recipients. CalWORKs recipients who enroll with OUTREACH qualify for 48 free rides for a six month period. Although OUTREACH does not ask the purpose of the trip, it is assumed the trip will be for work, training and childcare related purposes. The program is well-received and used among CalWORKs recipients. OUTREACH has to reapply for funding for this program every year. In addition to this program, OUTREACH collects the data on transportation needs and challenges of welfare recipients and feeds it back to the transit operators in Santa Clara County every six months. That allows for a better, demand-driven, scheduling of fixed route bus service in the County and largely benefits the local low-income population.	Operations	\$499,882 (1999), \$500,000 (2000)	FTA JARC, County of Santa Clara

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
Tulare County: Tulare County Workforce and Investment Department	Main training center is in the City of Tulare, near Visalia. Two city transit systems and one county transit system work in the vicinity. Through coordination efforts a single bus pass was established for CalWORKs recipients. CalWORKs recipients receive the card free of charge and may use it on any of the three transit systems. A photograph of the card holder is shown on the card.	Operations	Funding continued since 1998.	25% Department of Labor Welfare to Work grant
Ventura County: Ventura County Transportation Commission	In the event of an emergency, individuals who car pool, van pool or take transit to work or training, are eligible for a free taxi ride (if 20 miles or less) or free car rental (if 20 miles or more). An individual or their employer must register for the program. Individuals can use the service if they or a family member is ill, if they have child care problems, if there is a severe family crisis, if their employer unexpectedly requests they work past their regular hours or they are stranded at work because the car pool or van pool driver has an emergency. A maximum of two rides per month are allowed.	Operations	--	--
San Diego County: San Diego Health and Human Services	Implemented a wheels-to-work dial-a-ride pilot program for CalWORKs participants. Funding is expected to run out on June 30 and DHS is searching for additional funds to continue the program. A taxi voucher emergency ride home program is in the planning stage. Negotiations with a contractor are in progress for a car loan program. County cars are donated to the program and then repaired. CalWORKs participants with no other suitable transportation options may obtain low interest loans to purchase the donated cars. Negotiations between DHS and the contractor are currently focused on resolving liability and insurance concerns.	Pilot stage and planning.	--	--

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
Santa Clara County: OUTREACH	The program provides free after-school transportation for children between the ages of 5 and 13. Children who live in low-income families or whose parents are CalWORKs recipients are eligible for the program. The program assists low-income parents to obtain/retain employment or to stay in school by providing their children with convenient and reliable transportation to and from school and by enabling children to participate in after school programs. Run by OUTREACH, the program aims to serve 100 children per year. Currently, approximately 65-70 children are enrolled in the program, and more children get enrolled every week. However, there are enormous difficulties with running the program: large responsibility due to transporting young children, assuring that there will be an adult receiving a child at the destination, etc. Therefore, no more than 5-6 children are added to the program per week. All rides must be prescheduled and an adult must be present at both the pickup and dropoff locations.	Operations started in August 2001.	\$750,000 spread over three years, plus local matching funds of \$750,000.	MTC LIFT and County of Santa Clara Social Services Agency.
Los Angeles County: program management firm under the auspices of the MTA and HACLA	Vehicle sharing pilot program ~ Proposal for creation of small-scale pilot programs at two public housing sites for three years with the concurrence of the Housing Authority of the City of Los Angeles (HACLA). The program will make vehicles available to eligible CalWORKs participants for trips that are not viable by public transportation.	Operations expected to commence Oct. 2002.	\$600,000	CalWORKs Single Allocation funds
Los Angeles County: MTA and DPSS	Enhanced CalWORKs transportation services delivery system. MTA to hire four Transportation Coordinators to be in charge of coordination of transportation services within and between various regions. Duties to include dissemination of information about transportation resources, complex trip planning and collaboration with agencies and businesses to improve access to services.	The program has been put on hold.	\$1.1 million	CalWORKs Single Allocation funds

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
Solano County: Solano County Health and Social Services Agency	Grant will establish a guaranteed ride home program for CalWORKs participants.	Planning		MTC LIFT
<b>6. LOW-INTEREST RATE LOANS</b>				
Contra Costa County: Contra Costa Employment and Human Services Department, and the chosen bank	Auto-loan program that is still in its planning stage. The main goal is to provide welfare recipients with a low-interest car loan. First, the applicant's eligibility is checked through the initial screening process. Then the applicant goes through the Loan Review Committee that decides whether to grant that applicant a loan. The project is based on the Humboldt County model. Currently, there are four banks that expressed their willingness to participate in the project. Only one bank will be chosen. And clients will be required to attend money management and car maintenance courses prior to granting them an auto-loan.	Planning	--	Contra Costa County Employment and Human Services Department, and the chosen bank

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
San Mateo County: Family Loan Program	<p>This program is a replica of the National Ways to Work program. It provides low-interest loans, up to \$3000, to families on welfare and low income working parents to help with one-time job, transportation or education related expenses. The persons eligible for loans had to satisfy three requirements: having been employed for at least three months, have children and have been a resident in the county for at least three months. Consequently, 50% of the applicants did not qualify for a loan based on those criteria. In order to capture that population, the loan program was split into two parts. One program, loan A was designed for applicants who satisfy all three of the above requirements. Loan B program was used for those who did not meet one or more of those requirements. After two years of issuing loans A and B, repayment rate for Loans A was 98% and loans were typically repaid in 24 months. Loans B had a repayment rate of 32%. The Loan B program seemed to be more of a "grant" program as opposed to a loan program. Due to the low repayment rate, Loan B program was discontinued. Since the beginning of the operation, 108 loans have been approved with 67% of all loans used for car purchases. 97% of loan recipients are women. The clients reported 92% decrease in work time missed, 88% reduction in travel time to work and 21% increase in attendance in job-related activities. Besides providing access to funds, the program also aims to educate potential loan recipients on how to apply for a loan and fill out a loan application.</p>	Operations	--	CalWORKs, McKnight Foundation, Peninsular Community Foundation, Packard Foundation, Family Service Agency of San Mateo County and San Mateo County Human Services.

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
Ventura County: Many Motors	In Jan 1999, the Many Motors program was established by the non-profit agency Many Mansions as a fundraising program. Many Motors accepts donations of cars from individuals, government and corporate fleets. It inspects and repairs the donated cars using volunteer mechanics and then sells them to qualified CalWORKs recipients. The county screens CalWORKs recipients and makes referrals to Many Motors. Ventura County's credit union provides the financing for the cars which generally cost about \$1500 and \$2000. To qualify a CalWORKs recipient must be working and be able to pay about \$75 to \$145 a month towards the car loan. Lease proceeds accumulate in a special fund that can be used to buy more vehicles or used by Many Mansions building fund. The max loan is \$3000.	Operations	--	Ventura County and others.
Santa Clara County: Family Loan Program	Replicate of the National Ways to Work program. This program was set up after San Mateo's program. It receives funding from TANF.	Operations	--	TANF

#### 7. MULTIPLE PROGRAMS: SCHEDULE EXTENSIONS & NEW OR REVISED ROUTES

Contra Costa County: Contra Costa Employment and Human Services Department, Golden Gate Transit	In the attempt to connect Richmond residents looking for entry-level jobs in Marin County, at the end of 2001, operating hours on Route #40 were extended. Route #40 connects Contra Costa County and Marin County and goes through San Rafael, San Quentin, Richmond BART station, and El Cerrito Del Norte BART station. The service improvements provide better access to entry-level jobs and a direct connection with BART. North Richmond is an isolated community with a high density of local welfare recipients and limited transit access. In addition to offering evening and late-night services, service frequency was also increased. Buses were also rerouted to stop at major employment centers along the corridor.	Operations	LIFT \$536,000 (2001), matched by Measure C, Marin County, City of Richmond community development, Richmond employment and training, TANF, Department of Labor, AC Transit	MTC LIFT and many other organizations
---	--	------------	--	---------------------------------------

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
San Mateo County: Redwood Coast Transit and County of Del Norte Department of Health and Social Services	Hours of the fixed route bus network were initially extended to 7am to 11pm using JARC grant. These hours have since been reduced. However, to supplement the existing route, in September 2001, another bus route was added. The new bus route services Hawllend Hill area, which has many welfare recipients. In March 2002, the agency added one additional hour of service to the Hawllend Hill route and reduced an hour on the other route. The extended bus service enables CalWORKs recipients to commute to Hawllend Hill and Crescent City where most of the local jobs and key training and social service sites are concentrated. The Social Service Agency provides free bus passes to CalWORKs recipients. All other users of the service are charged a fare.	Operations	\$73,250 (1999)	FTA JARC
Placer County: Yuba-Sutter Transit	In 1999 Yuba-Sutter Transit initiated the new services, the Lincoln commuter express bus and expanded their urban dial-a-ride service. The commuter express bus provides service from Yuba City, goes through Marysville, Linda and Wheatland to the high technology employment center near the Lincoln Airport west of highway 65 in Placer County. This industrial park has large numbers of entry level jobs (\$7-\$9 per hour). Yuba City has high concentrations of welfare recipients. Two round trips are provided each weekday, 4:45am and 2:55pm. The service currently has a ridership of 5.6 passengers per service hour. Transit service in Yuba City, Marysville, Linda and Olivehurst, all urban areas, end at 6:30pm. Since the fastest growing sector for entry level jobs is the retail sector, and many of these retail jobs have evening shifts, Yuba-Sutter Transit extended their paratransit dial-a-ride service to 9:30pm on weekdays and during the hours of 6pm and 9:30pm all members of the public may use the service. The fare charged is lower than that during the day and fixed route transit passes are accepted.	Operations	FTA JARC: \$101,700 (1999), \$98,500 (2000). Both matched locally. In 2001 received JARC ear marked grant.	FTA JARC, matching funds from TANF and Department of Labor.

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
Sacramento Regional Transit District, Department of Human Assistance	Between 1999 and 2000, the grant was used to extend the service hours on 13 routes. In June 2001, a new route, Route #75 will be introduced between Mather Field/Mills light rail station and Mather Field.	Operations	Competitive JARC grants: \$800,000 (2000), \$822,849 (1999). Earmarked JARC \$700,000 (1999), \$661,372 (2000) & \$632,944 (2001).	FTA JARC
Kern Regional Transit Authority	Over 90% of entry level jobs and training centers are in Bakersfield, an urban area, while most of the areas low-income population live in Kern River Valley, a rural area. Bus service from Kern River Valley to Bakersfield has been increased from 9am (arrive in Bakersfield)-4:30pm (leave Bakersfield) to 7:30am-5:45pm. A new route from Lake Elizabeth to Bakersfield was also introduced. Two additional routes are in the planning process, and will operate within Kern River Valley from 5:30pm to 7:30pm.	One route in operation and two in planning.	\$239,000	FTA JARC (1999)
City of Los Angeles Route 422	A long-distance fixed-route bus service that runs from south-central Los Angeles through downtown and to a long stretch of the San Fernando Valley. This service was introduced by the city of Los Angeles, in concert with the Metropolitan Transit Authority (MTA) explicitly to serve reverse-commute needs.	Operations (2001)	City of Los Angeles and MTA	FTA JARC and local-source funds

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
<b>8. MULTIPLE PROGRAMS: ROUTE EXTENSIONS &amp; NEW ROUTES</b>				
Tulare County: County of Tulare Health Services Agency	The County of Tulare Health Services Agency contracted with the City of Visalia, City of Tulare and Tulare County Transit Authority to expand some existing routes and create some new routes. Unemployment rates are high in these cities. City of Visalia's contract involved extending an existing route to go through an industrial park. City of Tulare's contract increased service within the city and County of Tulare Transit Authority contract expanded and provided new service between counties. Services provided by the City of Visalia and Tulare County Transit contracts have experienced continued ridership increases and will continue to operate. City of Tulare's contract will be cut due to poor ridership figures.	Operations	\$200,000 (1999)	FTA JARC
<b>9. MULTIPLE PROGRAMS: NEW ROUTES &amp; USER ASSISTANCE</b>				
Yolo County: Yolo County Transportation Commission	The grant was used to fund three projects: (1) Increased bus service from downtown Sacramento to West Sacramento industrial area. (Route 240). Service runs during the weekdays, between 7:30am-8:15am and 4:30pm-5:30pm. (2) New bus service (Route 215) from Cache Creek Indian Casino (an un-incorporated area) to Woodland. Cache Creek Casino is the site of many entry level jobs and Woodland is the location of the shopping district and community college where training for low income people is available. (3) Increased local bus service (Routes 210, 211) in Woodland.	Operations	FTA JARC \$139,695 (1999) and joint application with Sacramento Regional Transit District for FTA JARC fund (2000)	FTA JARC and matching funds from TANF, Transportation Development Act and Indian Tribal Council.
San Mateo: San Mateo Human Services	The grant will fund two programs to assist low income people. 1) A midday shuttle service from Caltrain and SamTrans stops to the Human Services Agency One Stop Center. Job training and worker services are available at the center. 2) free taxi vouchers for a guaranteed ride home program.	Planning	\$320,000 (2001)	MTC LIFT

Responsible Agency	Brief Project Description	Project Phase	Funding Amount	Funding Source
<b>10. MULTIPLE PROGRAMS: FEEDER SHUTTLES &amp; USER ASSISTANCE</b>				
Orange County: Anaheim Transportation Network	The grant was used to establish five programs which focus on assisting CalWORKs recipients transition into work. The programs commenced operation in August 2000 and funding is available for two years of operation. Five components make up the program. 1) Staff assess clients transportation needs and advice about available transportation options. 2) Provide taxi rides for interviews up to six one way rides per calendar year. 3) Off peak hours (10pm-3am) door to door shuttle service. Clients must be referred by CalWORKs. First six months of rides are free, second six months the client is expected to pay 50% of cost. 4) Van pool shuttle, similar to the off peak hours shuttle, but operates between 5am-10am. Accommodates clients who are job searching. 5) Car pool matching.	Operations	\$650,000 (2000)	15% Department of Labor Welfare to Work grant.

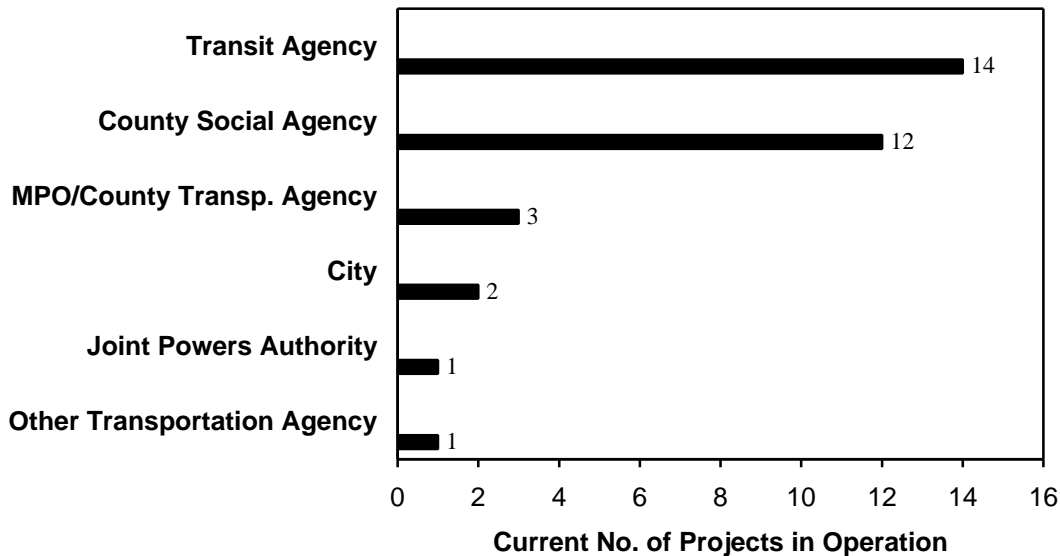
The third most frequent type of job-access and reverse-commute initiative to date has been some form of user assistance. These initiatives represent special programs targeted at individual beneficiaries, including child-transportation services, guaranteed-ride home programs, specialized carpool and vanpool services, and the provision of transit passes. Funds for user assistance have come from a wide array of sources, including JARC, CalWORKs, private foundations, and local government accounts. Chapter Five reviews user-assistance programs in Santa Cruz and Contra Costa Counties.

The fourth most common type of initiative has been special shuttle operations, normally as feeders between neighborhoods and mainline bus or rail-transit routes. Many of the shuttle programs listed in Table 4.1 are still in the planning stages. AC Transit's shuttle program connects several poor Oakland neighborhoods to major trunklines that serve large employment centers, including the Port of Oakland and the Oakland International Airport. In San Diego, a congregation of faith-based organizations and churches, called ACT (All Congregation Together), has joined forces to provide "Comlink" shuttle-van services to employment and job-training centers. San Mateo County's program is unique in that Congestion Management and Air Quality (CMAQ) funds were obtained, under the Federal Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21), to connect BART and Caltrain commuter rail stations with large employment centers. A similar program provides shuttle-van connections to major job hubs in Orange County. An example of a failed initiative was the Nickerson Gardens Resident Management Corporation shuttle program. This was a well-intended effort to not only provide connectivity between a poor inner-city neighborhood in southeast Los Angeles and job sites, training centers, and day-care facilities, but also to train local residents in driving, maintaining, dispatching, and managing the van services. High costs and a lack of accountability for the program's expenditures led to its eventual demise in the early 1990s. Critics contend the program failed largely because there was not the in-house institutional capacity to properly manage the enterprise, and that in hindsight, it would have been best if management responsibilities were gradually transitioned from public sector to local residents.

Next in order of frequency have been programs that provide loan assistance for purchasing, maintaining, and insuring private automobiles. The most notable and successful loan program to date has been mounted in San Mateo County, courtesy of funding from numerous public and private sources. Experiences with this program are reviewed in Chapter Eight.

Lastly, there have been two cases where an existing transit route has been extended (as opposed to an entirely new route being introduced): in San Luis Obispo County, wherein a local bus route was extended to connect with a one-stop job center, and Tulare County, where the County Health Services agency secured a JARC grant to extend routes to job clusters (although, at the time of this writing, the future of these route extensions were in doubt because of poor performance).

All and all, a wide array of stake-holder groups and interested parties has been involved in introducing job-access and reverse-commute initiatives in California. Figure 4.2 lists the relative frequencies in which various entities have taken the lead in introducing the programs outlined in Table 4.1. To date, transit agencies have been most actively involved, followed closely by county social and health services agencies.



**Figure 4.2 Relative Frequencies of Entities Taking Lead Initiative to Introduce Job Access and Reverse Commute Programs in California, Early-2002**

While the focus of the remaining chapters in Part Two is on transportation initiatives, it should be kept in mind that many other factors beyond separation from workplace conspire to make finding and keeping a job difficult for many disadvantaged Californians. Other significant barriers to job placement and retention include child-rearing responsibilities, minimal education, limited job and job-hunting skills, untreated mental and physical illnesses, substance abuse, and criminal records. Transportation strategies need to be coordinated with other measures to effectively remove roadblocks to employment.

### 4.3 SUMMARY

Overall, a rich assortment of job-access and reverse-commute services has been introduced in California to date. Many other improvements can be expected in the next few years as some programs move from the conceptual planning to the implementation stage. A wide array of funds have been tapped into to support these programs, including JARC funds, CalWORKs payments, Department of Labor Welfare-to-Work grants, local-source funds, and private foundation support. So far, transit agencies have been most active in introducing programs, followed by County social and health services departments. Regional planning organizations, county transportation agencies, municipal governments, and joint powers authorities have also played lead roles in some areas.

The remainder of Part Two presents case-study materials that examine some of these initiatives in greater detail. In combination, case experiences provide insights into what has worked well, what has not, and what policy changes might be introduced to best achieve the

intended objective of job-access and reverse-commute programs – namely, to enhance mobility so that disadvantaged individuals can find and retain gainful employment.

## Notes

---

- <sup>1</sup> The JARC grant program assists states and localities in developing new or expanded transportation services that connect welfare recipients and other low-income persons to jobs and other employment-related services. Job Access projects are targeted at developing new or expanded transportation services such as shuttle vanpools, new bus routes, connector services to mass transit, and guaranteed ride home programs, among others. Reverse Commute projects focus on transportation services to suburban employment centers from urban, rural and other suburban locations, for all populations (not just welfare recipients). All projects funded under this program must be part of a collaborative planning process that includes states, metropolitan planning organizations (MPOs), transportation providers, agencies administering Temporary Aid for Needy Families (TANF) and Welfare-to-Work funds, and other stakeholder groups. In urbanized areas with 200,000 inhabitants or more, MPOs select applicants. In urbanized areas under 200,000 population and in non-urbanized, rural areas, states select applicants. JARC funds are provided as competitive one-year grants, and a 50/50 Federal/local match is required. For more information about the JARC program, see: <http://www.fta.dot.gov/wtw/jarcfgs.htm>.
- <sup>2</sup> Administered through the California Employment Development Department (EDD), the Governor's 15 Percent funds, authorized under the Welfare-to-Work (WtW) Grant Program of the federal Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA), provides funds to public, private non-profit, and private for-profit entities through a Solicitation for Proposal (SFP) process. The purpose of the 15 Percent funds is to target exemplary projects that move hard-to-employ California Work Opportunity and Responsibilities for Kids (CalWORKs) recipients into lasting unsubsidized jobs. For more on this program, see: <http://www.edd.ca.gov/wtows15.htm>.
- <sup>3</sup> The *Manual of Policies and Procedures (MPP)* of the Department of Social Services of the Health and Human Services Agency of the State of California states, in Section 42-750.11: "Necessary supportive services shall be available to every participant in order to participate in the program activity to which he or she is assigned or to accept or retain employment." Transportation is one such "supportive service". State law prohibits the "capping" (or limiting the amount a county will pay a participant for) transportation services. Requiring CalWORKs participants to use their incomes or cash assistance payments to pay for transportation also violates state statute and regulations. State policies also acknowledge that participants may find it necessary to utilize multiple public transportation carriers to meet job-access needs. State regulations do not exclude payment for fixed-rate public or private transportation. Depending upon a client's transportation needs, methods of payment can include the provision of a bus pass or reimbursement for mileage for the use of a private automobile or for bus fares. Counties can provide additional types of transportation not specifically mentioned in regulations, such as carpool and vanpool services. CalWORKs legislation also recognizes that for parents of school-age children, reliable transportation may be necessary to take children to and from child-care centers or schools.
- <sup>4</sup> Personal contacts were made at the recommendation of individuals from the state Department of Social Services, Employment Development Department, and panel members overseeing this study, among others.

## **Chapter Five**

### **Menus of Mobility Options: Santa Cruz and Contra Costa Counties**

#### **5.1 INTRODUCTION**

Two areas in California that have gone the farthest in crafting menus of transportation options for meeting the mobility needs of welfare clients are Santa Cruz and Contra Costa Counties. In both instances, professionally trained social workers meet with clients to select the right mix of transportation services that best meet personal travel needs. While expanding choices adds cost, over the long run proponents hope that these added expenses will more than offset by reduced welfare enrollments and outlays for public assistance.

#### **5.2 SANTA CRUZ COUNTY**

Santa Cruz County has mounted one of the most impressive and successful set of transportation programs aimed at promoting welfare-to-work anywhere in the state. This is all the more impressive in that considerable parts of the county are rural in character. The county's four incorporated municipalities (Watsonville, Capitola, Santa Cruz and Scotts Valley) comprise 47 percent of total county population (of 257,000 in year-2000) however just 5.4 percent of total land area.<sup>1</sup> The County has three main employment hubs in the county: Santa Cruz, Capitola and Watsonville. Watsonville is a federally designated Enhanced Enterprise Community.

##### **Inter-Metropolitan Commuting Issues**

High housing costs have greatly influenced the commuting patterns in the county. (The city of Santa Cruz was recently ranked by the National Homebuilder's Association as the most expensive housing market in the nation.) Most county residents live in semi-rural unincorporated areas where housing is considerably cheaper, and commute to Santa Cruz for jobs and training.

Santa Cruz County has an extensive public bus network, however the vast majority of residents travel by car. Even low-income residents rely heavily on private automobiles. A 1998 survey of 424 county CalWORKs participants found 58 percent owned a car and 50 percent drove or carpooled for most trips.<sup>2</sup> This car ownership rate amongst CalWORKs participants is high in light of national statistics showing car ownership amongst welfare recipients is less than 10 percent.<sup>3</sup>

Car breakdowns and difficulty paying for vehicle maintenance, insurance, and registration are problems encountered by CalWORKs participants who own a car or carpool. Over half the surveyed CalWORKs participants reported that they could not legally drive because of either an expired car registration or an absence of liability insurance. Being poor also makes it difficult for many CalWORKs participants to pay traffic fines. Minor traffic infringements, if

not dealt with promptly, can become major financial burdens. Recovering a towed vehicle can run into the hundreds of dollars.

Riding transit also poses problems. Because of the county's job-housing imbalance, many welfare recipients incur long travel times aboard buses and making transfers. Having to make one to three stops on the way to work to drop off children further adds time to some bus users.

### **A Menu of Mobility Options**

To address the diverse transportation needs of CalWORKs participants, the Santa Cruz Human Resources Agency (HRA) has introduced a menu of transportation programs. These programs include a door-to-door shuttle service, emergency rides home, carpool incentives, work-related emergency payments, mileage reimbursement, and bus passes. To minimize teething problems and uncertainties often associated with new programs and to reduce costs, all initiatives are extensions of existing programs or operated in concert with human-services organizations with similar programs.

Since over two-thirds of the county's CalWORKs participants are children, addressing the transportation needs of kids in addition to those of their parents is essential to inducing welfare-to-work transitions.<sup>4</sup> Thus, some of the county's mobility initiatives are specifically targeted at the travel needs of children and parents with kids.

### **Client-Based Services**

It was understood early that county social workers were not sufficiently knowledgeable about transportation services and mobility options, thus one of the first steps was to train staff in this area. In the late 1990s, Santa Cruz transit officials conducted several training sessions to acquaint staff that work with CalWORKs participants with available transportation services. This enabled HRA Employment Training Specialists (ETS) to better assess the transportation needs of their clients and advise them on available mobility options.

Through discussions with each client, a specialist comes up with the best travel schedule for the client to get to work or training and, if necessary, to drop off children at a day-care center or school. The ETS then contacts the Santa Cruz Transit District to determine all transit options available and documents the results in a Transit Trip Planner form. If transit is not a reasonable option, the ETS reviews other transportation alternatives and available assistance. Only after the ETS has exhausted all other transportation options and determined none will adequately get a client to work or training will the client then be considered eligible for the Connections Shuttle. A Connections Shuttle referral form is completed documenting the reasons why transit is not considered a reasonable option.

### **Santa Cruz Connections Shuttle**

The connection shuttle provides high-quality door-to-door van services, though because of high costs, it is considered an option of last resort. It has also encountered problems,

including criticism by organized labor. This section reviews experiences with the shuttle program.

### **Service and Organizational Features**

The Connections Shuttle service is a dial-a-ride, door-to-door service introduced for CalWORKs participants and their children. It not only *connects* needy people to jobs, but also *creates* jobs. Specifically, CalWORKs participants are trained and hired to drive vans, enabling them to obtain their Class B drivers' licenses and gain firsthand experience in the van business. The program is novel because it "kills two birds with the one stone" — it both provides needed transportation services to clients and trains people to themselves become transportation service providers, augmenting the supply of persons trained in this field. Training to become a driver or dispatcher is not considered an end-state job; once training is completed, individuals are expected to find a job in the transportation field on their own.

Operations began in early-1999 with two vans and four employees. The Connections Shuttle now has six nine-seat vans, 10 drivers, two dispatchers and several administrative and management staff. Service is provided from 7 A.M. to 7 P.M. weekdays to all parts of Santa Cruz County including un-incorporated areas. A non-profit organization, Community Bridges (formerly Food and Nutrition Services Inc.) operates the Connection Shuttle. Community Bridges provides several other services including Santa Cruz's Americans with Disabilities Act (ADA) paratransit service, called Lift Line.

Most trips during morning peak hours are inter-urban, starting in the Watsonville area and ending in central Santa Cruz. The average trip length is about four miles. All rides must be scheduled at least 24 hours, and sometimes up to a week, in advance and riders must be registered with the service. Referral and registration is done through the Santa Cruz HRA. As part of the registration process, participants must list all destinations they may need to go to for training and work. These can include child-care centers, counseling services, medical clinics, and drug stores. Only under exceptional circumstances will the shuttle service go to other destinations. Rides are provided on a first-come/first-serve basis and the operator may deny a ride if no seat is available. Subscription rides may be arranged if the participant needs to ride to the same place at the same time on a weekly basis.

Connections shuttles operate on a 30-minute pickup time window. The shuttle can arrive as much as 15 minutes before and as late as 15 minutes after the scheduled pickup time. The CalWORKs participant must be ready during this period. A no-show will result in a passenger's future rides being canceled, including subscriptions.

### **Connections Shuttle Eligibility Requirements**

The Connections Shuttle provides transportation to CalWORKs participants and their children to work and training-related activities, free of charge. Rides may be provided while participants are in the CalWORKs program and up to twelve months after leaving aid. Santa Cruz HRA considers this to be sufficient time for the CalWORKs participant to transition into a stable job, and either purchase a car or find a suitable transit alternative.

To be eligible for the Connections Shuttle service, CalWORKs participants must meet several requirements. One, travel to work or training sites must exceed one hour one way or two hours round trip, exclusive of the time it takes to drop-off and pickup children. Two, the nearest bus stop must be more than one-half mile from a person's home, childcare destination, workplace or training site, or the number or age of children makes it difficult to take transit. Where possible, Santa Cruz HRA encourages clients to patronize public transit for at least part of trip.

To qualify for the Connections Shuttle job training program, an individual must: be a CalWORKs participant, not have a conviction, have a relatively unblemished car insurance and driving record, and not have had his or her driver's license suspended or cancelled. In late-2001, trainees were initially paid \$6.91 per hour and after receiving their Class B license this increased to \$8.41 per hour.

Besides providing trainees with driving and dispatching experience, the program also focuses on providing them with customer service and conflict management skills and building confidence. Training is limited to a maximum of seven months.

Between the program's inception in early-1999 and late-2001, 57 CalWORKs participants had enrolled in the job-training program. Of those, 82 percent received a Class B driver's license and/or a dispatcher's certificate, 7 percent dropped out before receiving any certificates, and 11 percent were still enrolled. Those who dropped out did so in the first few weeks of training.

The program has been fairly successful at creating jobs. Once becoming credentialed, 33 percent of trainees obtained employment with Lift Line (the ADA paratransit operator), 21 percent obtained work in other transportation-related jobs (e.g., airport van shuttle operators), 9 percent obtained work in jobs unrelated to transportation, and 18 percent were either still in training or had their training period extended beyond the seven months. Most of the remaining trainees were prevented from working due to illnesses.

### **Connections Shuttle Ridership Trends**

Ridership on Connections Shuttle shot up after the first year of operations, and has since stabilized. From April 1999 to December 1999, 111 CalWORKs recipients received 13,453 passenger rides, or around 1,500 rides per month. The second year of operation saw ridership numbers grow to 172 CalWORKs participants who made 27,915 trips, or over 2,300 rides per month. In year 2001, ridership dipped some and then flattened out to a rate of 1,600 per month.

From a ridership survey taken in April 2000, the majority of shuttle trips were taken by children -- 54 percent of trips were to day-care facilities and 3 percent to schools.<sup>5</sup> Other trip purposes were: work (27 percent), training (12 percent), job interviews and searches (1 percent), and supportive activities (3 percent).

### **Connections Shuttle Funding and Costs**

Funding for the Connections Shuttle comes from multiple sources: FTA's Job Access Reverse Commute (JARC) grants, Department of Labor Welfare-to-Work grants, TANF, and county assistance. The contract operating costs for the July 2001 to June 2002 fiscal year was \$255,000, 58 percent of which went to salaries and benefits. This pencils out to a cost per ride of \$14.14, more than ten times the cost of riding a local bus.

### **Institutional Issues**

The Santa Cruz Metropolitan Transit District (SCMTD) and the United Transportation Union voiced concerns about the Connections Shuttle during the initial planning stages. SCMTD was concerned mainly about losing bus riders to the shuttle service. Partly for this reason, Connections Shuttle eligibility was limited to CalWORKs participants who cannot reasonably use fixed-route transit and who have no other transportation options available to them. Geographic information system (GIS) maps documenting the locations of people on aid, child-care centers, transit routes, and bus stops were provided to SCMTD by Santa Cruz HRA to assist the transit agency in identifying routes that may be in high demand by people on financial aid. This goodwill gesture helped to diffuse opposition to the shuttle services.

The United Transportation Union opposed the shuttle service on the grounds that its trainee drivers and dispatchers would displace permanent workers. To address this concern, the Connections Shuttle job-training period was limited to seven months (though Connections Shuttle management reserves the right to extend an individual trainee's training period if there is a shortage of drivers). By enabling CalWORKs participants to obtain bus driving credentials, the Connections Shuttle is also providing a benefit to transit agencies and commercial paratransit vendors: expanding the pool of trained individuals to recruit from. Also, many former trainees obtain employment with Lift Line, whose work force is unionized, thus the program has also increased the pool of unionized workers.

Strict regulations governing transportation of children was another major hurdle faced during startup. The Department of Motor Vehicles (DMV) requires stricter driver licensing requirements for buses with more than nine seats that transport children, even if only a single child and a mother is being carried. To avoid these strict regulations, all vehicles used by the Connections Shuttle are nine seat vans. Smaller vans unavoidably add to the cost per rider, however.

Operational features of the program posed additional challenges. Trainee recruitment and training had to be carefully coordinated to ensure sufficient numbers of drivers were available at all times to provide rides. More recently, finding driver-trainees has proven difficult, apparently because the pool of those inclined to join the program has been significantly tapped into over the past few years. Staff at the Connections Shuttle also hypothesize that low wages combined with a strong economy have created other, more better-paying job opportunities for CalWORKs participants.<sup>6</sup> Inadequate outreach to CalWORKs participants informing them about the program may be another factor. The Connections Shuttle management and Santa Cruz HRA considered raising the trainees' wages but chose to keep them at current levels to promote the program as a training program, not a permanent job. Low wages encourage trainees to move to higher paid jobs

once they graduate and thus frees up a trainee position for others. Low wages also help to stretch out the budget for the program.

### **Emergency Ride Home Program**

The need for a car in case of an emergency is a reason commonly given for not carpooling or taking transit. The emergency ride home program provides free taxi vouchers to ridesharers and transit users when emergencies – e.g., a child gets sick at school, a sudden medical illness -- arise.

Santa Cruz Area Transportation Management Association (TMA) operates the county's emergency ride home program for the general public. Since August 2000, it has sponsored an emergency ride home program specifically for CalWORKs participants. The program is funded through the Federal Transportation Authority's JARC grant program.

All CalWORKs participants may use the emergency ride home program. Rides are allowed if: the CalWORKs participant or a member of their family become ill; there is a family crisis; the CalWORKs participant has unexpectedly been asked to work beyond regular working hours; or the CalWORKs participant has been stranded at work because the carpool driver had to leave early or stay late.

The county's TMA has made special arrangements with two taxi companies in Santa Cruz County to guarantee rides home. A cab fare that is 10 percent below the market rate has been negotiated, however a 10 percent surcharge is added to all fares as a tip to the driver. This makes cab drivers responsive to emergency-ride-home requests. CalWORKs recipients are provided with taxi vouchers in advance, and in an emergency the CalWORKs participant must contact the cab company directly to organize a ride. At the end of the ride, the driver and the CalWORKs participant fill out the voucher and the cab company bills TMA.

So far, the program has been used sparingly. Over a recent one-year period, 38 CalWORKs participants utilized the emergency ride home program and a total of 90 rides were supplied. This averages out to just 7.5 rides per month. The average emergency ride home trip is 8.7 miles in length costing an average cab fare of \$21.75.

### **Carpool Incentives Program**

Another mobility option introduced in the county is a carpool incentives program that encourages CalWORKs participants to share rides. Financial incentives are provided to CalWORKs participants who agree to be the driver of a carpool or a passenger who carpools for at least two days per week. Operated by the Community Action Board (CAB), the carpool incentives program was launched in October 2000. One year into the program, 32 CalWORKs participants had enrolled as carpool drivers or carpool passengers and a total of 59 incentive payments were made. Two friends traveling to work together, one of who is a CalWORKs participant or a CalWORKs participant dropping a child off at school before going to work, are classified as a bona fide carpool. However, only the CalWORKs participant is eligible for a financial incentive payment.

CalWORKs participants who sign up as drivers can receive a one-time sign-up bonus. Sign-up bonuses, \$200 or less in value, can be used for a vehicle tune-up, purchasing new tires, or buying insurance. After sign-up, the CalWORKs carpool driver may receive monthly incentives of either a free tank of gas, an oil change, a smog check (up to \$25 in value), or a one-month insurance payment (up to \$50 in value). Instead of monthly incentives, carpool drivers can elect to receive a three-month incentive payment provided they carpool for three consecutive months. The three-month incentive payment cannot exceed \$200 in value, and can be used for a tune-up, new tires, or insurance. CalWORKs participants who agree to be passengers in a carpool can receive a \$10 monthly gift voucher for clothing.

During interviews, the CAB coordinators reported that recruiting new CalWORKs participants has so far been a challenge. Employment Training Specialists see their CalWORKs clients as little as once a month, and because time is often short, many times this specific program option never gets mentioned during sessions. Furthermore, providing information about the program through written material alone is not sufficient to fully explain the program, with all of its conditions and options. Follow-up conversations by phone and in person are essential if welfare clients are to fully understand what the program involves. Also, coordinating the activities of Santa Cruz HRA staff, CAB staff, and CalWORKs participants has not always been easy.

All individuals receiving CalWORKs assistance, up to one year after leaving aid, are eligible for the carpool incentives program. The program costs around \$6,600 per year to operate, or around \$154 per participant. The most popular incentive has been tune-ups, consuming 40 percent of the budget. Insurance has accounted for 24 percent of expenditures, followed by tire purchases (16 percent), gas (or oil change or smog checks) (11 percent), one-month insurance (6 percent), and clothing gift vouchers (3 percent).

### **Low Interest Loan Program**

In late-1999, the Family Loan Program of Santa Cruz program was initiated, providing low-interest rate loans for car purchases. This program is a replica of a program with the same name designed by the McKnight Foundation in 1984 and introduced in other parts of the United States, including San Mateo County (reviewed in Chapter Eight). The idea originally stemmed from a dinner party hosted by the McKnight Foundation attended by low-income families. When asked what would most help them manage their lives better and increase their ability to be self sufficient, the families overwhelmingly said financial assistance to help address large, one-time expenses that were keeping them from getting better jobs or pursuing educational opportunities.<sup>7</sup>

Santa Cruz County's Family Loan Program provides loans of up to \$3,000 to applicants who can demonstrate that the loan will enable them to further their education or to start or keep working. The most common uses for the loan money are car purchases, car repairs, acquiring tools and uniforms for work, child-care services, and help with housing costs. Besides providing financial assistance and helping needy persons accumulate assets, the program also enables clients to develop financial management skills and build or repair damaged credit histories.

Between November 1999 and August 2001, the Santa Cruz Family Loan Program received 120 applications of which 50 were approved. Only 34 of these 50 applications were eventually funded. Over this period, 68 percent of loans went for car purchases, 12 percent for car repairs, 15 percent for housing payments, and 6 percent for other uses.

Loans are provided for a maximum of 24 months at an interest rate of 6 percent. To date, the average loan has been \$2,456. The maximum monthly repayment amount is \$134. The typical loan recipient is female (88 percent), employed (68 percent) or in school/training (24 percent), has two children (44 percent), is White (50%) or Hispanic (35%), and earns about \$1,547 per month. Most recipients did not own car at the time a loan was issued.

To be eligible for a loan, an applicant must be a resident of Santa Cruz County with physical custody of dependent children that are 17 years of age or younger (or for children in high school, 18 years of age or younger). The parent must have been working for 20 hours per week for the past three months or have been in school or vocational training equivalent to 20 hours per week. Also, the parent must have a family income less than 80 percent of the median family income in Santa Cruz County for a comparable size family, and must be able to demonstrate he or she can make monthly loan payments. To date, the loan default rate has been 15 percent.

The program is not just about doling out money. After a loan has been approved, the applicant must attend a financial management workshop. The person's loan-application file then goes to the Santa Cruz Community Credit Union for processing and the client becomes a bank customer. The bank services the loan in the same way as any other personal loan, and the loan recipient makes monthly repayments to the bank.

Fiscal oversight of the program is provided by the Family Service Agency of the Central Coast and an advisory group with representatives from partnering agencies. Funding is provided by private foundations and the Human Resources Agency of Santa Cruz County. The loan pool, including the default reserve, is \$320,000 and the program's three-year operating budget is \$171,300 (plus administrative costs to Family Service Agency).

Outreach to potential participants, especially employed parents who are not involved with social service agencies, has been the program's greatest challenge to date. An Advisory Committee, comprised of community partner representatives, and resource referrals by the HSA have helped in marketing the program.

### **Work-Related Emergency Payment Fund**

With very little savings to draw upon, unforeseen emergencies can often cause CalWORKs participants to miss or even quit work. The work-related emergency payment fund helps needy individuals cope with such emergencies. Partly funded from the Department of Labor Welfare-to-Work grants, the payment program was inaugurated in early-1999. Staff at the Career Works Division of the Santa Cruz HRA determine eligibility for the program and refer persons to the Community Action Board (CAB) which operates the program. CalWORKs participants are eligible for an emergency payment if they are participating in work-related activities, including training. For car-related emergencies, several additional criteria must also be met: the emergency must be unforeseen, alternative transportation must

not be feasible or available, and the cost of car repairs must not be greater than the value of the car.

To date, around 750 work-related emergency payments have been made per year to some 500 CalWORKs participants. Car-related expenses have consumed 55 percent of the program's budget. Around 90 percent of car-related expenditures have gone to car repairs.

### **Mileage Reimbursement and Bus Passes**

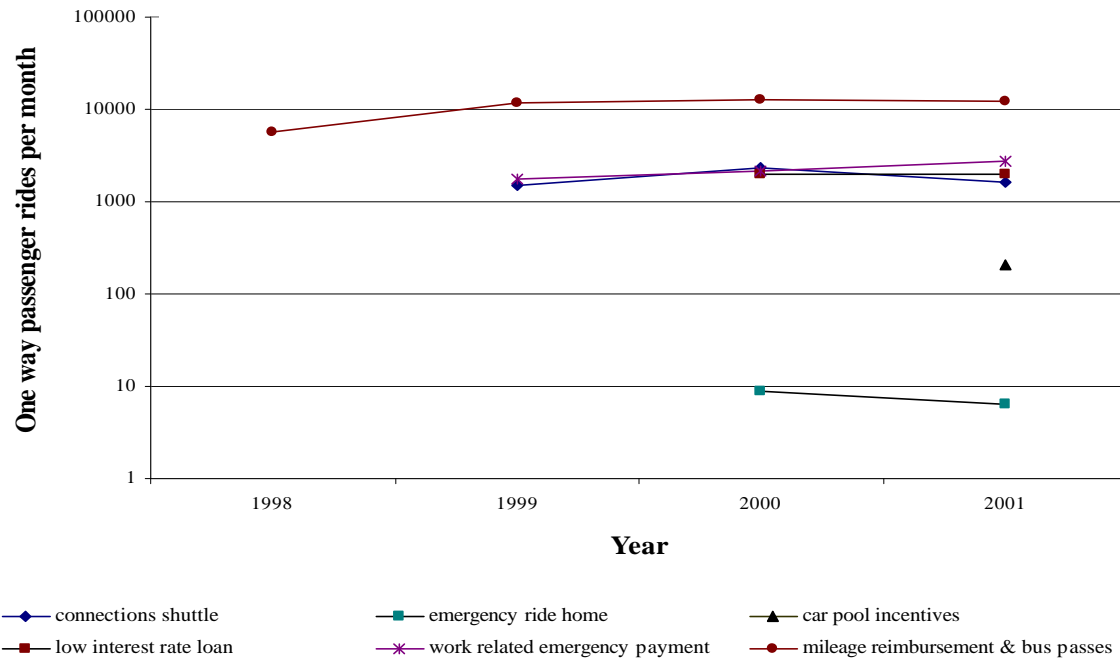
Before the Connections Shuttle and other transportation programs were introduced, the only forms of assistance available to CalWORKs participants were mileage reimbursement for use of a personal car or bus passes. In 2001, around \$280,000 was dispersed under this program, and 95 percent of payments went for bus passes. The average payment was \$42; monthly bus passes in the region cost \$40 for adults and \$30 for children. In cases where commuting by public transit takes more than one hour each way and a CalWORKs participant has access to a car, mileage reimbursement may be provided at 34.5 cents per mile. There are no limits on mileage reimbursement provided car usage is related to welfare-to-work activities.

### **Comparison of programs**

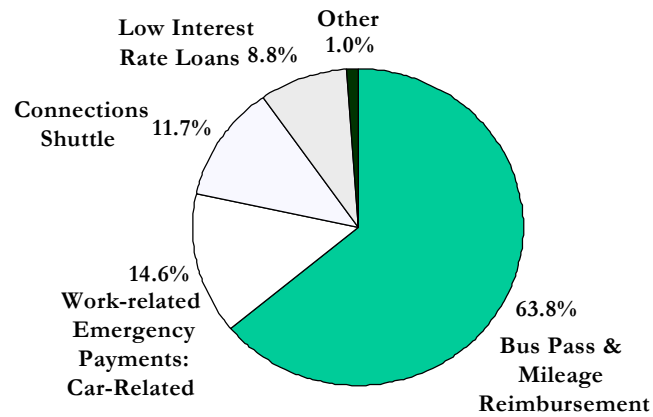
With such a rich mix of mobility options, what programs have CalWORKs recipients tended to gravitate toward? Comparing trends in participation among programs provides insights into those which, in the judgments of employment specialists and clients, are best suited to welfare-to-work transportations. Of course, this is not an unconstrained marketplace in that various conditions and restrictions limit participation in some programs. Still, examining trends in participation among programs provides insights into what is most popular and what is not.<sup>8</sup>

Figure 5.1 traces trends in numbers of monthly trips, or rides, taken under each transportation assistance program for calendar years 1998 to 2001. (Not all programs were in existence over these years.) Allowing over 12,000 rides to be taken per month for free between 1999 and 2001, bus-pass reimbursements far eclipsed the patronage of other programs. Note that Figure 5.1 plots data on a logarithmic scale, thus the dominance of bus passes is greater than what appears in the graph. The Connections Shuttle, low-interest rate loans, and work-related emergency payments programs each supported approximately 2,000 rides per month, one-sixth the number of trips made with passes. Programs providing guaranteed ride homes and carpool incentives were used sparingly compared to other programs. The one program trending upwards in Figure 5.1 is for work-related emergency payments. Trips related to bus passes and supported by loan programs stabilized during the time period, and participation in the Connections Shuttle fell by 30 percent from 2000 to 2001. Whether this was due to diminished interest in door-to-door, advanced-reservation van services or efforts by the County's HRA to move clients off of this high-cost service is unclear.

Figure 5.2 elaborates upon the previous figure by showing the breakdown of average monthly rides supported by each program for calendar-year 2001. The dominance of the



**Figure 5.1 Passenger Trips per Month for Transportation Assistance Programs in Santa Cruz County, 1998 to 2001**



**Figure 5.2 Share of Monthly Trips Supported by Transportation Assistance Programs in Santa Cruz County, 2001**

monthly bus pass program is again revealed, with nearly two-thirds of all trips made under Santa Cruz County's transportation assistance programs supported by pre-paid bus passes. Work-related emergency payments for car-related expenses are estimated to support 15 percent of trips, and low interest rate loans and door-to-door shuttles support a slightly lower share. The emergency ride home program and car pool incentives programs provide less than one percent of all monthly rides.

The poor showing of the emergency ride home and carpool incentives programs could be due to a combination of factors. CalWORKs participants may be unaware of the programs or the application process may be too complex and time-consuming. It could also be the case that the prospect of carpooling and vanpooling with others who have more secure and better paying jobs is unappealing to those who are trying to wean themselves from welfare assistance. Carpools are also inflexible with respect to intermediate trips, such as dropping off kids at child-care centers or attending to personal medical needs.

### **5.3 CONTRA COSTA COUNTY**

Contra Costa County, a largely suburban Bay Area county with some 950,000 residents, has, like Santa Cruz County, introduced a menu of mobility options for CalWORKs clients. In addition to providing door-to-door van service and carpool incentives, the county's employment and human services agency has proactively worked with local transit properties to extend the hour of bus operations and intensify services to better service the needs of low-income residents.

Contra Costa County's population has grown rapidly in recent years – by 18 percent between 1990 and 2000. More and more people have moved to the county because of its proximity to good-paying jobs in San Francisco and Oakland, relatively affordable housing, extensive transportation services (including BART), and strong manufacturing and service employment base. The county has a large service-sector and blue-collar manufacturing labor force, which during economic downturns have often resulted in job losses among low-skilled workers.

Contra Costa County has significant numbers of low-income residents and welfare recipients, mainly concentrated in cities of Richmond, Pittsburg, Antioch, and Concord.<sup>9</sup> A year-2000 survey of Contra Costa County welfare recipients revealed that 75.9 percent considered transportation “overall” to be a problem.<sup>10</sup> Not unlike in other parts of the state, many of the welfare recipients in Contra Costa County have no driver's licenses (32 percent) and over 60 percent do not own an operable car.<sup>11</sup> However, most people rely on automobiles for work trips, and driving or riding in a car was reported most frequently by respondents as the principal means of getting to work or job training. Transit ranked second, serving 39 percent of commute trips by welfare recipients (compared to 15.5 percent transit modal split for Contra Costa County residents in 1990).

In an all-out campaign to address the mobility needs of disadvantaged residents, the Contra Costa Department of Employment and Human Services (EHS) has collaborated with the Metropolitan Transportation Commission (MTC), the City of Richmond, the Chamber of

Commerce, several transit agencies, and adjacent county welfare offices to design a host of transportation and job-access programs. Experiences with these efforts are reviewed in this section.

### **Children's Transportation Services**

As in Santa Cruz County and much of the state, children make up a large share of the CalWORKs client list in Contra Costa County. Attending to the mobility needs of children is an essential element of the county's transportation assistance programs.

The typical profile of a CalWORKs recipient in Contra Costa County is a single mother with two kids (one pre-school age child and one school-age child). For most recipients, having convenient transportation to schools and day-care facilities is crucial toward obtaining and retaining employment.

In mid-2000, the County's EHS office contracted with Laidlaw, Inc., a transportation service-provider, to institute free door-to-door van services for children of CalWORKs participants. Children of CalWORKs participants are driven by vans to and from school or day-care centers between 6 A.M. to 6 P.M. on weekdays. The program was initially funded by a Welfare-to-Work grant administered by the State Employment Development Department (EDD), but within one year grant funding ran out, and now the county's EHS office of Employment and Human Services foots the bill for the service.

Currently, eight 10-seater vans provide door-to-door services for around 100 children. Often, children receive three or more trips per day as some need to be taken to preschool in the morning, then to a day-care center, and home at the end of the day. The service is available only to children of CalWORKs participants, however parents are allowed to accompany children younger than five years of age. Once a child is dropped off, the van then takes the parent to the nearest transit stop. For the safety of children, there are two adults on each vehicle: a driver and an aide. At the stops, one adult stays in the van and the other escorts the child to the destination. A two-person operation adds considerably to costs. While no firm figures are available, the estimated cost of the service is over \$22 per passenger trip.

Regardless, this service is much-valued by the county's CalWORKs participants for it relieves them of the day-to-day burden of hauling children to and from day-care centers, not all of which are within easy reach of homes and workplaces. While no one has evaluated this program, anecdotally it is thought to be a huge success. According to EHS staff, parents routinely praise the service. Many comment, to the effect, "without this service, I would not be able to work or attend training."

One of the main challenges of running the program was encountered early on when EHS was trying to market the service. Initially, the idea was to advertise the service to clients through their caseworkers. This approach failed to attract many participants. The department decided to mail a newsletter to all the welfare participants informing them of the service and inviting them to join. This seemed to do the trick, for the number of participants rose sharply, exceeding capacity. The number of individual rides now well

exceeds the project's first year goal of 13,000 rides. Today, there is a long waiting list to join the program. Current plans call for purchasing two more vans with financial help from the Metropolitan Transportation Commission (MTC).

### **Rides-to-Success**

In the fall of 2001, the County's EHS office entered into a contract with Laidlaw Transit, Inc. to operate a demand-response bus service for welfare recipients, called Rides-to-Success. The program has many similarities to Santa Cruz County's Connections Shuttle. Eligible clients whose trips can not be easily served by transit receive up to 50 free one-way rides over a six-month period. All rides must be employment or medical related. Vans run from 5 A.M. until 8 P.M. on weekdays and 7 A.M. until 6 P.M. on weekends. However, if a client requests a ride 72 hours in advance, she or he can receive a late-night lift between 8 P.M. and 1 A.M. Currently, the project offers 25 rides per day during weekdays and 24 rides on the weekend on a first-come/first-served basis.

While still in its infancy, EHS personnel are taking steps to improve the Rides-to-Success program. Currently, the average cost per ride exceeds \$20. By expanding the number of runs to serve 100 or more rides per day, staff estimates costs will eventually fall below \$20 per ride. Plans also call for extending the six-month limit for clients who sign up for a longer-term employment-related program like job training. EHS is also exploring the possibility, budget-permitting, of making services available until midnight without the 72-hour notice requirement.

### **Ridesharing Incentive Program**

Also like Santa Cruz County, Contra Costa County has sought to encourage CalWORKs recipients to team together in commuting to and from work. A year-2000 survey revealed that 41 percent of County CalWORKs recipients drive to work or job training, and 22 percent share rides with others. The chief incentive offered to carpoolers is mileage reimbursement. Since ridesharing levels are already so high, no other incentive besides assistance with ride-matching is offered.

### **Car Loan Program**

Also in the works is a car loan program for welfare recipients. Following the leads of Santa Cruz and San Mateo County, the EHS department has entered into negotiations with four banks that have expressed a willingness to participate in the project. Once an applicant's eligibility is checked through initial screening, the application will go through a Loan Review Committee that decides whether to grant a loan. County CalWORKs money will be put into a loan reserve fund to guarantee the loans paid by participating banks. Like Santa Cruz County, loan-recipients will be required to attend money management and car maintenance courses.

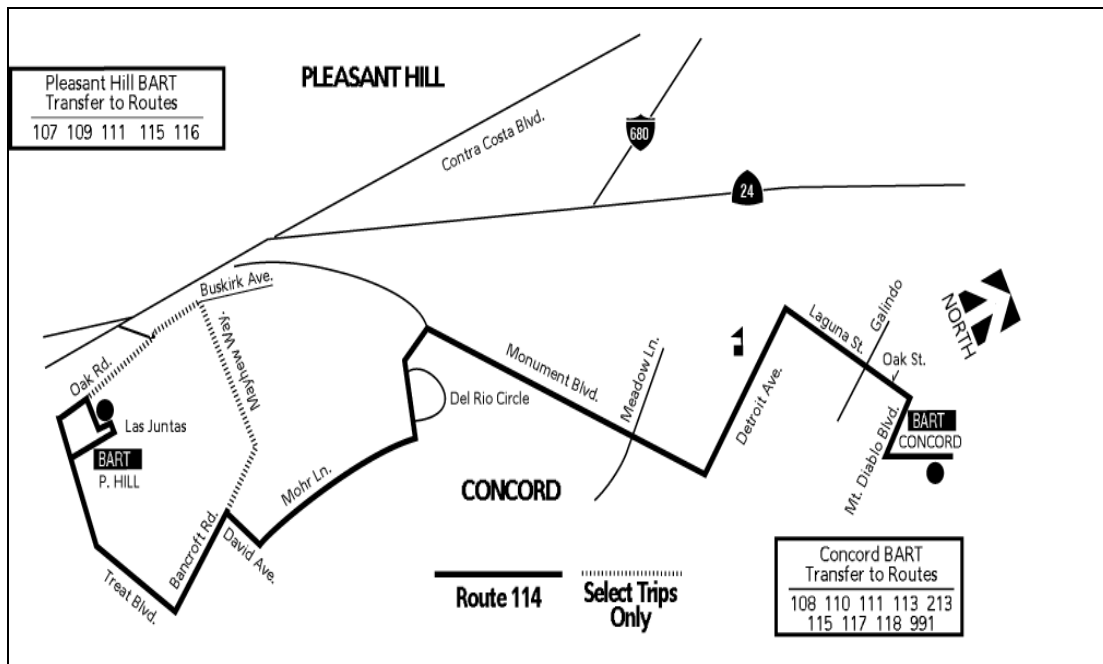
### **Bus Service Extensions**

Contra Costa County's EHS department has also played a pivotal role in persuading transit operators to extend their service hours. What was particularly instrumental was the creation

of a county-wide map showing where County welfare recipients live and the locations of low-skilled employment opportunities, schools and child-care centers, hospitals, and transit routes. The map helped identify gaps between where transit-dependents reside, where employment opportunities exist, and the routes that buses ply. An important discovery was the abundance of employment opportunities in southern Marin County, many involving evening work, within a relatively close reach of numerous welfare recipients living in the city of Richmond. This prompted the EHS to approach Golden Gate Transit (GGT) about extending the operating hours of Route 40 that connects Richmond with entry-level, service-industry jobs in Marin County. Service hours were eventually extended on two other routes operated by the Central Contra Costa Transit Authority (CCCTA) as well.

### Route 40

Route 40 connects western Contra Costa County with Marin County (via San Rafael, San Quentin, and the Richmond BART station) (Map 5.1). In the 1970s and early-to-mid 1980s, a private jitney-van operated along the present Route 40 corridor, patronized mostly by residents of Marin County who were visiting relatives incarcerated in San Quentin Penitentiary. Ridership losses led to the service's eventual demise. By the early 1990s, Marin County was experiencing a severe shortfall of workers in the retail, child-care, restaurant, and related service sectors. In an effort to bridge the gap between entry-level service jobs in Marin County and low-income residents in Richmond, in 1993 the EHS department carved out an agreement with MTC, AC Transit, BART and GGT to initiate Route 40. Costs were split, with MTC footing half of the bill, Golden Gate Transit and BART each paying 20



Map 5.1 County Connection's Route 114

percent, and AC Transit covering the remaining 10 percent. Over the years, ridership on Route 40, operated by Golden Gate Transit, has increased steadily at a time when patronage on other routes has leveled off or fallen.

Through its GIS map and lobbying efforts, the EHS convinced the consortium of transit agencies funding Route 40 to extend service hours in July, 2001. Longer service hours have enabled dozens of Richmond residents to obtain low-skilled jobs outside the traditional 8-to-5 work schedule. Service frequencies were also increased and the route was realigned to better connect to several employment hubs along the corridor.<sup>12</sup> Together, these improvements have been accompanied by sharp ridership gains – from 22,520 monthly riders in October 2000 (8 months prior to improvements) to 25,850 monthly passengers in October 2001 (4 months after improvements), a 14.8 percent one-year increase.

### **Route 114 and Route 314**

Contra Costa County's EHS department also managed to convince the other bus operator in the area, CCCTA, to extend hours and reduce headways on two other routes serving low-income neighborhoods: County Connection Routes 114 and 314. Route 114 connects the Pleasant Hill and Concord BART stations (Map 5.1). A large number of welfare recipients live along this corridor. Based on a GIS analysis, the EHS department estimated that 366 CalWORKs clients live within one-quarter mile of the route, not including family members. Ridership surveys confirmed the high degree of transit-dependency on Route 114. According to a year-2000 survey, almost 60 percent of Route 114 riders earned less than \$20,000 a year compared to a system-wide share of 29 percent.<sup>13</sup> Also, 86.8 percent of riders did not have a car available for the surveyed trip, compared to 70.1 percent of systemwide passengers. Moreover, over 70 percent of respondents had no driver's license (versus one-half of system-wide riders). Route 114 riders are also more dependent on weekend services: 40.6 percent ride buses every Saturday (versus 23 percent of system users), and 36 percent of riders indicated that Sunday service would be their most preferred improvement.

These survey results prompted several major improvements, made possible with funding from an MTC' LIFT grant, Department of Labor Welfare-to-Work assistance, and contributions from BART and CCCTA. Weekday service hours were extended to 11:30 P.M. and off-peak headways were cut from 40 to 15 minutes. Schedule changes were coordinated with BART to insure the arrivals and departures of buses coincided with BART's timetables.

The County EHS department also led the charge in introducing Sunday services along this corridor. A new Sunday-only service, Route 314, was introduced that within the first year exceeded ridership projections by 50 percent. Part of the route's success lies in the fact that it connects Diablo Valley Community College with BART. Many car-less welfare recipients and transit-dependent students take classes at the College on Sundays.

## 5.4 SUMMARY

Santa Cruz and Contra Costa Counties are two welfare-to-work success stories. In both cases, county social service offices pro-actively worked with other groups and forged alliances to implement an assortment of mobility options for CalWORKs clients. In both places, trained personnel meet one-on-one with needy individuals to custom-tailor transportation programs that best meet individual job-access and training-access needs.

Santa Cruz County has been particularly impressive in casting a wide net that provides a rich range of mobility options for CalWORKs recipients, including door-to-door van services, emergency assistance allowances, a low-interest car loan program, and various carpool incentives. CalWORKs recipients are trained to drive vans, enabling a number of previously unemployed individuals to find jobs in the transportation business. Programs have encountered problems, including high costs and objections from organized labor, however in the minds of many, the mobility benefits conferred have justified the effort.

In Contra Costa County, a similar set of initiatives has been pursued. Most unique has been a door-to-door van service for children of CalWORKs participants. The service is over-subscribed, suggesting there is probably a large pent-up demand for children's transportation in other parts of the state. High costs have forced the county to move slowly in attempting to catch up with the burgeoning demand. Also impressive has been the county's leadership in extending bus services and hours of operations between low-income neighborhoods and major job centers, both inside and outside of the county. Through a partnership with transit operators, the regional planning entity, and other parties, the county's Employment and Human Services department saw to it that traditional bus services were better aligned to meet the mobility needs of low-income residents. The county and transit agencies have been rewarded with sharp ridership increases on new routes, during late hours, and on extended weekend services.

## Notes

---

- <sup>1</sup> Source: <http://www.sccrtc.org/pdf/rtp-eir/eir-30-envirset.pdf>.
- <sup>2</sup> Santa Cruz County Human Resources Department, internal records, unpublished.
- <sup>3</sup> Government Accounting Office, *GAO's Recent and Ongoing Work on DOT's Access to Jobs Program*, Washington, D.C., Government Printing Office, August 2001.
- <sup>4</sup> Of the 5,318 CalWORKs participants in the year 2000, 1,535 or 29 percent were adults and 3,783 or 71 percent were children. Source: California Department of Social Services, *Public Welfare in California*, Sacramento, mimeo.
- <sup>5</sup> If a parent and child rode on a vehicle and disembarked at the same destination, this was considered two passenger rides.
- <sup>6</sup> For example, Santa Cruz's paratransit provider, Lift Lines, pays its drivers starting salaries of \$11 per hour, plus benefits.
- <sup>7</sup> S. Doyle and M. Austin M, *The Family Loan Program: A Case Study of a Public-Private Partnership in San Mateo County*, 1999, unpublished.
- <sup>8</sup> In the case of programs for which trip data were not readily available, estimates were made based on the number of participants and an assumed lower bound of monthly trips per participant.
- <sup>9</sup> Crain & Associates, Inc., *Transportation Survey of CalWORKs participants*, Martinez, Contra Costa County Employment & Human Services Department, 2000, p. 1-1
- <sup>10</sup> *Ibid.*
- <sup>11</sup> Contra Costa County Employment and Human Services Department, *Contra Costa County Welfare-to-Work Transportation Action Plan, Executive Summary*, Martinez, 1999, p. i.
- <sup>12</sup> For example, the bus gets off the freeway and travels along side streets to allow passengers to get on and off at Home Depot and Toys-R-Us.
- <sup>13</sup> Nelson/Nygaard Consulting Associates, *County Connection Ridership Survey*, Central Contra Costa Transit Authority, 2000.



## Chapter Six

### Fixed-Route Transit Reverse-Commute Services in Los Angeles County

#### 6.1 INTRODUCTION

Los Angeles County, California's largest with more than 9.5 million residents in year-2000, faces job-access and reverse-commute challenges at a scale unmatched anywhere in the state. With the nation's most crowded freeways, large pockets of concentrated inner-city poverty, and a steady migration of jobs to the suburbs and exurbs, rising to the challenge of meeting Southern California's job-access needs requires pro-active and prolonged policy responses on many fronts.<sup>1</sup>

In recent years, the acute mobility problems faced by Los Angeles County's unemployed residents have been closely studied. In a comprehensive analysis, the Lewis Center for Regional Policy Studies at the University of California at Los Angeles, in collaboration with others, found many of the County's poor and unemployed residents faced major welfare-to-work hurdles.<sup>2</sup> Using Geographic Information Systems (GIS) tools, the authors documented a serious spatial mismatch, finding a paucity of jobs in close proximity to neighborhoods of GAIN populations, Los Angeles County's term for participants of welfare-to-work employment and training programs.<sup>3</sup> GAIN participants who rely on public transit were found to experience the greater job-access difficulties. The study found that 36 percent of the County's GAIN population lived in areas with limited transit access to jobs, defined mainly in terms of average transit commutes that exceed 30 minutes. Based on surveys of GAIN participants, the study confirmed that child-care and health-care responsibilities make transit usage difficult in many instances. Among those without a car, 28 percent of survey respondents indicated they faced difficulties in traveling to health-care services. Many respondents also indicated that job searches are the biggest access problem they face mainly because interview schedules and destinations change day-to-day. This means tracking down the appropriate bus route and schedule to match each day's interview itinerary. Buses do not always go near interview locations. The research also discovered that informal transportation services, often in the form of neighbors providing lifts, sometimes for a fee or in return for a favor, many times fills the service gaps of "formal" public transit.

Another recent study documented the degree of concentrated poverty in Southern California.<sup>4</sup> During the 1980s, the percentage of the region's poor living in neighborhoods with a poverty rate of at least 20 percent grew from 40 to 48 percent. Data on elementary school poverty suggests that neighborhoods with high-poverty concentrations expanded in numbers during the 1990s, despite the strong economic growth in the latter half of the decade. The study faulted transportation programs that emphasize highway building over improved public transport as one of many factors that have resulted in continued joblessness and isolation of the poor from expanding suburban employment opportunities.

While Los Angeles County officials are pursuing many transportation options in hopes of stimulating welfare-to-work, it is well understood that the sheer scope of job-access needs in

the county will require that they rely to a significant degree on improving traditional fixed-route bus services. The county's major transit agency, the Los Angeles County Metropolitan Transit Authority (MTA), operates 185 bus routes with an active fleet of 2,250 vehicles (most powered by compressed natural gas) and 57 directional track-miles of light and heavy rail services.<sup>5</sup> Many routes are radially oriented and serve low-income neighborhoods, thus by design they are candidates for reverse-commute and job-access trips. At the time of this study, the only true bus route introduced specifically to handle reverse commutes was Route 422, initiated in late-2001 by the Los Angeles County Department of Transportation.

This chapter examines the performance of MTA routes that are considered to be candidates for reverse-commute travel, by virtue of their spatial orientation, relative to the line specifically custom-designed for reverse-commuting, Route 422. Comparisons are made in terms of ridership, cost performance, and patronage satisfaction. Because Route 422 is one of the few bus services in the state that has been introduced specifically to handle peak-period reverse-commute trips, it receives particular attention in this chapter. Based on a survey of the route conducted in December 2001, we review the degree to which the service matches origin-destination patterns of trips being made by passengers and the spatial distribution of low-wage jobs. The analyses provide insights into the kinds of service reforms that might be needed for fixed-route bus operations not only in Los Angeles County but throughout the state.

## 6.2 REVERSE-COMMUTE BUS SERVICES IN LOS ANGELES COUNTY

We asked professional staff with MTA whether the agency had inaugurated routes or service reforms that were specifically aimed at improving reverse-commute connections between low-income inner-city neighborhoods and outlying job sites. While there were none, MTA staff identified eight routes that, by virtue of their spatial orientations and connections to low-income neighborhoods, could effectively be used for reverse-commuting. The one bona fide example of a reverse-commute service, Route 422, was initiated and sponsored not by MTA but rather the City of Los Angeles Department of Transportation (LADOT)<sup>6</sup>. Local transit planners agreed that comparing trends and performance across the MTA bus routes as well as LADOT's Route 422 would be useful in probing some of the ridership, cost, and service implications of transit services aimed, at least in part, at low-income neighborhoods. This section addresses these matters.

The eight MTA routes and one LADOT route are shown in Table 6.1, identified in terms of the reverse-direction terminuses – i.e., where bus runs originate and where they terminate. Map 6.1 shows routes in relation to the “central city” versus “non-central city” designations presented in Chapter Two of this report. All routes except MTA 750 run from the central city to an outlying (i.e., non-central city) location. The map further reveals that the specially targeted route, LADOT's 422, is much longer than the others, spanning a distance of nearly 50 miles, end-to-end. Most of MTA's reverse-commute “eligible” routes cover distances of 20 to 30 miles.

**Table 6.1 Potential Reverse Commute Routes**

<b>Line</b>	<b>From</b>	<b>To</b>	<b>Direction</b>
MTA 78	Downtown LA	Arcadia	Northeast
MTA 90	Downtown LA	Sylmar	Northwest
MTA 92	Downtown LA	Sylmar Metro link Station	Northwest
MTA 94	Downtown LA	Sylmar	Northwest
MTA 150	Universal City Station	Canoga Park	West
MTA 156	Downtown LA	Panorama City	Northwest
MTA 720	Santa Monica	Montebello Metro link Station	East
MTA 750	Universal City Station	Warner Center	West
LADOT 422	Downtown LA	Thousand Oaks	West

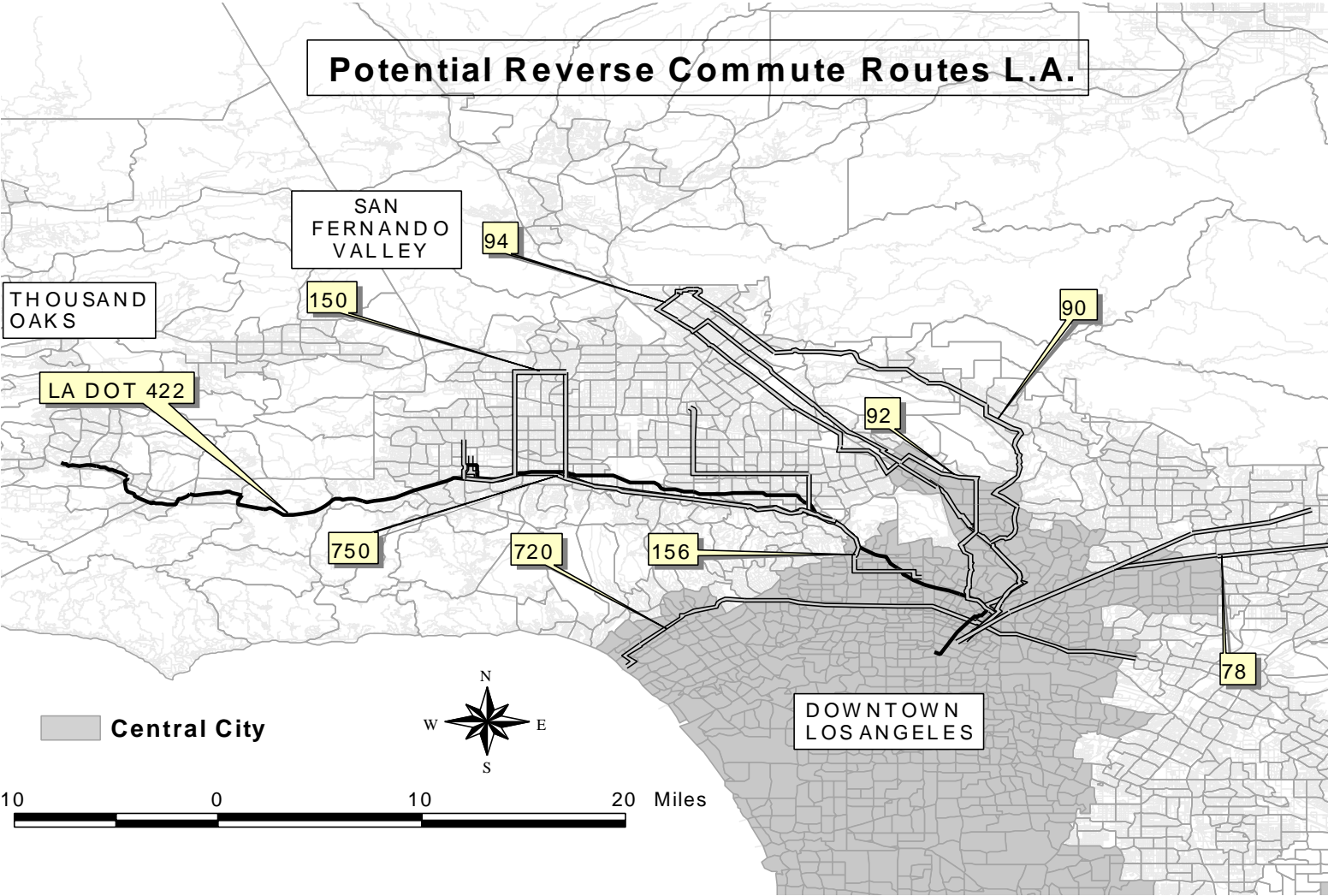
Another key difference is that all of MTA's routes operate as two-way services, approximately 18 hours a day on weekdays and weekends. Thus, they serve both the traditional suburb-to-central city (i.e., radial) and reverse-direction trips. In contrast, LADOT 422 operates solely in the reverse direction and only during commute hours: that is, outbound from the central city during the morning and inbound to the core area in the evening. Whereas the other routes serve all trip purposes, Route 422 is clearly targeted at serving work trips.

### **Ridership**

The most recent statistics reveal considerable variation in daily ridership among the reverse-commute routes. The new service, Route 422, has the lowest patronage, in part because it is a limited-hours service. Most popular is MTA's Route 720 which carries 18 times as many customers each weekday as Route 422 and nearly twice as many as the next most popular route (MTA's 156). Route 720 connects west and east Los Angeles via downtown and funnels into several Metrorail Red Line stations.

On weekends, Route 720 is also most heavily patronized among the nine routes, followed by Route 156 (connecting central San Fernando Valley to downtown Los Angeles and also feeding into Metrorail) and Route 94 (looping through the northeast portion of the San Fernando Valley and terminating downtown). Route 422 does not operate on weekends.

Adjusted for length of trips, Table 6.2 shows less of a differential between the MTA routes and Route 422 — notably, weekday passenger miles on Route 720 are 5.8 times that of Route 422 (versus 18 times in terms of ridership). Dividing passenger miles by ridership yields an estimated average weekday trip length of around 21 miles on Route 422, far longer than any of the other routes. This compares to an average trip length of Los Angeles County's GAIN population of just over 7 miles and an average of 12 miles for the general population.<sup>7</sup>



Map 6.1 Reverse-Commute Routes Serving Los Angeles County

**Table 6.2 Weekday and Weekend Ridership of Reverse-Commute Routes in Los Angeles County, Fiscal Year 2001**

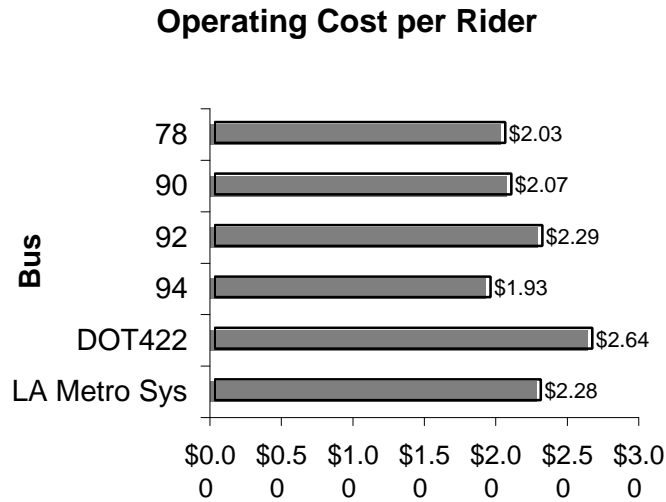
Line	Weekday (FY 2001)	Saturday (FY 2001)	Sunday (FY 2001)
<b><i>Riders</i></b>			
78	9,588	6,855	4,427
90	5,182	4,100	2,606
92	8,146	6,601	4,926
94	15,600	10,159	8,551
150	13,290	9,904	5,975
156	16,815	12,337	10,346
720	29,277	18,728	15,560
750	8,072	4,696	3,389
DOT422	1,609	--	--
<b><i>Passenger-Miles</i></b>			
78	53,494	44,013	26,313
90	37,052	26,082	16,756
92	41,225	33,479	27,281
94	98,183	67,989	59,810
150	65,142	46,534	34,445
156	65,012	50,987	45,569
720	194,411	117,163	108,792
750	59,996	37,402	28,765
DOT422	33,395	--	--

Sources: Los Angeles MTA and Los Angeles DOT, 2001 internal records.

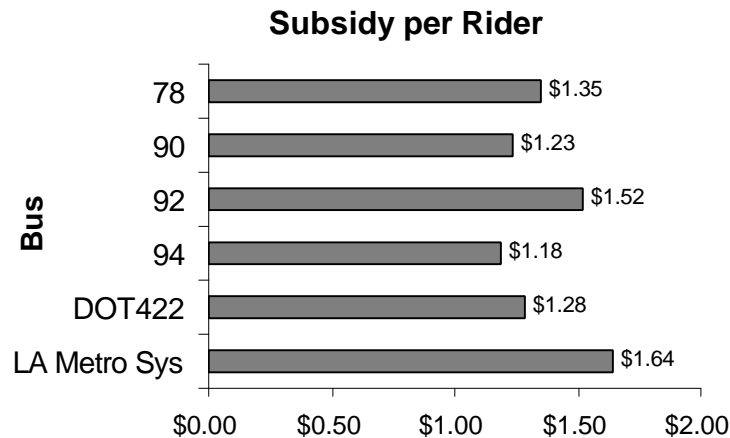
### Cost and Financial Performance

On a cost per rider basis, Route 422 is the most expensive among five routes for which data were available (Figure 6.1). In comparison to all bus routes operated by MTA, it costs around 16 percent more to serve each passenger carried on Route 422 than the systemwide average for transit services in the Los Angeles metropolitan area. These figures represent operating costs only, however outlays for rolling stock and other capital assets are likely similar across most bus routes, thus the same general relationship probably holds in terms of full costs. Still, the \$2.64 cost per rider recorded for Route 422 in 2001 is far below the \$20-plus expenses incurred for many door-to-door van services outlined in the previous chapter (i.e., in Santa Cruz and Contra Costa Counties).

Adjusting for farebox receipts, Figure 6.2 shows the subsidy outlay per rider for Route 422 is below two of the MTA routes and well below the systemwide average for transit operations in the Los Angeles Metropolitan Area. Moreover, Route 422 is returning over half of its operating costs through the farebox, well above the regional average for bus services and all of the MTA reverse-commute services shown in Figure 6.3. By comparison, most other

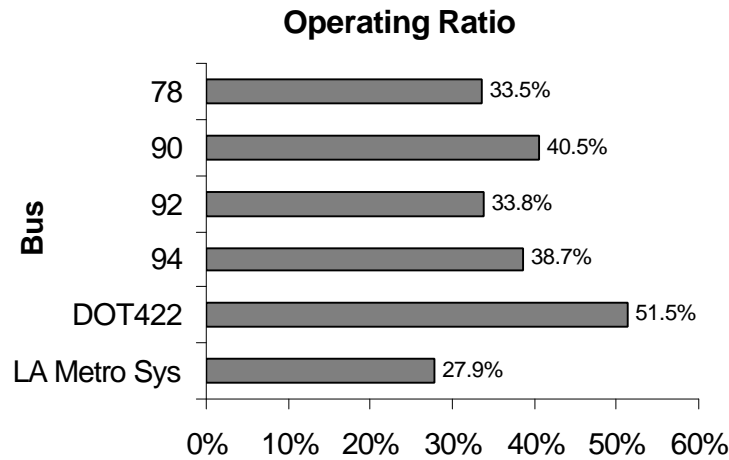


**Figure 6.1 Operating Costs per Rider, Five Reverse Commute and Los Angeles Metropolitan Area Systemwide Average, Fiscal Year 2001**



**Figure 6.2 Subsidies per Rider, Five Reverse Commute and Los Angeles Metropolitan Area Systemwide Average, Fiscal Year 2001**

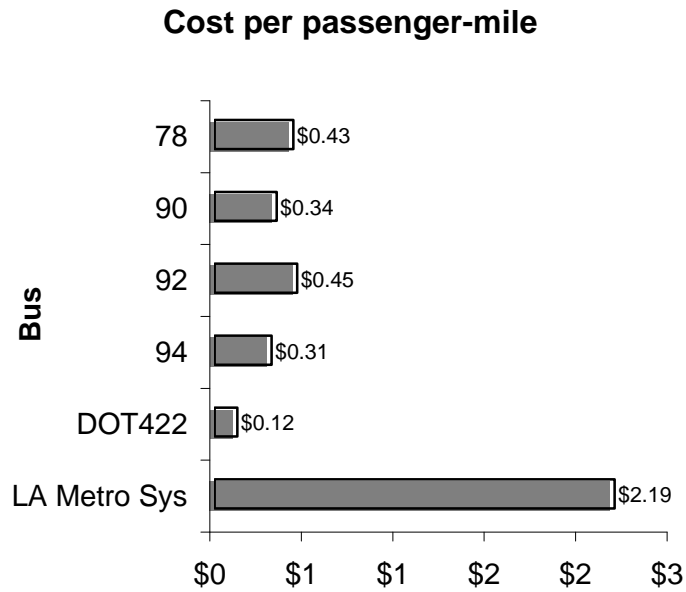
long-haul routes connecting poor neighborhoods to job centers are covering 30 to 40 percent of costs through fares. Part of the reason for the better cost performance of these reverse-commute routes lies in the fact that most are competitively tendered. Coach USA, for example, operates Route 422 under contract to LADOT.



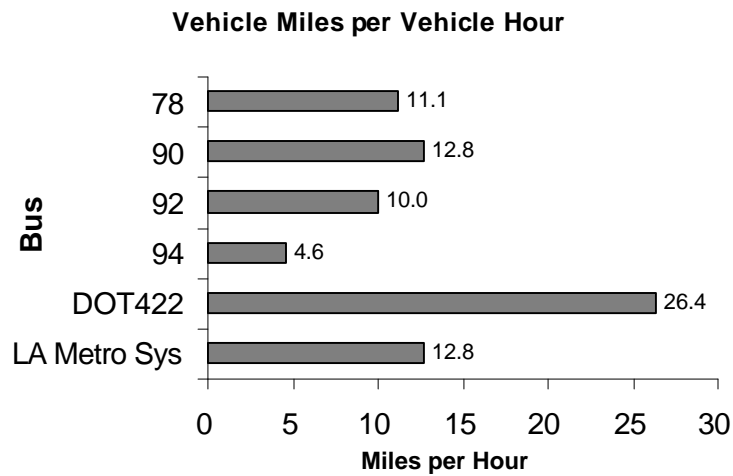
**Figure 6.3 Operating Ratios, Five Reverse Commute and Los Angeles Metropolitan Area Systemwide Average, Fiscal Year 2001**

Weighing costs against passenger miles yields a “cost effectiveness” measure of performance (Figure 6.4). On this criterion, LADOT Route 422 is the best performer. In fact, the cost per passenger-mile on Route 422 is just 5 percent of the regional average. Route 422’s superior performance is partly due to its length, resulting in relatively long average trip distances. It is also a product of Route 422 being a peak-only service, meaning it serves predominantly work trips which tend to be longer in distance than non-work trips. Moreover, as a peak-period service, Route 422 has relatively high load factors, avoiding the common problem of near-empty off-peak buses.<sup>8</sup>

Lastly, a measure of service efficiency used in the transit industry is “vehicle miles per vehicle hour”, or operating speed (in miles per hour). Because they operate along the Ventura Freeway for part of the route, as limited stop services along some stretches, and in less-congested outlying settings, buses on Route 422 tend to move relatively swiftly (Figure 6.5). The Route’s mean operating speed is more than twice that of the other routes and the regional system average of 12.9 mph. Speedy buses seem to have drawn customers to the route, reflected by its average of 67 passenger miles per vehicle mile, a figure that is 14.6 times the regional average and well above the performance output of MTA’s reverse-commute routes.



**Figure 6.4 Cost per Passenger-Mile, Five Reverse Commute and Los Angeles Metropolitan Area Systemwide Average, Fiscal Year 2001**



**Figure 6.5 Mean Operating Speed, Five Reverse Commute and Los Angeles Metropolitan Area Systemwide Average, Fiscal Year 2001**

### 6.3 COMPARATIVE RIDERSHIP PROFILES

To better understand who is riding buses and their attitudes toward services, we conducted a survey of ridership on Route 422 on Monday, December 3, 2001. We focused on this one route because, as noted, it was designed specifically and purposefully to serve reverse-commuters.

Surveys were distributed to riders on LADOT Route 422 between the hours of 5 A.M. and 9 A.M.<sup>9</sup> Thus, the sample frame constituted trips made from central Los Angeles to areas west, as far as Thousand Oaks in Ventura County. Approximately 440 copies of both Spanish and English versions of questionnaires were distributed to those boarding morning outbound buses. Of these, 155 responses were received, yielding a response rate of 35 percent.<sup>10</sup> Copies of both the English and Spanish surveys are shown in Appendix A of this report.

At various times in over the past two years, the MTA conducted on-board surveys of most of the reverse-commute routes discussed in the previous section. The contents of the MTA surveys were similar to those of the one we conducted on LADOT Route 422, allowing comparisons to be drawn. This section reviews survey results with respect to trip and rider attributes.

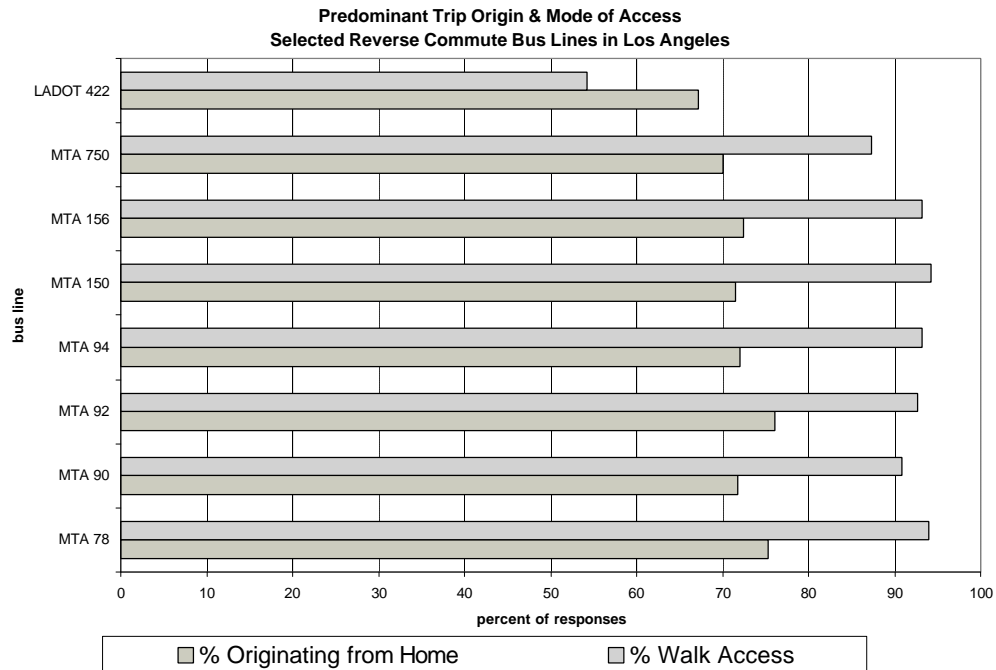
#### **Trip Origins, Destinations, and Modes of Access and Egress**

Surveys compiled information mainly for people heading to work from their home. On Route 422, around two-thirds of surveyed trips began at home (Figure 6.6). Interestingly, for around one-quarter of the respondents, the surveyed trip began at place of work, suggesting many were getting off of night-to-morning “owl” shifts.

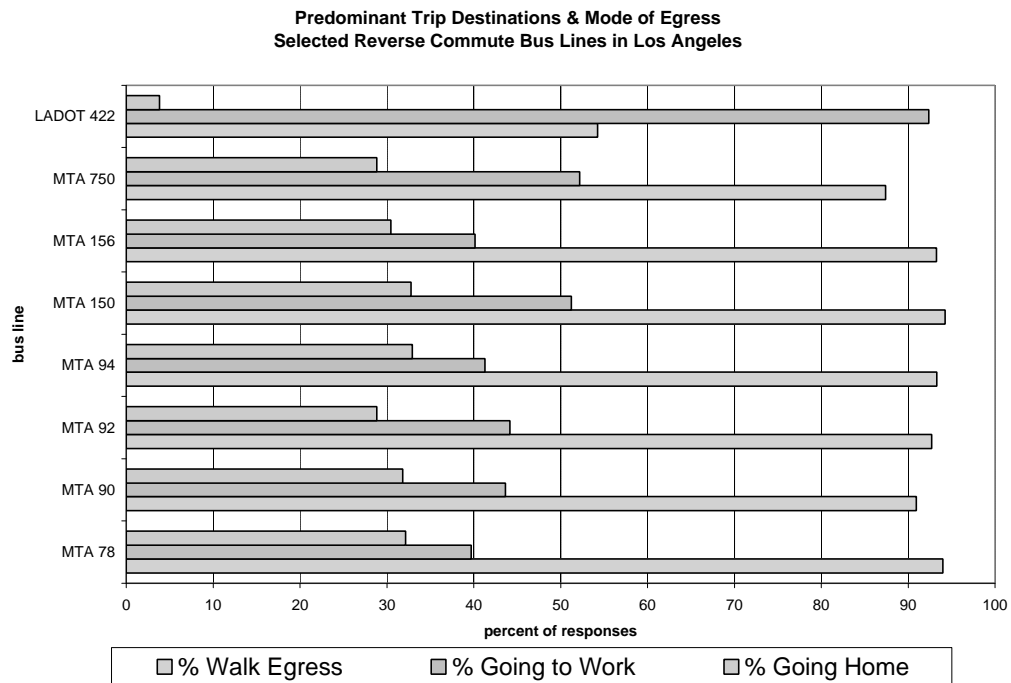
Figure 6.6 also shows that the vast majority of survey respondents accessed bus stops by foot – in most instances, over 90 percent walked to the stop, though in the case of LADOT Route 422, only around half did, meaning many had to transfer from a different bus route to access this special reverse-commute service. Just over 15 percent of Route 422 customers drove a car to reach Route 422. Park-and-ride was a miniscule share of trips on the other reverse-commute routes. There are no provisions for bicycle storage at bus stops along Route 422, thus no respondents reported riding a bike to access transit.

The commuter orientation of Route 422 is revealed by statistics on trip destination, shown in Figure 6.7. Around nine out of ten of surveyed riders on Route 422 were heading to work. By comparison, 40 to 50 percent of respondents on the other reverse-commute routes (which were surveyed over the full course of a day) were on their way to work. Disparities largely reflect the difference between peak-only and all-day services.

Once exiting the bus, most riders walked to their destination. The share of egress trips by foot along Route 422, however, was substantially lower than for the other routes. Almost half of those surveyed said they would be reaching their final destination by transferring to another bus or some alternative mode. While Route 422 provides a much-valued line-haul



**Figure 6.6 Trip Origins and Modes of Access for Reverse-Commute Routes in Los Angeles, 2001 Survey Responses**



**Figure 6.7 Trip Destinations and Modes of Egress for Reverse-Commute Routes in Los Angeles, 2001 Survey Responses**

connection, it alone does not directly serve many riders' door-to-door travel. Appreciable shares of customers need to transfer on one or both ends of the trip when riding Route 422.

### **Travel Frequency and Fare Media**

Almost three-quarters of respondents on Route 422 ride regularly, four to five times a week (Figure 6.8). An additional 21 percent use the service two to three times per week. For most of the reverse-commute routes shown in Figure 6.8, fewer than 5 percent of survey respondents were occasional users. Regular patronage often correlates with high transit dependency – many customers have little choice but to take a bus on an on-going basis to reach jobs.

In part because they are regular customers, over half of surveyed riders on all of the reverse-commute routes take advantage of monthly unlimited-ride passes. Over the course of a year, the savings conferred by monthly passes can mount in the hundreds of dollars, a non-consequential part of earnings for some transit-dependent users. Route 422 had the largest share of surveyed customers – three out of ten -- who paid cash for their rides.

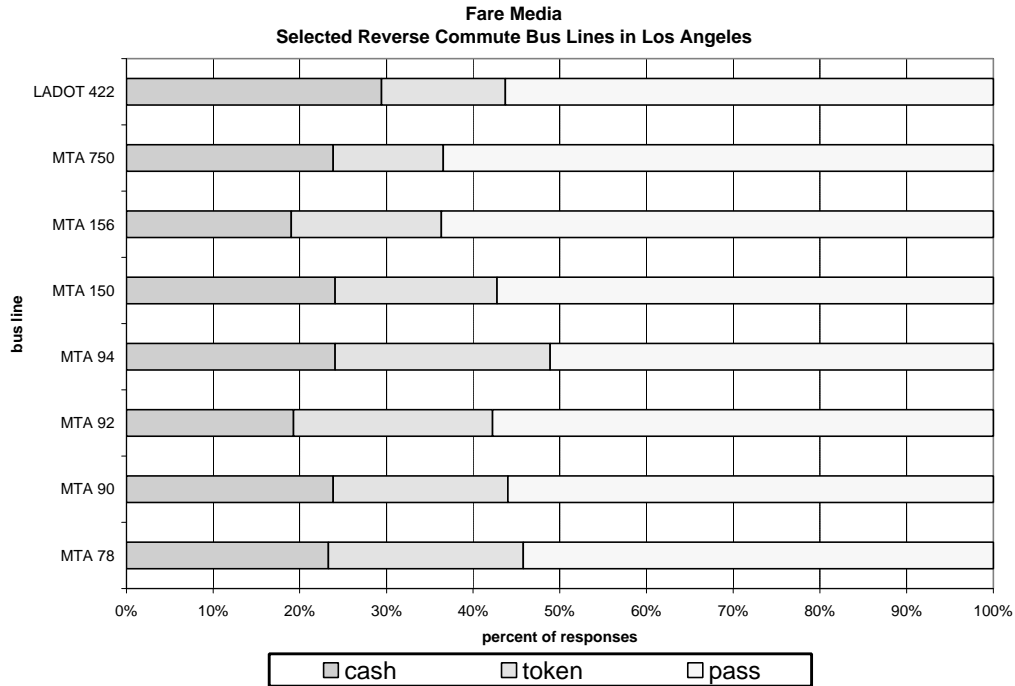
### **Socio-Demographic Compositions**

As services targeted at low-income neighborhoods, these reverse-commute routes can be expected to serve large numbers of minority and needy individuals. The on-board ridership survey results confirmed this. Route 422 overwhelming serves a Latino clientele. For five of the eight routes shown in Figure 6.9, the majority of passengers were Spanish-speaking. The MTA reverse-commute routes draw a more racially and ethnically diverse population of users. Many Latinos in Southern California have short-term, temporary jobs as day laborers and domestic help, and many have no access to cars.<sup>11</sup> Based on their ethnic composition alone, these reverse-commute routes appear to be providing an important social service.

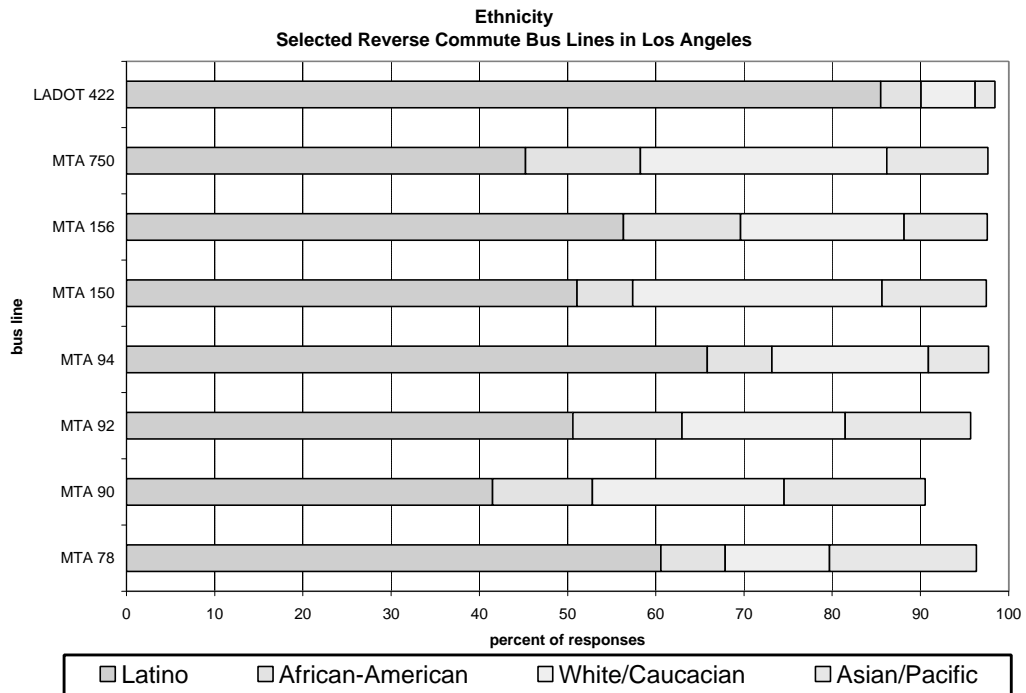
Women made up the majority of surveyed customers on all of the routes, ranging from 51 percent (MTA Route 94) to 84 percent (LADOT Route 422). Route 422's "female dominance" is reflected by the fact its share of surveyed women riders was 22 percentage points higher than that of MTA's highest female-patronized line – Route 78 (62 percent).

The majority of Route 422 customers came from low-income households: three-quarters of respondents lived in households where annual incomes total to less than \$15,000 per year (Figure 6.10). Over a third lived in households making less than \$7,500 a year, well below the poverty line. While MTA's reverse-commute routes also serve large numbers of low-income users, Route 422's passengers are, overall, clearly the poorest.

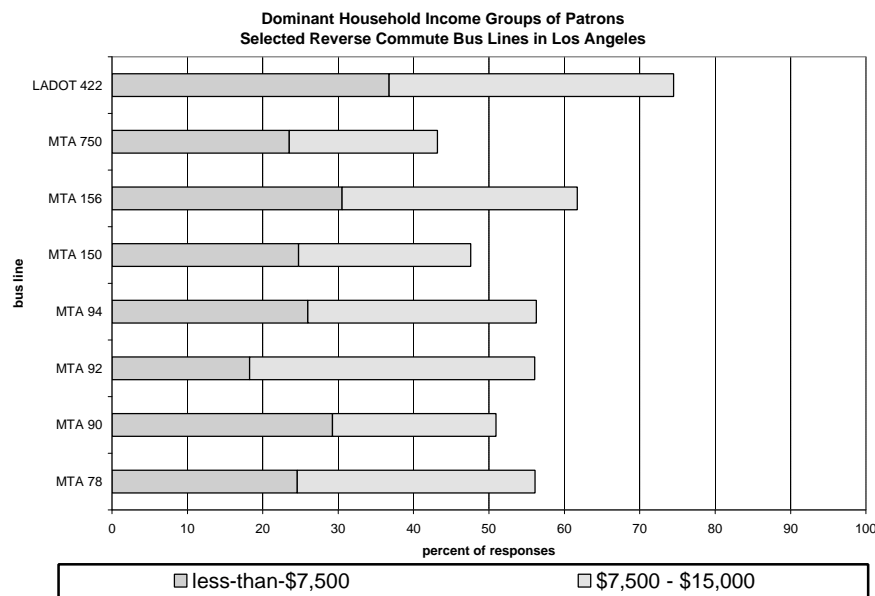
Information on other attributes of transit riders were only collected for our survey of Route 422, thus socio-demographic statistics cited below are only for that one route. In terms of household composition, 80 percent of those surveyed on Route 422 lived in a household with two or more adults – split evenly between those in households with two and those with more than two adults. Riders were predominantly of working age – 93 percent were between 20 and 55 years of age. As might be expected, most – 96 percent – of Route 422 respondents have jobs: 81 percent worked full time and 15 percent worked part-time.



**Figure 6.8 Fare Media Used by Surveyed Riders on Reverse-Commute Routes in Los Angeles, 2001 Survey Responses**



**Figure 6.9 Ethnic Compositions of Surveyed Riders on Reverse-Commute Routes in Los Angeles, 2001 Survey Responses**



**Figure 6.10 Household Income Profiles of Surveyed Riders on Reverse-Commute Routes in Los Angeles, 2001 Survey Responses**

The transit-dependency of Route 422's customers is best revealed by car availability statistics: 93 percent of survey respondents had no automobile available to make the trip. Eight out of ten had no driver's license. Almost all (98 percent) of respondents indicated they would continue to patronize Route 422 in order to get to work over the next six months.

In summary, Route 422 is a vital transportation service for Los Angeles County's working poor. Its riders are overwhelming Hispanic women from poor households who do not drive, and even if they did, they would have no access to a car. Many accept the need to make transfers to get to Route 422 and from where they exit to their final workplace destination.

## 6.4 ATTITUDES TOWARD SERVICES

The surveys of LADOT's Route 422 and MTA's reverse-commute routes asked similar questions about users' attitudes and views toward services. The purpose of such questions is to discern, mainly from a service delivery perspective, what is "working" reasonably well and where there is room for improvement.

### Travel Times

For choice (i.e., non-captive) riders, travel time is widely considered to be the most important factor influencing whether users opt for transit. Only when transit is time-competitive with the private car will it be able to win over appreciable numbers of

passengers who have the option of driving. Does the same hold for routes that serve predominantly captive, transit-dependent users, like LADOT's Route 422?

Figure 6.11 reveals no strong consensus about whether the time spent on the bus is satisfactory or not. In the case of most MTA reverse-commute routes, fewer than half of respondents rated time-expenditures aboard buses as “good” or “very good”. By comparison, LADOT's Route 422 scored well on this criterion – around two-thirds rated time aboard Route 422 buses as good or very good. This higher rating likely stems from the considerably faster speeds of Route 422 owing to its use of freeways and limited stops along some stretches. The fact that most reverse-commute services in the County receive a neutral or poor rating suggests a pent-up demand for swift, limited-stop services, such as the Metro Rapid buses operating along Wilshire Boulevard (MTA Route 720). One of the MTA Routes included in this survey, Route 750 along the Ventura Freeway corridor, was reconfigured into a Metro Rapid bus service since the survey of its riders was conducted. Changes mainly involved introducing bus-signal prioritization, running low-floor buses (to allow level boarding and alighting), and the elimination of some bus stops. Within the first year of these changes, ridership on Route 750 jumped 27 percent. On the Wilshire corridor, the increase was 42 percent. Studies reveal that one-third of the increase was new riders, one-third was current users riding more often, and one-third was MTA riders who changed routes (i.e., diverted trips).<sup>12</sup>

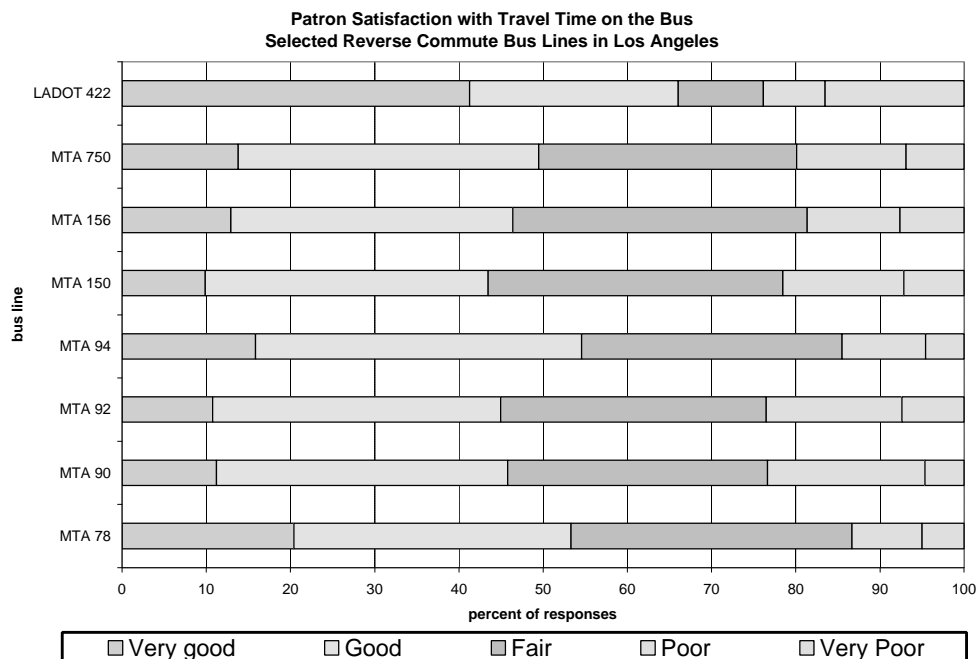
### **Punctuality and Convenience**

On-time performance and reliable services are also important to most transit users. On this criterion, Route 422 again scores well relative to MTA's reverse-commute lines, with over half of respondents rating its track-record for punctuality as “good” or “very good” (Figure 6.12). Most of the peer routes operated by MTA received this high of a rating by only 30 to 40 percent of customers. There was some bi-polarity in opinion about Route 422's ability to adhere to schedules – in addition to receiving the highest marks, it also received the lowest. More than one out of five respondents rated its punctuality “very poorly”. And more one out of three rated its punctuality as poor or very poor.

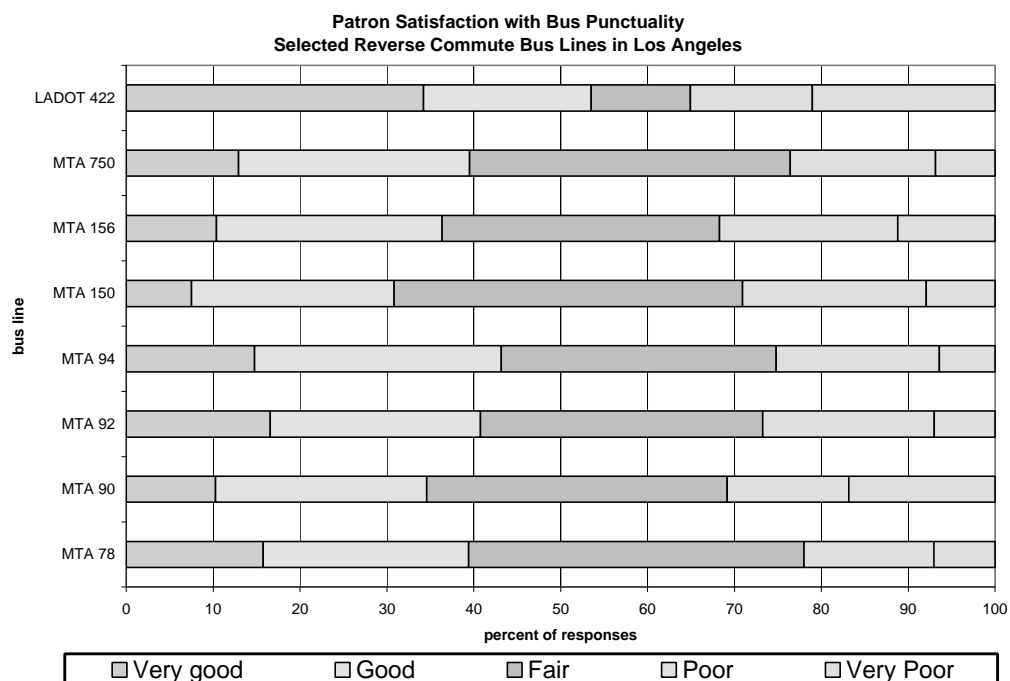
In ways, convenience is a catch-all category that gets at elements of speediness, punctuality, comfort, and overall quality of experience. Again, Route 422 received the highest marks: three out of four respondents scored it as good or very good in terms of convenience (Figure 6.13). Again, however, there was some discontent – almost one out of five riders felt Route 422 was inconvenient. The majority of customers on MTA's reverse-commute routes were neutral or mildly positive about the convenience of services.

### **Pricing, Safety, and Cleanliness**

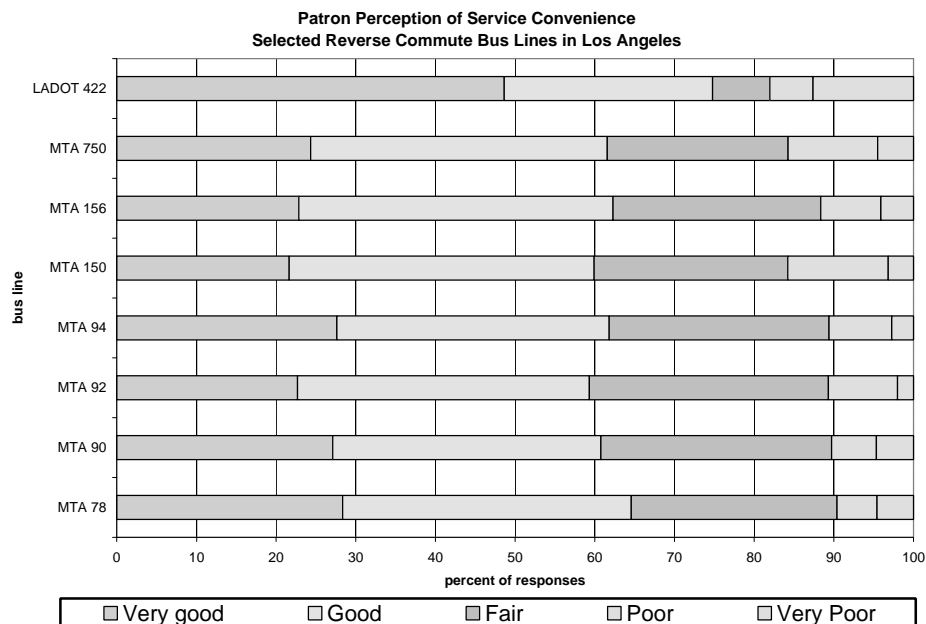
Transit-dependent users tend to be more price-sensitive than choice riders, however this holds mainly for discretionary trips.<sup>13</sup> For essential travel, like going to and from work, they have little choice but to pay higher prices. Accordingly, one might expect ridership on reverse-commute routes to be more price-inelastic, although when responding to survey questions about pricing, passengers might very well voice strong opinions about fare policy.



**Figure 6.11 Passenger Opinions About Travel Times on Buses for Reverse-Commute Routes in Los Angeles County, 2001 Survey Responses**



**Figure 6.12 Passenger Opinions on Bus Punctuality for Reverse-Commute Routes in Los Angeles County, 2001 Survey Responses**

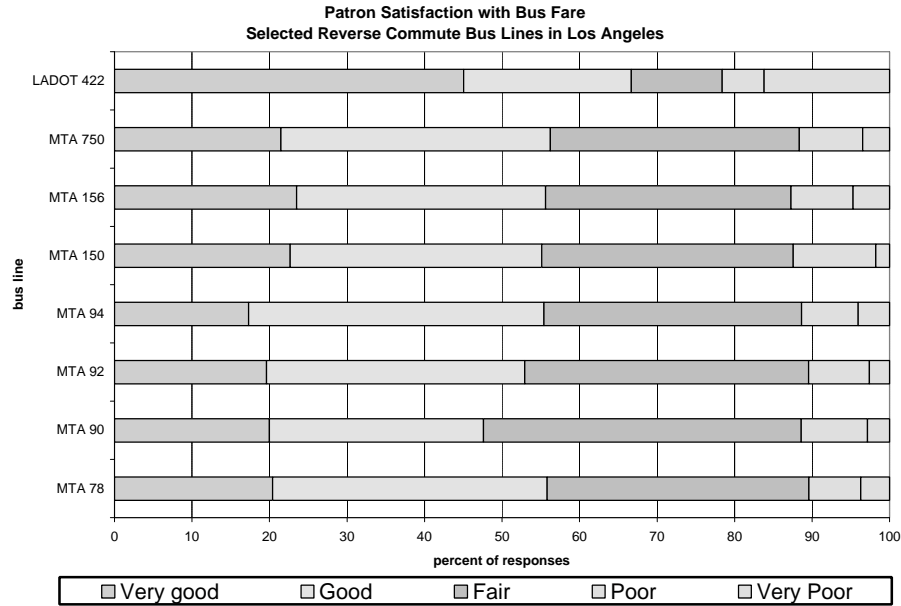


**Figure 6.13 Passenger Opinions on Convenience Levels of Reverse-Commute Routes in Los Angeles County, 2001 Survey Responses**

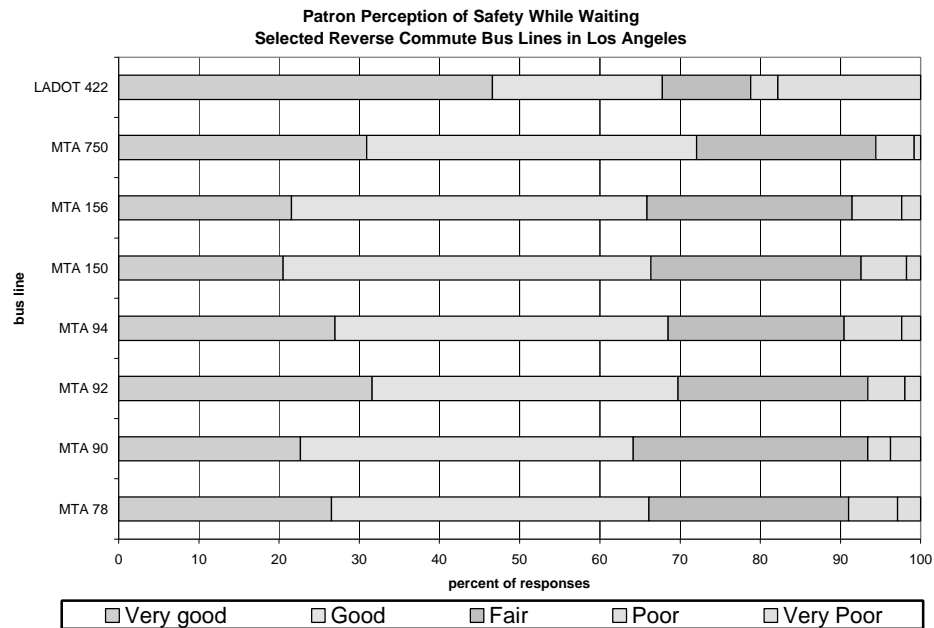
Over the past decade, fare levels have been a contentious issue in Los Angeles County. Efforts to raise fares in the early 1990s, implicitly to help pay for costly rail services, prompted lawsuits claiming fare hikes discriminated against minorities who rely mainly on buses to get around. A consent decree allowed fare increases, however more resources were required to go toward improving bus services and lowering the cost of monthly passes.<sup>14</sup> This series of events sent a clear signal to policy makers that transit pricing matters an awful lot to bus users of Southern California and their advocates, and that future fare-policy decisions have to be especially sensitive to matters of affordability and fairness.

Riders of Los Angeles County's reverse-commute services seem content with fares (Figure 6.14). In the case of MTA's routes, more than 85 percent feel fares are either fair or a bargain. While more of LADOT's Route 422 customers viewed fares positively than those on MTA's routes, more (over 20 percent) were also critical. Overall, however, the vast majority of reverse-commuters in Los Angeles County are satisfied with the fares they pay, due in part, one might surmise, to the popularity of discounted passes among those who regularly ride transit to work.

Safety is one of those factors that people tend to take for granted, and often only dwell on its importance when explicitly asked about it on surveys or when a crime while waiting for a bus or serious accident gets media attention. Figure 6.15 shows most reverse-commuters in the County feel comfortable or at no particular risk while waiting for a bus. LADOT's Route 422 received the poorest ratings in this regard, ostensibly because the route originates south of downtown, an area with among the highest crime rates in Los Angeles County.



**Figure 6.14** Passenger Opinions About Bus Fares on Reverse-Commute Routes in Los Angeles County, 2001 Survey Responses



**Figure 6.15** Passenger Opinions About Safety on Reverse-Commute Routes in Los Angeles County, 2001 Survey Responses

In terms of cleanliness, reverse-commute services get mixed marks (Figure 6.16). Most reverse-commuters on MTA routes view buses as reasonably clean and tidy. LADOT's Route 422 received higher ratings for cleanliness.

### **Overall Rating**

On all of the surveys, customers were asked to give an overall rating of bus services (Figure 6.17). This question came at the end of other attitudinal questions, meaning respondents answered it after already having rated services in terms of travel time, punctuality, convenience, price, safety, and cleanliness. One would expect all of these factors were weighed when respondents recorded a comprehensive grade.

Overall, the majority of customers rated services as good or very good for all except one MTA reverse-commute route. Consistent with the rating of most other factors, LADOT Route 422 got the most positive ratings – more than seven out of ten customers scored overall services as good or very good. It also had the largest share of negative ratings – two out of ten passengers gave it a poor or very poor mark.

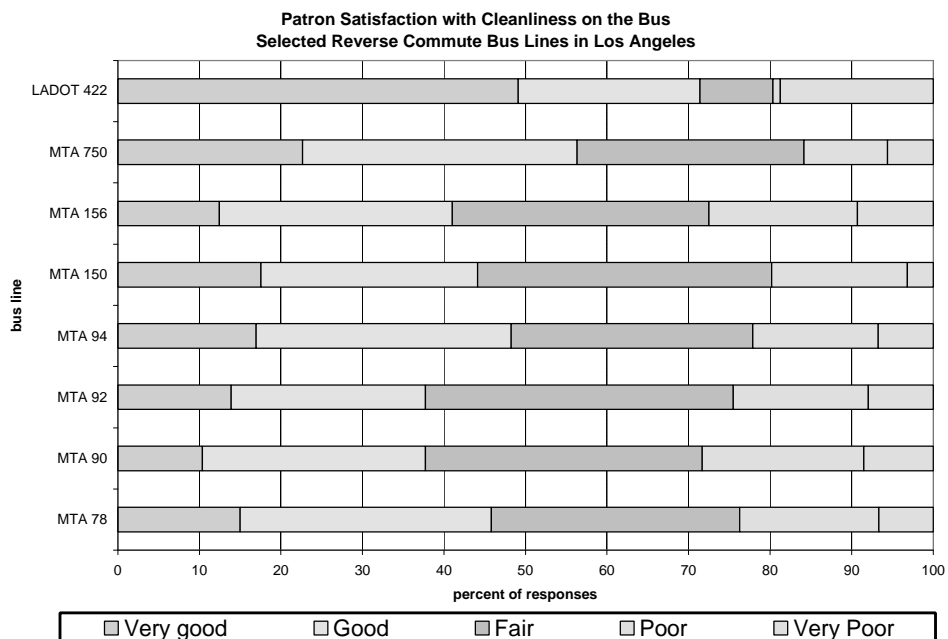
## **6.5 SPATIAL ATTRIBUTES OF DEMAND ON ROUTE 422**

Surveys of riders taking Route 422 also compiled information on the street addresses of trip origins and destinations, allowing fairly detailed analyses of spatial patterns of trips. Besides defining the desire lines of trips made aboard Route 422 buses, we were also able to plot the bus routes and desire lines in relation to the locations of passengers' residences and the locations of low-wage jobs. The resulting "gap analysis" provided visual cues on the degree to which, spatially at least, the configuration of Route 422 matched desire lines and connected low-income residents to jobs they are most eligible for.

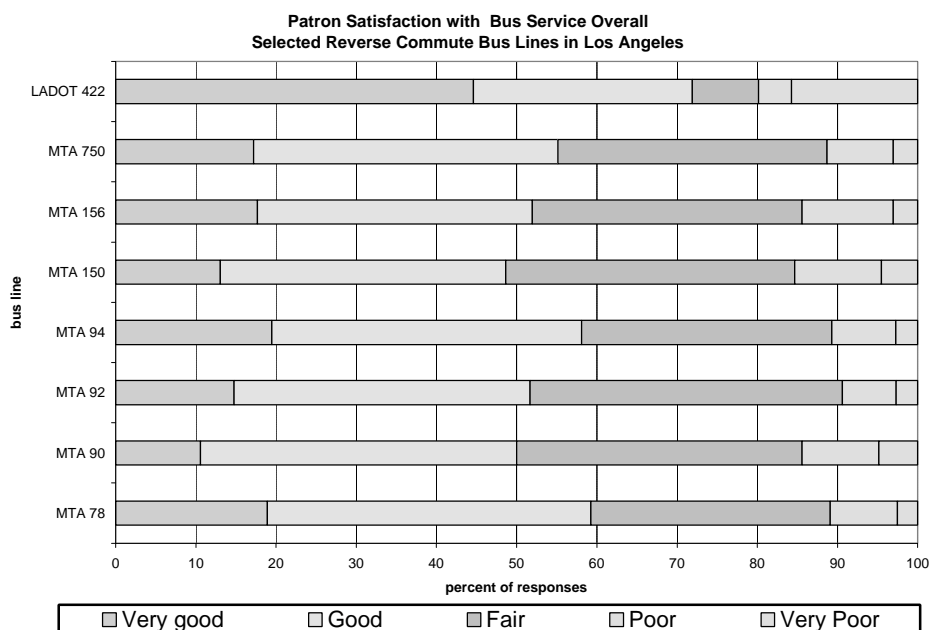
Map 6.2 shows Route 422 in greater detail, including the twelve stops and terminuses along the 50-plus mile corridor. At the eastern end of the corridor, Route 422 operates predominantly on surface streets. For significant portions of the route's central and western segments, buses operate on the Ventura Freeway (State Route 101), one of California's busiest freeways.

### **Desire Lines**

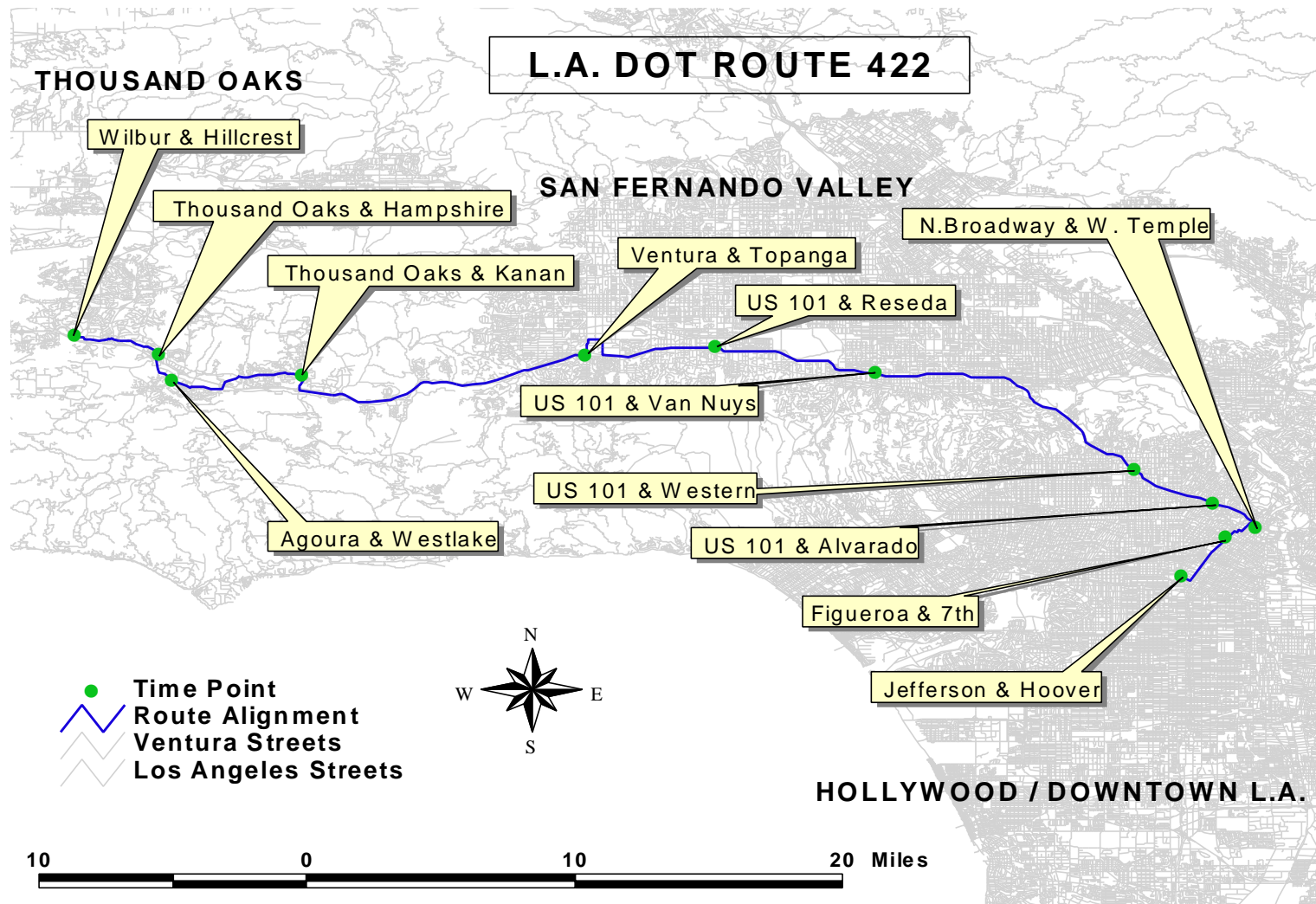
Based on trip origins and destinations, desire lines of all surveyed journeys on Route 422 were plotted (Map 6.3). Most trips are fairly closely aligned along Route 422's east-west axis, though some origins and destinations are aligned perpendicular rather than parallel to the route. In general, trip destinations (i.e., non-home ends of trips) are more dispersed than trip origins (i.e., home ends of trips). The spread-out nature of many trip destinations suggests many users of Route 422 have to make a transfer to another bus to reach their workplaces, something that was borne out in Figure 6.7 presented earlier. Any strategies that improved the connections between perpendicular feeder buses and Route 422 would clearly benefit users of Route 422. Flexible jitney services and shared-ride taxis, if allowed to ply



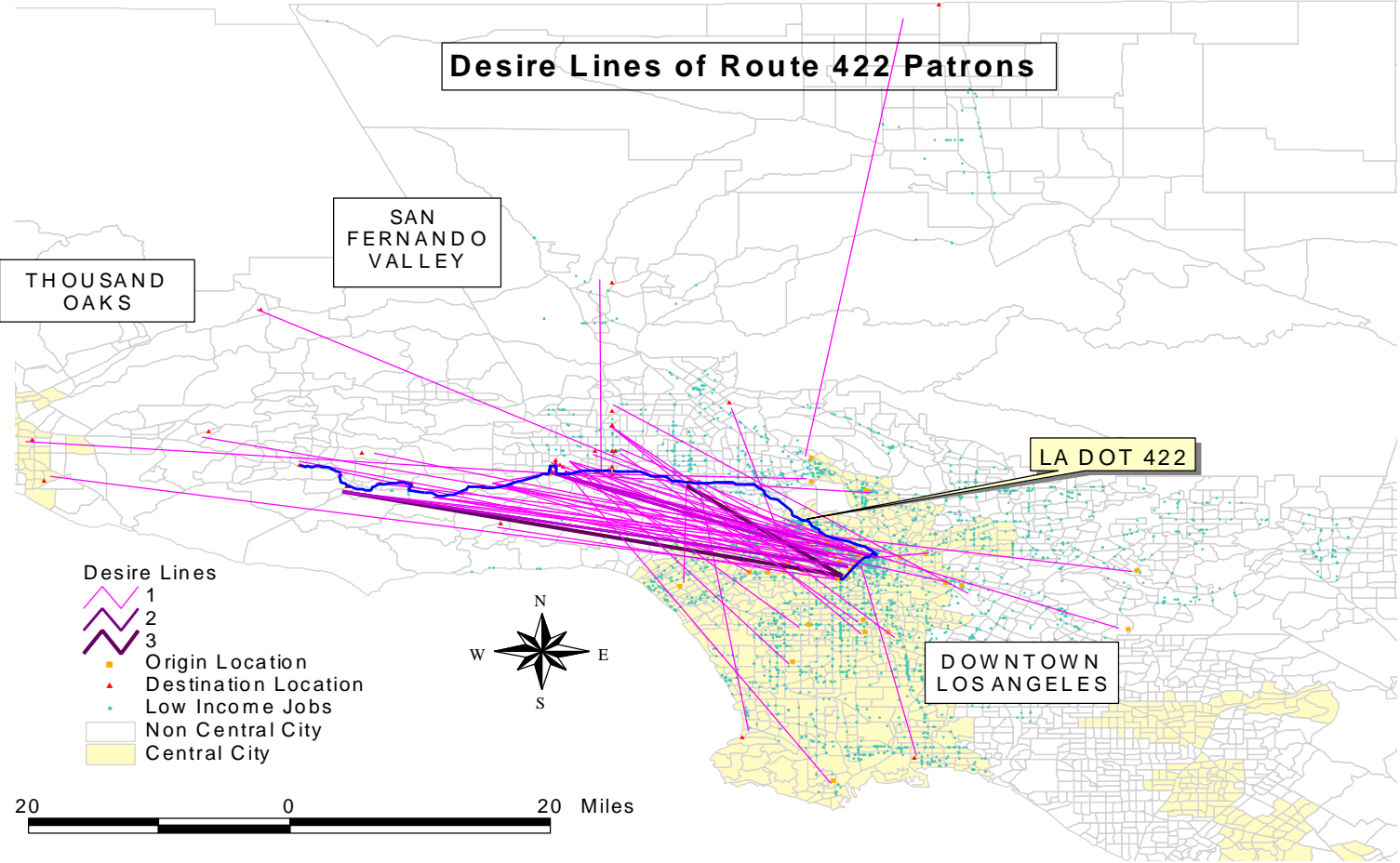
**Figure 6.16** Passenger Opinions About Vehicle Cleanliness on Reverse-Commute Routes in Los Angeles County, 2001 Survey Responses



**Figure 6.17** Passenger Opinions About Overall Bus Service on Reverse-Commute Routes in Los Angeles County, 2001 Survey Responses



Map 6.2 Alignment and Stops of LADOT Route 422



Map 6.3 Desire Lines of Surveyed Trips on LADOT Route 422

these perpendicular routes, might also materially enhance connections to jobs in the San Fernando Valley.<sup>15</sup>

### **Low Income Job Concentrations**

To investigate the locations of low-income jobs in relationship to Route 422, we turned to a proprietary data base of business locations. Called *Metroscan*, this data base provides precise address locations for current businesses based on records from the County Assessors office.<sup>16</sup> In the data base, properties are defined at a fine level of land-use detail. We chose business activities that tend to hire low-skill workers and pay low wages to identify where potentially low-income jobs are located. These include jobs at fast-food restaurants, businesses and shops on parcels with low assessed land values, attendant parking lots, warehouses, small motels and hotel (also with low assessed land values), and the like.

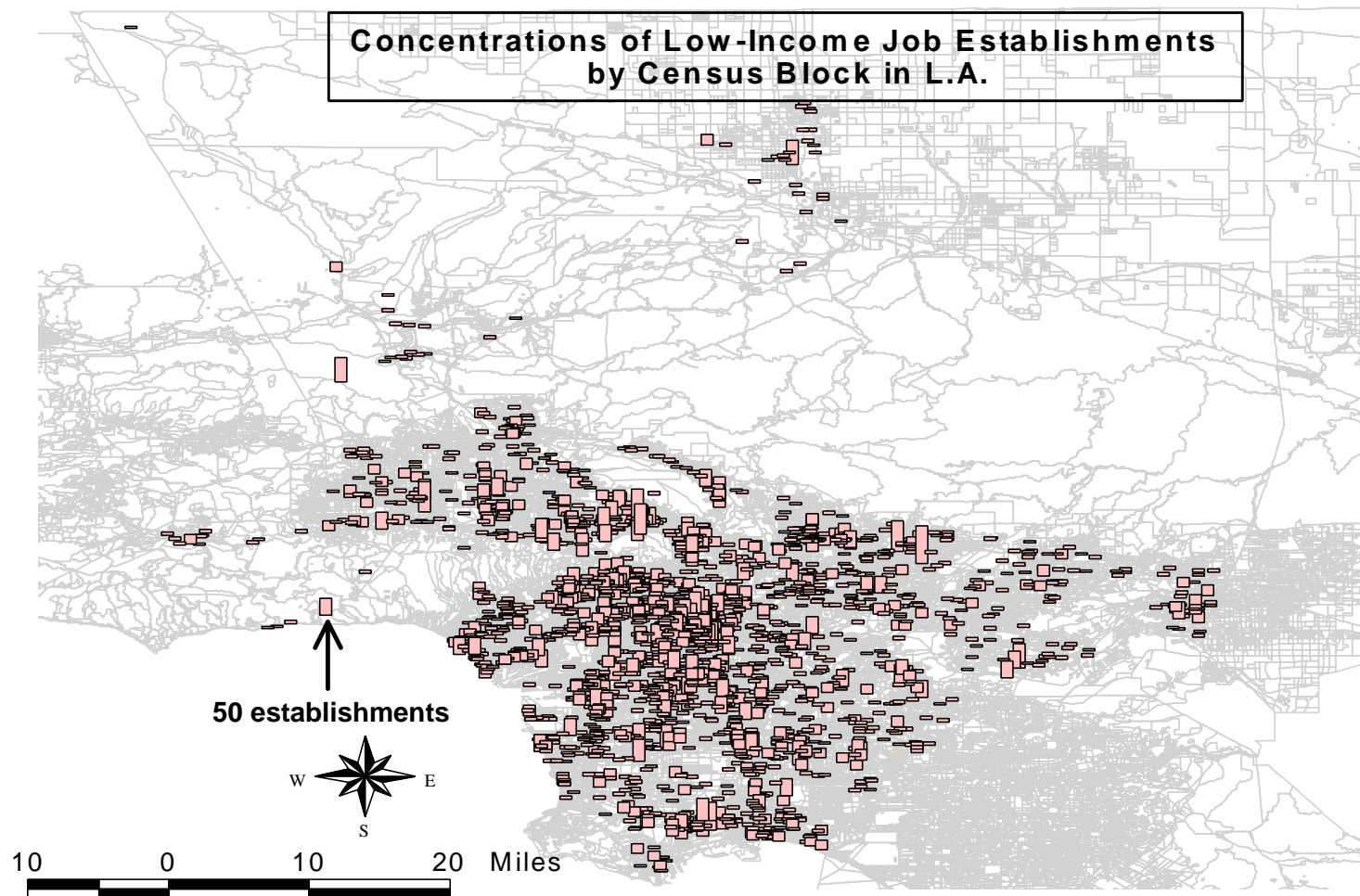
Map 6.4 plots the locations of low-income job establishments that existed in 2001, at the census block level, in Los Angeles County. Even though Route 422 connects many (predominantly Latino women) to jobs in the San Fernando Valley and beyond, Map 6.4 shows the highest density of low-income jobs are in and around downtown Los Angeles. The number of low-income jobs taper with distance from the center, although not in a uniform manner. The map also reveals concentrated pockets of low-wage, low-skilled jobs away from the center, including in the eastern and central portions of the San Fernando Valley, areas that are directly served by Route 422.

It is also worth noting that the data on locations of low-income jobs are only for business establishments. Many informal jobs, like domestic-work and itinerant day labor, are not captured in this data base. Indeed, these are the very jobs that many Latinos and undocumented workers – those who constituted a significant share of Route 422's customer base – end up finding. Moreover, large shares of these jobs tend to be in suburbs where many upper middle-income families reside and construction jobs are most prevalent. Some of Route 422's patrons may very well be bypassing the concentrations of established low-income jobs in the central city for more readily available informal and itinerant jobs in the suburbs. Regardless, based on attitudes and origin-destination data, Route 422 seems to be achieving its intended purpose for many needy customers: linking them to available faraway jobs in a satisfactorily manner, at least in the minds of the majority of users.

Another implication of high concentrations of low-income jobs in the core is that inner-city transit services are just as important, if not more so, than special reverse-commute services in promoting welfare-to-work. Besides attending to the real and legitimate mobility needs of reverse commuters, improvements in the quality of shorter-distance transit services within built-up portions of the city, we should be reminded, would also materially enhance job access for even larger numbers of CalWORKs participants.

### **Low-Income Jobs and Trip Origins and Destinations**

Might the limited spatial coverage of fixed bus routes, like LADOT Route 422, restrict where transit-dependent populations seek and find employment? While this is impossible to



Map 6.4 Distribution of Low-Income Job Establishments in Los Angeles County by Census Block, 2001

fully answer, the plotting of actual trip destinations (which again were mainly workplaces) relative to the locations of low-income jobs gives some perspective on this matter. If relatively larger shares of eligible jobs are far from the special reverse-commute route in relation to actual job sites, one might infer some degree of latent demand – i.e., work trips that might have been made if routes were better oriented to these destinations. While other MTA routes certainly are available for serving many potential workplace destinations off of the Route 422 corridor, none were designed for the expressed purpose of serving reverse-direction commutes. Accessing these far-flung jobs by traditional frequent-stop buses could be too taxing even for those sorely needing work.

Map 6.5 suggests some concordance between origin-destination patterns and bus routing along the San Fernando Valley axis served by Route 422, at least in relation to the locations of all low-income job sites in this part of the county. Most respondents' home origins are in and around the central city. Many destinations are in close proximity to the route. Some are neatly aligned along major arteries that run perpendicular to the Ventura Freeway. In the San Fernando Valley, while appreciable numbers of low-income jobs are aligned along the Route 422 axis, substantially more are many miles away, however. If more reverse-commute services like Route 422 were designed to serve other portions of the San Fernando Valley, many jobless and low-skilled inner-city residents of Los Angeles County would no doubt benefit. Such services would very likely unleash latent demand – i.e., open up job opportunities for low- or unskilled inner-city residents currently unemployed. Of course, designing and implementing more specialized services like Route 422 is not a costless proposition. Alternative models should be considered for serving areas far removed from freeway corridors like Highway 101, including flexible forms of mass transportation like private jitneys, shuttle vans, and shared-ride taxis.

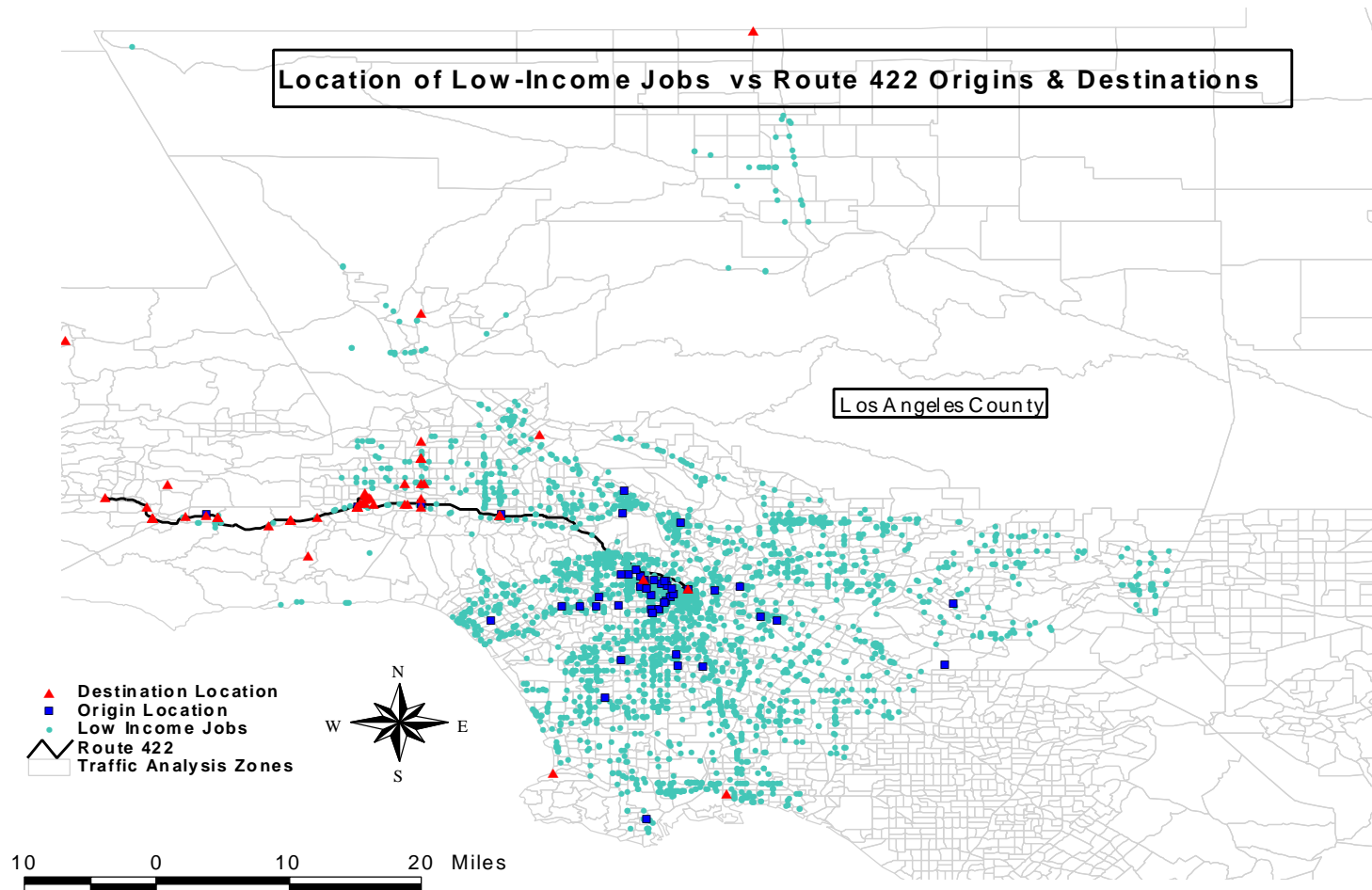
## 6.6 SUMMARY

Los Angeles County has a number of bus routes that connect inner-city neighborhoods with suburban jobs. Route 422, initiated by the county's transportation department, is one of California's truly reverse-commute bus services, targeted specifically at welfare-to-work clientele.

Comparative statistics reveal that Route 422 is a productive, well-performing service, returning relatively high shares of costs through the farebox and providing many passenger-miles of service relative to vehicle-miles of operations. High travel speeds due to freeway operations and limited-stop services partly account for its attractiveness to riders. Attitudinal responses to surveys confirmed this.

Route 422's importance as a mobility provider is underscored by the large numbers of riders who are transit dependent. The typical customer is a Latino woman from a low-income household who has no driver's license or access to a car. Nearly all customers indicated they expect to continue patronizing the service in the near future.

Spatially, Route 422 serves the origin-destination patterns of many customers reasonably well. Still, a goodly number of customers must transfer to other buses to reach their workplace destinations. Many areas with concentrations of low-wage jobs far removed from the Route 422 corridor but in the sub-region had no instances of Route 422 customers



Map 6.5 Distribution of Low-Income Job Establishments in Relation to the Origins and Destination of Trips on Route 422, 2001

working in these locations. This could hint at some degree of unfilled latent demand, possibly attributable, at least in part, to the absence of suitable transit connections. In a spread-out landscape like the San Fernando Valley, policy attention should also be given to more flexible, less traditional forms of mass transportation, such as privately owned and operated paratransit and feeder shuttles.

## Notes

- <sup>1</sup> According to the Texas Transportation Institute, Los Angeles County suffered the worst traffic congestion in the country every year between 1989 and 1999, measured on the basis of average annual person-hours delays per capita. Source: Texas Transportation Institute, *2001 Urban Mobility Study*, College Station, Texas A&M University, 2002; See section on: The Mobility Data for Los Angeles, CA; [http://mobility.tamu.edu/ums/study/cities/tables/los\\_angeles.pdf](http://mobility.tamu.edu/ums/study/cities/tables/los_angeles.pdf). For discussions on the suburbanization of employment in metropolitan Los Angeles, see: R. Cervero, *Suburban Gridlock*, New Brunswick, New Jersey, Center for Urban Policy Research, 1989; J. Garreau, *Edge City: Life on the New Frontier*, New York, Doubleday Press, 1991; and P. Gordon, H. Richardson, and M. Jun, Beyond Polycentricity: The Dispersed Metropolis, Los Angeles, 1970-1990, *Journal of the American Planning Association*, Vol. 62, 1996, pp. 416-420.
- <sup>2</sup> M. Moreno, N. Eisenberg, P. Ong, D. Houston, T. Bills, J. Horton, and L. Shaw, *Assessing the Transportation Needs of Welfare-to-Work Participants in Los Angeles County*, Los Angeles, Urban Research Division, Chief Administrative Office, County of Los Angeles, 2000.
- <sup>3</sup> GAIN is the employment/training component of welfare-to-work in Los Angeles County, implemented prior to the initiation of welfare reform. GAIN is the primary programmatic vehicle for employment, training, and placement in the County, and is a requirement for nearly all non-exempt CalWORKs participants.
- <sup>4</sup> M. Orfield, *Los Angeles Metropatterns: Social Separation and Sprawl in the Los Angeles Region*, Minneapolis, Metropolitan Area Research Corporation, 2000.
- <sup>5</sup> See: [http://www.mta.net/press/pressroom/facts\\_glance](http://www.mta.net/press/pressroom/facts_glance).
- <sup>6</sup> In 1995, when the MTA signed the Consent Decree, it agreed as a part of the decree to create a Master Plan for new Services linking transit dependent communities with employment, educational and medical opportunities. MTA recommended that LADOT be funded to operate the reverse commute service to the San Fernando Valley as a part of this new service plan, since MTA had knowledge of the potential reverse commute market as a result of local service demand outbound to the Valley that had been growing over the past several years. In addition, LADOT was the most logical operator of this service since they already operated traditional service on Route 423, which served the same basic origins and destinations of Route 422, but in the reverse direction. LADOT began Route 422 service on February 16, 1998. LADOT, which operates all its transit services through competitively selected contractors, was able to obtain a low marginal rate from its contractor to operate this reverse commute service because the contractor was able to turn dead-head miles into revenue miles. In addition, LADOT chose to redesign the reverse commute service by adding stops on the 101 Freeway in Echo Park, Hollywood, Van Nuys and Reseda.
- <sup>7</sup> Moreno, *et al.*, 2000; P. Hu and Jennifer Young, *Summary of Travel Trends, 1995 Nationwide Personal Transportation Survey*, Oak Ridge, Tennessee, Oak Ridge National Lab, 1999.
- <sup>8</sup> In fiscal year 2001, Route 422 averaged 636 passenger miles per vehicle hour which was nearly 11 times the regional average and more than twice that of any of the MTA reverse-commute routes. The number of passenger-miles per vehicle mile of service on Route 422 (67 in 2001) was similarly well above that of any other reverse-commute route.
- <sup>9</sup> This was a day with overcast skies and occasional drizzles. Besides members of the study team, temporary employees were hired from an employment agency to help administer the surveys. Surveyors rode buses from the corner of Jefferson and Hoover Streets at the downtown terminal of the line and distributed questionnaires to everyone who boarded during the survey period. Other surveyors were stationed at the busy boarding locations along the Ventura Freeway corridor at the Alvarado stop, the Vermont stop, and the Western stop. Surveyors, including temporary workers, were given several hours of training on how to administer surveys and assist riders fill out questions. They were informed that completing the survey was completely optional and were instructed to only request that people complete questionnaires, but not to press the matter.

- <sup>10</sup> Excluding missing data, between 100 and 120 valid responses were obtained for most questions.
- <sup>11</sup> Moreno, *et al.*, 2000.
- <sup>12</sup> Transportation Management & Design, Inc., *Final Report: Los Angeles Metro Rapid Demonstration Program*, Los Angeles County Metropolitan Transportation Authority, 2002.
- <sup>13</sup> R. Cervero, Transit Pricing Research: A Review and Synthesis, *Transportation*, Vol. 17, No. 2, 1980, pp. 117-140.
- <sup>14</sup> J. Grengs, Community-Based Planning as a Source of Political Change: The Transit Equity Movement of Los Angeles' Bus Riders Union, *Journal of the American Planning Association*, Vol. 68, No. 2, 2002, pp. 165-178.
- <sup>15</sup> See: R. Cervero, *Paratransit in America: Redefining Mass Transit*, Westport, Connecticut, Praeger Press, 1997.
- <sup>16</sup> Source: First American Real Estate Solutions, *Metroscan* data base, Los Angeles County.

## Chapter Seven

### Fixed-Route Service Expansions: San Diego and Alameda Counties

#### 7.1 INTRODUCTION

Los Angeles County has by far the largest transit operation in California. Among the next tier of large-size California transit services are two areas that have tried in earnest to upgrade fixed-route bus services to meet the needs of welfare-to-work populations: San Diego County, under the leadership of the Metropolitan Transit Development Board (MTDB) and Alameda County, through initiatives of the Alameda-Contra Costa Transit Authority (AC Transit). In San Diego County, several reverse-commute routes have been introduced to improve job access from the central city and southern parts of the county to the job-rich Mission Valley area and points north. In Alameda County, schedules have been extended to late evenings and weekends in hopes of connecting low-income neighborhoods to major employment centers that operate almost around the clock. Experiences with expanded transit services in these two counties are reviewed in this chapter.

#### 7.2 SAN DIEGO

In San Diego County, a rich assortment of public transit services are provided, comprising 130 bus routes, twelve demand-responsive van-based services, the Coaster commuter rail line, and America's first new-generation light-rail system, the San Diego Trolley. The Metropolitan Transit Development Board (MTDB) oversees the activities of six transit operators in the southern part of the county and is responsible for long-range planning. The North San Diego County Transit Development Board provides services in the north coastal and inland portions of the county.

Over the past decade, ridership within the MTDB service district has increased faster than population.<sup>1</sup> According to three on-board ridership surveys (conducted in 1985, 1990 and 1995), going to or from work constitutes around 40 percent of all transit trips in the region.<sup>2</sup> The share of work trips has declined slightly in recent times.

Over the years, San Diego voters have been willing to support public transit both at the ballot box and fare box. In 1987, they approved a half-percent sales tax, one third of which was earmarked for transit projects. According to a telephone survey conducted by the San Diego Association of Governments in 2001, most voters continue to support the sales tax.<sup>3</sup> This survey also revealed that 85 percent of voters would ride public transit if needed or if it were safe, fast, and attractive.

## **Welfare-to-Work Challenges**

As in Los Angeles County, San Diego County's policy-makers are firmly committed to making it faster, safer, and more convenient for CalWORKs participants to reach jobs by public transit. In 1999, the County approved a study, titled *San Diego Regional Welfare to Work Transportation Plan*, that reviewed various transportation issues and barriers facing CalWORKs recipients and charted a course for overcoming these roadblocks.<sup>4</sup> The study estimated around 36,000 families, or three percent the countywide total, received welfare assistance in 1999. A spatial analysis showed that existing transit services adequately connected the vast majority of the welfare recipients to potential job sites. However, late-night and weekend transit services were considered inadequate for those working non-traditional schedules. Nine residential areas and 15 potential employment clusters with poor transit access – due to routing, scheduling, or both – were identified.

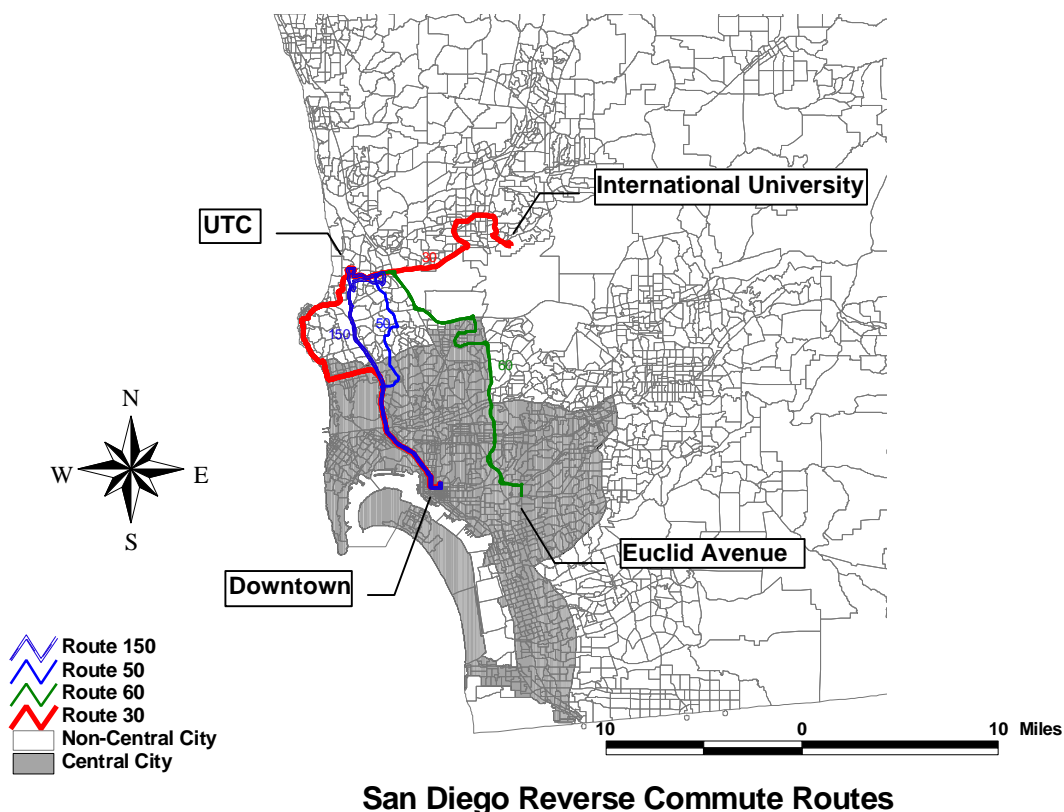
In addition to transit schedule problems, the 1999 study also asserted that transit pricing policies posed welfare-to-work barriers. In the 1990s, MTDB established a uniform fare structure and transfer systems for all operators in its district, but the fare system is still viewed by many as complicated. Those with little formal education or limited reading abilities, the study noted, have difficulties understanding the fare system. Fares were also thought to be too expensive for the very poor. In addition, existing transit services were judged ill-suited for chained trip-making, such as the need for a single mom to drop off kids at child-care centers on the way to work. A complicating factor is that most child-care providers operate around the “regular workday”, meaning if a parent works non-regular hours, child-care can be virtually impossible to arrange.<sup>5</sup>

As in Los Angeles County, transit was found to be most cumbersome for those with variant schedules, such as getting to interview appointments that change by place and time-of-day on a daily basis. Funding was identified as another barrier – notably, strings that limited how transit services might be improved or better coordinated. Welfare-to-work services usually require higher subsidies than ordinary fixed-route services, the study concluded, yet there are few pots of money lying around for expanding services like express reverse-commute runs.

To overcome these barriers, the transportation plan proposed a multi-prong approach, including new bus lines, route extensions, late-hour and weekend schedules, and more frequent bus runs. Employer-sponsored initiatives were also considered essential, such as employer-based shuttles to transit centers and company-supported vanpools. Other strategies that were considered worthwhile pursuing included transit information systems, low-interest loans that allow welfare recipients to purchase and maintain cars, and land-use measures such as incorporating day care at transit centers. San Diego Trolley has been a national leader on this last point, working to help build six child-care facilities on or near transit-owned properties.

## **Reverse-Commute Bus Services in San Diego**

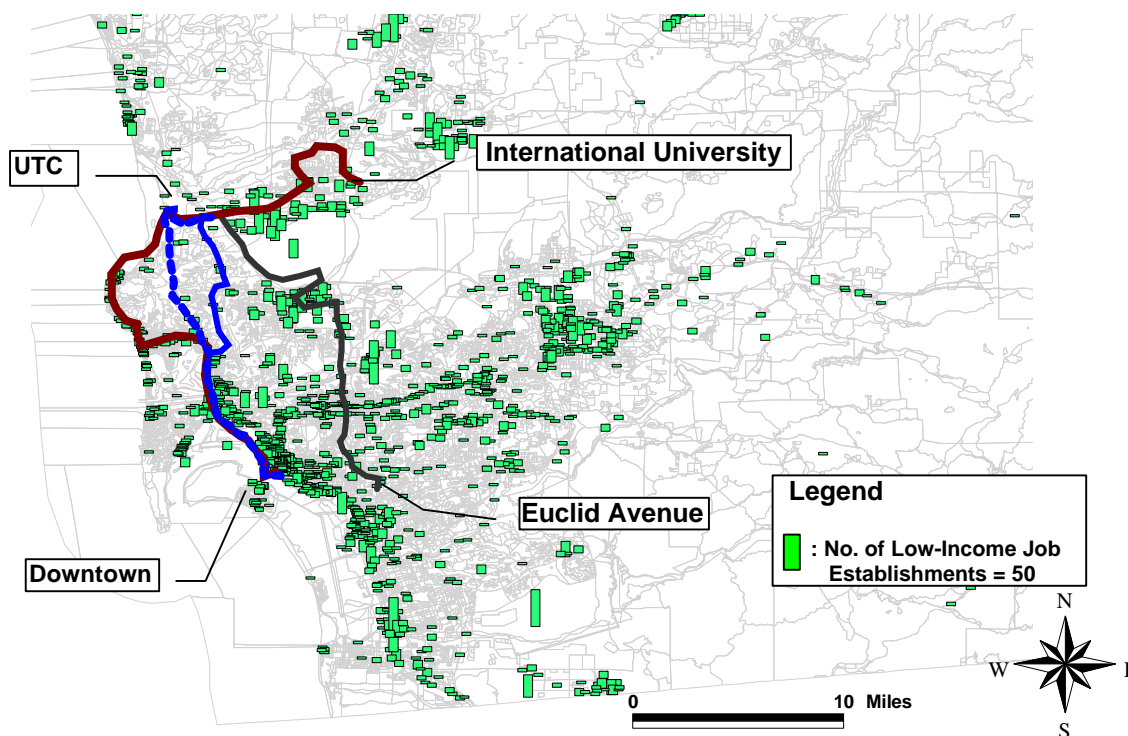
To date, the major response to the plan's recommendations has been to strengthen existing and introduce new reverse-commute bus routes in the county. Presently, four reverse-commute routes (shown in Map 7.1) are operated by San Diego Transit (SDT), the major bus service-provider in southern San Diego County: (1) Route 30: an express line



**Map 7.1 Reverse-Commute Bus Routes in San Diego County**

connecting downtown, La Jolla Retail Centers, University Towne Center (UTC), and U.S. International University where a large number of low-income jobs are located; (2) Route 50, that also connects downtown to UTC; (3) Route 150, which is the limited-stop express version of Route 50; and (4) Route 60 that runs between Euclid Avenue Trolley station and UTC. All of the reverse commute routes serve clusters of low-income jobs. Map 7.2 shows most of the high concentrations of establishments with large numbers of low-income jobs in the north-central part of the county (e.g., around Mira Mesa and UTC), the fastest area of job growth, are aligned along the four bus routes.<sup>6</sup> Many restaurants, shops, hotels, and service-oriented companies in the area provide low-skilled, entry-level employment opportunities. Spatially, transit routes appear smartly configured: they connect low-income neighborhoods to areas with buoyant job growth. Temporally, it is a whole different matter. Currently, none of the reverse-commute routes operates late hours or on weekends. This is despite the fact that county's Welfare to Work Transportation Plan stated:

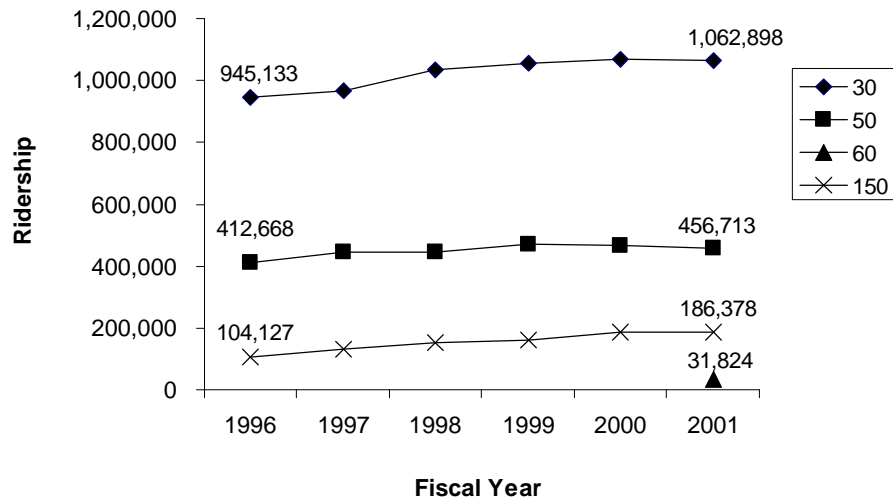
The most seriously needed improvements to the public transit system are not related to the addition of new bus routes. Instead, the greatest deficiencies of public transit as it relates to the needs of CalWORKs participants are the hours of service and the frequency of existing routes.<sup>7</sup>



**Map 7.2 Reverse-Commute Bus Routes and Distribution of Low-Income Jobs in Most Urbanized Portion of San Diego County**

These four reverse-commute routes have enjoyed steady ridership increases in recent years. From 1996 to 2001, patronage on Route 150 jumped nearly 80 percent (Figure 7.1). Routes 30's and 50's ridership grew by twelve and eleven percent, respectively, during the same period; route 30's ridership even eclipsed the one-million passenger mark in 2001. Route 60 was launched in 2001 and carried a relatively small ridership half a year into the transit market.

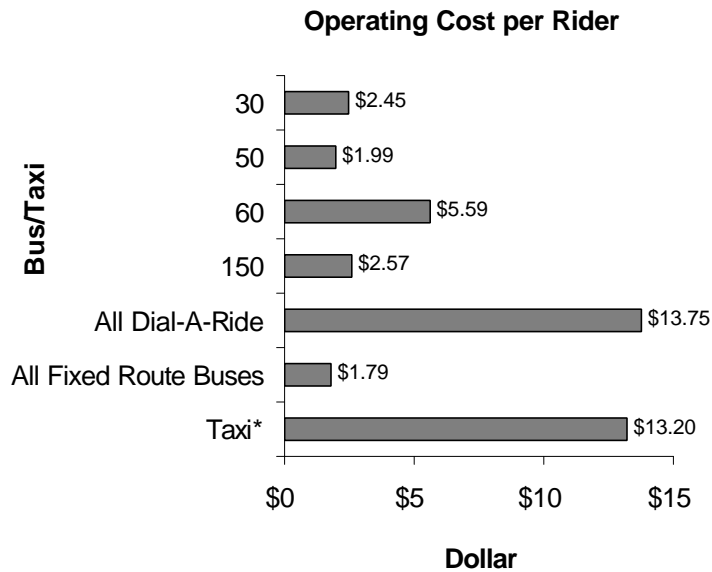
Financially, the four reverse-commute routes have not performed well. Their operating cost and subsidy per rider exceeded the average of all fixed-route bus services operated by San Diego Transit (Figures 7.2 and 7.3). Compared to dial-a-ride van services and taxis, however, they are a bargain, costing between 60 and 85 percent less per trip. Also, they required around \$10 less in subsidies per trip than dial-a-ride vans. The higher costs of reverse-commute routes relative to other bus services are likely attributable to several factors. One, reverse-commute routes operate over relatively long distances and because they serve a predominantly commuter market, buses tend to be less utilized during the off-peak. Some reverse-commute buses backhaul fairly empty during peak hours. Also, because of longer distance services, running on freeway segments without loading passengers, or serving less destinations, reverse-commute routes average relatively few passengers per vehicle mile compared to all fixed-route buses in the system (Figure 7.4).



Source: MTDB internal records

Note: Route 60's ridership is only for the second half of FY 2001

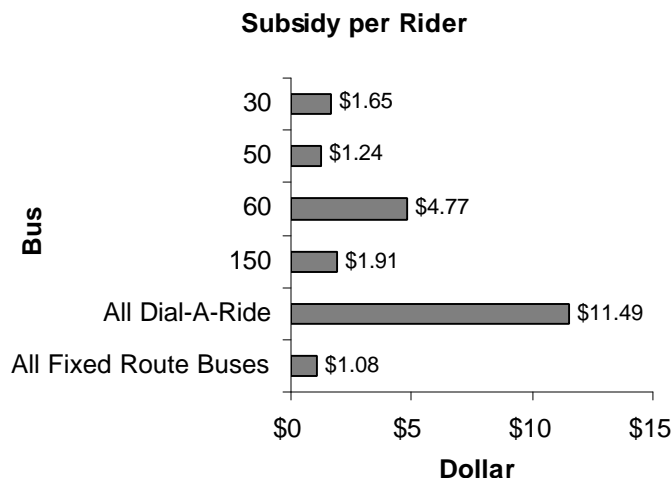
Figure 7.1 Ridership of San Diego Transit Reverse-Commute Bus Routes, 1996-2001



Source: MTDB internal records

Note: The estimate for taxi trips is based on the fare for the average trip distance of riders of all four reverse-commute routes

Figure 7.2 Operating Costs of San Diego Transit Reverse-Commute Bus Routes, FY 2001



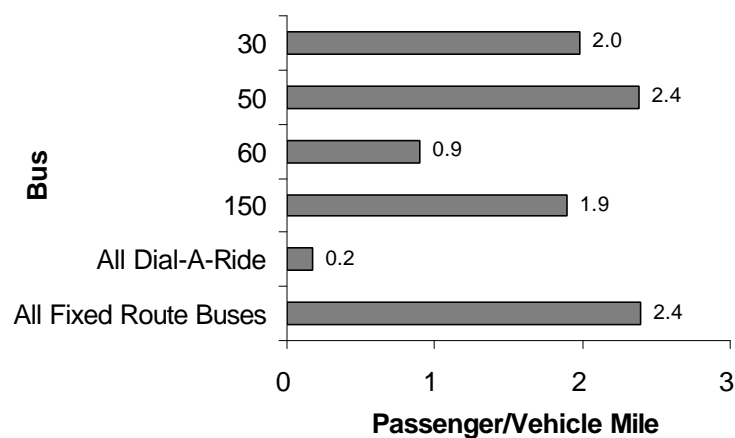
*Source:* MTDB internal records

**Figure 7.3 Subsidy per Rider for San Diego Transit Reverse-Commute Bus Routes, FY 2001**

### Rider Profiles and Attitudes

To better understand who is patronizing reverse-commute services in San Diego, we conducted an on-board ridership survey on November 29, 2001. The survey approaches and instruments were very similar to those used in the survey of reverse-commute routes in Los Angeles, reviewed in the previous chapter. As in Los Angeles, both English and Spanish versions of questionnaires were distributed. A stratified sampling approach was used. For all four routes, bus runs were divided into peak and off peak time periods, and then randomly selected from each group. Also, surveys were collected for both directions of trips. Most passengers willingly completed questionnaires, yielding 509 valid returns.

One-half of surveyed trips were for the purpose of going to work and 70 percent of commute trips were heading against the dominant direction of traffic (i.e., they were reverse). More than 70 percent of the commuters surveyed traveled during peak hours. The average (door-to-door) travel times of reverse commuters were slightly over one hour, which was 15 minutes longer than that of non-reverse commuters. The vast majority of the commuters walked between origins or destinations and bus stops, and the average walk time to or from a stop was seven minutes. Also, three quarters of reverse commuters transferred once or more, which was 14 percent higher than the transfer rates of non-reverse commuters. Only one out of five reverse commuters had a car available for the trip they were making compared to around 40 percent of non-reverse commuters. One quarter of the commuters picked up or dropped off kids on their typical work trips, and of these individuals, more than half took public transit to child-care centers. Thus, at least 12 percent, and likely far more, of bus users made complex multi-legged trips.



Source: MTDB internal records

**Figure 7.4 Passengers per Vehicle Mile of San Diego Transit Reverse-Commute Bus Routes, FY 2001**

Based on responses to attitudinal questions, the vast majority of riders patronizing SDT's reverse-commute routes were generally happy with services, regarding transit as important and expressing a willingness to continue riding the bus. Three-quarters of riders agreed or strongly agreed that overall bus services were satisfactory. More than 90 percent agreed or strongly agreed that the bus services were important for the trip they were taking while filling out the survey. Additionally, 85 percent of respondents said they planned to continue riding the bus to work over the next six months. Of the other 15 percent, most said they would likely occasionally use transit in the future, such as when their cars break down.

Though San Diego's reverse commuters were generally satisfied with bus services, the survey uncovered one unmet need: providing job access to those working late hours and on weekends. Currently, none of reverse-commute bus runs depart after 6:15 P.M. However, half of the reverse commuters work late hours. Of these, nine out of ten would take public transit if it were available. This unmet need is most acute along Route 50: two-thirds of its reverse-commuters disagreed or strongly disagreed that the bus schedule was convenient. Also, half of surveyed reverse commuters work on weekends, but all four of the routes operate only on weekdays.

### 7.3 ALAMEDA COUNTY

Extending the hours of bus services is widely viewed as the number-one priority for meeting the job-access needs of needy individuals in San Diego County, yet to date little headway has been made on this front. In contrast, the Alameda-Contra Costa Transit Authority (AC Transit) serving the Oakland-East Bay area has consciously and aggressively pursued this strategy. Along with introducing new routes, the hours of bus operations have been extended on a number of bus routes that serve some of the East Bay's poorest neighborhoods.

AC Transit is the third largest bus-only system in California and the fourth largest in the nation. The agency operates 153 weekday bus routes, 36 of which are transbay connectors to the city of San Francisco. Currently, it serves some 230,000 daily customers.

### **First Wave of Schedule Extensions**

Alameda County, home to 1.44 million residents, is a land of prosperity and deprivation. An estimated 10.8 percent of its households live below the poverty line.<sup>8</sup> Around half of the county's welfare recipients reside in the city of Oakland. Because many county residents are transit-dependent, AC Transit has long had a tradition of running late-night "owl" and weekend bus services. In the early 1990s, however, budget cuts forced the agency to suspend most of its owl services, to the chagrin of many low-income, car-less residents. This forced some businesses to change their work shifts to coincide with AC Transit schedules. Oakland officials soon sought to remedy the situation by seeking funding from Alameda County's Board of Supervisors, however despite best of intentions, late-night services remained patchy for several years. Then in 1998, the city of Oakland sponsored a series of round tables, in collaboration with AC Transit, the Metropolitan Transportation Commission (the region's MPO), and local employers, devoted to linking poor neighborhoods to job centers. Employers who were adversely impacted by cuts in AC Transit owl services were given a seat at the table. Companies like United Parcel Service, Federal Express, and Super K-Mart plus institutional employers such as the Oakland International Airport attended these gatherings and strongly recommended the reintroduction of late-night services in addition to the initiation of new routes.

MTC's role was more than helping to broker an agreement. The agency also spearheaded important technical analyses to guide policy decisions. Notably, its staff planners prepared a series of GIS maps of Alameda County identifying where welfare recipients live relative to the location of low-wage workplaces, child-care centers, and bus routes. The maps highlighted gaps between where buses go and where welfare recipients need to go to reach jobs they are eligible for. Because many of these jobs operate on late-night and odd-hour shifts, it became evident that getting people off of welfare and into work would require that schedules be extended.

In late-1999, AC Transit extended the hours and days-of-week of operations for five bus routes and added several entirely new routes. All of these improved routes connect low-income, predominantly minority Oakland neighborhoods with employment centers near the Oakland International Airport and downtown as well as small businesses dotted along International Boulevard and San Pablo Avenue (Table 7.1). All operate seven days a week. Service improvements were funded through a combination of transit-agency funds, Federal welfare-to-work grants, and County CalWORKs assistance. To market the supplemental services, the city of Oakland and AC Transit sent out information on new and extended services to all welfare recipients in the County and employers with ten or more workers.

Table 7.2 reveals the scope of benefits conferred by the bus schedule extensions and new routes. Collectively, these improvements connected inner-city residents to more than 400 employers (within a five-minute walk of routes) and around 380 child-care, training, and

employment support facilities and services. Also, some 420 new bus stops were added within a quarter mile of the residences of welfare recipients or low-income households. Table 7.2 also reveals wide variation in service-effectiveness, expressed in terms of passengers per revenue hour: from a low of around 4 (in west Oakland) to a high of over 15 (in Oakland's Fruitvale area).

These specialized services came at a high price, however. For the five routes combined, the average operating cost per ride was \$7.90 in 2001. This is three times higher than the system-wide average cost of \$2.65 per hour. Compared to the typically double-digit cost of door-to-door van services and vouchers for late-night taxi services, however, outlays for service extensions were viewed by many as quite reasonable.

### **Recent Improvements**

Building upon these accomplishments, AC Transit expanded services on three other bus routes during 2000 and 2001. Hours of operation on Route 50, which serves the low-income Alameda Point neighborhood, were extended from 9 P.M. to midnight. Six months after these service improvements were introduced in late-2001, Route 50 was averaging only 9 passengers during these extended hours, at a cost of around \$24 per trip. Unless substantially more riders are attracted, the future of Route 50's late-night services is in doubt. At these costs, taxi voucher might be a more reasonable option.

More successful have been two other recent schedule extensions targeted at poor neighborhoods. In August 2001, operating hours on Route 83/86 serving the city of Hayward were expanded to 2 A.M., new stops were added, and routing was reconfigured to improve access to several child-care facilities and job centers. At \$4.62 per rider, Route 83/86 costs twice as much per passenger as AC Transit's system-wide average. Compared to the performance of Route 50, however, Route 83/86 is viewed as a modest success.

A third recent extension, Route 376, is a night shuttle that plies a loop route between two BART stations and the North Richmond area in Contra Costa County. More than fourteen hours were added to Route 376's daily schedule. Along portions of the loop, Route 376 operates as a route-deviation service, meaning drivers can travel several blocks off the mainline to deliver customers to their front doors, at their discretion. Route 376 has been credited with opening up access to more than 200 new employers who hire low-skilled, entry-level jobs for residents of the North Richmond area. It has done so at a cost of \$8.35 per rider, more than three and a half times the system-wide average.

## **7.4 SUMMARY**

Extending transit schedules is widely viewed as an important strategy for promoting welfare-to-work transitions due to the non-traditional, sometimes odd-ball work schedules of many low-wage, entry-level jobs. This chapter reviewed experiences with bus service improvements for two comparable-sized bus-based services. In San Diego County, reverse-commute routes have provided much-valued connections between low-income neighborhoods and job enclaves. While passengers appreciate these services, the most common complaint voiced was the absence of late-night and weekend services. In Alameda

**Table 7.1 AC Transit Supplemental Bus Services**

<b>New Late Night and All-Night Service</b>	<b>Service Hours</b>	<b>Route Termini</b>	<b>Service Area</b>
<b>Route 56</b>	Late-night service 8 P.M. – 12 midnight	Coliseum BART to MacArthur Blvd.	Oakland Coliseum, Coliseum BART
<b>Route 315</b>	Late-night service 7 P.M. – 12 midnight	MacArthur BART to Downtown Oakland	West Oakland, Children's Hospital, Downtown Oakland
<b>Route 345</b>	All-night service 12 midnight – 5 A.M.	East Oakland Loop to and from Eastmont TownCenter	East Oakland, Elmhurst neighborhood, Eastmont Town Center, Coliseum BART, Brookfield neighborhood
<b>Route 354</b>	All-night service 10:30 P.M. – 6 A.M.	Super K-Mart store to MacArthur Blvd.	Fruitvale neighborhood, Fruitvale Station Center, Super K-Mart Store, Fruitvale BART
<b>Route 362</b>	All-night service, 12 midnight – 5 A.M.	MacArthur BART to Fruitvale BART	MacArthur BART, West Oakland, Downtown Oakland, Lake Merritt BART, Highland Hospital, Fruitvale BART

**Table 7.2 Performance of AC Transit Supplemental Bus Services**

<b>New Services</b>	<b>Route #56</b>	<b>Route #315</b>	<b>Route #345</b>	<b>Route #354</b>	<b>Route #362</b>
New stops within ¼ mile of or directly reaching employment sites not previously accessible by transit	62	90	64	42	186
Additional number of employers with entry-level jobs within a 5-minutes reach on each route	64	41	77	> 140	> 115
New stops within ¼ mile of or directly serving child-care facilities, training centers, and other employment-support services	55	56	28	160	82
New stops within ¼ mile of or directly reaching homes of welfare recipients or low-income residents	52	90	186	62	40
Daily average passenger per revenue hour	4.4	3.8	7.8	15.4	7.8

County, such improvements have been made. Through a collaborative effort, hours of operations on eight AC Transit routes have been expanded over the past four years. Schedule extensions and other improvements have opened up access to low-skilled jobs, child-care centers, and training facilities for many areas with high concentrations of CalWORKs recipients. While the costs of late-night service extensions tend to be high, for the most part their subsidies are far less than those for door-to-door van services or taxi

vouchers. For this reason, AC Transit has opted to retain its late-night and weekend timetables.

## Notes

---

- <sup>1</sup> Patronage grew by 12 percent between Fiscal Years 1990 and 1996, which was higher than the population growth of 6 percent during the same period (SANDAG, 1996). Between Fiscal Year 1996 and 2001, ridership increased by another 14 percent, which was again higher than the population growth rate of 9 percent. In Fiscal Year 2001, total annual ridership reached 84.5 million (or more than 232,000 riders per day). Sources: Metropolitan (Data source: MTDB).
- <sup>2</sup> San Diego Association of Governments, *The Changing Face of Transit Riders*, San Diego, SANDAG INFO, 1997.
- <sup>3</sup> San Diego Association of Governments, *Attitudes About Transit and Ridesharing*, San Diego, SANDAG INFO, No. 2, 2000.
- <sup>4</sup> BRW, Inc., *San Diego Welfare to Work Plan: Final Report*, San Diego, San Diego Association of Governments, 1999.
- <sup>5</sup> BRW, Inc., *San Diego Welfare to Work Plan: Stakeholder Analysis Technical Report*, San Diego, San Diego Association of Governments, 1999.
- <sup>6</sup> Information on the locations of establishment with low-income jobs was obtained from the *Metroscan* data base for San Diego County, just as for the Los Angeles County analysis. See Chapter Six for more about this data base.
- <sup>7</sup> BRW, Inc., *San Diego Welfare to Work Plan: Stakeholder Analysis Technical Report*, 1999, p. A-7.
- <sup>8</sup> U.S. Department of Agriculture, Economic Research Service, County-Level Poverty Rates: <http://www.ers.usda.gov/Data/PovertyRates/PovListpct.asp?st=CA&view=Percent>.



## Chapter Eight

### Car Access and Welfare-to-Work: Research Insights and Case Experiences in California

#### 8.1 INTRODUCTION

Given some of the past disappointments in mounting transit services that meet job-access needs of the poor, some areas of the United States have shifted their focus to enhancing private mobility – that is, “automobility”. In a number of places, including Ventura and San Mateo Counties in California, those receiving public assistance or with very low incomes are eligible for loans that can be used to purchase and insure second-hand cars. Some states, like Maryland and Texas, offer sizable tax deductions to firms and individuals who donate vehicles for welfare recipients.

A 1999 study by the Progressive Policy Institute, *Working Far From Home: Transportation and Welfare Reform*, vehemently argues that private automobility offers the best hope for America’s poor. The study’s authors minced no words in touting the advantages of the private car:

“The shortest distance between a poor person and a job is along a line driven in a car...Too often policy makers...are willing to consign poor people to barely functional public systems from which higher-income citizens routinely withdraw. People who point to mass transit as the environmentally sound alternative to cars for the working poor would subject them to inconveniences they themselves would never tolerate”.<sup>1</sup>

By implication, poor people traveling to the suburbs need cars for the same reason non-poor people do: scattered destinations and multi-legged trips make bus travel too cumbersome and time-consuming. Another advocate of the private car “solution” adds:

“The need to take children to day care or school and to run errands on the way home makes shared transportation impractical for workers with family obligations. Workers quit riding as soon as they find a steady job and can afford a car, leaving vanpool operators with a high rider turnover and no stable revenue stream.”<sup>2</sup>

Proponents also note that car ownership can spawn entrepreneurship among inner-city residents. Several studies document how inner-city residents with cars sometimes supplement their earnings by operating informally as jitneys, connecting their neighbors to jobs when heading to work themselves.<sup>3</sup> This provides potentially high-quality door-to-door services, without the double-digit subsidies often reported for specialized welfare-to-work and reverse-commute bus services (e.g., see Chapters Five and Seven of this report).

Car-based strategies, however, have not escaped controversy. The retention of older vehicles, environmentalists point out, exacerbates air quality problems. Others warn that the cost of insuring a car in high-crime, central-city settings can be prohibitively expensive. Some also worry that those depending on the private car to reach jobs will not be able to cover mounting maintenance expenses and costly repair bills that accompany owning older vehicles.

This chapter examines the debate over increasing car ownership as public-policy strategy for promoting welfare-to-work. Discussions are mainly from a California perspective. Notably, recent research that examines the statistical influences of owning a car in four California Counties of vastly different sizes – Alameda, Los Angeles, San Bernardino, and San Joaquin – is reviewed. This is followed by case reviews of experiences in San Mateo County, home to one of the nation’s most successful car-access loan programs, and Ventura County which has worked along with non-profit groups to promote car donations to needy, low-income families. While all California counties support car usage among CalWORKs recipients through mileage reimbursement and in some instances (e.g., Fresno and San Diego Counties) help with parking expenses, registration, and insurance, San Mateo and Ventura Counties have been at the forefront in making it easier for car-less welfare recipients to become car owners.

## **8.2 RESEARCH FINDINGS**

Several recent analyses have statistically examined the effects of car ownership on the ability of California welfare recipients to find employment and get off of public assistance. The focus of this work has been on the relative importance of private versus public mobility – i.e., access to a private car or public transit – in explaining welfare-to-work transitions. The analyses use data on employment and welfare status for two points in time from California Work Pays Demonstration Project (CWDP) data base. Results for the analyses in Alameda, Los Angeles, and San Joaquin Counties are first presented, followed by an analysis for San Bernardino County conducted as part of this research project.

### **Alameda, Los Angeles, and San Joaquin Counties**

A recent research project undertaken by Cervero, Sandoval, and Landis specifically addressed the question of whether there is any empirical proof that car ownership significantly explains the ability of Californians to find jobs and leave welfare.<sup>4</sup> Because this study sheds light on the relative importance of access to cars within a California context, its core findings are reviewed in this section.

The study’s focus was on identifying the relative influence of transit versus highway accessibility and car ownership in explaining the ability of some individuals to switch from welfare recipient to active employment. The research relied on an unusually rich panel of data on characteristics of welfare recipients in the three California counties during the first half of the 1990s. All data were tied to records maintained for a random sample of individuals who at one time were receiving public assistance. While all surveyed individuals were unemployed and receiving Aid for Families with Dependent Children (AFDC) support in Wave 1, two years later in Wave 2, some of the individuals had found jobs and gotten off

public assistance.<sup>5</sup> Changes in welfare status were associated with various predictor variables, including car ownership, job-accessibility via transit, neighborhood-scale measures of bus-service intensity, and attributes of individuals. Accessibility measures and quality of transit services were estimated using GIS techniques and address information on each person's specific location of residence. Multinomial logit estimation allowed the incremental influence of transportation, human capital, and various control variables on the probability of obtaining a job to be gauged.

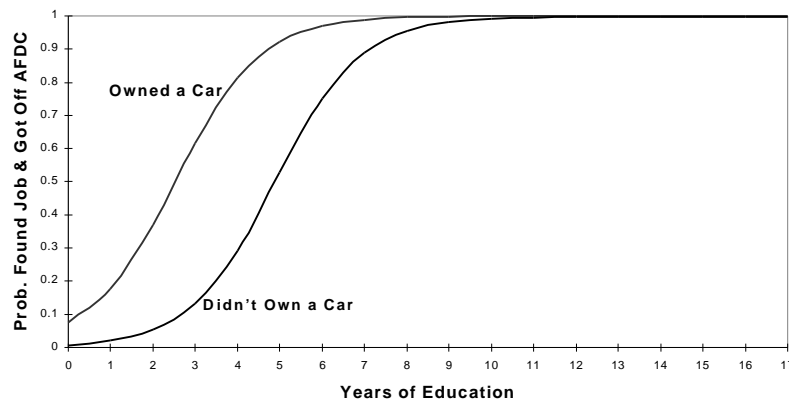
For all three counties, the study showed that a change in status from non-car ownership to car-ownership significantly increased the probability of Californian's leaving AFDC and finding employment. The strongest relationship was found in San Joaquin County, suggesting that in smaller areas with poorer quality transit services, automobility is even more important in allowing welfare-to-work transitions. Job accessibility via transit was found to also contribute to the ability of AFDC recipients to find work in Alameda County (but not the other two), however this variable was nowhere near as strong of a predictor as was car-ownership status.

In the case of Alameda County, where owning a car and having good public transit connections were both associated with welfare-to-work transitions, the importance of access to private cars was underscored by sensitivity analyses. From the logit model output, it was estimated that, controlling for other factors, the odds ratio of getting a job (and staying off AFDC) to not getting a job jumped by a factor of 13 when an individual's status switched from not owning a car to owning one. Inputting information into the predictive model to reflect conditions for the "typical" Alameda County welfare recipient allowed the odds of finding employment as a function of car ownership, controlling for an important covariate variable – years of education – to be plotted. Figure 8.1 presents the results of this sensitivity analysis. The figure shows human-capital factors, like schooling, have a strong bearing on employment outcomes. It also reveals, however, that for those with only primary levels of education, gaining ownership of a car can appreciably increase the probability of finding a job and staying off welfare, all else being equal. In general, the likelihood of Alameda County welfare recipients with only two to five years of education finding a job was about 50 percent higher if they owned a car versus if they did not. This is a huge differential, strongly suggesting that car ownership helps the neediest and least employable individuals find work.

### **San Bernardino Study**

To extend the study of Cervero, Sandavol, and Landis, we obtained data for panelists from San Bernardino County from the California Work Pays Demonstration Project (CWPD) data base. A similar analysis was carried out as described above, using a series of control variables that reflected socio-demographic and human-capital characteristics of panel members (from 1993 to 1995) so that we could zero-in on the relative importance of owning a car versus the quality of transit access to cars.

Table 8.1 presents the results of the multinomial logit analysis. Three employment outcomes were modeled: getting a job and getting off welfare; getting a job but staying on welfare; and



Source: R. Cervero, O. Sandoval, and J. Landis, Transportation as a Stimulus to Welfare-to-Work: Private Versus Public Mobility, *Journal of Planning Education and Research*, 2002 (forthcoming).

**Figure 8.1 Sensitivity Analysis Results on Probability of an Alameda County Welfare Recipient Finding a Job and Getting Off AFDC**

not finding work. These three categories roughly correspond to ordinal outcomes that range from the least to the most favorable. The second category reflects situations where individuals found jobs, albeit most likely low-paying ones. Besides low-wage employment, category two likely also represents part-time and contingency work – i.e., unstable employment situations which kept working parents with children dependent on public assistance.

As was found in Alameda, Los Angeles, and San Joaquin Counties, car ownership was a strong and positive predictor of whether AFDC recipients in 1993 were able to find work in 1995 and also if they were able to get off of welfare as a result. Car ownership not only contributed to successfully finding work, but it also distinguished between those who got a job but stayed on welfare and those who did not. Given that the coefficient on the car ownership variable in Equation 1 of Table 8.1 is larger than in Equation 2, one can infer that owning a car led to relatively higher earnings, marginally contributing to the ability to leave welfare.

The model also shows that quality of transit access to jobs mattered. Based on a cumulative opportunity (gravity-based) measure of job accessibility over the transit network, good transit access contributed most strongly to the outcome of getting off work as well as welfare. Car ownership was a more statistically significant explainer of positive employment outcomes than transit accessibility, however it is encouraging that both private and public

**Table 8.1 Multinomial Logit Model for Predicting Probability of Employment and Welfare Outcomes; San Bernardino, 1993-1995**

VARIABLES	Equation 1: Got Job/Got Off Welfare			Equation 2: Got Job/Stayed On Welfare		
	Coeff.	Std. Error	Prob.	Coeff.	Std. Error	Prob.
<b>Transportation Variables:</b>						
Owns Car (wave 1& 2) (1=Yes; 0=No)	2.202	0.694	0.002	1.765	0.502	0.000
Transit job accessibility index <sup>1</sup>	0.014	0.000	0.062	0.009	0.000	0.062
<b>Human Capital Variables:</b>						
Years of Education	0.259	0.175	0.139	0.094	0.117	0.420
Uses Day Care (1=Yes; 0=No)	0.502	0.540	0.352	1.218	0.485	0.120
English Language	1.828	1.516	0.228	-2.723	1.849	0.141
Receiving Training (1=Yes; 0=No)	0.610	0.422	0.148	0.228	0.385	0.354
<b>Control Variables:</b>						
Age (years)	-0.005	0.002	0.012	-0.002	0.002	0.294
Child Present (1=Yes; 0=No)	-0.822	0.314	0.009	-0.094	0.208	0.217
Health Problem (1=Yes; 0=No)	-2.567	0.952	0.007	-0.849	0.500	0.417
Married (1=Yes; 0=No)	1.306	0.614	0.033	-0.465	0.355	0.447
Intercept	- 14.222	4.102	0.001	-5.293	2.885	0.067
<b>Summary Statistics:</b>						
Chi-Square = 97.01, Prob. = .000, $\chi^2 = .457$ .						
Percentage of cases correctly predicted: Total = 83.5%; Got Job/Off Welfare = 57.6%;						
Got Job/Stayed on Welfare = 33.3%; No Job/Stayed on Welfare = 83.5%.						

Notes:

- <sup>1</sup> Regional job-accessibility by transit was calculated using a gravity-based measure of the form:  $A_i = \sum_j E_j \exp(-\beta T_{ij})$ , where:  $A_i$  = Accessibility indicator of person residing in location  $i$ ;  $E_j$  = Employment (non-professional, non-executive, and non-managerial occupational classes) in destination zone  $j$  (source: U.S. Bureau of the Census, Part II of the 1990 Census Transportation Planning Package (CTPP) for the Los Angeles-Orange County-Riverside Consolidated Metropolitan Statistical Area);  $T_{ij}$  = Travel time (in minutes) from residential location  $i$  to census-tract of employment  $j$  by transportation network (i.e., transit or highway) of mode  $k$ , based on the 1993 regional travel-time matrices maintained by MTC;  $\beta$  = Empirically derived coefficient reflecting work-trip impedances.
- <sup>2</sup> Based on concordance between actual and predicted group membership, where predicted membership involved assigning case to category with the highest predicted probability using Equations 1 and 2. Predicted probability for suppressed group (no job and remained on welfare) equals one minus the combined probabilities from Equations 1 and 2.

mobility contribute positively. This reinforces the notion that private automobility is not a substitute for but rather a complement to public transit access. In combination, the two appear to have worked positively toward successful welfare-to-work transitions in San Bernardino County.

Other variables in the model have coefficients that are consistent with expectations and that emphasize the importance of other factors in assisting people get off of welfare. Education and training both contributed to successful employment outcomes (though these variables were not statistically significant in the case of San Bernardino County). While having kids at

home worked against the ability of AFDC recipients in 1993 to find work by 1995, having child-care services was an offsetting factor.

### **8.3 SAN MATEO COUNTY: CAR LOAN PROGRAM**

Chapter Five discussed experiences with San Cruz County's low-interest loan program for CalWORKs recipients. To date, relatively few people in the county have taken advantage of the program and there is no evidence it has achieved its intended objective – allowing needy individuals to find jobs and leave welfare. One California county where a car-access loan program has been in existence for over four years and where evidence suggests many low-income individuals have benefited is San Mateo County.

Introduced in January 1998, the Family Loan Program provides small loans to welfare recipients and low-income parents residing in San Mateo County who have no access to conventional loans. A partnership of public and private interests provided funds for the program, including the San Mateo County Human Service Agency, the Peninsula Community Foundation, the David and Lucille Packard Foundation, the McKnight Foundation, United Way of the Bay Area, the Women's Foundation of San Francisco, the California State Automobile Association, Bank of America, Pan American Bank, and the San Mateo Credit Union. The program is overseen by the County's Family Service Agency. It was modeled after a seminal program designed in 1984 by the McKnight Foundation to provide low-interest loans to working families in Minnesota to help them deal with large, or unexpected, one-time expenses. The loans are serviced by four local banking partners that are able to access low-interest federal funds under the Community Reinvestment Act (CRA).

#### **Loan Administration and Recipients**

The Family Loan Program provides one-time loans of up to \$3,000 to help with job or education-related expenses. Besides providing financial resources, the program also builds experience in obtaining and repaying a bank loan and provides an opportunity to establish or repair credit history.

To be eligible, an applicant must: (1) be a resident of San Mateo County for at least three months; (2) be a custodial parent of one or more children under 17 years of age; (3) must have been employed at least 20 hours a week for at least three months or be enrolled in post-high school education or vocational training; and (4) must demonstrate an ability to make monthly payments.<sup>6</sup>

One and a half years into the program, 89 of 203 applicants, or 44 percent, had been approved for loans. The average loan amount was \$2,594 and the average processing time was 15 days. Most loans were for transportation purposes: 71 percent went to car purchases and 8 percent were used for major repairs.<sup>7</sup> By mid-2000, the program had received 750 inquiries and 250 applications, leading to 100 approved loans. Over half of the approved loans went to CalWORKs recipients.

The program has clearly reached needy individuals. During these first 18 months, 97 percent of loan recipients were women. The vast majority were single moms raising one or more children. Many lived below the poverty line.

## Impacts

By all accounts, the Family Loan Program has been a success.<sup>8</sup> People are paying back loans: its 91 percent repayment rate is well above the national average of 70 percent for similar programs. Also, clients are getting to work more quickly and on-time: 18 months into the program, loan recipients reported a 93 percent average reduction in time spent getting to work and a 90 percent decline in work time missed. Additionally, there was a 26 percent increase in attendance at job-related educational activities.

Perhaps of most importance are “outcome” measures – i.e., to what degree did the loans achieve their intended purpose of promoting welfare-to-work? The best indicator is that average gross incomes rose after loans were issued: by 23.8 percent within the first 6 months of receiving a loan and by 36.9 percent at the end of the loan term.<sup>9</sup> Just as telling are anecdotes.

- A 39-year-old single mother of two bought a used car whose motor soon burned out. With no credit card, she could not afford the repairs. After receiving a loan, she was able to get the car in good running order, allowing her to get to work by 5 A.M. and pick up her children at day care at around 3 P.M.
- Another single mom who was a recovering addict bought a 1993 sedan within one month of receiving a loan. Before, it took her two hours and fifteen minutes to get to work via bus and train. Her three boys had to take the bus on their own to school. On weekdays, she rarely got home before 8 P.M. to be with her sons. With a car, she has been able to cut her commute time by three-quarters and has a few more hours each day with her children. She is also able to regularly attend Alcoholics Anonymous and Narcotics Anonymous meetings.
- Before getting a car, it took a young Latino man who worked as a cook an hour and a half to take a bus to his job ten miles away. Once he bought a car, his commute time fell to 15 minutes. This enabled him to work an extra half shift in the morning, and because of his increased presence at the job, his boss promoted him to head cook. He, his wife, and young daughter were able to move out of a roommate situation to their own apartment.

In recent years, other California counties have opted to follow San Mateo County’s lead, introducing their own car loan programs. Besides Santa Cruz County, car loan programs targeted at CalWORKs clients have been introduced over the past few years in Sacramento, Santa Clara, Sonoma, and Humboldt Counties.

## **8.4 VENTURA COUNTY: CAR DONATION PROGRAM**

In Ventura County, both local governments and non-profit groups help low-income families and CalWORKs recipients acquire donated cars. Under the county's Job Opportunity Transportation Program, economy vehicles that fleet operators (such as local government or large private employers) plan to dispose of because of age, high mileage, or surplus vehicles are acquired as a charity. Vehicles are carefully inspected and all necessary repairs are completed by a private auto repair facility or auto repair classes at local community colleges. Vehicles are then sold at minimal cost to pre-screened welfare families to be used as transportation to and from work. If necessary, the Ventura County Federal Credit Union provides loans to these families to purchase the vehicles. Maximum loans are for \$3,000, including inspection, repairs, fees, taxes, and six months of insurance.

A similar program is run by Many Mansions, a non-profit organization that provides low-cost housing and transportation assistance. Individuals and companies donate cars to Many Mansions and receive receipts indicating the Blue Book value of the vehicle for tax deduction purposes. Donated cars are repaired and put into good working order, and then offered at less than \$5,000 to welfare recipients who qualify and can pay usually around \$75 per month toward the auto loan. Funds accumulate in an escrow account that is used to repair and refurbish vehicles. One year into the program, only seven of Ventura County's 6,000 or so CalWORKs clients had received cars through the Many Mansions campaign.

While Ventura County has made the most headway to date in passing on donated cars to needy families and individuals, several other California counties are following suit. One of the more unique efforts is in San Joaquin County, where the county welfare agency has purchased vehicles retired from the county motor pool and distributed them to CalWORKs clients. In another twist, the Butte County Regional Occupation Program offers car repair classes to train CalWORKs clients for mechanics jobs, and repairs the cars of CalWORKs recipients, without charge, as part of the hands-on training experience.

## **8.5 POTENTIAL ROADBLOCKS**

Car-based strategies are not panaceas and certainly should not be construed as a replacement for transit-based ones. The barriers to and problems surrounding car ownership can be substantial.<sup>10</sup> Buying, insuring, maintaining, and operating a car is sometimes beyond the means of many low-income individuals. The bill for insuring a car in high-crime inner-city neighborhoods can be quadruple that for a car in a prosperous suburb. Moreover, many women on welfare have no driver's license and little or no experience maintaining a motor vehicle. Given that cars donated to human service agencies and passed on to low-income residents tend to be old and well-worn, maintaining a very used car can be a financial drain. Also, many states set strictures on vehicle ownership for welfare recipients, forcing them to drive only older, more unreliable cars. In California, for instance, state regulations limit CalWORKs participants to vehicles with values no greater than \$4,650. In a 1998 interview of CalWORKs recipients conducted by the League of Women Voters of Ventura County, one working mom lamented:

“\$5,000 for a car is not realistic in today’s auto market. It is hard taking a bus carrying a baby, stroller, diaper bag, and book bag. No one helps you on or off the bus.”<sup>11</sup>

Most welfare recipients own older cars, sometimes on their last leg. A 1999 survey of TANF recipients living in rural areas found the median model year was 1987 and 43 percent of the vehicles had a trade-in value of \$100 to \$500.<sup>12</sup> With old, well-worn cars, repairs can be a heavy burden. Mounting bills and big-ticket expenses can prompt some to sacrifice health care and even food on the table.

The idea of promoting car ownership among the poor runs against the instincts of many environmentalists and urban planners. Older cars often belch fumes. Thus, car-donation programs and other efforts to recycle aged cars among the poor could simply prolong the lives of vehicles that would have otherwise been retired from the fleet, exacerbating local air quality problems.

In addition, using charity and donation programs to get cars into the garages of poor can invite fraud and abuse.<sup>13</sup> In 1999, a Sacramento man was arrested for personally pocketing more than a million dollars from a car donation scam. In California, virtually anyone can create a charity and offer tax breaks for vehicles without government scrutiny for 18 months or longer.

## 8.6 SUMMARY

The weight of empirical evidence and case experiences lends considerable credence to the argument that assisting the inner-city poor purchase a car can stimulate employment. Statistically, research on California’s experiences show that owning a car is a far more powerful predictor of whether people will find jobs and get off of welfare than the availability and quality of transit services.

In recent years, San Mateo County has spearheaded a car loan program with good results. Loan recipients, virtually all of whom are women with children, get to work faster, are less likely to be tardy, and are more likely to attend adult training courses. In Ventura County, both the county government and a non-profit organization have introduced car donation programs that allow CalWORKs clients and other needy individuals to obtain refurbished cars through installed payments. Little is known about the success of these programs, or the lack thereof.

Critics charge that promoting car travel over mass transit can back-fire by saddling the poor with expensive repair bills and increasing air pollution, especially given that many low-income households own old vehicles that are on their last leg. When viewed as an alternative rather than a substitute for mass transit, car-based strategies enrich the palette of mobility options available to the poor. Mobility choices are good, for rich and poor alike.

## Notes

---

- <sup>1</sup> M. Walter and M. Hughes, *Working Far From Home: Transportation and Welfare Reform*, Washington, D.C., Progressive Policy Institute and Public/Private Ventures, 1999, pp. 1-2.
- <sup>2</sup> K. Orski, Empowering the Carless, *Innovation Briefs*, Vol. 10, No. 5, 1999, pp. 1-2.
- <sup>3</sup> O. Davis and N. Johnson, The Jitneys: A Study of Grassroots Capitalism, *Journal of Contemporary Studies*, Vol. 4, 1984, pp. 81-102; R. Cervero, *Paratransit in America: Redefining Mass Transportation*, Westport, Connecticut, Praeger Press, 1997.
- <sup>4</sup> R. Cervero, O. Sandoval, and J. Landis, Transportation as a Stimulus to Welfare-to-Work: Private Versus Public Mobility, *Journal of Planning Education and Research*, 2002 (forthcoming).
- <sup>5</sup> As part of the California Work Pays Demonstration Project (CWPDP), data were obtained from a random sample of 466 individuals residing in Alameda County, 802 in Los Angeles County, and 597 in San Joaquin County, all of whom in 1992/1993 received Aid for Families with Dependent Children (AFDC). A second wave of survey data was compiled for the same individuals in 1994/1995, some of whom by this time had found jobs and were no longer receiving AFDC assistance.
- <sup>6</sup> S. Doyle and M. Austin, The Family Loan Program: A Case Study of a Public-Private Partnership in San Mateo County, Family Service Agency of San Mateo, August 1999.
- <sup>7</sup> C. Valenzuela, *Seventh Interim Report of The Family Loan Program*, San Mateo, Family Service Agency of San Mateo County, June 2001.
- <sup>8</sup> Valenzuela, *Ibid.*
- <sup>9</sup> The county also provided a second category of loans for higher risk clients under more relaxed eligibility requirements. This program is viewed as unsuccessful in that there has been low levels of repayment and average incomes of recipients actually went down following the issuance of loans.
- <sup>10</sup> E. Blumenberg, Reverse Commute Transit Programs and Single Mothers on Welfare: A Policy Mismatch? *Tech Transfer Newsletter*, Winter 2001, pp. 4-6.
- <sup>11</sup> League of Women Voters of Ventura County, Welfare Reform: Progress and Problems, Ventura, 2000. <http://www.ez2.net/lwv/CalWORKs.htm>.
- <sup>12</sup> R. Kaplan, Rural Challenges: Barriers to Self-Sufficiency, *Welfare Information Network Issue Notes*, Vol. 2, No. 2, 1998, p. 2.
- <sup>13</sup> C. Anderson, Take That Old Car Donation Off Taxes, But Don't Overdo, says IRS, *Associated Press*, September 24, 1999.

## **Chapter Nine**

### **Challenges of Implementing Job-Access and Reverse-Commute Programs in Smaller and Rural Counties**

#### **9.1 INTRODUCTION**

So far, the case materials reviewed in Part Two have focused on fairly large urbanized counties in big metropolitan areas. Such settings are more likely to have the densities, financial resources, and institutional capacity to mount and sustain transit services aimed at welfare-to-work clients. This is not always the case in smaller counties and rural areas.

This chapter reviews the experiences with job-access and reverse-commute programs in three counties where, because of their smaller and geographically spread-out populations, public transit has historically struggled to build a ridership base. Stanislaus County, with a population of some 450,000 inhabitants, lies on the eastern edge of the San Francisco Bay Area and consequently is part of the Bay Area's commutershed. A number of CalWORKs recipients living in Stanislaus County commute back and forth to the Bay Area each workday, and the cost of these commutes is not inconsequential. As problematic have been the difficulties of mounting successful in-county bus services given the diffuse pattern of employment. Merced County has less than half of Stanislaus County's population, and it too struggles in its efforts to find cost-effective mobility solutions for CalWORKs participants. Currently, a long-haul bus operates between the city of Merced and the Yosemite Valley, providing access to entry-level jobs at the many restaurants, motels, and retail shops that ring the National Park. The results of an onboard ridership survey we conducted on this route are presented in this chapter. Far smaller is Mendocino County whose year-2000 population barely topped 85,000. In a valiant effort to serve pockets of low-income rural areas, the county has introduced two long-distance bus runs, albeit at a fairly high cost per trip. Collectively, these three settings provide insights into the challenges that the majority of California's 56 county governments face in mounting cost-effective reverse-commute and job-access transit services.

#### **9.2 STANISLAUS COUNTY**

Situated in California's Central Valley, Stanislaus County, like many low-density settings, wrestled with trying to serve the commuting needs of transportation-disadvantaged populations. The absence of large employment centers means that many work-trip destinations are scattered throughout the county and beyond. With a strong agricultural base and significant numbers of low-skilled workers employed by 24-hour food-processing and cannery companies, the commute schedules of many county workers do not mesh well with those of the public transit system. Consequently, the private automobile is mainly relied upon to get to work, both by middle-income workers and welfare-to-work populations.

Stanislaus County's experiences point to a host of commuting issues that small but rapidly growing metropolitan areas face. This case is based largely on insights gained from interviews held with employment coordinators with the Stanislaus County Community Services Agency (CSA) as well as professional staff from the Stanislaus Council of Governments, the city of Modesto, and Stanislaus Regional Transit (StaRT). CSA's employment coordinators are the frontline of defense against joblessness. It is their job to interact and work with CalWORKs participants to find ways, including transportation, of getting them off of welfare and into gainful employment.

### **Inter-Metropolitan Commuting Issues**

Stanislaus County increasingly functions as a "bedroom community" to the San Francisco Bay Area, offering a repository of affordable housing. In 1990, 61 percent of employed residents worked in the county; the other 39 percent were external commuters.<sup>1</sup> During the 1990s, the county's population increased by 21 percent, largely due to the Bay Area's buoyant economy and high-priced housing market. Stanislaus County's low housing costs are not without a price; they are matched by long and sometimes expensive commutes.

For many Stanislaus County residents heading to the Bay Area each workday, taking public transit to work is not a viable option. Distances are too great. To catch a bus or train, many residents would have to get up very early and return home very late, an unacceptable option for the large number of individuals with children who moved to the county in search of decent schools and a better quality of life. In 1990, 93 percent of County workers reached their jobs by private car.<sup>2</sup>

As traffic congestion along Interstate-580 (connecting the Central Valley and the Bay Area) has steadily worsened, another problem encountered by low-skilled workers on tight work schedules is late arrivals. It only takes a single car breakdown or accident to bring traffic to a near-standstill during rush hours. For those who must be on the job at set hours to serve customers, such as restaurant cooks and hotel clerks, being late is unpardonable. According to county employment coordinators, several Stanislaus County CalWORKs recipients have been fired in the past year because they arrived at work late on consecutive occasions.

From interviews, a consensus view of CSA's employment coordinators was that commute trips made by their clients are too dispersed – both geographically and by times-of-day – for viable specialized bus services to be mounted. Most felt that the county is not dense enough, nor are there enough well-defined employment hubs, to form a "critical mass" of transit or vanpool customers that yield economies of scale.

Among the transportation issues related to the commuting needs of welfare-to-work clients that the coordinators cited were:

- *Unpredictability and irregularity of work.* The work locations of many low-skilled workers are literally "moving targets". One client of the Stanislaus County Community Services Agency works as sub-contractor in the San Francisco Bay Area. He needs to drive because his job locations and work schedules literally change day-

to-day. He also has to bring personal tools to the job, making public transit riding all the more difficult.

- *High reimbursement costs.* The county's welfare agency encumbers high costs in reimbursing full-time employed clients for their transportation costs. State law mandates that welfare agencies reimburse full-time workers at a cost equivalent to bus fares. However the absence of suitable transit alternatives forces the agency to reimburse clients for their private car usage at the Federal rate of \$0.345 per mile (in 2001). For some clients working in the South Bay, this adds up to over \$1,000 a month in reimbursed transportation expenses (in comparison with a countywide mean of \$70 per year for transportation reimbursements to welfare-to-work clients). This has drained county financial resources, however these expenses are accepted as a "lesser evil" than mounting costly, lightly utilized specialized bus runs. Regardless, those making long, inter-city commutes disproportionately consume the county's over-stretched transportation budget.
- *Child care.* A majority of the County's 5,600-plus CalWORKs families are headed by single mothers with day-to-day child-care responsibilities. Riding public transit is impractical not only because routes do not always go near child-care centers but also because most mothers want midday auto-mobility to respond to emergencies, such as a child becoming sick at day-care. The idea of placing child-care centers near major transportation hubs was not perceived as a viable option by employment coordinators mainly because quality of day-care services, and not accessibility, is considered the dominant factor in choosing a service.

## Transportation Options

Both fixed-route and Dial-a-Ride transit services are available in Stanislaus County, operated by multiple agencies. All are competitively tendered and all stop running after 7 to 8 P.M. Several "non-traditional" transit services exist that are available to welfare-to-work populations. Below, experiences with seven types of non-traditional transit are reviewed.

- *Shuttle Bus Runs.* The city of Modesto contracts out buses (Modesto Area Express, or MAX) that link a park-and-ride lot in the city to two major rail services: the Altamont Commuter Express (ACE) inter-city rail service and the Bay Area Rapid Transit (BART) heavy-rail system (Photo 9.1). BART shuttles to the Dublin-Pleasanton station have been most successful. Currently, two premium-quality shuttle buses seating 55 passengers depart the Vintage Faire Mall Park & Ride lot in the morning en route to the BART station, and return in the evening. Some 110 customers patronize the non-stop service each workday, paying \$10 per round trip. In early 2001, the service was recovering almost 90 percent of operating costs through the farebox, however the addition of a second bus run lowered this recovery rate to around 70 percent. The city also operates three bus runs each morning to the ACE train station in Manteca, providing high-speed rail access to jobs in Livermore, Pleasanton, Fremont, and the Santa Clara Valley. Fares are \$1 each way for the considerably shorter rail connection. With daily ridership averaging around 80



**Photo 9.1** MAX Commuter Express bus collects passengers at a rail station

customers, cost recovery rates are also far lower, on the order of 20 to 25 percent. Although no on-board ridership surveys have been conducted that profile patrons of these rail-access shuttle services, according to city staff the typical customer is in a clerical or retail sales position and draws a fairly modest annual salary. In that the station's park-and-ride lot is routinely full, most riders appear to be choice customers.

- *Special reverse-commute run.* The Stanislaus Regional Transit (StaRT) system provides inter-city services within the county. Recently, the agency began operating two bus runs per weekday that connects low-income neighborhoods of Modesto to the Hershey Chocolate Factory in outlying Oakdale. The service was introduced at the request of the employer. The service is in its infancy, thus the jury is still out on terms of ridership. The employer did rearrange work schedules to coincide with the bus route's timetable and hours of operation. This is a positive sign.
- *Runabout Services.* StaRT also operates a hybrid "runabout" inter-city service that blends features of curb-to-curb services (like Dial-a-Ride) and designated time points (like a fixed route bus). County residents traveling between designated time points within any one of four service areas need not book a reservation. All others seeking curb-to-curb services must call ahead and book a ride. Reservations are only accepted if they do not interfere with the ability of buses to reach checkpoints at designated schedule times. Considerable numbers of riders have low incomes and rely on the service to get to work, however no surveys have been conducted that reveal the degree to which CalWORKs participants rely upon the service.

- *Local Targeted Bus Services.* MAX also operates Route 39 that was introduced to redress a state Transportation Development Act (TDA) “unmet needs” claim. The bus route connects several inner-city neighborhoods to the Beard Industrial Park twice a day, with the two runs scheduled to coincide with work-shift changes in the work zone. Many food-processing and cannery plants in the Industrial Park hire low-skilled workers on a three-shift, 24-hour basis. The service has struggled to build a ridership base, however, and currently is one of MAX’s poorest performing routes, averaging just 4 passengers per vehicle-hour of service.
- *Door-to-door Dial-a-Ride.* The MAX system operates ADA paratransit vans that in the evening, from 6 P.M. to 11 P.M. are open to the general public on a space-available basis. Two-hour advanced reservations are required for the door-to-door service, and at \$1.65 per ride, fares are considered to be a bargain. (Buying a book of 10 bus tickets lowers the cost to \$1.15 per trip.) A few individuals have a standing reservation to receive door-to-door transportation to outlying job locations. Dial-a-ride runs also connect to Modesto’s Amtrak rail station. In 1999-2000, MAX’s Dial-a-Ride services racked up a cost of \$13.17 per passenger, well above the revenue intake, resulting in a farebox recovery rate of around 10 percent.<sup>3</sup> Most other municipalities in the County run their own version of Dial-a-Ride services, and most incur comparable deficits per ride.
- *Vanpools.* Several formal vanpools operate to, from, and within Stanislaus County. These are coordinated through the Commuter Connection program in neighboring San Joaquin County. Overall, vanpools play a minor mobility role in the county.
- *Informal van services.* Numerous vans, sponsored by employment contractors who hire migrant farm workers, operate throughout Stanislaus County, especially during the busy harvesting months of May through September. These are employer-sponsored services that operate independently of other transportation programs in the county. Many private vans are thought to be non-registered “informal services”, though farm-labor transportation laws are far more lenient with respect to vehicle safety and fitness standards. A number of vans operate in Westley, a newly census-designated place (CDP) that is home to many migrant workers who are housed in dormitory facilities. According to the Director of Stanislaus County Housing Management, recently arrived migrant farm workers are most dependent upon private vans. Many who have lived in the area for a year or more have purchased cars and drive or share rides with co-workers to get to the fields. Van riders complain that the contractors overcharge for transportation services, given the marginal quality of services.

## Future Directions

Stanislaus County’s CSA staff is drawn to the idea of door-to-door van services, especially if large employers are willing to hire sufficient numbers of clients to make such an operation cost-effective. To date, such opportunities have been few and far between. Also, the county has opted against providing low-interest loans for car purchases. This is partly because of

liability concerns over whether clients can be counted upon to obtain driver licenses, vehicle registration, and adequate insurance coverage.

Stronger institutional arrangements are viewed by a number of public and private stakeholders as crucial toward enhancing welfare-to-work transportation in the county. Currently, transportation policy matters pertaining to welfare-to-work are handled through the StanWorks Advisory Committee. City and county transportation staff actively serve on the committee along with staff from other public agencies. This has led to some coordinated efforts, such as jointly submitted bid for Federal grant assistance under the JARC program between the city transit agency and the county welfare office. Proponents also hope that better coordination will eventually spawn new forms of cost-effective transit.

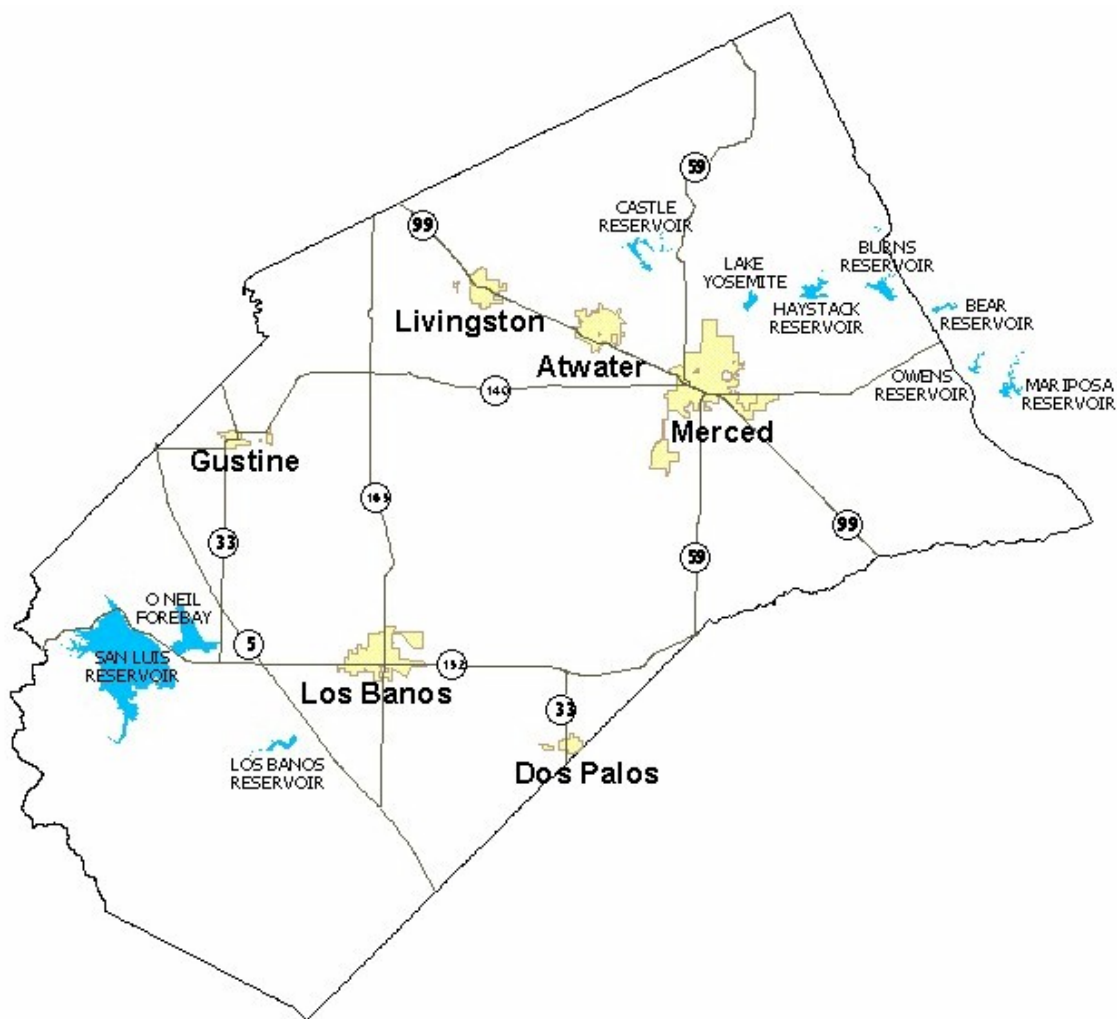
### 9.3 MERCED COUNTY

Merced County lies in the heart of California's San Joaquin Valley, stretching from the Pacific Coastal Range to the Sierra foothills and the southern entrance to Yosemite National Park. The County, with a land area of about 2010 square miles, has around 210,000 residents. Within the County are six incorporated cities – Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced – which together account for more than two-thirds of the total population (Map 9.1). Merced, the County seat, is by far the largest; with a population of about 65,000, Merced is home to nearly one in three County residents. The other five cities range in size from 5,000 to 28,000. Most of the remaining population lives in scattered rural locations.

Merced County's population grew by about 18 percent in the 1990s, following an even faster period of growth in the preceding decade (during which the City of Merced grew by 50 percent.) Projections by the Merced County Association of Governments indicate that the growth rate is expected to pick up again over the next decades, with total growth of as much as 30 percent anticipated by 2010 and a doubling of county population by 2025.<sup>4</sup> Some of the anticipated growth will be spurred by the opening of a tenth University of California campus near Merced, expected to enroll nearly 22,000 residents.

Much of the employment in Merced County is related to agriculture (e.g., farming, ranching, food processing). Government services, recreation and tourism, retailing, and light manufacturing also provide substantial employment. In part reflecting the seasonal nature of the agriculture and tourism industries, overall unemployment levels are high. Both the County and the City of Merced experienced unemployment rates over 15 percent in 1999, several times the state average.

Like other parts of the Central Valley, Merced County has witnessed an influx of residents who commute to jobs outside the County but choose to live in the County because of its affordable housing. Today, a typical three bedroom home can be found on a tree-lined street for about \$120,000.<sup>5</sup> Long commutes both east to the San Francisco Bay Area and north to the Sacramento area are on the increase, and interest in vanpools and other subscription services has blossomed. Transit services are provided by several operators and offer regular local and intercity service. Still, most commutes, whether internal to the County or longer distance, are made by auto. Like Stanislaus County, the challenges of



**Map 9.1 Merced County and Incorporated Cities**

mounting cost-effective bus services in a spread-out, substantially rural setting like Merced County can be daunting.

### **Transit in Merced County**

Within Merced County, buses are operated by Merced County Transit. Bus service to Yosemite National Park and surrounding areas is provided by the Yosemite Area Regional Transportation System (YARTS). Several other bus companies offer specialized services or long distance connections. In addition, Amtrak stops in Merced.

Merced County Transit routes serve the County's major employment and shopping centers, with service available within a quarter-mile in most city neighborhoods. Outside the cities, routes are far apart, but park-and-ride options are available at some locations and bikes can

be taken on buses. Services are offered Monday through Friday, 7 A.M. to 6 P.M., and Saturdays 9-to-5. Sunday and holiday services are not available.

Currently, Merced County Transit operates 14 routes, of which seven are within the City of Merced and two are within the City of Los Banos. Five routes provide inter-city connections. The frequency of service varies widely, with local shuttles operating on 30-45 minute headways and intercity services operating 2-8 runs a day.

Dial-a-Ride service is also provided. Dial-a-Ride is primarily offered to senior citizens and the handicapped, but it can be used by other members of the public who lack a regularly scheduled bus operating within one mile of their residence (i.e., everywhere in the county except the cities of Merced and Los Banos.)<sup>6</sup>

YARTS's long-haul bus services operate along State Highway 120 and State Highway 140 from Merced to Yosemite/Mammoth Lakes/Tuolumne Meadows/Lee Vining. There are six runs each way on weekdays, with some services operating only during summer months. Fares range from \$5-\$20 round trip depending on distance traveled. Both recreational travelers and Yosemite area employees, many of whom live in Merced and surrounding communities, ride these buses.

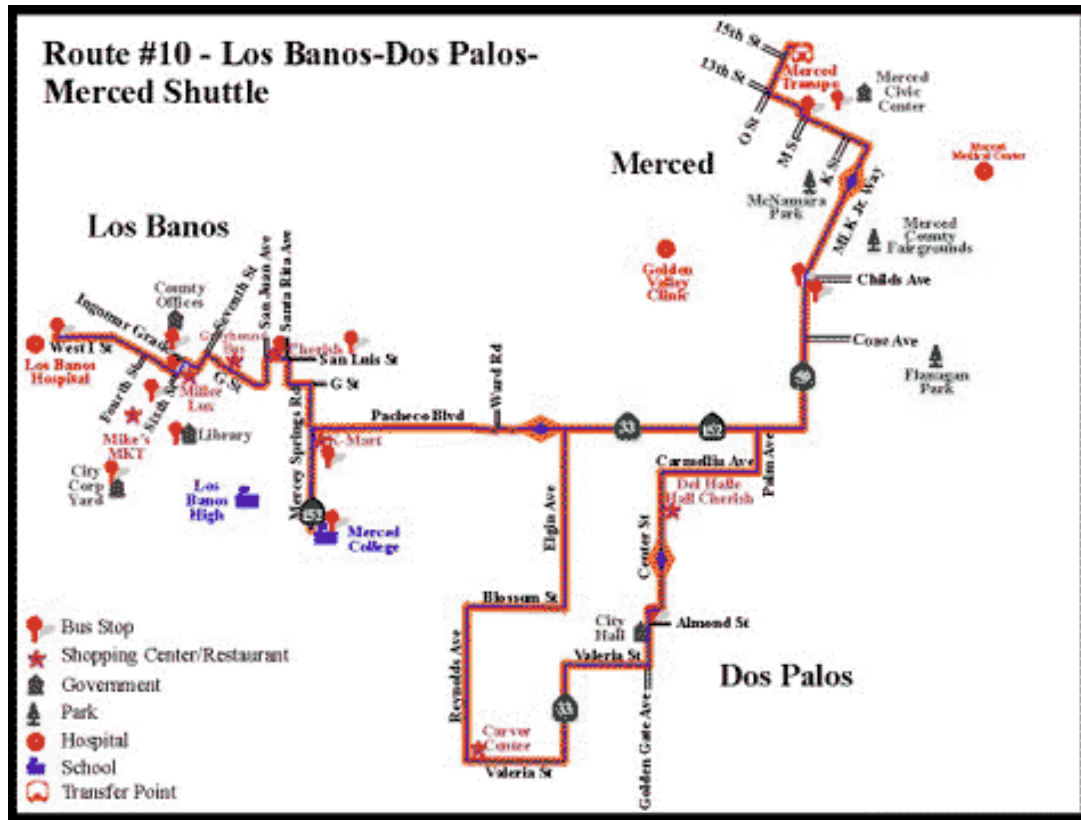
### **Serving Welfare-to-Work Populations**

Some 3,800 Merced County residents – about three percent of the total population - are on welfare. The County's high unemployment rate has complicated the job of the Merced County Human Services Agency (MCHSA), whose responsibility is to help those on welfare gain employment. Permanent, full-time work is hard to find, and most jobs that are available to welfare recipients offer minimum wage or just above, with few or no benefits. Consequently, according to MCHSA's staff, many welfare recipients find it preferable to stay on welfare. Instead of working full-time at \$6 an hour, having someone else take care of the children, and incurring job-access and child care costs, many prefer to stay on public assistance and care for their children themselves.

Still, the time limit on public assistance means that most welfare recipients must eventually look for work. In Merced County, most welfare recipients live in the city of Merced, whereas many employment opportunities are located in the city's outskirts, other communities, and rural areas. Reverse-commute services are being looked upon to help bridge the welfare-to-work gap.

All of the Merced County Transit routes serve major employment centers and several connect low-income neighborhoods to outlying job centers. Several routes and services, described below, were designed or redesigned especially to serve welfare-to-work populations.

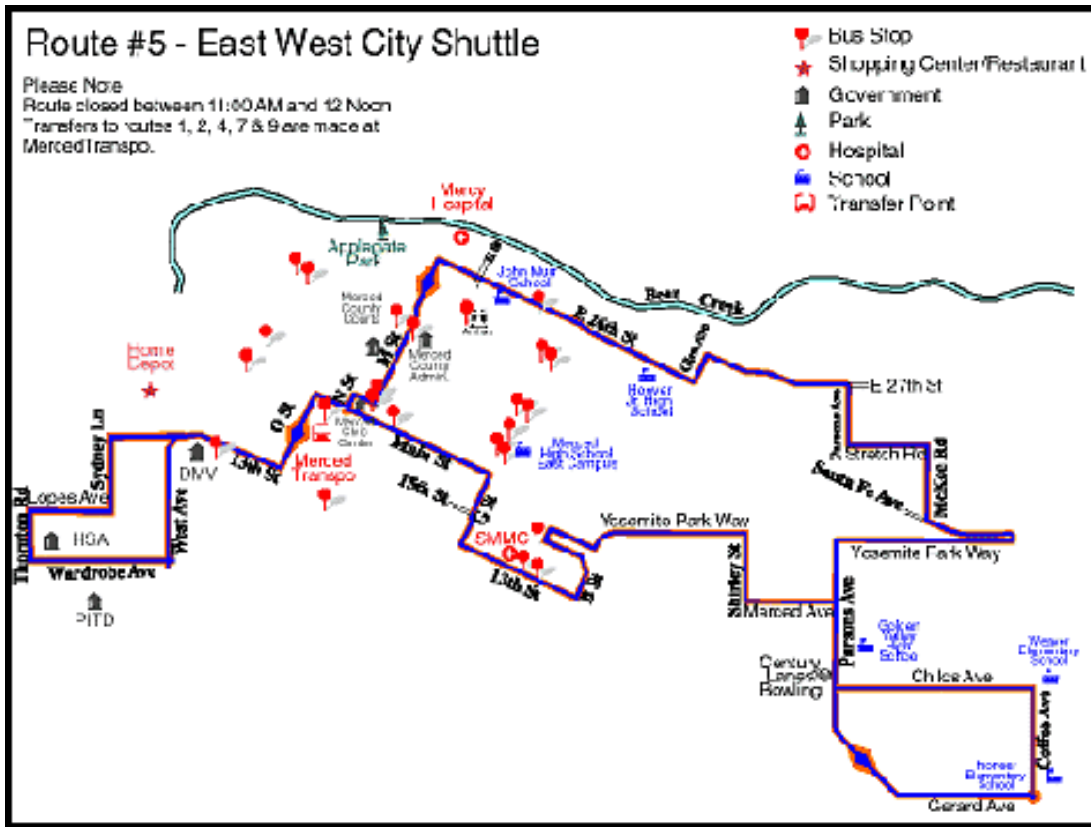
- Route 10A. Designed for welfare recipients, Route 10A was initiated in 2000, with two years of financing provided by welfare-to-work programs. The route connects low-income communities and employment centers in Merced and Los Banos (Map 9.2). It has proven popular not only with CalWORKs recipients but also



### Map 9.2 Merced County Transit Route #10

senior citizens and kids, many of whom ride the bus to school. During the first year of service, ridership more than doubled and the farebox recovery ratio increased from six percent to 21 percent (approximately the average for rural routes in the County.)

- Route 5. Introduced in late-2000, Route 5 connects several low-income neighborhoods in Merced to the County office complex (Map 9.3). This was the first route whose schedule was translated into Spanish and South Asian languages.
- Discounted Bus Passes. The County also offers CalWORKs clients free or discounted bus passes, to be used for work-related or education-related trips. In Fiscal Year 2000-2001, approximately \$77,000 was spent on this program.
- Door-to-Door Van Services. The County also runs vans that provide rides home from late-night classes at Merced Community College, where many Merced County welfare recipients take classes. Because of high costs, the future of van services is in doubt.
- Emergency Ride Home Program. Instituted for bus riders who need emergency lifts, as in Santa Cruz County (see Chapter Five), this program has so far attracted few takers:



### Map 9.3 Merced County Transit Route #5

during its first eight months, only eight rides were provided. County staff members speculate that welfare recipients may not be aware of the program because caseworkers usually do not inform clients of this option.

Two additional programs are aimed at welfare recipients who own and use cars:

- Mileage Reimbursement. The County spent over \$152,000 on this program in Fiscal Year 2000-2001, more than twice as much as was spent on transit passes. (Note this is in contrast to Santa Cruz County's experiences, reviewed in Chapter Five, where most funds went to passes.) According to County staff, mileage reimbursement costs are high because jobs are scarce in Merced, forcing welfare recipients to travel long distances for employment (some to San Jose and other parts of the Bay Area). Thus, as in Stanislaus County, many of the reimbursed trips span long distances, driving up program costs.
- Car Repairs. The County finances car repairs for the clients who find it necessary to commute by private car. This occurs through direct cash payments as opposed to loans.

As in San Diego and other case settings reviewed so far, many of Merced County's CalWORKs participants shy away from transit because evening and weekend services are limited or non-existent. Merced County Transit managers maintain there simply is no budget to expand bus services in periods of low demand. The travel needs of the Yosemite area workers are especially complicated because of the seasonality, low pay, and irregular hours of the work, plus the fact they commute in the reverse direction.

### **Rider Profiles and Needs**

On-board surveys of YARTS Highway 140 buses were conducted to profile trips and users and elicit opinions about the service. As noted, this is a very long-haul reverse-commute service, targeted at connecting residents of Merced, Los Banos, and other communities to entry-level, low-skilled jobs in and around Yosemite National Park. The trip from Merced Amtrak to Yosemite National Park takes about two and a half hours. The survey approach and instruments were similar to those of Los Angeles County and San Diego County, reviewed in Chapters Six and Seven, respectively.<sup>7</sup> Because some questions were asked that were unique to the YARTS survey, a copy of the English version of the questionnaire is presented in Appendix B of this report.

The survey was conducted between November 5 and 7, 2001. Questionnaires were distributed on eight different bus runs, including all six reverse commute runs from Merced to Yosemite National Park and two runs in the opposite direction. Questionnaires and cover letters explaining the reason for the survey were handed out to all boarding passengers. A total of 86 completed surveys were returned on these eight runs; over three-quarters of riders willingly completed surveys.

### **Trip Attributes**

Nearly half of respondents were heading to or from work, and most commuters were traveling in the reverse-flow direction from Merced and surrounding communities to and near Yosemite National Park. Other recorded purposes were for shopping (16 percent of trips) and recreation (15 percent).

Because most trips were for work, ridership on surveyed runs peaked between 6 and 7 A.M. and again between 4:45 P.M. and 5 P.M. However, commuters also were on the buses at other times of day.

Most surveyed passengers were regular customers, riding the bus four or more times a week; frequency of use was similar for reverse and non-reverse commuters. The average one-way door-to-door commute time was 80 minutes, with about 16 minutes of that time spent accessing the bus stop; only a few commuters indicated they had transferred to the Highway 140 bus. There was little difference in trip durations by riders' gender, race, income, or job status.

Despite the inflexibility of bus riding, many reverse commuters reported that they sometimes make intermediate stops to or from work:

- 42 percent pick up/drop off children on the way to work;
- 49 percent sometimes go shopping;
- 45 percent sometimes go to a doctor; and
- 55 percent often take care of other personal business (e.g., go to the bank).

Women, in particular, reported picking up and dropping off children on the way to and from work; 52 percent of the female commuters said that they did so, versus only 39 percent of males. However, few used the bus for this task. Among reverse commuters, half of those who picked up or dropped off children said they used a car; many others reported that they transported children on foot or by bicycle.

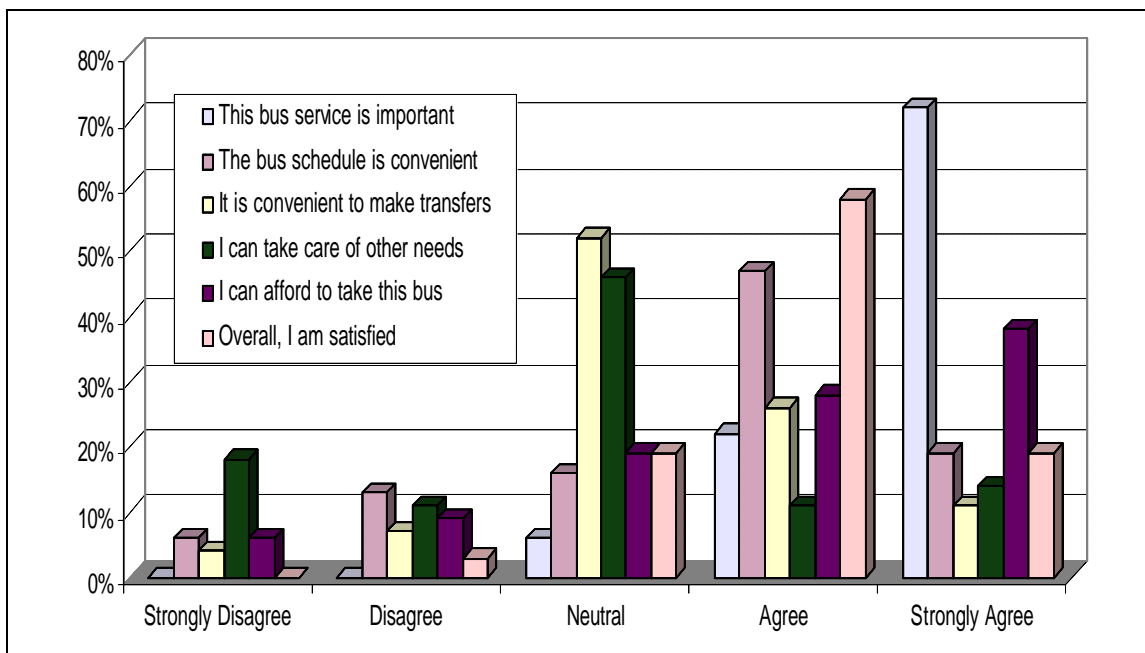
Around three-quarters of commuters are choice riders, meaning they could have driven instead of taking transit. Given the long distance covered by buses, evidently most customers prefer to relax on the bus and read a newspaper than driving. Most survey respondents said they expect to continue to commute by bus. Interestingly, 87 percent of the commuters with a car available planned to take the bus to work over the next six months, versus only 78 percent of those with no car available.

### **User Profiles and Attitudes**

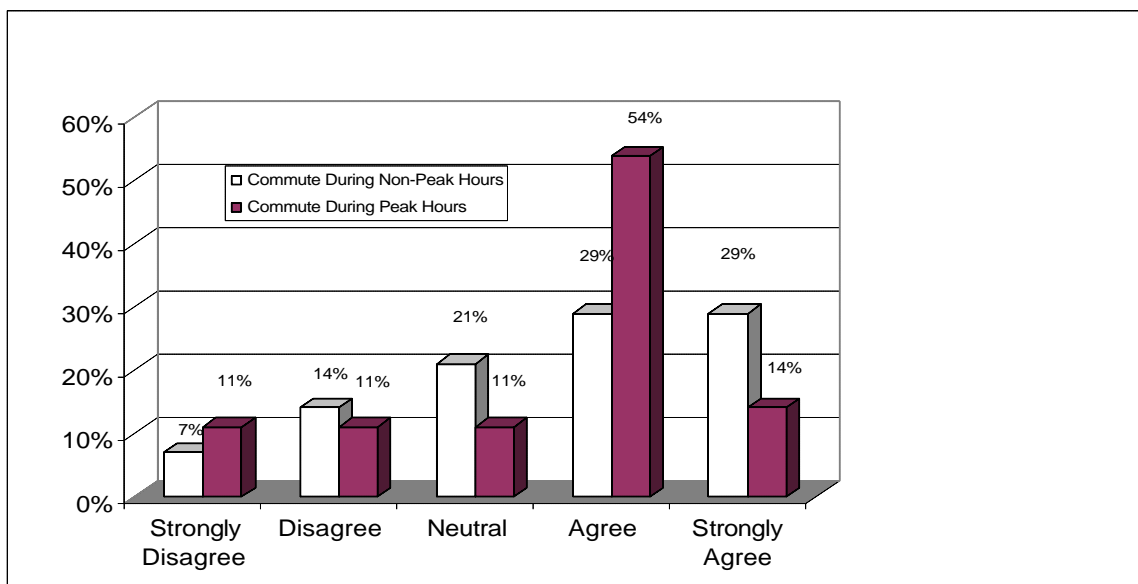
Most (57 percent) of surveyed riders were women. The mean age was 40 years. Whites made up just over three-quarters of respondents; 10 percent were Latinos and around 4 percent were Native Americans. More than three quarters of respondents had jobs – 63 percent worked full-time and 14 percent part-time. Many of the remaining riders were retirees and day-trippers, heading to Yosemite National Park with friends and loved ones.

In addition to having a car available, most (80 percent) of surveyed riders possessed a driver's license. More respondents lived in households with three or more cars (25 percent) than in households with no cars (21 percent). The remaining 54 percent lived in one or two car households. The mean household income of respondents was \$29,500 and the average household size was 2.5 persons.

Based on responses to attitudinal questions, riders seem fairly happy with the YARTS bus service. Figure 9.1 presents the breakdowns of attitudinal responses to six different questions. The figure reveals virtual unanimity that the YARTS Highway 140 bus service is important. Also, around two-thirds of the commuters agreed or strongly agreed that bus schedule is convenient. Figure 9.2 splits this question into responses among peak versus off-peak commuters, revealing with somewhat higher agreement among those traveling during peak than off-peak hours. Returning to Figure 9.1, around half of respondents were indifferent as to whether it was convenient to make transfers. More critical were responses to the statements about the ability to make intermediate trips. Slightly more respondents disagreed with the statement that they “can take of other needs” when riding the bus than those who agreed. For most surveyed riders, bus fares were viewed as reasonable.



**Figure 9.1 Attitudinal Responses to YARTS Highway 140 Bus Service, 2001**



**Figure 9.2 Breakdown of Attitudes on the Statement: "The Bus Schedule is Convenient", by Peak and Non-Peak Commuters, YARTS Highway 140 Bus Service, 2001**

Weighing everything, three-quarters of respondents agreed or strongly agreed that the overall service is satisfactory. Those who were dissatisfied expected to quit riding the bus within the next six months. To see if there was any variation in responses among those making intermediate stops, we divided the sample into two groups: (1) those with “travel complexity”, meaning a single parent without a car dropping off a kid at school or day care or making some other intermediate stop as part of the work trip; and (2) those without “travel complexity”, meaning they did not fall into this category. Figure 9.3 reveals that while there were slightly higher shares of working parents facing travel complexity who were critical of overall service, there were also higher shares who were very satisfied. Evidently, working parents without cars were thankful to have the bus service available.

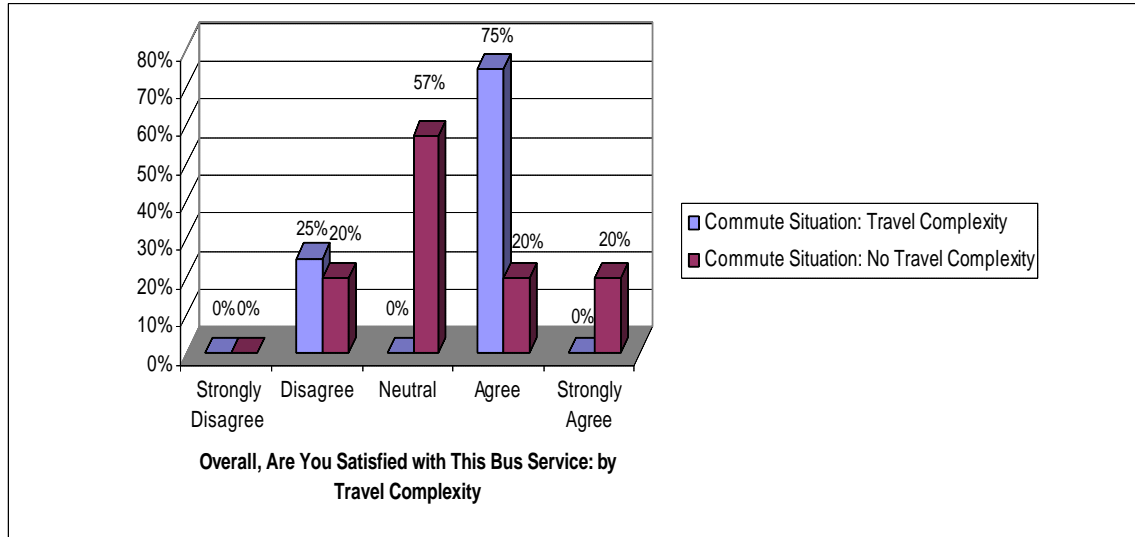
We note that, in addition to the small sample size, one must hedge on generalizing from these results because of the strong seasonality of ridership along this surveyed corridor. Because we conducted the survey in November, summer recreational activities had ended and winter snow activities were not yet under way. Employment was at a seasonal low. A survey conducted during the peak employment season (approximately May through September) would likely have obtained more responses and may have found a different mix of travelers and issues than are reflected in this survey. During summer months, for example, employment is not only higher in the National Park and Forests, but also in nearby hotels, motels, restaurants, and retail establishments. Regardless, we suspect the generally positive attitudes toward the YARTS Highway 140 route hold all times of the year – customers value it as an affordable and convenient long-haul carrier between Merced County and employment opportunities in and around Yosemite National Park.

### 9.4 MENDOCINO COUNTY

Mendocino County is an agricultural county of around 86,000 inhabitants roughly a hundred miles north of the San Francisco Bay Area. The picturesque landscape consists of a large central valley through which the Russian River flows, surrounded by rolling hills. The county seat of Ukiah has a population of about 30,000 and there are two other communities, Fort Bragg and Willits, with populations of roughly 10,000 each. Most other communities, including very small settlements and Native American Reservations, are quite remote, as far away as 90 minutes driving time from the largest cities. Out-of-the-way places are characterized by low incomes, high unemployment, and low automobile ownership. A large share of residents in these remote areas rely on public assistance.

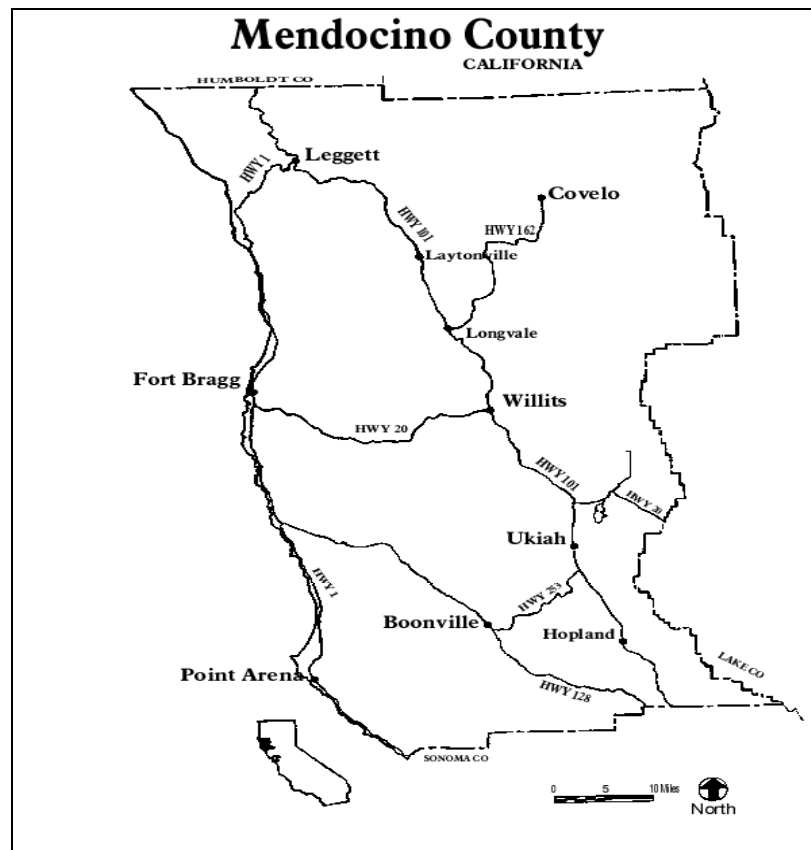
#### **Transit Services**

The county is served by the Mendocino Transit Authority (MTA), based in Ukiah. MTA’s fleet of 40 buses serves mainly the three largest cities. Less populous areas near Ukiah (Redwood Valley and Potter Valley) and communities along state highways are offered what is termed “lifeline” service consisting of routes with one bus per day in each direction.



*Note: Travel Complexity denotes a single-parent without a car making an intermediate trip to child care or some other destination.*

**Figure 9.3 Attitudinal Responses to Overall Satisfaction with YARTS Highway 140 Bus Service, by Travel Complexity Status**



**Map 9.4 Mendocino County Communities**

MTA covers only around 10 percent of operating costs through fares and is thus heavily dependent upon subsidies, mainly funds from state Transportation Development Act (TDA). For some time, funding constraints have precluded services to the least populated portions of the County.

Today, MTA is the only significant provider of transportation services within the County. Two private taxicab companies tried to operate in the county, but both eventually went “belly up” because of slack demand.

In the wake of welfare reforms of the late-1990s and aware that the mobility needs of welfare recipients can no longer be neglected, County officials have begun to rethink transit policies. Sensitive on one hand to the high cost of providing reliable public transit in rural communities, and on the other to the pressing need for access among rural residents, MTA has sought to build partnerships with social services agencies and major employers (including larger wineries) to craft an appropriate set of transit strategies. A collaborative approach, officials feel, offers the best hope for doing so.

### **Mendocino Works Collaborative**

In 1997, social services agencies in Mendocino County joined forces to form a collaborative called Mendocino Works, recognized as one of the most effective economic development and social services collaborations in rural California. Today, Mendocino Works is made up of thirty agencies that offer integrated and comprehensive vocational training, entrepreneurship and business assistance, support services, and childcare assistance. As the coordinating agency for all welfare-to-work activities in the County, Mendocino Works has paid a great deal of attention to transportation. The Transportation and Childcare Committee of Mendocino Works is Chaired by the General Manager of the MTA. The Mendocino Works Steering Committee, which must approve applications for Federal welfare-to-work grants, is keenly aware of the need to design cost-effective transportation strategies that enhance job-access for the county’s low-income rural residents.

Through Mendocino Works’ leadership, two transit services were initiated aimed at serving CalWORKs participants: a bus route between Laytonville and Willits, and another between Hopland and Ukiah. Buses ply fixed routes in both areas, providing needy rural families with affordable transit.

### **Laytonville-Willits Bus Service**

Laytonville is a rural community with a population of some 2,000 residents situated in Long Valley along Highway 101. It lies 20 miles north of Willits, where many residents go for social services, shopping, and work. Median family income is in the lower third of all communities in the County. While the population of Laytonville comprises only 2 percent of the County’s total, it accounts for 4.6 percent of the County’s TANF case load.

With funding from the Mendocino Private Industry Council (MPIC), the MTA initiated the Laytonville-Willits service in October of 1998. Twenty-passenger ADA-compliant vehicles were purchased specifically for this service. Three bus runs operate per day in each

direction, and the service is open to the general public. The funding agreement stipulates, however, that MPIC and Job Alliance clients receive service priority. The one-way fare is currently \$0.75 for local rides within Laytonville, \$2.25 for rides between Laytonville and Willits, and \$3.75 for trips between Laytonville and Ukiah. CalWORKs participants who are in job training and employment programs are often provided with punch passes, made available without cost by social service agencies.

Ridership inched up from 3.8 to 4.5 passengers per vehicle hour between the first and second six-months of service. Most riders have not been CalWORKs participants. During the first year, operating costs fell from \$13.44 to \$10.79 per passenger trip. The farebox recovery ratio has remained low, between 6 and 7 percent. A survey of riders conducted in late-1999 showed that 61 percent of passengers did not own cars, and another 18 percent owned cars that were not considered safe or reliable. The majority of surveyed passengers were making trips for personal purposes, including employment related services, and 19 percent reported that they were riding the bus to work.

### **Hopland-Ukiah Bus Service**

A second bus service was initiated in April 2001 using Federal Transit Administration Access to Jobs funding along with Department of Labor TANF funds, contributions from the Mendocino Air Quality Management District, funding from the Mendocino County Office of Education, and a grant from Fetzer Vineyards. Buses run between Hopland, a small rural community, and Ukiah 15 miles to the north. Two trips per day are offered in each direction. While ridership on the Hopland-Ukiah bus route is higher than on the Laytonville-Willits route, the majority of riders are welfare recipients who receive free passes. Because few pay cash fares, the service's farebox recover rate is only 4.2 percent. Owing to its higher loads (14.3 passengers per service hour), the route has been costing around \$5.45 per passenger, half as much as the Laytonville-Willits route. To attract more riders from the general public, MTA has contemplated re-routing the service to Highway 101. This could be at the expense, however, of less penetration into lower density settlements.

### **Future Plans**

MTA management hopes to expand transit services more in coming years, pending the availability of subsidy funds. The agency hopes to be able to serve the rural community of Covello, home to a large number of welfare recipients, some of whom are Native Americans. Covello is about one hour of driving time from the main state highway, Route 101, however, and thus the cost of providing even one bus per day in each direction will be high.

Mendocino Works feels car ownership might be a more viable mobility option for the rural poor in remote areas. The consortium has entered into discussions with automobile dealerships in the region and is pursuing private and non-profit support for some form of automobile purchase program.

## 9.5 SUMMARY

This chapter highlighted the difficulties faced in running transit in low-density settings with few employment nodes. Despite the many hurdles, several small California counties have sought to introduce various fixed-route and demand-responsive services within the limits of financial resources.

With many low-income residents working non-traditional hours and jobs geographically spread, officials in Stanislaus County have introduced a combination of shuttle bus runs, Dial-a-Ride vans, special reverse-commute connectors, and informal van services for farm workers. Despite high costs, county officials hope to work with employers to jointly sponsor services targeted at low-income workers. In Merced County, limited job opportunities have forced some low-skilled workers to find jobs several hours away in and around Yosemite National Park. A fixed-route bus service provides reliable and much-valued reverse-direction access to entry-level jobs in restaurants, hotels, and shops that ring the Park. On-board patronage surveys reveal passengers are very satisfied with the service, though many of those making intermediate stops, such as dropping off kids at day-care centers, rate transit poorly in terms of schedule convenience and flexibility.

Because of the vast distances between settlements, needy persons living in remote rural settings face particularly difficult problems accessing jobs, adult training, and various social services. This characterizes many of the poor living in Mendocino County. Through a collaborative arrangement between public and private groups, several long-distance bus services have recently been introduced in the county. The costs of these bus runs are well above system averages and while most customers are not on welfare they generally make low incomes and are transit-dependent. As in Stanislaus and Merced Counties, Mendocino County officials hope to be able to expand services to other remote low-income areas through employer support and public-private partnerships.

## Notes

---

- <sup>1</sup> U.S. Bureau of the Census, Census Transportation Planning Package, Part II, Stanislaus County, 1994.
- <sup>2</sup> U.S. Bureau of the Census, California Summary Tape File 2C, 1992.
- <sup>3</sup> Stanislaus Council of Governments, *1999/2000 Transit Systems Management Report*, Modesto, May 2001.
- <sup>4</sup> See: <http://www.mcag.ca.us>.
- <sup>5</sup> *Ibid.*
- <sup>6</sup> Hours of operation are generally the same as for fixed route services, 7 A.M. to 6 P.M., Monday through Friday, and 9 to 5 on Saturdays. However, service hours vary from community to community depending on demand.
- <sup>7</sup> The survey was developed and carried out in cooperation with the transit operator and county and regional officials. The questionnaire gathered information about each respondent's trip origin and destination, purpose, mode, and cost, among other attributes. Additional questions asked what aspects of services people liked most and least. Questions also were asked about the socioeconomic and demographic characteristics of the traveler and his or her household. Because the transit surveys were collected on board the buses as travelers proceeded to their destinations, both the survey and the cover letter requesting consent and disclosing the uses of data were brief. Notices of the impending survey and copies of the consent letter also were made available on the buses a day or two before the survey date, so that riders would have adequate opportunity to read and think about the letter and their willingness to participate in the survey.



## **Chapter Ten**

### **Specialized Reverse Commute Services in Small County Settings: California's Indian Casino Bus Runs**

#### **10.1 INTRODUCTION**

While many small and rural-like counties in California struggle with designing and deploying bus services to meet job-access and reverse-commute needs, in two areas – Yolo and Tulare Counties – successful transit programs have been introduced. In both instances, tribal councils governing gambling casinos on Indian reservations have sponsored long-haul reverse-commute bus shuttles that conveniently deliver workers to their establishments, round-the-clock. While the contexts of these services are certainly unique, in both cases experiences point to the kinds of conditions that appear necessary to mount cost-effective bus services in smaller, less-dense settings: proactive employer participation, employment hubs that form concentrated destinations, coordinated work shifts, and long-distance commuting. The experiences with these Indian Casino bus shuttles and other initiatives in Yolo and Tulare Counties are reviewed in this chapter.

#### **10.2 YOLO COUNTY: CACHE CREEK CASINO BUS SERVICE**

Yolo County is home to one of the truly successful examples of specially targeted welfare-to-work transit services in the United States. Through a combination of a ready-made market, a well-designed shuttle service, and pro-active employer participation, the Yolo County Transportation District's (Yolobus) Route 215 run to the Cache Creek Indian Casino in the community of Brooks has attracted a steady stream of riders and made it possible for many low-skilled individuals to get off welfare and maintain gainful employment.

The Route 215 bus makes five round-trip runs between the County Fair Mall in the city of Woodland and the Cache Creek Indian Casino seven days per week, 365 days per year (Map 10.1). Its primary ridership base is casino workers and patrons from along the Highway 16 corridor. It also serves a vital secondary role as a connection for low-income transit-dependent individuals living in the mid-route communities of Capay, Esparto, and Madison. These customers use the service to access health care, county and state offices, and retail shops in Woodland.

Route 215 service replaced a previous bus line along the Highway 16 corridor that operated as a traditional fixed-route service as opposed to an express shuttle, with far more stops and far fewer riders. The prior route only operated two days a week, with two round trips per day.



**Map 10.1 Route 215: Yolobus's Cache Creek Casino Shuttle Run**

Yolobus has contracted the service to Coach USA. Because services are privatized and drivers are non-unionized, drivers have been recruited who are willing to work late-shifts. Consequently, Yolobus does not face the kinds of pay-premiums for late work that non-contract transit operators often incur.

### **Meeting County Welfare-to-Work Needs**

Yolo County is a mixed semi-urban and rural county west of the city of Sacramento, with a population of around 160,000. The County's four cities are Davis, West Sacramento, Winters, and Woodland, all of which have a "small town" character. Yolobus, the County's primary transit operator, serves these cities as well as unincorporated County areas with both fixed route and door-to-door ADA paratransit services. Its bus routes operate within the county as well as to and from Sacramento.

Since the passage of federal welfare reform legislation (PRWORA) in 1996 and the state's CalWORKs program soon thereafter, Yolobus and Yolo County's Department of

Employment and Social Services (DESS) have worked in tandem to introduce suitable welfare-to-work transit services. Initially, their joint efforts focused on buying cars for clients and ride-matching. Upon delving into this new arena, Yolobus's management wrestled with several issues, including increased costs for liability and vehicle insurance. The ridesharing effort was encumbered by the inability to find reliable, responsible drivers for participation. Given Yolo County's rural character, there did not appear to be enough of a critical mass of people heading to the same place at the same time to match people into carpools and vanpools. Fixed-route service that connect client populations to job areas was considered more cost-effective.

In responding to welfare-to-work mandates, Yolobus worked with the Sacramento Area Council of Governments (SACOG) to identify client populations within Yolo County that could be connected to jobs by transit. A GIS analysis revealed that 70 percent of TANF households were within a quarter-mile of Yolobus' fixed-route bus system. In addition, the study found that nearly 11,000 jobs within the city of Woodland were within a quarter-mile of the fixed-route network. As a result of this analysis and with the support of a Federal JARC grant, Yolobus identified bus routes that should be either enhanced or newly created to serve these populations.

Yolobus initially funded three projects, two of which continue today. First, the agency enhanced two existing routes within the city of Woodland, Routes 210 and 211, by extending hours of operation. These routes, which circulate clockwise and counter-clockwise within Woodland, serve many locations frequented by local low-income and client populations, including job sites, training centers, and retail shops. Both routes serve the Woodland Community College where most job training occurs. Earlier and later bus runs were added to coordinate services with class times at the college.

Additional routes were also created to fulfill job-access needs. The first was Route 212, a service meant to connect the client populations of downtown Woodland with industrial jobs in the East Woodland area. The service ran for less than a year and then discontinued due to low ridership. A second service, Route 240, was introduced to serve reverse-commute trips from downtown Sacramento to the West Sacramento industrial area in Yolo County. There are two morning runs from Sacramento, and two afternoon ones from the industrial area. The service continues to this day. The third and by all accounts most successful reverse-commute service introduced is Route 215 to the Cache Creek Indian Reservation.

### **Route 215**

An important outcome of the joint Yolobus and SACOG study was the identification of significant numbers of low-income households dotted along the Highway 16 corridor between the city of Woodland and Cache Creek Casino. The study revealed that some 6,500 CalWORKs clients, or 39 percent of the entire countywide client population, lived in the city of Woodland or in rural areas along the proposed Casino bus route. Yolobus planners discovered that Woodland's aid-recipient populations were spatially well served by current fixed-route services, some of which were routed through low-income

apartment complexes. They felt, however, that a long-haul supplemental route between Woodland and the casino work site was necessary to “connect the pieces”.

Low-income rural-area populations, in addition to the low-income Woodland population, also stood to benefit by a Woodland-to-casino route. TANF recipients in the mid-route towns of Capay, Esparto, and Madison would have access not only to service jobs at the Casino, but also jobs, job training, government offices, medical clinics, and shopping opportunities in the city of Woodland. The overwhelming majority of people residing in these small rural towns make \$20,000 or less and live on fixed incomes. There are also a large number of Spanish-speaking migrant workers along the corridor who would be able to access the Madison Migrant Center along the Casino route.

Institutional and business factors also led to the formation of the Cache Creek Casino service. In 1998, the Casino expanded its operations, creating a market for entry-level service jobs. At the same time, Yolo DESS was mandated to transition clients from welfare to work. All sides realized that a public-private partnership provided the best forum introducing transportation services that connect CalWORKs clients to jobs.

The problems faced by the Casino owners surfaced immediately upon opening. Prospective job seekers and even those initially employed had problems accessing the site, due to unreliable transportation. At the time, public transportation to the casino was nonexistent. The County also had a vested stake in seeing a bus route introduced. By creating a reliable and direct transit connection, DESS would be able to assist the Casino by providing pre-screened clients for job interviews and to fulfill its obligations to promote welfare-to-work transitions.

Another extenuating and important factor that led to the creation of Route 215 was a serious safety problem along the main road, state Highway 16, leading to the casino. Highway 16 is a two-lane, rural highway that has experienced several fatal accidents in recent years. The straight alignment invites many motorists to exceed the posted speed limit however the narrow width has all too often resulted in fatal head-on accidents. One sees reminders all along the corridor – white crosses with wreaths placed by family members as memorials to their lost loved ones. With rising accident levels and increased traffic due to the Casino’s opening, there was outspoken public support for a new bus service that would remove vehicles from the two-lane highway.

### **Service and Performance**

In July, 2000, Yolobus inaugurated Route 215. The initial service was set at three round trips per day to coincide with the Casino’s three full-time work shifts. Because of rapid ridership increases, two more round trips were soon added. In addition to casino workers, Route 215 serves the general public, including a steady stream of senior citizens from Woodland heading to the casino on one-day excursions.

By all accounts, Yolobus’ Route 215 has been a smashing success. During its first year of operation, ridership on all rural routes (of which Route 215 counts for the bulk of

passengers) shot up 32 percent, an increase of 47,204 passengers. This compares to an increase of just 7 percent for all YoloBus' fixed routes. Route 215 has been the main contributor to rural ridership growth, providing a vital job access link and a safe alternative to the car along an accident-prone corridor. In contrast, YoloBus' Route 240, a service linking downtown Sacramento residents with industrial jobs in West Sacramento, saw a 24 percent drop during this one-year period (2000-2001). Route 240 has struggled whereas Route 215 has prospered to a significant degree because of density: Route 240 serves a diffuse job market while Route 215 serves a concentrated one. Route 240 connects to an industrial and warehouse district, creating spread-out work destinations to buildings with large floorplates. This physical landscape has suppressed ridership levels, as it has for another targeted service in Yolo County, Route 212, which was eventually discontinued, as discussed below.

### Factors Contributing to Success

Route 215 experiences hint a number of factors that contribute to the success of a reverse-commute service in a small-county, substantially rural setting. It is worth examining these factors more closely for they inform us of some of the ingredients necessary to mount and sustain successful reverse-commute services. Among the key factors behind Route 215's success have been: a large employment hub, three daily shifts, private finance and marketing, and a long mainline route, among others.

- *Large Employment Hub.* Perhaps leading the list of factors behind the Route 215's success is the existence of a large employer in a single building at the terminus of the route. The Cache Creek Indian Casino is Yolo County's second largest employer (only to the University of California at Davis), currently with over 1,000 workers. This makes the casino a concentrated workplace destination. The "many-to-one" travel patterns mean most passengers are delivered to the front door of their workplace. A single main destination also creates routing efficiencies – buses have a single "target" to reach.
- *Shift Schedules:* It has been not only the spatial concentration of trips that has aided YoloBus's special shuttle service but the temporal concentration as well. The casino operates on a schedule of three eight-hour shifts – 7 A.M. to 3 P.M., 3 P.M. to 11 P.M., and 11 P.M. to 7 A.M.<sup>1</sup> With the workforce exceeding 1,000 employees, several hundred workers are heading to and leaving the casino at shift changes from which Route 215 can draw from.
- *Private Finance.* The Rumsey Band of Wintun Indians (Wintun Tribe) currently funds over 30 percent of the service's cost – about \$60,000 in FY 2000-2001. In coming years, it is expected that the Tribe's contribution will increase, depending on whether JARC funding is continued. Of course, the casino-owners would not be contributing such large sums if they did not perceive they were receiving benefits at least as large. Having workers arrive on time aboard a safe and comfortable bus, and without the stress of having to

fight the 30-45 minutes of two-lane traffic between Woodland and the casino, has made it in the casino's interest to help underwrite the service.

- *Private Marketing.* Employer support has extended beyond financial contributions. The Cache Creek Casino also actively markets the 215 service to its employees and customers. An announcement is made on the casino's intercom about each bus's arrival and soon-to-occur departure. Bus schedules are prominently displayed at a number of locations in the casino, including the entrances to all restaurants. Buses pick up and drop off employees and customers prominently at the front door, not at out-of-sight locations (as was the case for one Indian Casino employee bus service not reviewed in this report) (Photo 10.2). The casino also markets the service through its help-wanted advertisements. In addition, the casino owners fine-tuned their work-shift schedules to match the arrival times of buses, increasing bus-scheduling efficiencies.
- *Long Route.* Route 215's long mainline segment, spanning 23 miles from terminus-to-terminus through a landscape of mainly fruit groves and farmsteads, means there are few stops along most of the corridor. This not only results in high average speeds outside of Woodland, but also better schedule adherence since there are fewer unanticipated delays at stops. As importantly, unlike many job sites in Woodland that are within cycling and sometimes walking distance to car-less CalWORKs recipients, the casino is too far and remote to reach by foot or bike.
- *Other Contributors.* Other factors that are unique to the travel corridor have also had a hand in the success of the Route 215 shuttle service. As mentioned before, Highway 16 is a two-lane rural road with fast-moving on-coming traffic. It is notorious for head-on accidents. Many of the casino workers take the 215 bus, in part, because they feel safer. In addition, the casino runs as a "24/7" operation, meaning there is a constant stream of customers all times of day, days of week, and months of year. The 215 route also enjoys unusually balanced, bi-directional flows – the buses are full in both directions. This owes to two factors: the coordinated nature of the casino's three shifts means when one group of workers disembarks to go to work, a comparably sized group of workers are boarding to go home. The fact that Route 215 serves both reverse commutes and radial commutes made by transit-dependent ruralites going to medical facilities and other services in Woodland also creates balance.



**Photo 10.1 Route 215 Clean Natural Gas Bus Picking up Employees at Front Door of the Cache Creek Casino**

### **Contrasting Welfare-to-Work Experiences**

The success of Route 215 stands in marked contrast to two other initiatives tried in Yolo County to get CalWORKs recipients to their new jobs. One targeted program introduced by Yolo DESS with the help of JARC funding was a rideshare program. The project sponsors, however, could not find responsible clients to operate carpools on a regular basis. Changing work schedules, vacations, personal emergencies, and other factors impeded efforts to match individuals to an on-going carpool or vanpool. Included among these individuals were Cache Creek workers, many of whom had similar work schedules and allotted vacation days. Also, the lack of a coordinating entity or dedicated funding formed barriers. This absence of support may have been partly due to the impracticality of coordinating rides for clients whose residences and job locations are highly dispersed within and outside the county.

The County also tried a car maintenance program wherein CalWORKs recipients received financial help in getting their cars in good running shape. This program proved to be too expensive, however, as many clients' cars were very old, some on their last legs. In a number of instances, the cost of maintaining a car was more than the car's value. In addition, DESS had a major liability concern funding the program, particularly in dealing with repair shops where clients fixed their cars.

A third failed initiative involved introducing a new shuttle run between Woodland's low-income neighborhoods and the Warehouse district at the eastern edge of town where many

low-wage, minimum-skilled jobs are available. After two different attempts to run buses to the Warehouse district, the service was halted because of meager patronage. The last attempt came in 1999, when Yolobus introduced Route 212 between downtown Woodland and East Woodland. On-board surveys conducted by Yolobus showed all passengers were heading to work. However, despite good on-time performance, Yolobus ran the service only a little more than one year because of eroding ridership. In its last three months, Route 212 averaged 84 riders per month or around 4 passengers a day.

Fixed-route service to the East Woodland Warehouse District did not succeed largely because it had none of the ingredients of success associated with the Casino express service. As summarized in Table 10.1, the physical and institutional landscapes associated with the Warehouse bus services were not conducive to success. The trip destinations – 15 large floorplate warehouse sites – were scattered throughout the district, meaning the dominant travel pattern was many-to-many. Such a pattern is hardly a natural market for fixed-route transit. Moreover, whereas the casino operated on three daily shifts, in the Warehouse District, shift schedules varied considerably across the multiple employers, meaning there were many permutations in the desired times of arrival among customers. The absence of bus services during owl shifts meant transit was not an option for many workers. Also, the Warehouse district service received little employer marketing support and no employer financial assistance. Lastly, whereas the casino was far away relative to where many County CalWORKs recipients resided, the Warehouse District was within walking or bicycling distance for a number of car-less individuals. For these persons, transit was not the only mobility option.

**Table 10.1 Contrast in Factors Influencing Performance Outcomes  
Between Yolo County's Fixed Route Casino Shuttle Route  
and the now-defunct Warehouse District Route**

	<b>Casino Shuttle/Route 215</b>	<b>Warehouse District/Route 212</b>
<b>Work Sites</b>	Concentrated Distinct – 3 shifts	Dispersed Varied – many shifts
<b>Work Schedules</b>		
<b>Employer Support</b>	Substantial: funding & marketing	Minimal or non-existent
<b>Average Commute Distance</b>	Long: ~ 10-12 miles (as far as 23 miles)	Fairly Short: 2-4 miles

### **Funding Issues**

Yolobus received two years of JARC funding – in 1999 and 2000 (the second year as part of a competitive program). As yearly seed grants, however, there are no guarantees of long-term Federal support. If the County does not continue to receive Federal grants, it will have to find replacement funding. The most obvious place to look is state Transportation Development Act (TDA) funds, however in rural counties like Yolo, road projects almost without exception absorb all TDA monies. If TDA funds cannot be secured and unless

employer or rider contributions are substantially increased, services will likely have to be cut. Given the relatively cheap fare of \$1.25 and the presumption that most customers like the service and will thus be willing to pay more, fares are likely to increase if and when Federal JARC funds dry up. The Wintun Indian tribal council has pledged additional support for the current and future years, on top of their past contributions, thus this could moderate future fare hikes.

### **Route 215 On-Board Survey: Rider Profiles and Opinions of Service**

An on-board survey was conducted on November 30, 2001 to examine the degree to which the Route 215 service is meeting the needs of its riders, particularly with respect to job access. The survey approach was very similar to that used in Los Angeles, San Diego, and Merced Counties, discussed in Chapters 6, 7, and 9.<sup>2</sup> The survey instrument, available in English and Spanish, was also similar.

Survey results revealed that Route 215 is playing a vital mobility role. Of all survey respondents, 76 percent were using the service to access jobs, job training, or find jobs. Virtually all commutes were in the reverse direction – 56 of 57 of those making work trips were reverse commuters.<sup>3</sup> The next largest share of trips, 10 percent, was for recreation, mainly involving County residents making day excursions to the casino. Smaller shares of personal, school, social, and medical trip purposes made up remaining trips. These destinations are located primarily in the city of Woodland.

Survey responses revealed balanced usage of the service across hours of the day. Most (88 percent) of reverse commuters utilize the service four or more times per week, and all respondents stated they patronize Route 215 at least twice per week. Additionally, the majority (54 percent) of commuters ride the bus during off-peak hours. The survey also revealed that the average trip duration of reverse commute trips was 43 minutes, which is not too much less than the service's 50-minute end-to-end run time. This indicates surveyed commuters boarded in Woodland for Cache Creek jobs. Average durations did not statistically vary by gender or other socio-demographic variables.<sup>4</sup>

Responses to questions regarding riders' attitudes toward the service also revealed how well it serves patrons. Three-quarters of reverse commuters on Route 215 said they were satisfied overall with the service.<sup>5</sup> Additionally, nearly two-thirds of non-peak hour reverse commuters felt that the bus schedule was convenient. More than 80 percent of reverse commuters rated the service as "important", and 85 percent expect to continue patronizing the service within the next six months. These overwhelmingly positive responses testify to the superiority of the bus service, even among those with the option of driving to work.

These survey results are consistent with findings from a YoloBus/Yolo DESS survey of the route conducted shortly after service commenced. In that survey, 81 percent of riders were using the bus to access jobs, 64 percent had annual incomes of \$20,000 or less, and 47 percent owned or had access to a car. From both surveys, it is clear that Route 215 is providing a valued mobility service, for choice and captive riders alike.

Also revealing are the responses of low-income versus non-low income riders to the November 2000 survey. Figure 10.1 shows that 58 percent of low-income riders found

transit schedules to be convenient. The biggest gap in responses was over whether transit is affordable, with lower income users understandably feeling less positive about this. For other attitudinal questions, those with annual incomes below \$15,000 tended to be more critical than those drawing more income. Transit ranked the lowest in terms of riders' abilities to conduct errands. This parallels the low marks given to transit by reverse commuters in Merced County, presented in Chapter Nine. Since Route 215 provides access to shopping and other services at the Woodland end of the route, its ability to serve intermediate trips was viewed as acceptable among half of non-low income riders.

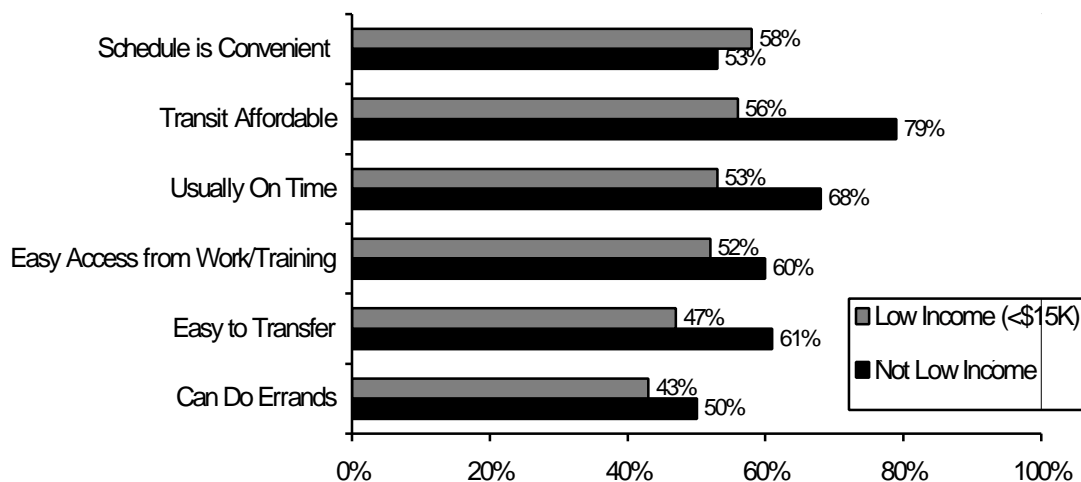


Figure 10.1 Attitudes Toward Route 215 Services by Annual Income Level

### 10.3 TULARE COUNTY: EAGLE MOUNTAIN CASINO BUS SERVICE

As in Yolo County, a successful reverse-commute Indian Casino bus service has been introduced in Tulare County. Employer initiated, sponsored, and operated, special employee bus services are provided by the Eagle Mountain Indian Casino located on the Tule Indian Reservation near Porterville.

Since opening in 1996, Eagle Mountain has grown to become the third largest casino in California, drawing customers from nearby and afar. The casino operates 24-hours per day and currently employs 420 workers.

During the first few years of opening, the casino was experiencing high employee turnover. Absenteeism and late arrivals were also growing problems. Through a series of meetings with employees and exit interviews, it became evident that the main source of these problems was transportation, or the lack thereof. Most workers at Eagle Mountain live in Porterville, and face at least a 15 mile commute each way along a curvy and dangerous two-lane county road. Besides safety concerns, from time to time the road from the Reservation to Porterville is blocked by bad accidents and bridges being washed out. Thus, both the Eagle Mountain and Cache Creek casinos share a similar problem that set the stage for

employer-sponsored bus services – long commute distances along accident-prone two-lane roads. The casino's isolation and access problems also made it difficult to fill many low-paying jobs. High turnover created other costs, like advertising for jobs, interviewing, performing clearance and background checks, training, and out-fitting hirees with new uniforms. Every time someone quits, these costs must again be incurred.

Realizing that transportation problems were threatening the casino's very livelihood, in early 2001 the tribal council, which owns and oversees the casino enterprise, agreed to initiate and subsidize a bus service to and from Porterville for both employees and customers. Separate buses are used to carry workers, who pay \$1 per round trip and customers, who ride for free. Management opted to separate the two groups to avoid problems that might harm the casino's image, like having customers overhear employees engaged in unflattering shop talk or possibly even employee-customer confrontations. Also, there might be awkward situations – e.g., if the bus had just one seat left and an employee and a customer were trying to get on, who would the driver allow to board?

### **Eagle Mountain Bus Service**

Eagle Mountain's employee buses ply a fixed route that loops between three stops in Porterville before heading directly to the casino. Bus stops were sited in areas with ample street parking so that workers could park-and-ride.<sup>6</sup> Customer buses cover more distances and stops at more places.

Presently, Eagle Mountain has eleven 24-47-passenger buses that deliver workers and customers to the Casino's front door (Photo 10.2). The service is not contracted out, but rather is owned, managed, and operated by the casino itself. Operating a safe service is the casino's number-one priority. Many drivers formerly drove school buses, meaning they were trained to drive safely. In addition, the casino's transportation staff holds regular meetings with drivers to discuss safety issues. Attendance is mandatory. During the meetings, staff point out some of the most dangerous parts of the windy route and how to avoid accidents. The casino's transportation manager is a certified school bus driver trainer, with a certificate in passenger transportation from California State University, Sacramento and the California Department of Education – School Transportation Services Units, and thus is particularly sensitive to safety concerns. To date, there has been no turnover among bus drivers. This is attributable, in part, to a work schedule that allows a lot of free time: three days a week, twelve hours per day (7 A.M. to 7 P.M.).

The bus service is not cheap, costing the casino around \$15,000 each month to maintain and operate. Only around \$2,000 of this is recovered from the farebox. While the casino's management concedes some costs might be saved by tendering the service through a competitive-bid concession, the benefits of internal operations and management – mainly in terms of being able to oversee and control the quality of service – are thought to outweigh the additional costs. The Tule tribal council also wants to make sure, to the degree possible, that drivers are members of the tribe to provide needed jobs and training for the un- and under-employed Native Americans.

Employee bus runs leave the casino every other hour. Work shifts start and end on the hour to allow employees to board the bus without any delay.



**Photo 10.2 Eagle Express Employee Shuttle at the Entrance to Eagle Mountain Casino**

Employees can either buy a monthly pass with unlimited rides for \$20, or they can purchase a \$1 bus pass that can be used any time for one round trip. As Figure 10.2 shows, the \$1 “emergency” passes surpassed the regular passes in popularity immediately upon introduction in January, 2002. In this sense, the shuttle bus is used as back-up transportation for many casino workers. Also, employees can win free monthly bus passes as part of a “good-will” monthly raffle that aims to promote bus usage.

### **Benefits**

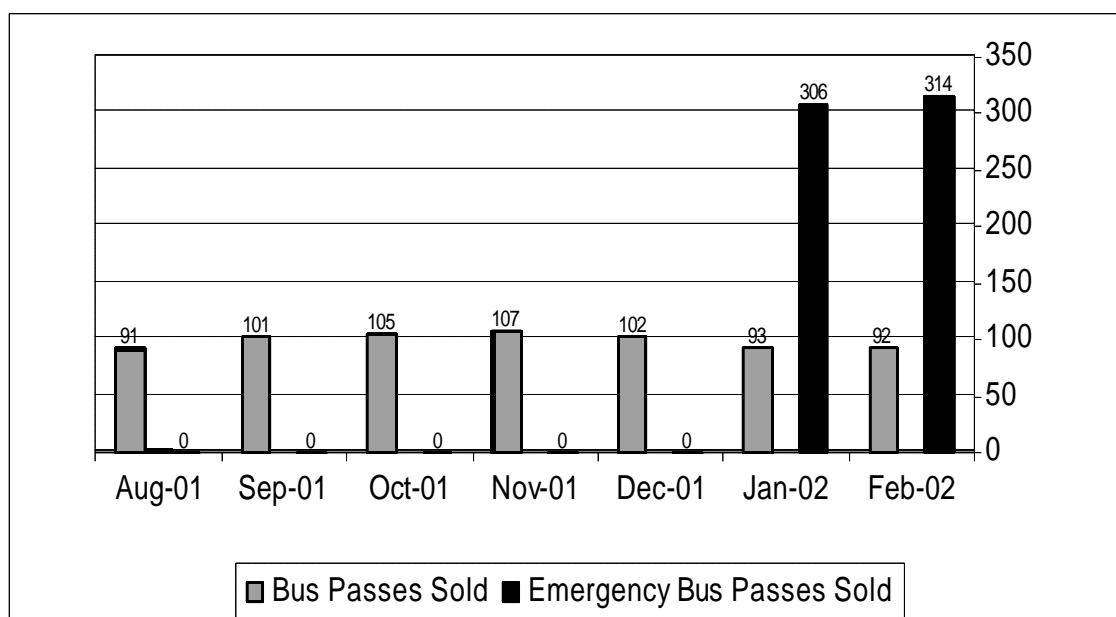
So far, bus services have been reliable. In the first year of operation, buses were late in arriving at the casino on only two occasions – once due to an accident that slowed traffic on the connecting road and once because the vehicle broke down.

So far, the service has proven attractive to casino workers. Among 420 employees in early-2002, around one-quarter rode the bus to and from work at least once a week. Over 90 percent of employees come from Porterville thus bus riders are usually aboard for a 15 to 20 miles stretch each way. Many prefer the bus to driving to avoid the windy road that is the only way into and out of the Reservation by car. A growing share of bus users are thought to be choice riders.

According to the casino's management, the bus service deserves some of the credit for the ability to attract more educated and experienced workers in recent years. More than half of casino workers are women and most have completed high school. Still, an estimated 40 percent of Casino workers receive some form of welfare assistance, thus the bus shuttle is praised by County officials for helping to bridge the welfare-to-work gap.

In addition to the bus service, Eagle Mountain casino has also tried other transportation programs such as carpooling. The carpooling program was not successful even though the casino was offering financial incentives to the drivers of carpools. With carpools, the dangers and stress of driving the windy road to the Casino would not have been diminished very much. A 24-passenger bus relieves far more workers from the daily chore of driving to work than do carpools. Riders sharing was not as dependable as transit either. Records show that carpoolers had the same level of tardiness and no-shows as non-carpoolers.

Besides providing job access, the shuttle bus has been credited with freeing up parking spaces. This has especially been critical on weekends when parking lots are normally full. It has also done its fair share toward contributing to better air quality in the Reservation's valley which is encircled by pollution-trapping hillsides.



**Figure 10.2 Trends in Eagle Mountain Employee Bus Passes Sold, Regulator and "Emergency" Bus Passes**

#### 10.4 SUMMARY

Yolo County's Cache Creek Casino shuttle bus run is a true welfare-to-work transit success story, one that all parties – riders, drivers, employers, transit agencies, and social service workers – lavish praise upon. The route's 333 percent ridership gain over the first year of

operation speaks for itself. Without the pro-active support of the Wintun Tribe, Route 215 would not be the success it is. The Casino's management willfully funds and markets the shuttle service, recognizing the mutual benefit of helping CalWORKs clients fill and keep jobs at their establishment.

The Yolo County case offers insights into the institutional, financial, and operating conditions that are often necessary for mounting successful reverse-commute and welfare-to-work services. The Cache Creek shuttle serves a large employment hub with shift schedules that dovetail with the Shuttle's own schedule. The shuttle is a long route with few intermediate stops and provides a safe, comfortable alternative to a long drive on an accident-prone highway. It bears noting that the County did not succeed on several other fronts to provide welfare-to-work transportation, in striking contrast to their experience with Route 215. Non-successes were missing what the Cache Creek Route has: concentrated employment destinations, limited schedule shifts, and importantly, an employer who supported and aggressively marketed the bus service.

Eagle Mountain Casino's employee bus shuttle seems poised to follow in the footsteps of the Cache Creek shuttle. Like Cache Creek, a dangerous long-haul roadway to the casino from the nearest labor market has made bus transit an attractive alternative to driving. Around a quarter of Eagle Mountain Casino's workforce rides the bus on a monthly basis. While the service recovers less than 15 percent of costs through the farebox, the casino's tribal council has every intention of continuing to run the service for the benefits of a more productive and reliable workforce are thought to more than offset these expenses. In that around 40 percent of Eagle Mountain's workforce receives some form of public assistance, as in the case of Cache Creek, the bus shuttle is a bona fide welfare-to-work success story.

## Notes

---

- <sup>1</sup> Route 215 buses arrive at the Casino 11 minutes before work shifts begin and leave 10 minutes after they end.
- <sup>2</sup> Members of the research team and Spanish translators conducted the on-board surveys. Questionnaires were administered on all five Casino-bound runs and two return Woodland-bound runs, which constituted four peak-hour and three off-peak hour runs. This was done in order to survey as many people as possible from all Casino shifts, including the previous day's overnight shift.
- <sup>3</sup> The vast majority of commuters on the surveyed buses were Casino workers. Though the survey did not cover all return runs from the Casino, survey conductors verified on-board that these runs had passenger loads similar to the Casino-bound runs.
- <sup>4</sup> For example, reverse commuters who are transit dependent (and do not own cars) averaged trip durations of 40 minutes.
- <sup>5</sup> Reverse commuters are defined as those who work at the Cache Creek Casino (or other non-central city workplaces) and use the surveyed bus for their commute. Also included is anyone who was seeking jobs or in job training. Any commuters boarding the bus at intermediate stops along the route were classified according to the direction of the bus. Thus, all Casino-bound work-related trips were classified as reverse commute, while all other work-related trips were considered to be non-reverse commute.
- <sup>6</sup> Many employees drive from home to the bus stop, park their cars near the bus stops and ride the bus to work. The casino was able to enter into an agreement with the Tulare Government Center that allows casino workers to park their cars on the Government Center's parking lot.



## **PART THREE**

### **RESPONDING TO UNMET NEED AND LATENT DEMAND**

The focus so far has been on investigating reverse commuting and job access issues from a demand, supply, and performance perspective, drawing upon empirical data and case experiences. While insightful, such inquiries say nothing about the demand for travel that is not currently being served, called *Latent Demand*. On-board ridership surveys report in Part Two, for example, shed light on what service improvements existing transit riders would like to see introduced, however this totally misses the kinds of service reforms that those currently foregoing transit riding most prefer. The voices of Californians facing particularly difficult job-access problems and who are unable to enter the labor force as result also need to be heard.

Part Three examines the nature and scope of unmet travel needs in parts of the state. Chapter 11 presents results of surveys conducted among clients of social service agencies in two counties: San Diego and Yolo. Like the on-board ridership surveys reported in Part Two, the focus of these surveys is on better understanding the kinds of transportation programs and transit service reforms that would best satisfy the needs of low-income individuals, with the main difference being many of those who responded do not take transit or have jobs. Chapter 12 follows up on these surveys by presenting the results of a “gap analysis” conducted for the San Francisco Bay Area, focusing on accessibility via transit to low-paying jobs given the distribution of low-income households in the region. When contrasted with what we know about actual transit usage, this analysis gives some perspective on the scope of latent demand in a large region like the Bay Area.



## Chapter Eleven

### Exploring Latent Demand: Mobility Needs and Preferences of CalWORKs Clients

#### 11.1 INTRODUCTION

Is the ability of some Californians to find jobs in any way connected to the alignment and configuration of contemporary transit services? Why do some of those who have successfully transitioned from welfare-to-work opt to drive instead of take public transit, even if owning and using a car takes a large share of their earnings? These questions get at the matter of latent demand – potentially pent-up desires to enter the labor force or utilize public transit that in some way get suppressed by today's mobility options.

In order to probe and better understand unmet transportation needs of CalWORKs clients, surveys were conducted. Of particular concern are the wants and desires of those who remain jobless and on welfare. Among CalWORKs participants with work, transit might not be delivering the kinds of services that satisfy their mobility needs. To probe this topic, two survey instruments were designed: one for those with jobs and the other for those not working. Surveys were conducted of CalWORKs clients in two very different places reviewed in this report: Yolo County and San Diego County. The choice of these two areas was based largely on the willingness of county staff responsible for CalWORKs programs to assist us with the logistics of administering surveys. Questionnaires were designed and written in English and also translated into Spanish and Russian (for the considerable population of Russian Immigrants who live in the greater Sacramento area, including Yolo County). Appendix C presents the questionnaires that were administered. Surveys were conducted in February 2002. In the case of Yolo County, an intercept-survey approach was used. This involved asking CalWORKs clients to complete the questionnaires as they entered the County's primary social service building. With San Diego, surveys were handed out and collected by caseworkers at the time they met with CalWORKs clients.

For both areas, survey responses were stratified to allow differences in attitudes, views, and opinions to be examined by: workers versus non-workers; transit versus non-transit users; those making complex trips (e.g., involving child-care drop-off) versus non-complex ones; and those who are transit dependent (i.e., without car access) versus those who are not. The analysis largely reinforces findings from Part Two of this report. One, jobless clients stressed the importance of suitable transportation for job searches. Many CalWORKs clients expect that once they get jobs, they will be able to purchase cars and drive to work. Survey responses also suggest that in rural settings like Yolo County, cars are preferred for finding out about work opportunities, getting to job interviews on time, and accessing work sites. On the other hand, in bigger, denser settings like San Diego County, public transit has broader appeal owing to qualitatively better services that can be supported. Also consistent with the case studies findings in Part Two was desire of many CalWORKs clients to see transit operate during late hours and on weekends. Among those with jobs who do not patronize transit, there was a strong preference for expanding coverage and service

frequencies. Transit-dependents favored across-the-board improvements in services. Those with access to cars also support transit improvements though many prefer financial help with buying and maintaining autos. Finally, many welfare clients who make complex commutes would like to see more flexible transit services introduced to allow them to efficiently connect between home, child-care centers, and workplaces.

It should be kept in mind that survey responses speak to transportation factors that currently form barriers to finding and retaining a job. Many non-transportation factors – e.g., minimal education, limited job skills, substance abuse, and physical illnesses – also impede efforts of many CalWORK recipients to find suitable employment. Respondents generally had no problems in finding fault with current transportation offerings, however it is important to remember that problems they face often extend well beyond mobility, or the lack thereof.

## 11.2 YOLO COUNTY

The Yolo County Department of Employment and Social Services (DESS) serves welfare and low-income clients residing in this low-density county of 160,000 inhabitants west of Sacramento. The agency provides a number of social services, including CalWORKs, TANF, and Medi-CAL benefits, food stamps, and general assistance (to clients who have exhausted all other means of support). The County's two one-stop offices, located in Woodland and West Sacramento, provide services on a walk-in basis. In addition to welfare assistance, both offices provide job search, training, and placement services. Of the County's nearly 18,000 current CalWORKs welfare-to-work cases, around 11 percent receive some form of transportation assistance, such as funds for car maintenance, mileage reimbursement, and transit passes. In addition, about 44 percent of the County's approximately 1,100 current CalWORKs family cases receive child-care assistance.

In Yolo County, welfare-to-work assistance is organized under the CalWORKs Employment Services Program (CWES).<sup>1</sup> Once clients enroll in CWES, Yolo DESS pays their transportation costs in the form of direct mileage reimbursement or transit passes. Transportation reimbursement and child-care services are also provided through two other county employment programs, the Workforce Investment Act Programs and Youth Employment Services. These programs are open to all eligible County residents, regardless of whether they are on public assistance.

In 1999, 364 Yolo County clients per month received mileage reimbursement or transit passes. The average monthly cost per client was \$105, translating to an annual transportation expenditure of over \$450,000.<sup>2</sup> Through successful placements, the County has witnessed a drop in the number of CalWORKs welfare-to-work clients receiving transportation services to around 2000 in early-2002. Annual transportation costs have commensurately declined to approximately \$250,000 annually. As of early-2002, DESS's records show that 81 unemployed clients have transitioned to gainful employment, in part due to targeted transportation assistance. As noted in Chapter 10, the Yolo County Transportation District (Yolobus) has also played an important role in facilitating welfare-to-work transitions through the introduction of specialized services, notably the Route 215 Cache Creek Shuttle. The DESS helped place 93 clients in service jobs at the Cache Creek Casino, many of whom would not have been able to work there were it not for the long-haul shuttle run.

## Client Survey

In early-February, on-site surveys of 137 clients who entered the Woodland one-stop office were conducted.<sup>3</sup> The majority of respondents were women and around half were Spanish speakers. Beyond the questionnaires themselves, many of those who completed surveys discussed and openly shared with the study team their views on transportation. All stressed the importance of access in finding and keeping jobs as well as taking advantage of social services. A frequent lament was the absence of specialized transportation services for children and job training sites.

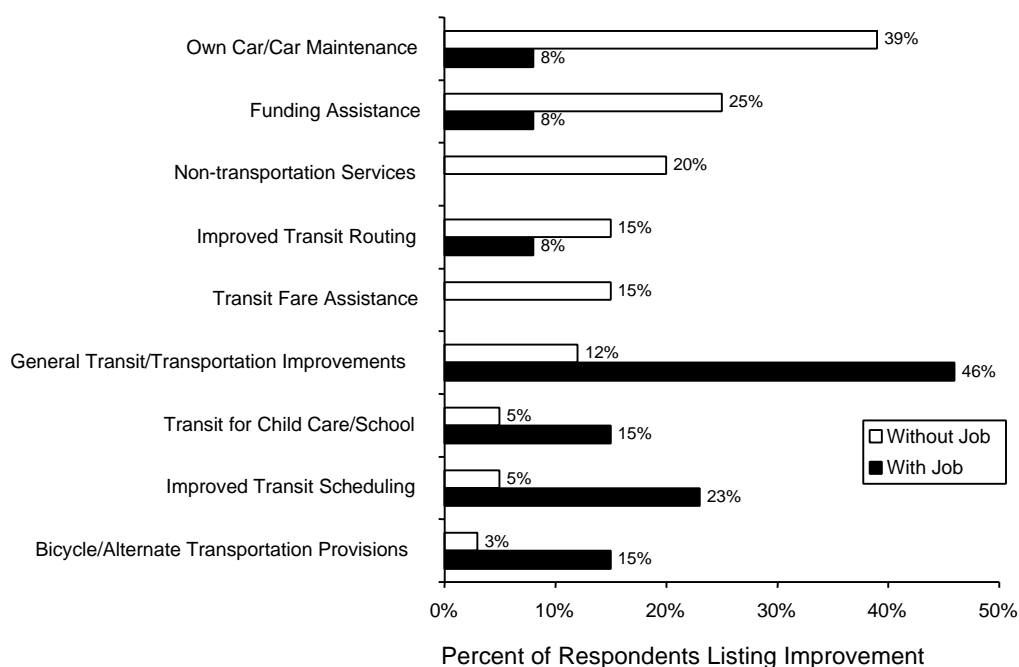
To shed light into peoples' attitudes and opinions about transportation options, survey results were broken down and analyzed across several dimensions, in particular low versus non-low income and workers versus jobless respondents. The question most relevant to latent demand focused on needed transportation improvements. For those without jobs, the question asked: "List three things that could be done to help you travel to school/training, or to find a job". For those employed, the question was worded differently: "What three transportation services need to be improved most to help you keep your job".

## Desired Improvements

A clear pattern emerged from the two sets of responses: those without jobs wanted automobility while those with jobs (and presumably cars as well) emphasized the importance of improving transit services (presumably as back-up and an occasional mobility option). Figure 11.1 shows that around four out of ten respondents without jobs wanted help in purchasing and maintaining cars. If and when they get jobs and make commutes, many of these respondents indicated they would likely make multi-legged trips to drop off kids, go to health clinics, and attend job training. Jobless respondents were most drawn to programs that provide some form of direct financial assistance. In addition, one-quarter of clients without jobs desired general funding assistance, such as help with health care (even though the survey question explicitly asked what transportation improvements they would most like to see introduced).

Among those with jobs, the most common request was for general transit improvements, to be expected among lay people unaccustomed to thinking about strategic transit service reforms. Still, many working respondents knew exactly what they wanted: around one-quarter called for transit schedule improvements, 15 percent expressed a desire for specialized transit services for their children, and 8 percent wanted better routing.

Figure 11.2 breaks down responses by income levels. A similar pattern was found: low-income clients wanted help in owning and maintaining cars more so than those with higher incomes. Survey results revealed that many low-income respondents live in rural settings with meager bus services and make multi-leg, zig-zag trips, thus understandably they aspire for automobility. Next in order of desirability were transit-related programs: assistance with transit fare and increased service frequency. While Yolo DESS provides CalWORKs participants with money to purchase transit passes, many who collect benefits other than CalWORKs are ineligible for this benefit. Sometimes residents who have exhausted



*Note: Multiple responses possible, thus figures sum to more than 100 Percent*

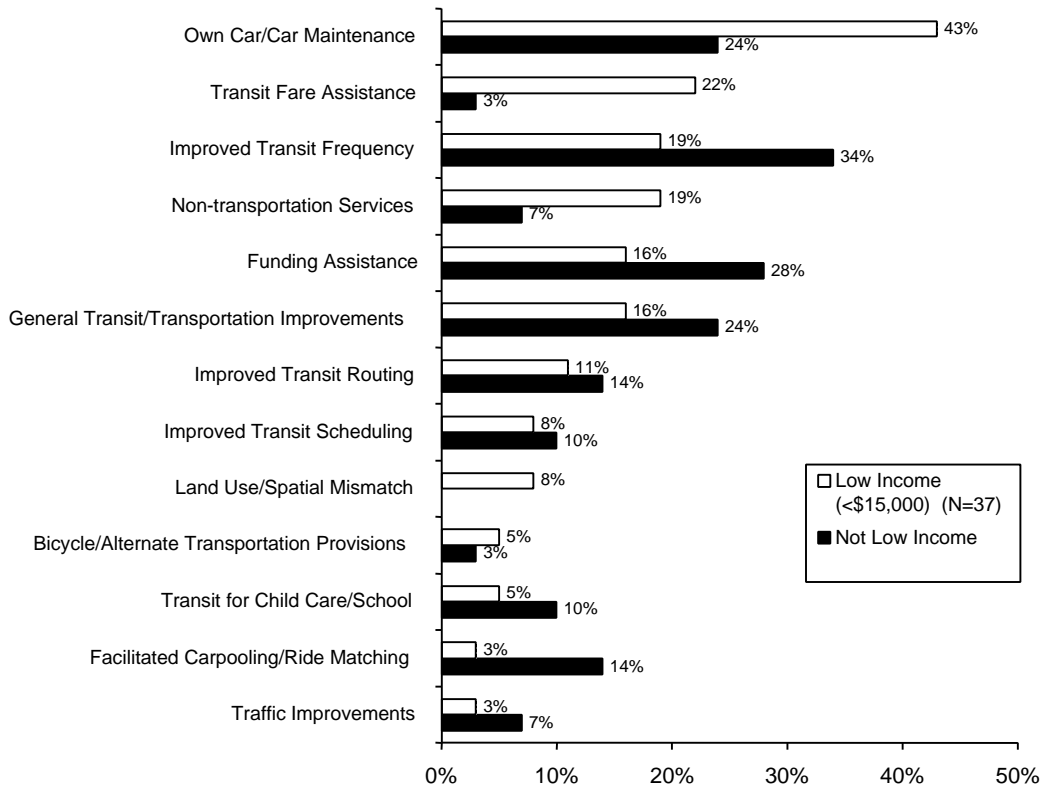
**Figure 11.1 Desired Transportation Improvements of Yolo County Welfare Clients, by Job Status**

CalWORKs benefits but are still looking for jobs or who have low-wage jobs face the greatest mobility hardships.

Among respondents with higher incomes, the strongest preference was for more frequent transit services. This likely reflects higher income car-owning CalWORKs recipients being particularly sensitive to the time delays. Off-peak buses that come by every 45 minutes to one hour are not viable mobility options for this group. Those earning more also often listed financial assistance as desirable, including help buying a car and more funds (e.g., mileage reimbursement, transportation vouchers) allotted for transportation services. Ten to 15 percent of financially better-off respondents listed bus routing and scheduling changes as desirable improvements.

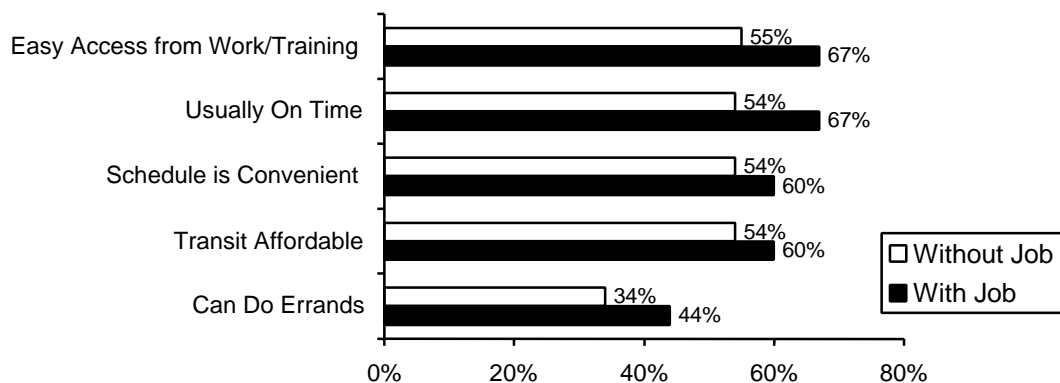
### Views Toward Transit

Besides these open-ended questions, respondents were asked to share their views about existing transit services by answering several closed-ended questions. Breaking down responses by job status revealed that jobless feel fairly strongly about improving transit services so as to allow them to attend school or job training. Just over half of those without jobs felt that transit provided easy access to school or job training, is usually on time, has convenient schedules, and is affordable (Figure 11.3). Perhaps most telling, only about one-third of respondents without jobs felt that they could take care of errands during their trip to or from school or job training. For most, such intermediate stops include child-care centers,



Percent of Respondents Listing Improvement  
*Note: Multiple responses possible, thus figures sum to more than 100 Percent*

**Figure 11.2 Desired Improvements of Yolo County Welfare Clients, by Income Level**

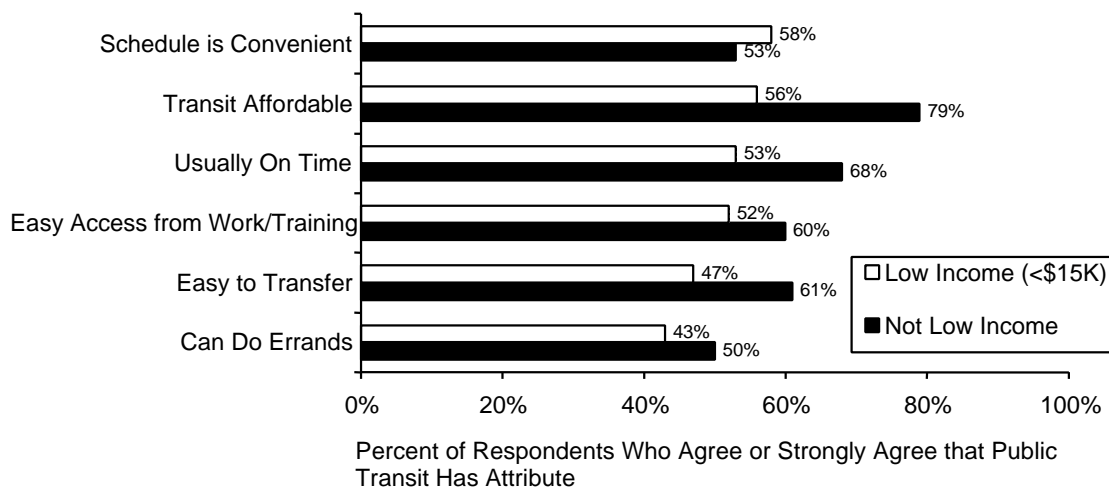


Percent of Respondents Who Agree or Strongly Agree that Public Transit Has Attribute

**Figure 11.3 Attitudes Toward Transit of Yolo County Welfare Clients, by Job Status**

health clinics, and shops. This may speak to two facts. One, traditional fixed-route, fixed-schedule transit often better serves workers traveling during peak hours, whereas those seeking or training for jobs often do so in the off-peak. Second, joblessness and complex travel patterns reinforce each other. Many of Yolo County's jobless clients are women with children, and low-paying jobs makes child-care too expensive, keeping them unemployed. Traditional fixed-route transit is not particularly well-suited for serving these trips. Flexible forms of paratransit, such as the door-to-door child-transportation services introduced in Contra Costa County (reviewed in Chapter 5), are better suited.

Breakdowns by income levels matched breakdowns by job status. Predictably, Figure 11.4 shows the largest disparity between low and non-low income respondents was in terms of transit affordability. Except for the schedule convenience factor, respondents from the lowest income categories were less positive toward transit service features than were those making more than \$15,000 per year.



**Figure 11.4 Attitudes Toward Transit of Yolo County Welfare Clients, by Income Level**

Overall, responses from Yolo County CalWORKs clients reveal a significant degree of pent-up demand for mobility. The county's neediest residents are most interested in financial assistance, mainly help in buying and maintaining cars. This partly reflects the fact that many of the County's poorest households are located in rural settings where there are few options to automobility. Traditional bus transit generally receives high marks except for running errands and making intermediate trips. More flexible, door-to-door paratransit is likely more up to the task of serving the mobility needs of the County's most transportation-disadvantaged residents. The higher cost of van-based services needs to be weighed against the benefits of better satisfying the mobility needs of low-income and jobless residents.

### 11.3 SAN DIEGO COUNTY

Surveys similar to those administered in Yolo County were also compiled in San Diego. The only difference is that information was compiled at the time CalWORKs participants were meeting with caseworkers rather vis-à-vis intercept surveys. Questionnaires were handed out at all regional branches of the Health and Human Services Agency of San Diego County over the first three weeks of February 2002. During this period, CalWORKs participants who came to the offices to meet with caseworkers were invited to fill out survey forms. A total of 287 questionnaires were collected, 49 (or 17 percent) of which were from workers.

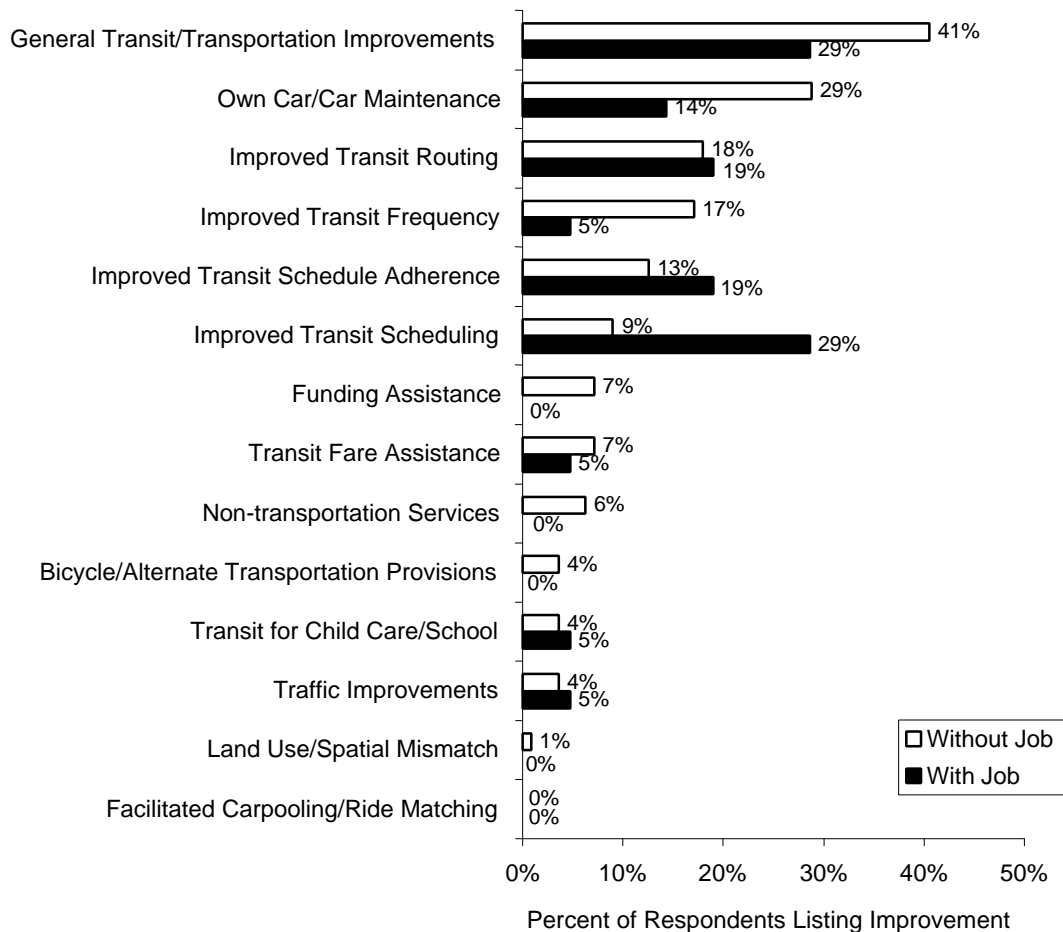
This section summarizes the San Diego County survey results. As with Yolo County, results are stratified by those with and without jobs, in addition to several other dimensions, like transit users versus non-users and whether or not someone's journey-to-work pattern is or would be (if they had a job) "complex".

#### Desired Improvements

Responses to the open-ended question on desired improvements revealed two different priorities by job status: among unemployed clients, the greatest interest lay in improving transportation services to facilitate job-hunting activities; for employed clients, the focus was on providing or improving late-hour and weekend transit services. At the top of the list of improvements desired by jobless clients were general transit or transportation improvements, listed by four out of ten respondents (Figure 11.5). Second most frequently listed was help with owning or maintaining a car. This differs from Yolo County where jobless residents ranked owning a car as their top priority. The difference could have a lot to do with density: as a fairly urbanized setting with various transit options, poor jobless residents of San Diego County have more mobility options and accordingly are less dependent on cars; in low-density Yolo County, this is not the case. Improved transit routing and more frequent services are also important to jobless San Diego County's CalWORKs recipients. Employed clients expressed a stronger interest in expanding transit schedules. This likely speaks to the fact that many work late shifts or on weekends, periods of slack transit services.

The breakdown of responses by transit versus non-transit users yielded several insights (Figure 11.6). One, significant shares of both groups want help with acquiring and maintaining cars. For non-transit users, this was the top priority. Also, both groups called for general transit improvements. This suggests that many non-transit users on welfare feel strongly about transit services and are pre-disposed to ride San Diego County's rich offering of buses and trains, however current-day configurations of service often make this difficult. Their willingness to voluntarily write-in requests for improved transit services indicates they would like to take transit but for a host of reasons – stereotypically the absence of late-night services, difficulties in making chained trips, inaccessibility to transit stops – are unable to. San Diego County's CalWORKs recipients who ride transit also identified schedule adherence as a problem. For those with jobs in service industries who have to arrive to work on time to cook meals, bag groceries, work cash registers, and the like, arriving late to work because of tardy buses too many times can mean losing one's job. Clearly, many needy transit users are keenly aware of the importance of punctual transit services.

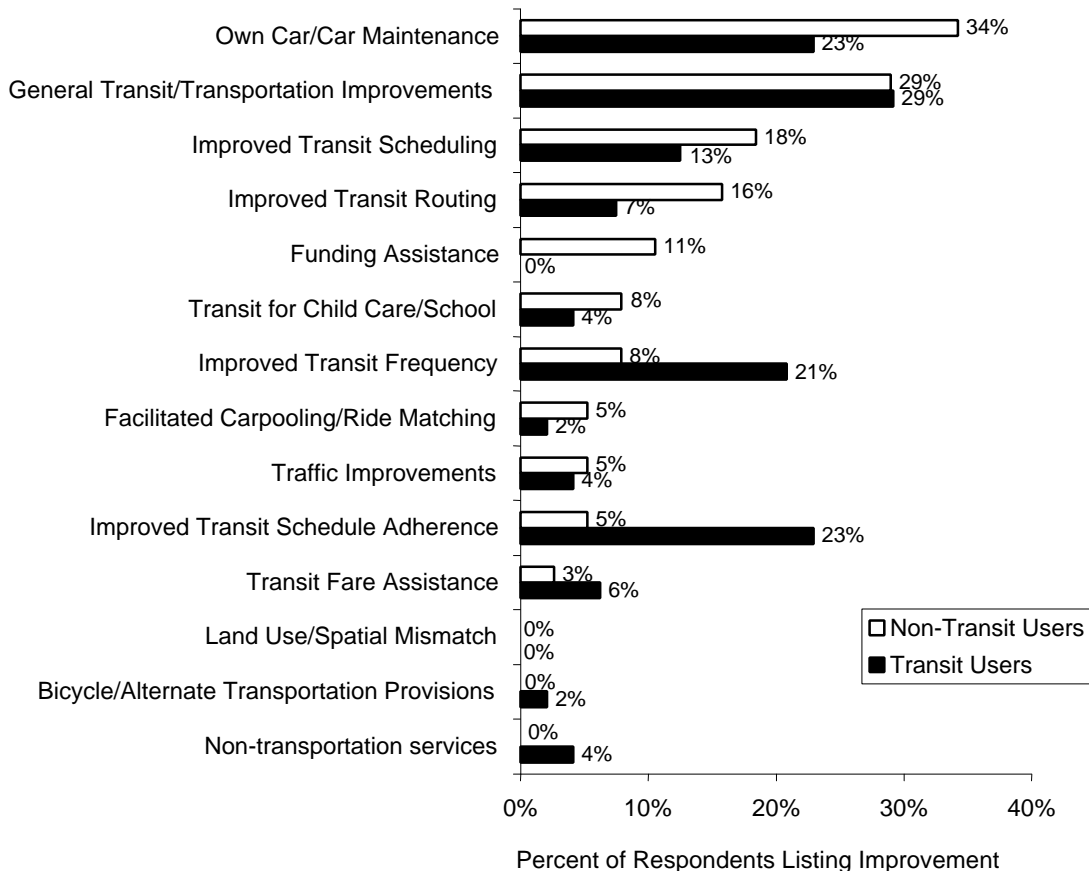
CalWORKs clients' preferences were also studied in terms of "transit dependency" (Figure 11.7). In this analysis, transit dependents were defined as those with low incomes (i.e., annual household income below \$25,000) or who were carless. Several points stood out. One, transit-dependent clients were most interested in broadly defined "transit improvements", and what appealed most to CalWORKs clients who generally have more mobility options were auto-focused strategies – e.g., loan programs to assist with auto



**Figure 11.5 Desired Transportation Improvements of San Diego Welfare Clients, by Job Status**

purchases, financial aid to insure and maintain cars, and loans for major repairs. Consistent with what was found before, more frequent, on-time services that pick-up people closer to their origins and drop them off closer to their destinations were of interest to a number of San Diego County's transit-dependent CalWORKs clients. Again, this underscores the sensitivity of a number of needy car-less individuals to quality of transit services. Clearly, transit is not up to par in the minds of significant numbers of persons who are expected to successfully make welfare-to-work transitions.

Responses were also stratified in terms of whether CalWORKs recipients make multi-legged trips to get to and from work – e.g., as single parents with child-care responsibilities. Clients who make complex trips (or would if they had jobs) tended to cite the need for improved transit routing far more than those who did not (Figure 11.8). Other desired improvements noted by appreciable numbers of clients making complex trips included better routing, more frequent services, schedule extensions, specialized van runs to schools and day-care centers for their children, and assistance with ride-matching and forming vanpools.

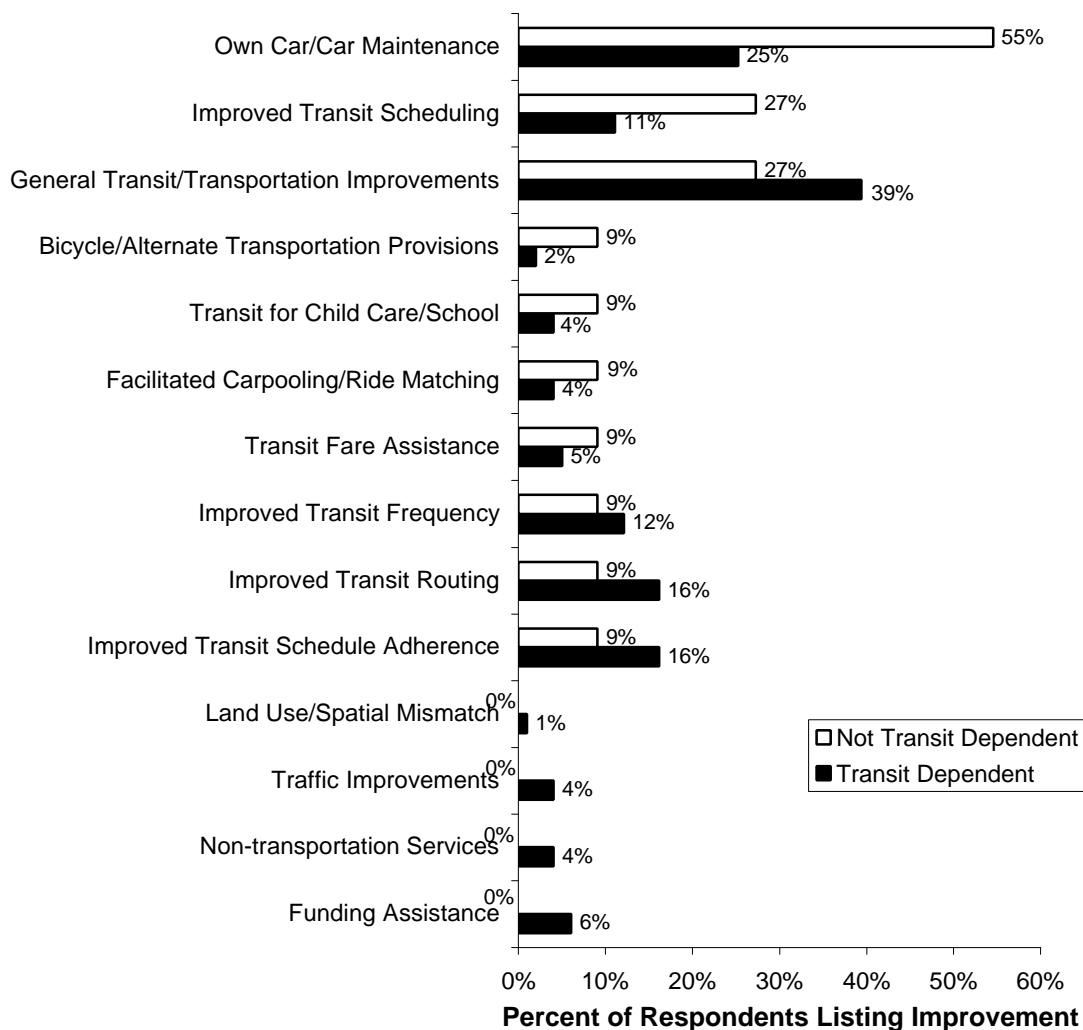


**Figure 11.6 Desired Transportation Improvements of San Diego Welfare Clients, Transit Users vs. Non-Transit Users**

### Views Toward Transit

The other key response elicited from San Diego County CalWORKs clients was views about current-day transit services. As with the Yolo County analysis, the intent was not only to identify what is working well and what is not in the minds of needy populations, but also to illuminate the kinds of service reforms that are best positioned to reap mobility dividends.

Most revealing with regards to attitudes toward transit was whether clients had jobs or not (Figure 11.9). In general, both groups were fairly satisfied with the county's current transit

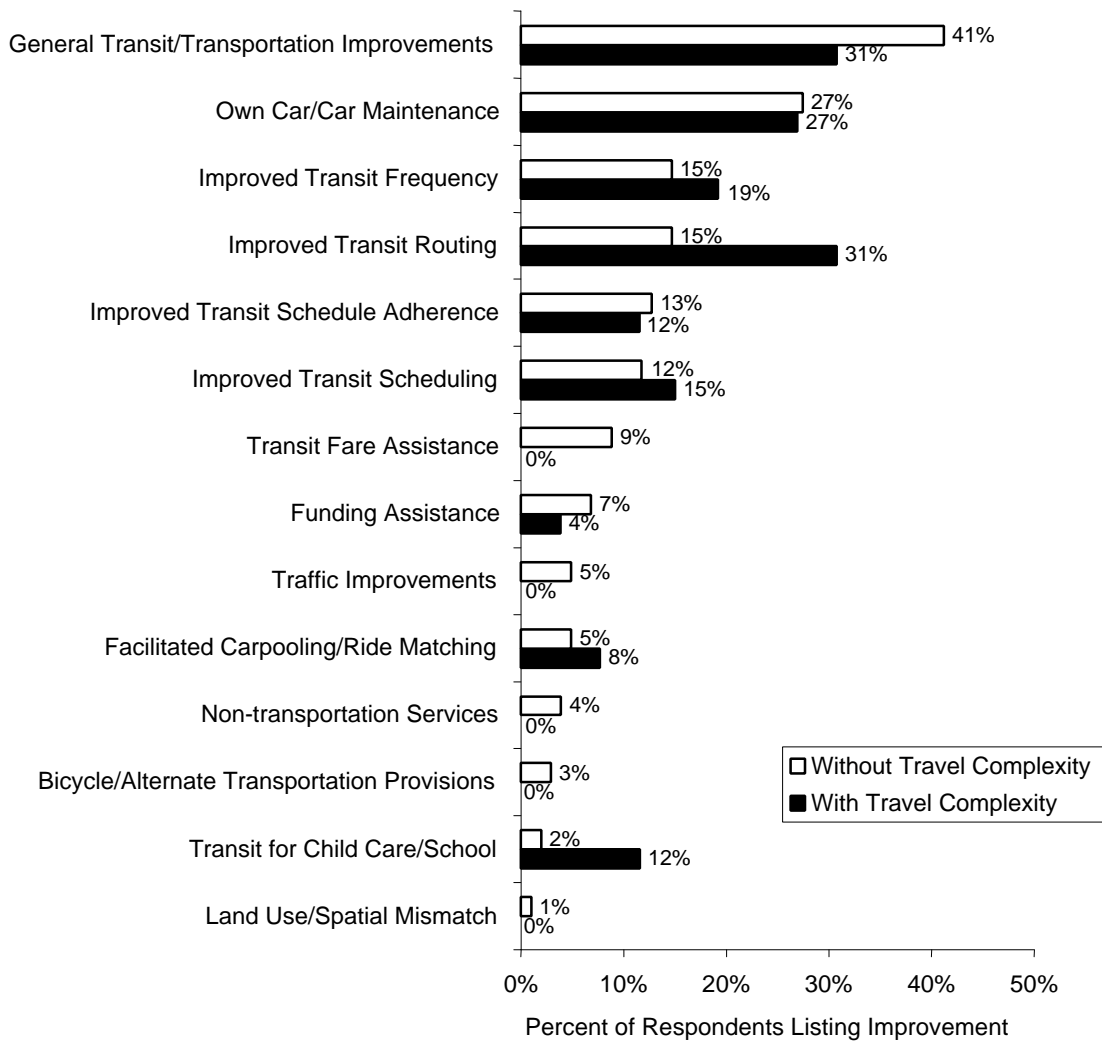


*Note: Multiple responses possible, thus figures sum to more than 100 Percent*

**Figure 11.7 Desired Transportation Improvements of San Diego Welfare Clients, by Transit Dependency**

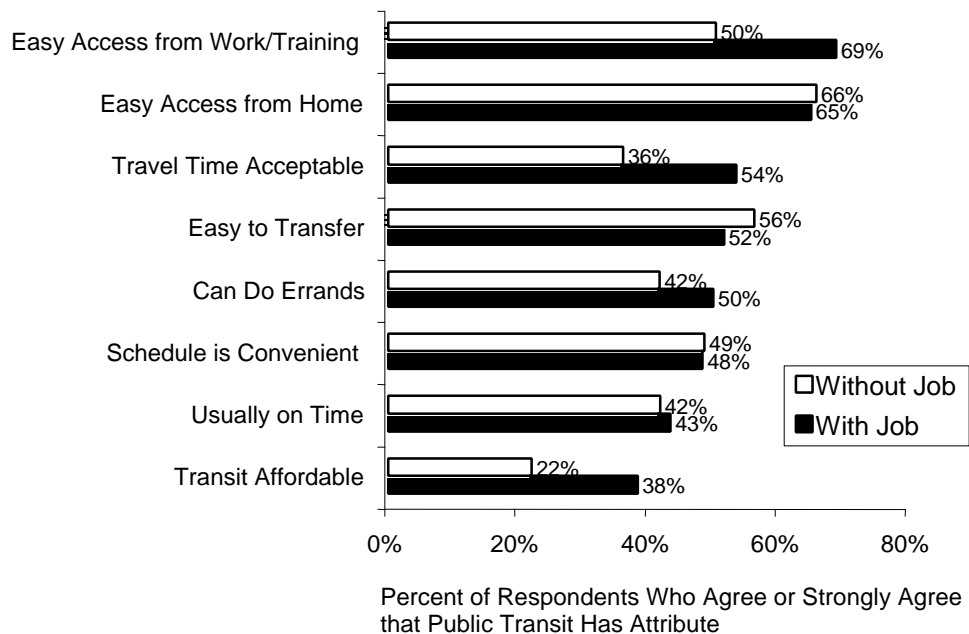
service arrangements, with a few exceptions. Fewer than one out of four clients without jobs agreed that bus and rail fares in San Diego County are affordable. (We note that fairly few jobless clients stated in the open-ended question that they wanted fare assistance.) Also, fewer than half of CalWORKs recipients felt current-day transit services were usually on time or had convenient schedules. We again see a concern expressed for the punctuality and scheduling of bus and train services in the County, regardless if the respondent had a job or not.

San Diego County's transit services seemed to perform best in terms of ease of access from clients homes to stop, meaning route coverage is, on balance, fairly good. Access from work



**Figure 11.8 Desired Transportation Improvements of San Diego Welfare Clients, by Travel Complexity**

also rated highly, particularly among those with jobs. Overall, surveyed CalWORKs recipients with jobs rated the County's existing transit services more highly than those without jobs. This lends credibility to efforts in some counties, like Santa Cruz (Chapter Five), to tailor-design mobility services to the very neediest of clients. Based on the views shared by San Diego County's CalWORKs, such initiatives are essential if needy individuals are to make the successful leap from welfare-to-work.



**Figure 11.9 Attitudes Toward Transit of San Diego Welfare Clients, by Job Status**

#### 11.4 SUMMARY

Views and opinions shared by CalWORKs recipients in Yolo and San Diego Counties reveal a significant degree of latent demand. While survey results do not define the magnitude of unmet needs, they provide a good perspective into the kinds of transportation programs that are most likely to induce welfare-to-work transitions.

A key distinction uncovered between the two cases was the stronger emphasis placed on owning a car among jobless CalWORKs clients in Yolo County than San Diego County. This is thought to reflect fundamental differences in transit operating environments. In spread-out and predominantly rural Yolo County, many CalWORKs clients need automobility; transit services are often too sparse and infrequent to search for and routinely commute to jobs. San Diego County's rich mix of bus and rail services makes public transit a much more viable option. Among the transit improvements that jobless individuals find most helpful are schedule extensions to late nights and weekends, more direct routing, and more frequent services. Some also stressed the importance of specialized, door-to-door van services that deliver their children to and from child-care and schools. A goodly number of clients from both counties rated traditional fixed-route services poorly in terms of the ability to run errands, directly reach destinations, and arrive on-time. Many were particularly sensitive to transit's spotty record of on-time performance. This is understandable given that many low-skilled workers find jobs in service industries requiring they arrive to work on time to serve customers and the need to punctually pick-up children at day-care centers. Flexible, door-to-door paratransit therefore not only has a lot to offer to the children of CalWORKs recipients, but also to the recipients themselves.

All of this leads to a policy conundrum. Paratransit and more intensive public transit services can cost considerable amounts, yet many jobless CalWORKs clients who were surveyed complained that fares are already too expensive. San Diego County's neediest individuals were particularly sensitive to the inaffordability of transit. The introduction of commercial paratransit matched by user vouchers that keep costs affordable to disadvantaged travelers is one way to achieve the twin goals of better quality services and affordable fares. Opening up the marketplace to paratransit competitors can help contain operating costs, however there is no disputing that paratransit matched by user-side subsidies requires increased public-sector funding support. Higher public outlays must be weighed against the benefits of better-suited transportation programs inducing more welfare-to-work transitions than would otherwise occur.

## Notes

---

- <sup>1</sup> According to the Yolo County DESS website, “CalWORKs employment services (Welfare-to-Work) is a program designed to help people on public assistance become employed. The program offers a range of job services, including a job club, a job search workshop, and an employment center with access to phones and job leads. The program also provides training and education, and pays transportation and child care for participants. Source: <http://www.yolocounty.org/org/dess/program/clwrket.htm>.
- <sup>2</sup> Yolo County Department of Employment and Social Services, CalWORKs Implementation Status Report, 1999. See: <http://www.yolocounty.org/org/dess/program/calwrksrpt/calworksrpt.html>.
- <sup>3</sup> Clients were asked to voluntarily complete surveys and ensured all responses would be treated confidentially. As a small gesture of thanks, donuts and coffee were provided.

## Chapter Twelve

### Transit Service Gap Analysis: Accessibility to Low-Wage Jobs in the San Francisco Bay Area

#### 12.1 INTRODUCTION

Another way of studying latent demand, or unmet needs, is to conduct a “gap analysis”. In the context of reverse-commute and job access, this mainly involves examining gaps in the locations of needy households and jobs for which they qualify, and measuring the degree to which public transit connects the two.

In this chapter, a gap analysis is presented for the San Francisco Bay Area. The focus is on mapping the locations of low-income households and low-wage jobs. Using accessibility indicators and geographical mapping, the scope of current job-access gaps is gauged.

This analysis builds upon some of the work presented in the second chapter of this report. For carrying out the gap analysis presented in this chapter, the following steps were undertaken. First, the locations of low-income households and low-income jobs were identified. Second, levels of job accessibility were measured. Third, thematic maps were produced that revealed the spatial patterns on relative accessibility to low-wage jobs. The policy implications of the findings are elaborated upon.

#### 12.2 METHODS AND MEASURES

The first step of the gap analysis involved identifying locations of low-income households and low-wage jobs. In this analysis, a *low-income household* represents one with a total annual income within the lowest quartile, set at \$25,000 or less. Similarly, a low-wage job is defined as one that pays \$25,000 a year or less.<sup>1</sup> Because the scale of analysis was regional, household and employment data presented in this chapter were examined at the level of traffic analysis zones, or TAZs.<sup>2</sup>

Data on income profiles of households are fairly easy to come by using census records. Year-2000 household income data were obtained from projections available from the Association of Bay Area Governments (ABAG).<sup>3</sup> Obtaining reasonably up-to-date information on low-wage jobs, expressed at a fairly fine-grained geographic level (like TAZs), is far more difficult. Low-wage jobs were estimated using data obtained from the County Business Pattern data base maintained by the U.S. Department of Commerce.<sup>4</sup>

For purposes of measuring the accessibility of low-income households to low-wage jobs, isochronic measures of accessibility were measured. Isochronic measures provide a cumulative count of numbers of low-wage jobs within specified travel times (or fixed “isochrones”) of each TAZ with households.<sup>5</sup> To account for the tendency of low-wage workers to endure relatively longer commutes (mainly because of their dependency on

slower public transit modes), accessibility was measured over two fairly long isochrone thresholds: 60 and 90 minutes. For auto and transit modes, isochronic measures of accessibility were estimated using zone-to-zone travel time estimates provided by the Metropolitan Transportation Commission (MTC).<sup>6</sup>

### **12.3 GAP ANALYSIS RESULTS**

This section presents the gap analysis results, first showing locations of low-income households followed by low-wage jobs and then presenting findings on levels of job accessibility via private automobiles versus public transit. The average numbers of jobs accessible by each mode within the entire nine-county Bay Area are also presented as a summary index of the relative job-access performance of cars versus transit.

#### **Locations of Low-Income Households**

In year-2000, low-income households were spread in many parts of the nine-county Bay Area, though they were most concentrated in built-up portions of San Francisco, the western portions of the East Bay, and parts of San Jose (Map 12.1). Not all pockets of low-income households were in core areas, however; concentrations were also found in outlying parts of Santa Clara, Sonoma and Solano Counties.

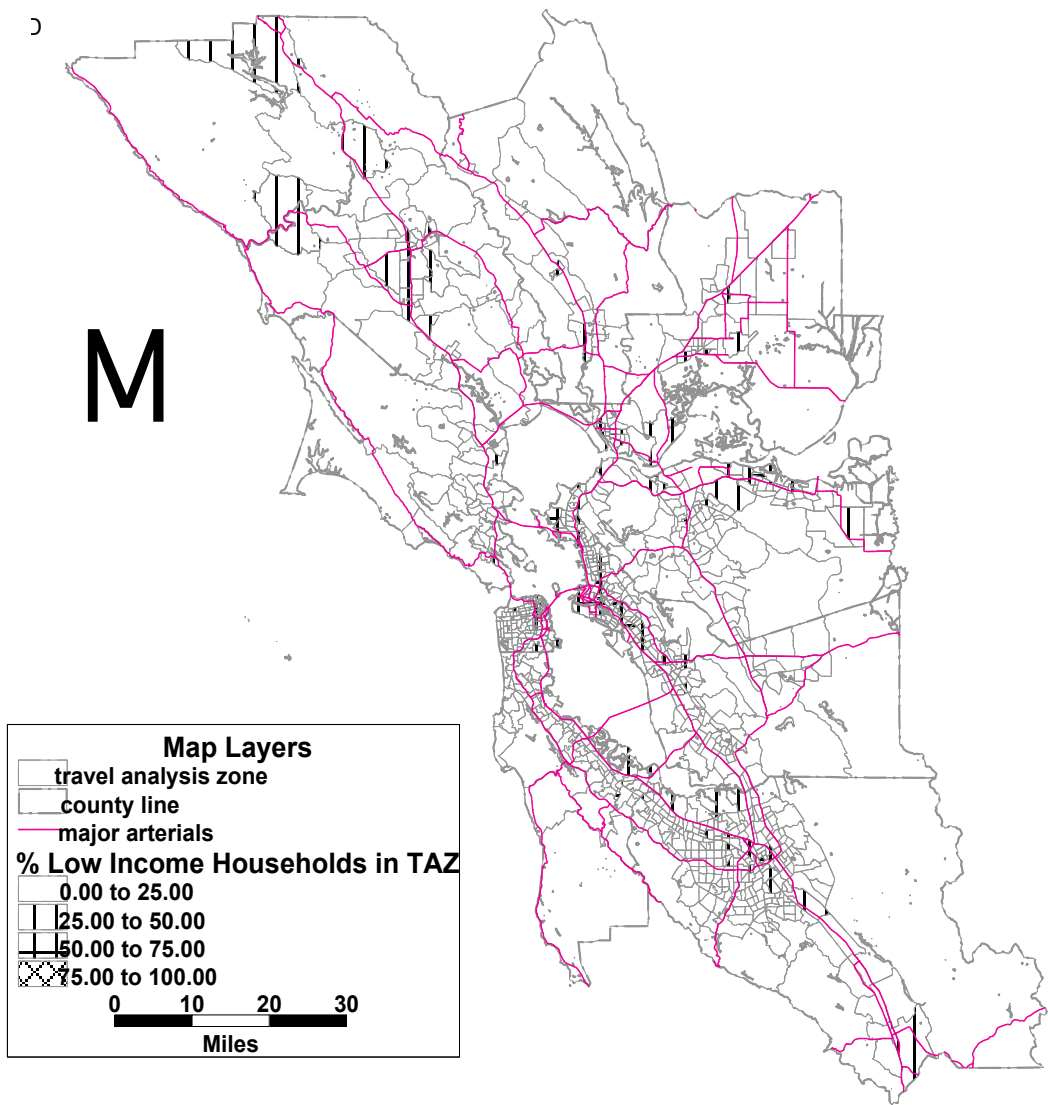
#### **Locations of Low-Wage Jobs**

In general, the Bay Area's low-wage jobs were more geographically spread out than were low-income households, as shown in Map 12.2. This reflects the wider spatial distribution of many service-industry jobs in the restaurant, hotel, and retail-service industries. In year-2000, the large concentrations of low-wage positions were in the cities of San Francisco, Oakland, Fremont, and San Jose as well as the presence of a number of suburban enclaves, including Santa Rosa, Vacaville, Dublin, and Walnut Creek.

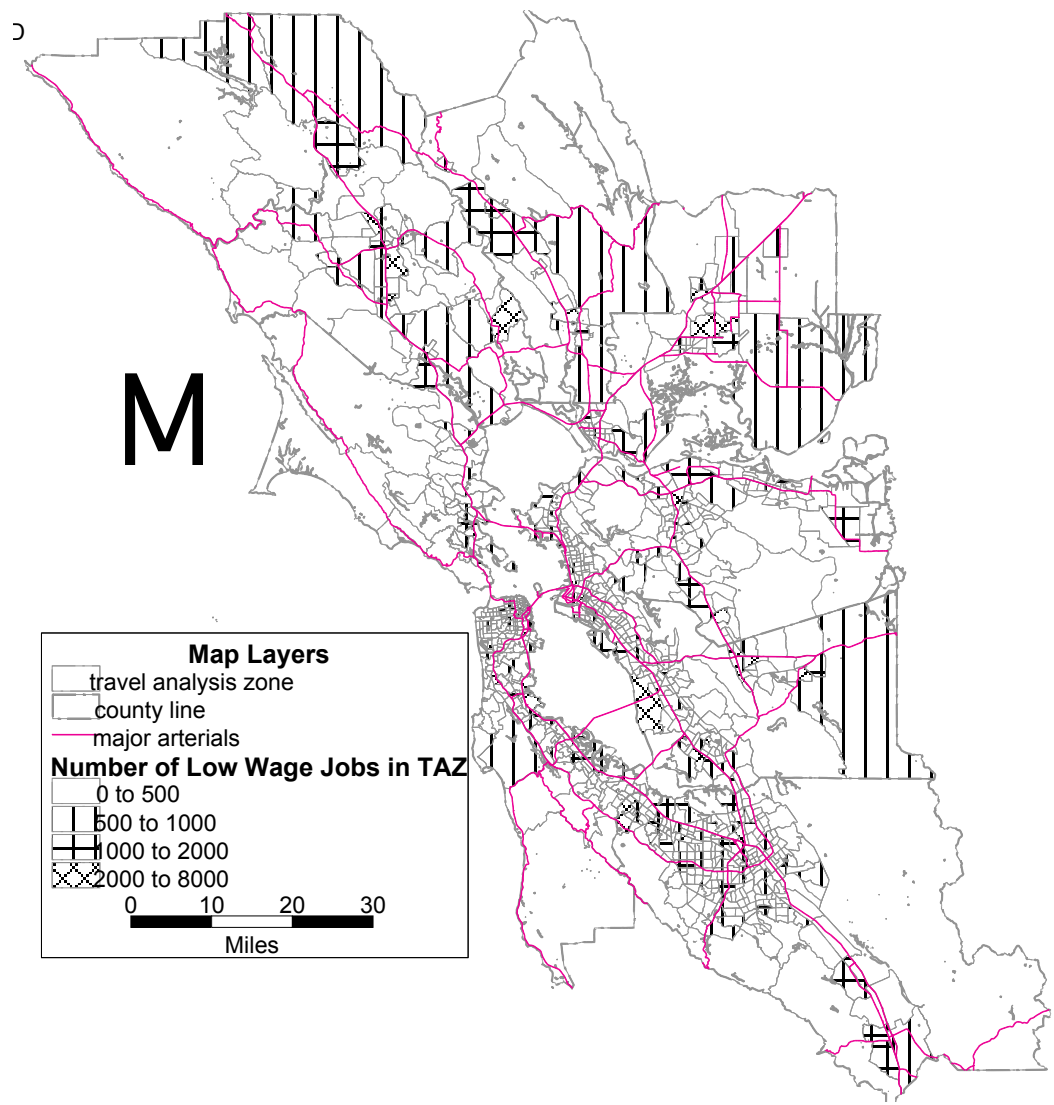
A visual scan of Maps 12.1 and 12.2 suggests the spatial mismatch hypothesis holds to some degree. Concentrations of low-income households in built-up urban areas stand in contrast the fairly spread-out distribution of low-wage jobs. On the surface, this sets the stage for reverse commutes. However, the dispersed nature of many low-wage jobs also suggests a pent-up demand for lateral, cross-town travel. The performance of cars versus transit in connecting to low-wage jobs is addressed next.

#### **Job-Accessibility Isochrones**

Numbers of low-wage jobs that could be reached by auto versus transit during peak hours within designated travel-time isochrones were measured. Table 12.1 summarizes the results in terms of the TAZ average (i.e., averaged across all 1099 TAZs in the Bay Area), broken down by automobile versus transit travel. Using 30-minute intervals, the table shows on



Map 12.1 Concentrations of Low-Income Households  
in the San Francisco Bay Area, 2000



Map 12.2 Concentrations of Low-Wage Jobs in the San Francisco Bay Area, 2000

**Table 12.1 Region-wide Averages of Numbers of Low-income Jobs that can be reached by Low-Income Households within Travel-Time Isochrones, 2000**

<b>Isochrones (minutes)</b>	<b>Auto</b>	<b>Transit</b>	<b>Transit as % of Auto</b>
30	54	12	22
60	223	58	26
90	350	124	35

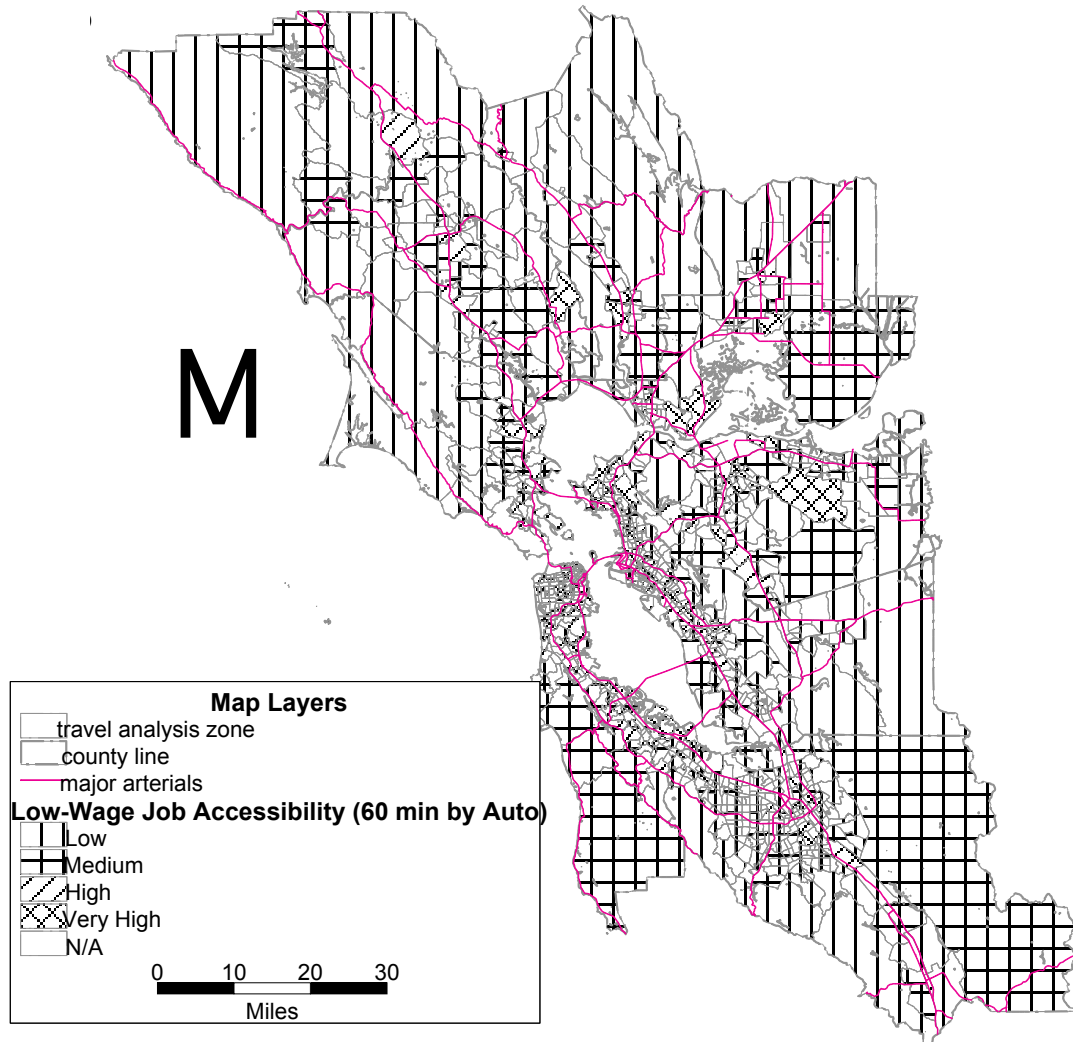
average 54 low-wage jobs could be reached during peak hour by automobile within a half hour by low-income households, which is four and a half times higher than via transit. While levels of low-wage jobs accessible by transit increases with lengthier travel-time isochrones, the cumulative counts of jobs are still around a third or less than what is accessible by private automobile.

To provide insights and visual cues into relationships, isochronic statistics on access to low-wage jobs were mapped. Each TAZ's job access was measured relative to the regional average (i.e., averaged across all 1,099 TAZs). Ordinal scores were derived – from low to very high – based on the following:

- *Low*: a TAZ was accessible to less than the regional average number of low-wage jobs within the specified travel time (i.e., 60 or 90 minutes), by mode;
- *Medium*: a TAZ was one to three times more accessible to low-wage jobs than the gross regional average number within the specified travel time (i.e., 60 or 90 minutes), by mode;
- *High*: a TAZ was three to five times more accessible to low-wage jobs than the gross regional average number within the specified travel time (i.e., 60 or 90 minutes), by mode;
- *Very High*: a TAZ was five or more times more accessible to low-wage jobs than the gross regional average number within the specified travel time (i.e., 60 or 90 minutes), by mode; and
- *N/A*: the TAZ is not accessible by transit therefore no indices were calculated for the transit option.

Maps 12.3 and 12.4 present the mapped results for the 60-minute travel-time isochrone. For both modes, the maps reveal that TAZs with the lowest levels of access to low-wage jobs tend to be on the fringes. This is particularly so for trips by public transit. Only in the built-up, highly urbanized areas of the Bay Area is there relatively high access to low-wage jobs via public transit. In fact, some of the poorest neighborhoods of Oakland and San Francisco score very high in terms of relative access to low-wage jobs by car. Suburbanites who are dependent on transit generally have the poorest access to low-wage jobs among all Bay Area households.

Map 12.5 and 12.6 show the relationships when results are plotted for 90-minute travel-time isochrones. In the case of automobile travel, most built-up and centrally located areas

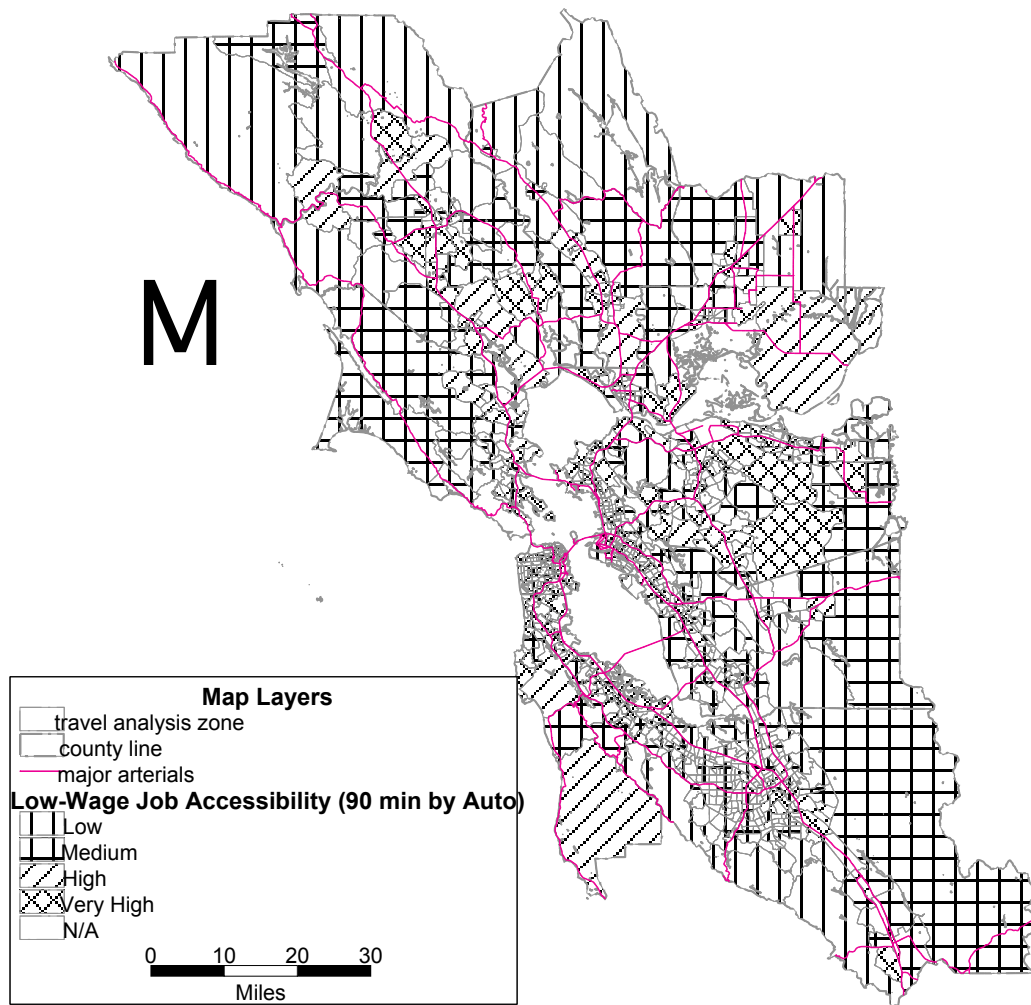


**Map 12.3 60-Minute Auto Travel-Time Isochrone:**  
**Relative Level of Low-Wage Job Accessibility within 60 minutes**  
**Peak-Period Travel Time by Auto, 2000**

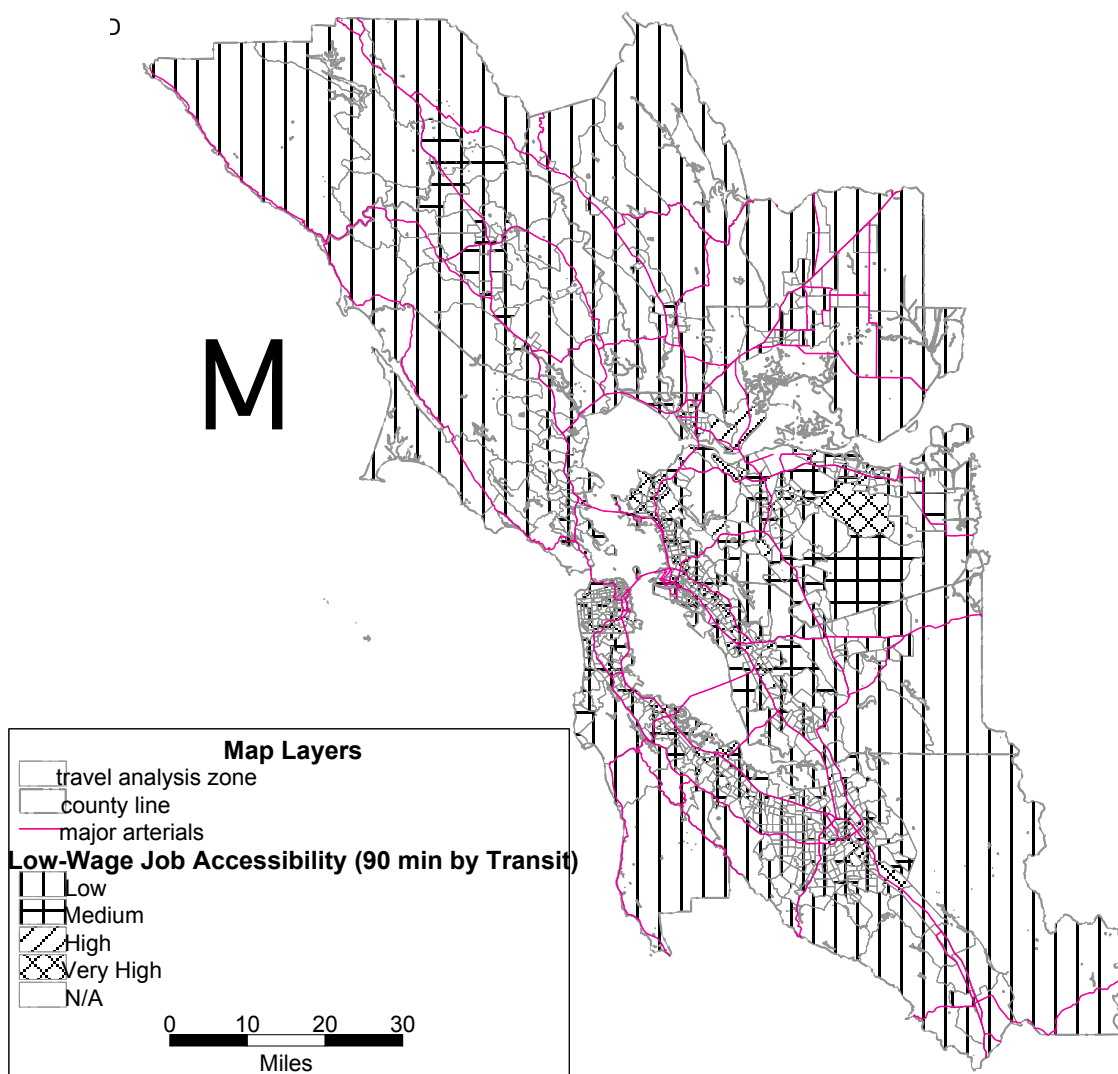


---

**Map 12.4 60-Minute Transit Travel-Time Isochrone:  
Relative Level of Low-Wage Job Accessibility within 60 minutes  
Peak-Period Travel Time by Transit, 2000**



**Map 12.5 90-Minute Auto Travel-Time Isochrone:**  
**Relative Level of Low-Wage Job Accessibility within 90 minutes**  
**Peak-Period Travel Time by Auto, 2000**



**Map 12.6 90-Minute Transit Travel-Time Isochrone:  
Relative Level of Low-Wage Job Accessibility within 90 minutes Peak-  
Period Travel Time by Transit, 2000**

have access to low-wage jobs that exceed the regional average. TAZs that are fairly inaccessible to low-wage jobs via automobile, even over a 90-minute travel time, are mainly on the periphery of the region. In contrast to estimates for auto travel, many TAZs still have relatively poor access to low-wage jobs via transit within 90 minute isochrones. Much of the North Bay and southern parts of the region still average poor job access via transit, even when commute times are stretched to an hour and a half.

When incurred on a regular basis, five days a week, 90-plus minute one-way commutes via public transit are not viable mobility options for most CalWORKs recipients, particularly given the fact that many are single parents unwilling to sacrifice an additional three-plus

hours a day away from their children. For many, it is easier to withdraw from the labor force and get by through informal employment and whatever forms of public assistance are available. Collectively, these findings further underscore the huge travel-time commitments required by conventional public transit services, resulting in the continued separation of many inner-city poor from job opportunities in large and congested metropolitan areas like the San Francisco Bay Area. Policies are needed to prevent present-day gaps from widening into unbridgeable chasms that keep many low-income households systemically unemployed and under-employed.

## 12.4 VEHICLE AVAILABILITY BY INCOME LEVELS

The gap analysis presented in this chapter reinforces findings from earlier parts of this report on the value of private mobility. While public transit can play an important mobility role for many needy individuals living in the inner city, for many others automobility holds the most promise for finding and retaining jobs. The year-2000 census Public Use Microdata Sample (PUMS) data base underscores the importance attached to vehicle ownership in California. Just 8 percent (or approximately 900,000) of all California households had no private vehicle available for work travel in year 2000. Among households making more than \$50,000 per year, only one in twenty did not own a vehicle, in most of these cases by choice. Among needier households, however, car ownership was far less common:

- One out of three (32 percent) of California households with annual incomes under \$10,000 did not have any vehicle available for work travel in 2000.
- One out of five (21%) of the state's households with annual income under \$25,000 had no vehicle available for work travel in 2000.

Clearly, income shortages make automobile ownership difficult for many Californians. Low-interest loan programs, such as administered in San Mateo, Santa Cruz, and Ventura Counties are one option. The introduction of door-to-door paratransit that takes on some of the service features of private cars is another. Given the relatively high cost of route-deviation and door-to-door transit services, financial assistance of some kind will be needed if paratransit is to be within reach of California's poorest households. User-side subsidies are one option. Regulatory reforms that allow commercial paratransit operators to enter the marketplace are also needed in many local settings. Because such measures involve multiple stakeholders, institutional initiatives that allow for close coordination and open up channels of communications will be important first steps. The chapter that follows addresses these and other institutional issues.

## 12.5 SUMMARY

Empirical data from the San Francisco Bay Area reveal the scope of present-day mobility gaps facing many low-income households. While all zones with low-wage jobs were accessible by auto, this was not the case for public transit. At 30-minute travel-time isochrones, automobile travel offered accessibility to four times as many low-wage jobs as did transit travel. For 90-minute travel durations, the private car had an advantage of three

to one. These differentials reflect the fact that roads go practically everywhere, whereas transit services neither exist everywhere nor operate at all times.

In the San Francisco Bay Area, substantial concentrations of low-income households were found not only in central-city settings but in the suburbs as well. Thus, "reverse commutes" constitute just one part of the region's job-access needs. There are many low-income individuals living on the fringes who face mobility hardships in making radial and cross-town journeys as well. Policy focus should be on job-access needs, generally defined, as opposed to directional niche-markets like reverse commutes.

## Notes

- <sup>1</sup> The Association of Bay Area Governments (ABAG) identifies the lower quartile of household incomes in the year 2000 as "less than \$25,000" per year. This is not the same threshold used by the U.S. Bureau of the Census to define "poverty". In the 2000 Census, poverty is defined as a function of household size, number of children and family income with values that go up to \$38,300. (See: <http://www.census.gov/hhes/poverty/threshld/thresh00.html>.) For instance, with a household size of four including two children, the poverty threshold is \$17,463. The \$25,000 benchmark adopted in this analysis more broadly represents low-income households.
- <sup>2</sup> As noted in Chapter Two of this report, traffic analysis zones, or TAZs, are the basic geographic units of analysis used by the Metropolitan Transportation Commission (MTC), the regional transportation planning agency for the San Francisco Bay Area. There are 1099 TAZs in the region.
- <sup>3</sup> Association of Bay Area Governments, *Projection\*2002: Forecasts for the San Francisco Bay Area to the Year 2025*, Oakland, California, 2001.
- <sup>4</sup> Data source: <http://fisher.lib.virginia.edu/cbp/>. These data are limited by the fact that they contain information on total wages and employees but not on the distribution of wage levels. The latter was estimated as follows. For each of the Bay Area's nine counties and for eight two-digit economic sectors, county-level wage data for 1998 were obtained and used to derive the average wage per sector. Based on hourly wage rates and assumed hours worked per year, annual wage rates were determined. For example, at the minimum wage of \$5.50 per hour, the corresponding annual wage level is \$10,000 or less. At \$8.50 per hour it is \$10,000 to \$18,000 and at \$12 per hour it is \$18,000 to \$25,000. Average wage data were used to estimate the cumulative probability of a wage being below these benchmarks within each sector. Of the eight sectors, five had significant proportions of low-income jobs across the three wage groups: agriculture (78.5 percent), retail trade (75.0 percent), food services (99.7 percent), health care (6.0 percent) and transportation-warehousing (4.6 percent). These percentages were applied to ABAG's socioeconomic data on total number of jobs by sector to estimate number of low-wage jobs by TAZ for year-2000.
- <sup>5</sup> The mode-specific isochronic index of accessibility for TAZ  $i$ ,  $AI_{iA}$ , reflects the cumulative total of low-wage jobs that can be reached from that zone within the specified time isochrones by auto and transit, based on:

$$AI_{iA} = \sum p_{ikA} E(t < C)_{ijA} \text{ (auto)}$$

$$AI_{iT} = \sum p_{ikT} E(t < C)_{iT} \text{ (transit)}$$

Where:  $p_{ikA}$ ,  $p_{ikT}$  = proportion of low-income households within TAZ  $i$  as a proportion of all low-income households within the specified travel time by auto (A) or transit (T) respectively from TAZ  $i$ ;  $E(t < C)_{ijA}$  = the number of low-wage jobs within the specified travel time,  $C$ , by auto (similarly for transit) from TAZ  $i$ ; and  $C$  = isochronic contour of up to 60 or 90 minutes of zone-to-zone travel time. Source: R. Cervero, T. Rood, and B. Appleyard, Tracking Accessibility: Employment and Housing Opportunities in the San Francisco Bay Area, *Environment and Planning*, Vol. 31, 1999, pp. 1259-1278.

- <sup>6</sup> Zone-to-zone travel times from MTC represent peak-period travel times from centroids of any pair of TAZs, stratified by automobile and transit. Travel-time matrices prepared for the 2000 Bay Area Transportation Study (BATS) were used in estimating accessibility.

## **PART FOUR**

### **POLICY INITIATIVES AND CHALLENGES**

Meeting the reverse-commute and job-access needs of California's transportation-disadvantaged populations remains a significant public-policy challenge. Ultimately, progress will depend upon the willingness and abilities of those organizations and individuals who are in positions to influence change taking appropriate action. Many times, however, regulatory and institutional factors stand in the way of progress. Overcoming institutional barriers is essential to making headway in enhancing job-access and reverse-commute services in the state. Building partnerships among the many groups with a vested interest in bringing about successful welfare-to-work transitions offers the best hope for overcoming barriers.

Chapter Thirteen reviews the institutional landscape that influences public-policy action and inaction with regards to reverse-commute and job-access initiatives in California. The roles of collaborative partnerships and institutional coordination are stressed. Chapter Fourteen closes the report by drawing overall conclusions and presenting public-policy recommendations.



## Chapter Thirteen

### Institutional Factors Influencing of Reverse-Commute and Job-Access Activities in California

#### 13.1 INTRODUCTION

Many groups and organizations have a vest interested in promoting job-access and reverse-commute transportation services in California. Institutionally, they are vertically and horizontally separated, with their own staffs, budgets, management structures, and policy directives. Some organizations operate under statutory mandates that direct their participation in welfare-to-work activities and circumscribe their powers and areas of involvement. Others pursue missions for which involvement in welfare-to-work and job-access transportation programs is of tangential importance, at best. Some entities operate in a support capacity while others are at the front line, directly delivering services. All of this leads to an institutional environment in which coordination and cooperation can be challenging and at times difficult.

California's CalWORKs legislation mandates interagency coordination at the local level: "There shall be close coordination between local transit providers and county welfare departments in order to ensure that transportation moneys available for purposes of assisting recipients of aid ... are expended efficiently for the benefits of that population."<sup>1</sup> Furthermore, legislation directs "local transit providers to consider giving priority to the use of transit funds to the enhancement of public transportation for welfare-to-work purposes, and in areas where public transit services are not available ... to consider giving priority to transportation alternatives, such as, but not limited to, subsidies, vouchers, van pools, (and) contract paratransit operations."<sup>2</sup> Despite such directed language, transportation service-providers participate in reverse-commute and job-access matters through their own volition, and no CalWORKs funds are specifically earmarked for transportation.

This chapter examines the degree to which current institutional arrangements, funding levels, regulations, and implementation approaches stand as barriers and in some instances, missed opportunities, toward strengthening reverse-commute and job-access services. It also discusses approaches for building partnerships and carrying out job-access planning. Also reviewed are barriers to effective coordination and integration of services, and ways in which barriers might be best overcome.

#### 13.2 STAKEHOLDERS AND PARTNERSHIPS

Given the many vested interests in mounting successful job-access and reverse-commute programs, collaboration and cooperation are absolutely essential if substantial progress is to be made. This section reviews the many stakeholders who are involved in the process, and sets a context for building meaningful partnerships.

## Stakeholders

Many organizations and individuals have a vested stake in the outcomes of job-access and reverse-commute programs. Among the most prominent stakeholders are representatives from transportation service-providers, human service agencies, employers, metropolitan planning organizations (MPOs), state agencies, rideshare organizations, and employer associations (e.g., transportation management associations). Some directly provide transportation services (e.g., transit agencies and job-placement organizations). Others provide support services (e.g., human-service agencies) or forums for coordination (e.g., MPOs, transportation management associations). Some represent the “front lines” of services, interacting directly with clients (e.g., case-workers, job-placement specialists, employers). Others work behind the scenes to provide guidance to front-line workers (e.g., state social-service offices). Not to be forgotten are non-traditional groups such as civic, religious, and charitable organizations and child-care providers. Communication between primary stakeholders – notably transportation service-providers and welfare organizations – is absolutely crucial to successful job-access planning. Close working relationships can help identify, deliver, and pay for needed transportation services.

County welfare offices lie at the center of any successful welfare-to-work campaign. Besides being statutorily obligated to identify and respond to today’s job access needs and plan ahead for tomorrow’s, they operate “in the trenches”, working with CalWORKs clients, face-to-face, on a regular basis. Much of the responsibility for coordinating and orchestrating job-access initiatives among multiple parties and stakeholders ultimately rests with county welfare departments.

Often as important is the involvement of local transit agencies and transportation service-providers. While in some instances, county welfare departments work closely with local transit agencies, in others it can be a “forced marriage”. Many times, these two entities have no history of having worked closely together. The fact they are staffed by professionals who often come from different disciplines – e.g., social work versus transportation engineering – can erect artificial barriers at the very outset. Turf battles can ensue over who should be at the helm. A review of California experiences prompted this observation: “A power struggle (exists over) who should be the transportation boss in the area of CalWORKs -- transit providers who have the expertise or county welfare departments who have the money”.<sup>3</sup> A combative and untrusting climate often means that applications for Federal and state grants are pro forma rather than collaborative.

MPOs can play important roles in promoting cooperation among agencies and consolidating efforts to economize and minimize fragmentation. The Metropolitan Transportation Commission (MTC) in the San Francisco Bay Area played such a role in working with county social service agencies and transit-providers in mounting specialized reverse-commute and late-night transit services targeted at low-income households in Contra Costa County (see Chapter Five). The involvement of MPOs is particularly crucial toward finding multi-jurisdictional and multi-sectoral solutions to job-access problems. MPOs also play vital roles in brokering information. For example, MTC designed a web site that provides on-line information on transit routes and schedules for any combination of trip origins and destinations within the region.

Enlisting the support of employers can also be critical toward the long-term success of job-access programs. Employer involvement provides an opportunity to address issues important to them, like employee recruitment and retention. Employers are also well-positioned to provide their workers with information about transit options and to market various commute alternatives on-site.

Implementing some fairly progressive transportation initiatives may require that the list of stakeholders be enlarged even more. As noted in Chapter 5, efforts to introduce door-to-door van services in Santa Cruz County were criticized by organized labor out of fear that low-wage shuttle drivers would either displace unionized workers or pressure salaries to be lowered. Involving labor unions early in the process of mounting contracted door-to-door van services can avoid possible confrontations. Another potential obstacle is city ordinances that prohibit the entry of commercial paratransit services into the marketplace. Many California communities have ordinances that restrict common-carrier for-hire transportation services to licensed and registered taxicab companies.<sup>4</sup> As a result, fairly expensive exclusive-ride taxis end up being the only mobility option to traditional fixed-route transit. In the late 1990s, Sonoma and Butte Counties tried subsidizing taxi services for clients in remote areas but discontinued these programs because of prohibitively high costs. Shared-ride taxis or jitneys might be more cost-effective options, however local regulations often ban such arrangements. If California's array of paratransit service options is to be broadened to better serve welfare-to-work clients, local and state regulators need to be convinced that current market-entry controls should be relaxed. The best way to achieve this is to make them part of a collaborative partnership.

### Partnerships

A collection of stakeholders working more or less independently of each other will yield results that are no greater than the sum of the parts. Partnerships produce synergies wherein there is value-added in pooling resources and teaming together for the common goal – in this case, helping needy Californians make the transition from welfare-to-work.

Successful job-access initiatives involve building partnerships of some form. Partnerships are often non-traditional. They may lead to conflicting views and opinions, or create new, contrary perspectives on organizational roles and responsibilities.<sup>5</sup>

Meaningful partnerships involve a certain amount of mutual learning. Stakeholders need to learn why each group is at the table and appreciate the unique knowledge and experience that each participant has to offer. Human-service agencies, for example, need to gain an appreciation for how transportation services are provided, the types and magnitudes of costs that are incurred, and the decision-making process involved in designing and deploying services. Transportation service-providers, in turn, need to understand the choices facing disadvantaged individuals as they struggle to make the transition from welfare-to-work.

Collaboration inevitably requires a certain degree of consensus-building. Role clarification is important. Differences of opinion will usually surface, requiring some degree of brokering and conflict resolution to move the process forward and prevent the process, however well-intentioned, from being derailed.

Collaboration and coordination is important for fiscal reasons as well. Public officials have a fiduciary responsibility to tax-payers to make efficient use of public funds. Cutting waste and redundancies and pooling resources can save money, increase productivity, and provide more and better services to consumers. Cooperation allows for more centralized management of services, reduces confusion among travelers, provides clearer lines of authority, and can spur other collaborative inter-agency efforts.

Sometimes a Memorandum of Understanding (MOU) or similar formal agreement can be useful in forging partnerships. MOUs help to define the roles and responsibilities of each participating agency, and more or less establish the “game rules”.

Cooperation pays off in many ways, such as the expansion of services to late hours. A good example of this is Tuolumne County, where bus schedules were extended to coincide with class times of a local community college attended by many CalWORKs recipients. This would not have happened were it not for the close ties between the county welfare department and transit agency.

One of California’s most successful collaborations for promoting employment is the San Diego Workforce Partnership, Inc., created in 1974 through an official agreement between the City and County of San Diego.<sup>6</sup> In 1988, the Partnership joined forces with several local faith-based, community, and state organizations to form a Welfare to Work Transportation Coalition, devoted to responding to child-care and transportation needs, identifying employment opportunities, and helping needy individuals make the transition from welfare to the workplace. Among the most active coalition members have been the American Red Cross, regional transportation planners and operations, All Congregations Together (ACT, a faith-based organization), San Diego Department of Health and Human Services, and San Diego Association of Governments (SANDAG). With the support of a U.S. Department of Labor Welfare-to-Work grant, new bus routes were designed and feeder van connections to bus and light rail lines were introduced. A Community Resource Center, Chollas View, also opened that serves as a transportation hub and also provides child-care services, supports monthly seminars devoted to forming carpools and vanpools, and offers specialized training in driving vans. By all accounts, collaboration was critical to success: “The Coalition evolved into a group with a shared mission because of the relationships that developed between the individuals representing the various organizations....It’s people and relationships, not organizations”.<sup>7</sup> Consistent with their “helping mission”, churches were particularly vital to the program’s success. Churches were willing to accept trainees that traditional employers would have unlikely accepted. Participants seemed more comfortable with the mentoring and working style of the churches than with having to deal with public agencies.

### 13.3 INSTITUTION BUILDING AND PLANNING

The ability to serve existing job-access needs and plan ahead to meet future targets hinges on building in-house institutional capacity, particularly at the county level. This can be an immense challenge for small and rural counties. This section reviews these challenges.

## **Building Institutional Capacity**

As a “work-first” program that promotes self-sufficiency, CalWORKs imposes lifetime limits on receipt of cash assistance by adults. The responsibility and authority for implementing the program is largely devolved to California’s 58 counties. Counties are given the flexibility and latitude to design programs to suit local needs.

The CalWORKs legislation requires that counties address needs of CalWORKs clients by developing local transportation plans. Many small counties, however, do not have the staff resources to collect the data and conduct the kinds of technical analyses that allow unmet needs to be defined and appropriate transportation strategies to be introduced. Small counties are unlikely to have staff members who work solely or even predominantly on transportation planning. Often, over-stretched staff must focus on coping with today’s problems and set aside longer term planning in hopes they will eventually be able to get to it. A survey in late-1998 found that 19 of the state’s 58 counties had yet to begin transportation planning in compliance with CalWORKs legislation, in large part because of the absence of in-house capabilities and limited financial resources.<sup>8</sup> Of the ten county-prepared CalWORKs plans that had been prepared at the time, transportation and community service lagged other areas in planning and implementation. Moreover, transportation plans tended to be modest, if not tepid, in scope. Most California counties opted to pay for clients’ use of public transit and personal cars, mainly through reimbursements, rather than trying to enrich local transportation service offerings. Overall, transportation was not perceived by most county welfare departments to be as serious of an issue as job training or child care.

For many county social service agencies, transportation planning and program implementation is a brand-new undertaking. While Federal and state grants provide fiscal resources, developing new interagency relationships, identifying the mobility needs of clients, and designing appropriate programs are not skills that are instantly learned. Rather they take time, particularly given the many pressing demands placed on local agencies responsible for implementing CalWORKs plans. Some California counties have yet to apply for Federal JARC grants because they have yet to establish effective lines of communications between their welfare departments and local transportation authorities.

## **Job-Access and Reverse-Commute Planning**

Job-access planning must be a collaborative effort involving stakeholders from both the public and private sectors. The process begins with stakeholders coming together to address and respond to common transportation concerns facing needy populations. Stakeholders share a common vested interest in achieving outcomes that meet the mobility needs of clients.

Planning for job access must reflect the long-range prospects of employment. Counselors must look beyond transporting an individual to his or her first day on the job. Resources might go toward providing flexible mobility options, like door-to-door van services, for interviews and early access needs until clients can settle into stable commute patterns.

In rural and remote settings, planning needs to come to terms with whether conventional transit will ever be a viable mobility option. Nationwide, only 60 percent of rural

communities have public transit services.<sup>9</sup> Of these communities, one-quarter receives only infrequent services. In these un- and under-served areas, many low-income households have no choice but to rely on private vehicles, if they are available. Mobilizing resources in ways that provide greater access to cars – whether used as private vehicles, for carpools, or even community-based jitneys – should be a central focus of transit-less communities in remote, out-of-the-way settings.

A good in-state example of effective planning for job-access is the *Welfare Mobility Plan* prepared for San Luis Obispo County.<sup>10</sup> The effort involved pooling resources and knowledge among key stakeholders, including the California Department of Social Services, human-resource agencies, training institutions, employers, transit and ridersharing service-providers, and CalWORKs participants. Through a series of meetings and collaborative efforts, mobility barriers were identified and a set of short-, mid-, and long-term projects were selected for overcoming barriers, including: a regional transportation guide; trip planner database enhancements; a guaranteed ride program; a universal transit pass; shuttle services; a community work unit; personal automobile programs; and one-stop shop centers.

Instrumental in the process was strategic planning carried out by San Luis Obispo County involving the use of Geographic Information Systems (GIS) tools to identify the locations of CalWORKs participants, potential employment opportunities, child-care facilities, job-training centers, and existing transportation services. The San Luis Obispo Council of Governments (SLOCOG) furnished information on traffic volumes, origin-destination flows, and transit service levels to help evaluate the suitability of various transportation service options given the spatial distribution of needy households, jobs, and service centers. GIS tools were critical in allowing San Luis Obispo County's stakeholders to identify unmet needs. Analyses showed that 70 percent or more of CalWORKs clients lived within one-quarter mile of existing County bus lines. They also revealed that existing transit routes poorly served the airport, a location of many entry-level, low-skilled jobs, as well as many potential work sites beyond the San Luis Obispo city limits. Traffic volume data provided by the COG allowed commuter bus routes to be configured so as to minimize delays. Through a partnership arrangement, the County was able to gain access to proprietary and confidential data on child-care providers for purposes of identifying how bus routes could be better structured to serve these destinations.

### **13.4 CONFRONTING AND OVERCOMING BARRIERS**

Interviews with staff members from county welfare departments suggested that despite what the academic literature says and despite multiple stakeholders, coordination is generally not perceived to be a problem or barrier. The biggest barriers are fiscal and programmatic, imposed by higher levels of government. These are reviewed below.

#### **Funding Barriers**

There is strong consensus that enhancement of reverse-commute and job-access programs in California require substantial sums of money. Limits on the use of funds, however, can stymie efforts to mount and expand needed transportation services. Among funding related barriers and issues are the following:

- *Lack of long-term funding guarantees.* Most Federal programs provide one-year funding grants for welfare-to-work program. The Federal Transit Administration's Job Access and Reverse Commute (JARC) program, for example, provides one-year competitive and earmarked grants to fund various transportation initiatives, such as purchasing buses, mounting new transit routes, or user-side assistance. What happens when the year is over? With programs like JARC, there are no guarantees that funding support will be in place several years downstream. This makes it difficult for counties and transit agencies, especially small ones, to purchase rolling stock and other capital equipment. Unless a guaranteed pot of funds is available to underwrite the operations and maintenance of these vehicles, many local authorities are reluctant to make capital purchases even when funded by Federal transfers. Transit agencies are sometimes unwilling to even modify existing bus routes because of doubts over longer term funding. Kern County's transit operator, for example, balked at adding a stop on a bus line frequented by CalWORKs clients because the county welfare department could not assure future funding and, in the past, retracting bus lines had generated "bad publicity".<sup>11</sup>
- *Non-traditional funding arrangements.* Grants from JARC and the "Governor's 15 Percent" program are competitive, however transportation agencies traditionally receive earmarked funds. Competitive grants require collaboration between entities – notably transit agencies and county welfare offices – that often have no past experience of working together. Some transit providers have reported that county welfare departments submitted applications for JARC grants "without any input from transit".<sup>12</sup>
- *Local matches.* Many grant programs, including JARC, require 50 percent local matches. While encouraging local funding commitment can ensure programs are efficiently managed and administered, for some counties, particularly small ones, coming up with matching funds can be difficult.
- *Funding Restrictions.* The three primary sources of federal funding for welfare-to-work transportation – JARC grants administered by the U.S. Department of Transportation, TANF grants issued by the U.S. Department of Health and Human Services, and Welfare-to-Work grants from the U.S. Department of Labor – require that funds go only to allowable uses: contracting for shuttles, buses, and carpools; purchasing vans and minibuses; purchasing rider passes or vouchers; facilitating the donation and repairs of older motor vehicles; loans for leasing or purchasing motor vehicles; and one-time payments for automobile repairs and insurance. While this list covers many transportation options, missing are private paratransit services. Currently, Federal grant funds cannot go to private paratransit providers other than in the form of public-sector contracting for these services. Also, funds may not be used to subsidize current transit operations.

## Programmatic Barriers

Besides funding constraints, many aid programs contain strictures and stipulations that impede coordination. Programmatic rules and procedures form artificial barriers that can be just as onerous as financial ones. These include:

- *Inter-client service restrictions.* Opportunities for sharing specialized door-to-door paratransit services often fail to materialize because of programmatic restrictions. The van used for meal-on-wheels purposes in the midday and evening, for example, could also be used to transport needy CalWORKs clients to jobs during morning and afternoon peak periods. However, restrictions often preclude inter-client transportation services. Pooling the resources of social service agencies, churches, civic organizations, elderly groups, and others would enable substantial efficiencies to be achieved. This would eliminate the duplication of services and provide a critical mass of clients for efficiently matching vehicles to multiple trip origins and destinations as well as non-traditional work schedules. Combining the services of different human-service transportation providers would go a long way toward more efficiently utilizing services that already exist.

Based on informant interviews, many community-based organizations in San Diego County, including faith organizations and the Red Cross, indicated a willingness to allow CalWORKs clients to utilize some of their van services.<sup>13</sup> However, these organizations often face barriers themselves, such as driver contracts that restrict driving duties for specific clients and liability insurance that limits coverage to targeted populations. One option might be for different agencies to pool resources to pursue group insurance plans.

- *Discretionary Involvement.* Local transportation agencies do not have a mandate to assist county welfare departments with reverse-commute and job-access activities. Involvement relies on voluntarism and good will. Notes one observer: “Transportation agencies have historically been focused on roads and mass transit for the general population, not on moving a specific group of people with erratic transportation needs from home to child care to work and back again, often during off-peak hours”.<sup>14</sup> The boards of transit agencies usually answer to a larger constituency, and are less likely to approve services that primarily benefit a single segment of the population, such as CalWORKs clients.
- *Cross-border restrictions.* Designing CalWORKs programs at the county level creates artificial boundaries that rarely match commutesheds. A new JARC-funded bus line might take an inner-city resident to a county’s border but not to an employment enclave in the next county over. One successful example of a cross-boundary service is the special bus run between Woodland in Yolo County and downtown Sacramento (see Chapter Ten). Besides cross-border route extensions, the synchronization of schedules across multiple transit operators can also materially enhance transit services. Where passengers must switch buses to access jobs, transfers should be free to keep prices affordable. Given the importance attached to affordable transit by jobless CalWORKs recipients (see

Chapter 11), add-on fares that add “insult to injury” by charging those who are forced to transfers should be duly eliminated. If not, fare penalties are likely to drive many very low wage-earners back to the ranks of unemployed.

### 13.5 STATEWIDE FORUMS

Given that CalWORKs transportation programs are fairly new, mistakes are often made and new problems are routinely encountered. Much can be gained by learning from the experiences – both successes and failures – of others. During interviews, many county staff members responsible for administering transportation programs under CalWORKs said they would welcome forums to interact, “trade notes”, and share experiences on an occasional basis. These could take the form of ad hoc gatherings, such as conferences and workshops devoted to CalWORKs transportation themes, or formal task forces and panels that regularly meet to advance the cause of job-access and reverse-commute transportation programs in the state. Lessons can be shared, guidance can be offered, and best practices can be show-cased. The panel formed to oversee this present study – constituting representatives from the local, regional, and state levels as well as private industry and professional organizations – represents the kind of collaborative “brain trust” that can be instrumental in effectively shaping and guiding public policy in this arena (Photo 13.1).



**Photo 13.1 Collaborative Involvement of Stakeholders for the Reverse-Commute and Job-Access Study**

### 13.6 SUMMARY

Successful job-access and reverse-commute programs require successful collaboration. Most importantly, the many stakeholders – county welfare departments, transit service-providers, employers, MPOs, and many others – must build partnerships that coordinate efforts, reduce waste and redundancies, increase productivity, and deliver better transportation services to clients. Sometimes relationships between county welfare departments, which are required to implement CalWORKs transportation programs by law, and local transit agencies, that often must shoulder the burden of delivering transit services suitable to needy individuals, are strained. While partnerships unavoidably give rise to some degree of institutional conflicts, nonetheless they are absolutely indispensable toward making headway in bridging welfare-to-work gaps. Partnerships are particularly effective at bringing stakeholders who are unaccustomed to dwelling on job-access needs, such as employers, to the table and exposing them to the mobility challenges their workers – current and prospective -- often face. Employers are in a position to not only provide transportation services but also to provide informational resources for their employees.

In small and rural counties, a lack of institutional capacity to do short-term needs assessments and long-range transportation planning has hampered progress on the job-access front. In most counties, two other barriers – fiscal and programmatic – are often encountered. Longer term funding commitments are needed if innovative transportation initiatives are to materialize. While there are many start-up funding sources, these monies are often non-renewable and providers are left to fend for themselves in finding funds to continue services. Requirements regarding local matches and the use of funds also form barriers to job-access programs.

Bureaucratic barriers prevent mixing funding sources and pooling transportation resources. Exclusive funding prevents a van purchased with funds to provide door-to-door connections for the elderly from being used to transport a CalWORKs client to a job interview. Restrictions on inter-client transportation result in vehicles and trained drivers being under-utilized. Cross-border restrictions that prevents a JARC-funded van from entering a neighboring county to serve an employment hub form artificial barriers as well.

One way to pool resources and promote mutual learning is to organize forums that allow the many stakeholders involved in CalWORKs programs to periodically get together, such as through conferences, workshops, or task forces. Such forums not only allow firsthand experiences to be shared and best practices to be show-cased, but also provide a sounding board for testing new ideas and an outlet for forging consensus on public-policy reforms and initiatives.

## Notes

---

- <sup>1</sup> P.U.C. section 22. 99144.1.
- <sup>2</sup> P.U.C. Section 22. 99144.1.
- <sup>3</sup> J. Klerman, G. Zellman, T. Chun, N. Humphrey, E. Reardon, D. Farley, P. Ebener, P. Steinberg, *Welfare Reform in California: State and County Implementation of CalWORKs in the Second Year*, Santa Monica, Rand Corporation, 2000, p. 245
- <sup>4</sup> R. Cervero, *Paratransit in America: Redefining Mass Transportation*, Westport, Connecticut, Praeger Press, 1997.
- <sup>5</sup> Federal Transit Administration, *Job Access Planning: Challenges and Approaches*, Washington, D.C. Source: <http://www.fta.dot.gov/wtw/japca/ch1/cpijap.html>
- <sup>6</sup> Multisystems, Inc., Ecosometrics, Inc., Mudle & Associates, Inc., and Simon & Simon Research Associates, Inc., *Guidebook for Developing Welfare-to-Work Transportation Services*, Washington, D.C., Transit Cooperative Research Program, TCRP Report 64, 2000.
- <sup>7</sup> *Ibid.*, p. 9-19.
- <sup>8</sup> Klerman, *op cit.*
- <sup>9</sup> Community Transportation Association of America, *A Brief History of the Job Access and Reverse Commute Program*, Washington, D.C., 2001. Source: <http://www.ctaa.org/ntrc/atj/jarc/BriefHistory>
- <sup>10</sup> Federal Transit Administration, Office of Planning, *Access to Jobs: Planning Case Studies*, Washington, D.C., Report No. FTA-TPL-10-01.1, 2001.
- <sup>11</sup> Klerman, *et al.*, 2000, p. 247.
- <sup>12</sup> Klerman, *et al.*, 2000, p. 245.
- <sup>13</sup> BRW, *San Diego Regional Welfare to Work Transportation Plan: Stakeholder Analysis Technical Report*, San Diego County, 2000.
- <sup>14</sup> Klerman, *et al.*, 2000, p. 242.



## **Chapter Fourteen**

### **Meeting Reverse-Commute and Job-Access Needs in California: Rising to the Challenge**

#### **14.1 INTRODUCTION**

Getting to work, keeping appointments, and taking advantage of employment support services require suitable transportation. Since most CalWORKs recipients do not own cars and, outside of large metropolitan areas, public transit options are often limited, finding means of overcoming mobility and job-access obstacles can be crucial to welfare-to-work transitions. The challenges are especially great for those trying to get from central-city residences to suburban jobs, so-called reverse commuters, since public transportation services have traditionally been aligned in the opposite direction.

Frankly, there is no “one-size-fits-all” transportation solution to the welfare-to-work challenge. Mobility needs vary across urban, suburban, and rural settings. Specialized transit services and private mobility have roles to play, as do adult training, child-care services, and other human-capital investments. A multi-lateral, multi-sector approach is called for, one that recognizes that job-access problems are also child-care, job-training, and housing problems. Approaching job-access and reverse-commute needs from a broader, more holistic perspective can enrich and strengthen mobility offerings.

This chapter draws conclusions and makes policy recommendations based on overall research findings. It closes with an Action Agenda that calls for the state to take a strong leadership role in meeting California’s reverse-commute and job-access needs for years to come.

#### **14.2 INSIGHTS AND POLICY INFERENCES**

A wealth of information was brought to bear in studying reverse-commute and job-access issues and needs in California. In Part One, empirical data were used to define the scope of reverse commuting in the state’s four largest metropolitan areas and to draw profiles of individuals who reverse commute, including those with low incomes. In Part Two, transportation programs introduced throughout the state to serve CalWORKs clients were inventoried. This was followed by a series of case studies that highlighted best-case practices, assessed performance, and explored why some initiatives fell short of hoped-for outcomes. Part Three focused on unmet needs, surveying CalWORKs clients to identify transportation initiatives that appear best suited for meeting today’s job-access and mobility needs. A “gap analysis” that gauged the degree to which public transit connects low-income individuals to low-wage jobs was also presented. In Part Four, the institutional landscape that today governs and shapes job-access and reverse-commute programs throughout the state was critically examined. Case experiences underscored the importance of close

collaboration and cooperation among stakeholders in bringing about successful welfare-to-work transitions.

Drawing from these collective materials, a number of insights and conclusions can be reached. These are summarized below.

### **The Reverse-Commute Marketplace**

Spatial mismatches have been blamed for the persistent problem of concentrated unemployment in California's inner cities. Those with minimal education and work skills are increasingly isolated from the many entry-level and service-sector jobs in the suburbs.

In California's four largest metropolitan areas – greater Los Angeles, the San Francisco Bay Area, San Diego County, and metropolitan Sacramento – reverse commutes constituted only 7 percent to 11 percent of all journeys-to-work. Some reverse-commute trips are no doubt suppressed because poor or non-existent public transit connections prevent needy inner-city residents from securing suburban jobs in the first place. With the exception of the Bay Area, 19 out of 20 reverse-commute trips were by private car.

Empirical data also revealed that two-thirds or more of reverse-commuters in large metropolitan areas occur during peak hours. Based on interviews of unemployed CalWORKs clients, there appears to be a sizable pent-up latent demand for off-peak travel. Limited transit services during non-traditional work periods suppress this demand.

Geographically, reverse commutes in California's big metropolitan areas are highly spread out. The diffusion of trip origins and destinations render fixed-route transit services impractical for many reverse-commuters.

### **Reverse Commute Profiles**

Around one out of five reverse-commuters in California's large metropolitan areas are from low-income households. Many are minorities, in particular Hispanic women. More than one out of five low-income reverse-commuters are from households with one or no cars. Almost all of these individuals are transit dependent. From an estimated mode-choice model, the odds of a low-income reverse commuter taking transit was found to be five times greater than that of a middle-income person traveling in the opposite-flow direction. Appreciable numbers of California's reverse commuters match the stereotype often portrayed – many are low-income, car-less, minority workers who have no choice but to take transit to reach outlying job sites.

The hardships many of California's low-income reverse-commuters face in using transit were underscored by comparing travel times and costs with those of private cars. For documented reverse-commute trips made by low-income workers in three of the large metropolitan areas, peak-period travel times by bus were three to four times higher than those by private cars. While taking transit saves money, this benefit was generally far overshadowed by the quantum increases in travel times faced in trying to get from the inner-city to suburban job sites via conventional bus transit.

## **CalWORKs Transportation Initiatives**

As of early-2002, some 36 transportation programs aimed at serving the job-access and reverse-commute needs of CalWORKs clients had been introduced in California. Transit agencies and county welfare departments launched the vast majority of these programs. In most instances, transportation programs were a result of cooperative and collaborative efforts among multiple organizations.

To date, the lion's share of programs have focused on modifying traditional fixed-route bus services, either by adding new routes or extending the hours of operations of existing ones. Nearly one out of four job-access and reverse-commute initiatives have involved some form of assistance targeted at individual beneficiaries, like child-transportation services, guaranteed-ride home allowances, or the initiation of carpool-vanpool services. Other improvements introduced throughout the state include the initiation of shuttle connections to job centers, low-interest loan assistance for purchasing or upgrading cars, and the extension of bus routes farther out to connect job centers and community college campuses.

Case studies reviewed in this report highlighted "best practice" experiences and provided insight into impacts and outcomes. It is difficult to pass judgment on the many job-access and reverse-commute initiatives to date, however, because evaluation has never been a high priority. What little evaluation exists has generally been in the form of qualitative information (e.g., interview commentary) and has been more of an afterthought than a product of ex-post/ex-ante assessments. To date, little attention has been given to data collection, research design, and compiling consistent and reliable information over time. Evaluation has also been hampered by the absence of "controlled experimental" studies involving the selection of control cases. Many of the state's CalWORKs programs are also still in their infancy, making impact assessment all the more difficult.

## **Transit-based Strategies**

The most common transit-based strategy introduced by California counties has been purchases of bus passes for CalWORKs clients. By itself, bus pass assistance is a passive strategy for, while it deals with affordability concerns, it fails to modify how transit services are delivered in ways that might enhance job access. With the support of Federal and State grant awards, a number of transit service modifications have been introduced in California in recent years. In larger areas like San Diego and Los Angeles Counties, brand-new reverse-commute services targeted at inner-city low-income communities have been mounted. In other areas, like Alameda County, the focus has been on extending the hours of bus operations. Some areas have opted to introduce door-to-door van services. So far, the near-term costs of these initiatives have been high. In most cases where door-to-door van services or late-night "graveyard shift" operations have been introduced, costs have exceeded \$10 per trip and in a few cases more than double this amount. Such figures begin to match what it would cost to hire private taxicabs to directly serve individual clients.

Small and rural counties have struggled the most to introduce expanded and consumer-responsive fixed-route transit services. Often, densities are too low and travel distances are too far to operate cost-effective bus services. The most successful programs to date in small and rural settings have involved active employer support and co-sponsorship. Of particular

note have been several successful reverse-commute bus shuttles that serve gaming casinos at California Indian Reservations. Besides employer involvement, these shuttle services been successful because of: (1) high employment densities – i.e., concentrated work sites; (2) limited numbers of work shifts that allow effective co-scheduling of bus runs; (3) high-speed, limited-stop services that make transit time-competitive with the private car; and (4) aggressive marketing by operators and employers. In the case of Yolo County’s casino shuttle run, ridership jumped 333 percent the first year of service. On-board surveys reveal most customers are very satisfied with the quality and price of service. Given that many were unemployed a year or so earlier, this employer-supported long-haul bus route is a bona fide reverse-commute success story.

While it is difficult to generalize given the state’s limited experiences with transit service innovations to date, some inferences regarding specific transit services strategies can be drawn:

- *New Targeted Bus Routes.* There have been a few successes to date with brand-new reverse-commute bus routes introduced in California. Most notable has been a long-distance, limited-stop service, Route 422, which connects several low-income, inner-city neighborhoods in the city of Los Angeles with suburban jobs in the San Fernando Valley. To date, Route 422 has been a productive, well-performing express bus service, covering relatively high shares of costs through fare receipts, experiencing steady ridership gains, and serving needy, transit-dependent populations. Customers, many of whom are Latino women from low-income households and who have no access to cars, expressed satisfaction with the service and most expect to continue patronizing in coming years. Many users have to make transfers to and from Route 422, however, meaning the service functions mainly as a mainline trunk route and suggesting that complementary feeder-distributor connections would be much-valued enhancements.

In San Diego County, three new reverse-commute bus routes have been introduced in recent years, with each enjoying steady ridership growth. Still, the costs per rider of these targeted services exceed those of all other fixed-route bus runs in the system, although compared to dial-a-ride vans and taxis, they cost between 60 and 85 percent less per trip. While on-board surveys revealed passengers greatly value these new bus services, a common complaint was the absence of late-night and week-end services.

- *Schedule extensions.* In several of the case examples reviewed in this report, notably San Diego and Alameda Counties, the most serious mobility problem faced by CalWORKs clients was the absence of late-night and weekend bus services. That is, mobility problems were more *temporal* than *spatial*. Yet the focus to date of most welfare-to-work transit services has been on introducing new routes or extending existing ones. A universal problem with running late-night transit is the high cost relative to patronage levels. Double-digit costs per passenger are not uncommon. Owl services and late-night bus runs in Alameda County have provided much-valued access to jobs

at major employment hubs, like the Oakland International Airport and the Port of Oakland, however some runs incur costs as high as \$24 per trip. Such outlays are unsustainable and a clear sign that localities should enter into contractual arrangements with local taxicab companies to provide late-night services, ideally in the form of shared-ride taxis funded through user vouchers.

A limitation of these transit case studies is that they overlook unmet needs, or “latent demand”. Surveys of CalWORKs clients in Yolo and San Diego Counties suggested a considerable pent-up demand for transit and job-access services tailored to individual mobility needs. In the case of San Diego County, many jobless CalWORKs clients expressed a need for new routes and extended schedules to assist with job searching, making interview appointments, and eventually commuting to work. Because most clients live and work in fairly urbanized settings, respondents from San Diego County were most interested in seeing traditional bus services expanded. In more sparsely populated Yolo County, unemployed CalWORKs recipients were most interested in receiving help with purchasing and maintaining private cars. If and when they get jobs and make commutes, many of Yolo County’s survey respondents indicated they would be making chained, multi-legged trips to drop off and pick-up kids and attend job training. Joblessness and complex travel patterns reinforce each other to some degree in places like Yolo County. Many of the county’s jobless clients are women with children, and low-paying jobs makes child-care too expensive. If they were to work, many would have to invest several hours a day aboard buses between home, day-care, and work, a scenario that prompts quite a few to stay unemployed. Many single parents living in semi-rural and non-urbanized settings strongly feel that car ownership provides the only realistic alternative for getting off of welfare and into full-time employment.

### **Car Access and Automobility**

The working poor often need access to cars for the same reasons the non-poor do: public transit is unable to adequately serve multi-legged trips or late-night work schedules. In remote locations and even semi-rural settings like Yolo County, private cars can be the only viable means of mobility.

Statistical evidence from Alameda, Los Angeles, San Joaquin, and San Bernardino Counties showed that owning cars is more strongly associated with welfare-to-work transitions than any transportation variable. Experiences in San Mateo County demonstrated that car ownership reduces the amount of work time missed and increases job-training participation among CalWORKs clients. Surveys conducted of transit passengers as well as CalWORKs clients revealed a strong preference for car ownership among those living in rural and remote areas as well as among those making chained trips, such as between home, child care, and work.

Car-based strategies have not been without controversy. Buying, insuring, maintaining, and operating a car can be beyond the means of many low-income households. Many donated cars are gross-polluters and are only a year or so away from expensive repair bills. Because vehicles owned by CalWORKs recipients are often aged and undependable, some have argued that interim transportation, like paratransit, should be made available until

participants make enough money to purchase and maintain reliable cars. Another remedy might be to relax the \$4,650 ceiling on the value of cars that CalWORKs participants are allowed to own. Tax credits for donating cars in good running order, such as introduced in several other states, might also be considered.

Car-based strategies should not be viewed as substitutes or replacements for transit. They can enrich the palette of mobility options available to the poor. For example, car ownership has been known to spawn informal jitney services in inner-city areas, providing shared-ride door-to-door connections to job sites and retail centers at affordable yet market-clearing prices.<sup>1</sup> In rural and remote settings, car-based strategies can also relieve financially strapped counties of high-cost transit services. Remarked one welfare-to-work administrator from a rural county: “subsidizing car-related expenses or loans of \$1,000 to \$2,000 that enable ongoing transportation and steady employment is a net savings to the county when compared with the cost of aid and employment services”.<sup>2</sup>

### **Paratransit**

In our review of statewide experiences, we found few examples in which shared-ride taxis, flexible-route jitneys, and other forms of small-vehicle, door-to-door paratransit services were offered, targeted specifically at CalWORKs clients or reverse commuters. Of course, ADA paratransit services thrive in many parts of the state, however these are limited mainly to seniors and the physically disabled, groups to which most CalWORKs recipients do not belong. So far, the focus of welfare-to-work transportation has been on traditional fixed-route bus services. We suspect the absence of paratransit is in part due to local ordinances that ban shared-ride taxis, jitneys, and other more personalized forms of mass transportation.

We feel that paratransit is a missed opportunity. While Los Angeles’s Nickerson Gardens experiment with community-based paratransit in the early 1990s failed, this was due mainly to mismanagement and not to any fundamental flaws in the concept. Paratransit should be given another chance, perhaps as part of a well-designed and carefully managed demonstration program.

Several California counties have made headway in designing and implementing door-to-door paratransit services. Butte and Santa Cruz Counties have purchased vehicles and trained CalWORKs clients to drive shuttles as work experience or on-the-job-training. Contra Costa County uses vans to carry kids of CalWORKs recipients to and from school and day-care centers each workday.

### **Menu of Mobility Options**

Much is to be said in favor of county transportation programs that offer a menu of mobility options. Santa Cruz and Contra Costa Counties have been particularly ambitious in this regard. While a buffet of options adds costs, the ability to custom-tailor transportation services to meet the individual mobility needs of each client is a huge benefit. Santa Cruz’s client-based approach toward job-access planning has given rise to a rich mix of mobility options, including door-to-door van services, emergency ride home provisions, carpool incentives, low-interest loans for car purchases, and work-related emergency payments. The

County's van service "kills two birds with one stone" since CalWORKs recipients not only ride but also drive vans, enabling a number of previously unemployed individuals to find permanent jobs in the transportation business.

Contra Costa County's client-based approach resulted in the introduction of a door-to-door shuttle service that takes children of CalWORKs adults who have recently found jobs to and from day-care centers and schools. The service is over-subscribed, suggesting there is probably a large pent-up demand for children's transportation in other parts of the state. As in Santa Cruz County, Contra Costa County also offers door-to-door van services to adults, ridesharing incentives, and various bus-route expansions. Through a partnership of transit operators, the regional planning agency, and several large employers, the county's Employment and Human Services department saw to it that traditional bus services were better aligned to meet the mobility needs of low-income residents.

### Information Systems

Several of the transit agencies that introduced successful reverse-commute and job-access programs relied on Geographic Information System (GIS) tools to identify where CalWORKs recipients reside and where jobs they qualify for are located. Many times, the locations of day-care centers, adult training programs, and social-service offices were also geo-coded. Cost-effective bus services were introduced that best responded to the "lay of the land". Not all areas in the state, particularly small counties, have the resources and in-house staff capabilities to conduct such analyses. The state should consider developing such capabilities in order to provide assistance to small and rural counties. Consideration should also be given to creating resource positions of trained personnel who can help smaller and rural counties with technical analyses on an as-needed basis, such as when new bus services are being designed. It should be remembered that spatial tools like GIS can help with routing decisions however they say little about how to best change schedules. By focusing on spatial analyses, there is the risk of overlooking sometimes what is a more pressing need – the extension of bus operating hours to evenings and weekends.

### Technology

Given the complex spatial and temporal nature of trips made by many CalWORKs clients and reverse-commuters, technology should be put to good use where possible to create smart paratransit. Telematics and automated vehicle location (AVL) technologies allow vans to respond in real-time to travel requests and help optimize vehicle routing, scheduling, and dispatching.<sup>3</sup> An out-of-state example is the SaFIRE (Smart Flexroute Integrated Real-Time Enhancement System) demand-responsive service introduced in Prince William County in northern Virginia. There, smart paratransit has been designed to link feeder vans to line-haul buses and intercity trains. Route-deviation services have also been launched wherein vans and buses deviate up to a mile from major arteries to pick up and drop-off customers.

In California, the Santa Clara Valley Transportation Authority (SCVTA) combined a digital geographic database, automated routing and scheduling software, and AVL technologies to form a SMART paratransit service in 1996, though this service is reserved for seniors and disabled individuals as opposed to CalWORKs or welfare-to-work populations. Technology has allowed daily routes to be optimally planned based on the origin and destination

patterns, pick-up and drop-off times, and equipment needs. SCVTA's SMART paratransit saved around \$500,000 annually in operating costs. Much of the savings have been due to higher load factors, with the share of multi-passenger trips having increased from 38 percent before the new service to over 55 percent today.<sup>4</sup> Other innovative initiatives in California that marry cutting-edge technology with efficient forms of paratransit and automobility includes the CarLink station-car program serving a CalTrain station in Palo Alto and City CarShare (involving automated reservation systems for real-time leasing of vehicles under a cooperative arrangement) introduced in the cities of San Francisco, Oakland, and Berkeley. Consideration should be given to adapting such forms of smart paratransit and automobility to the needs of reverse-commuters and welfare-to-work populations as well.

### **Implementation and Coordination**

Experiences clearly show that successful job-access and reverse-commute programs depend upon successful collaborations. The many stakeholders – county welfare departments, transit service-providers, regional planning entities, faith-based and charitable organizations, among others – must build partnerships that coordinate efforts in ways that deliver suitable and cost-effective transportation services to clients. Partnerships can increase productivity by tapping into scale economies. Teaming multiple service-providers across multiple human-service agencies, for example, can create opportunities for centralized driver training, vehicle maintenance and inspection, vehicle scheduling, and insurance coverage.

Collaborations are sometimes easier said than done, however. Disagreements and “turf problems” between California's county welfare offices and local transit agencies have thwarted progress in some instances. In small and rural counties, a lack of institutional capacity and staff training to do short-term needs assessments and long-range transportation planning have also been impediments. Additionally, funding programs can pose barriers. While many one-year grant sources are available, the absence of sustained multi-year funding discourages many localities from pursuing ambitious job-access strategies. Restrictions also prevent a van purchased to provide mobility for the elderly from being used to transport a CalWORKs client to a job interview.

Institutional problems also create contradictions that make it difficult to rationalize job-access programs. Surveys of low-income and jobless CalWORKs participants in California, presented in Chapter 11, underscored the need to keep transit fares affordable. One way to do this is to competitively contract out services so as to lower operating costs. Most private vendors hire non-unionized, low-wage drivers to keep costs down however this can also end up lowering service quality. Experiences show that contracted services can compromise reliability and on-time performance. Sometimes contracted buses do not show up or are well behind schedule. Reliability is of utmost importance to many CalWORKs clients in that if they arrive to work late more than once, they are usually let go, especially those who make a living serving customers in the restaurant, retail, and lodging industries. Additionally, efforts to introduce some door-to-door van services in the state have been stonewalled by organized labor out of fear that low-wage shuttle drivers will take away jobs from unionized workers or eventually depress salary levels. Such problems might be averted by enlarging partnerships to include union interests, private vendors, and others with a vested stake in job-access programs. Expanded partnerships can bring new people with fresh ideas and different perspectives to the table.

## Demonstration Programs

In conducting this research, we were struck by the fact that most strategies being pursued to cope with job-access needs were fairly traditional, such as the extension of a bus route another mile or two or assistance with bus-pass purchases. There was little evidence of localities seeking to “test the waters” by introducing innovative transportation initiatives, like smart paratransit, user-side subsidies, or community-based mobility enterprises. This is likely due to a number of factors: limited budgetary resources; limited knowledge among the many non-transportation professionals who managed CalWORKs programs at the county level; reliance on public transit agencies, who tend to be risk-averse and to stick with traditional approaches; and one-year grant awards that provide no guarantees of ongoing funding and thus encourage conservative transportation approaches.

We believe the time is ripe to pilot-test new transportation strategies and ideas, unencumbered by traditional approaches. Demonstration programs can encourage and reward “out-of-the-box” thinking. An example might be child transportation services, such as introduced in Contra Costa County. A common lament among CalWORKs recipients, many of whom are single parents, is the need for auxiliary transportation services that take kids to and pick them up at schools and day-care facilities. By relieving carless parents of this duty, child transportation makes transit riding far more plausible for many parents who have made the welfare-to-work transition. Child transportation services can be very expensive, however, particularly given that a chaperone is needed in addition to a driver. One idea might be to recruit senior citizens and retirees who are willing to work as chaperones, either as voluntarily or for nominal pay. Another option might be to use CalWORKs clients with part-time jobs to fill in as chaperones on a rotating basis. Moms with part-time jobs whose own children are getting lifts to and from school or day-care are obvious candidates. Such initiatives, however, would need to proceed with caution for safety and security reasons. Better yet would be cost-effective transportation that allows children, especially of younger day-care age, to travel with their own parents.

Ideally, demonstration programs should be judged based on “outcome” measures of performance, not “outputs”. Output-based measures examine what was delivered – e.g., miles of transit service. Outcome-based measures focus on the degree to which objectives have been achieved – e.g., moving adults from welfare rolls to gainful employment.

## 14.3 AN ACTION AGENDA

Although not everyone agrees how job-access and reverse-commute needs are best met, one finds virtual unanimity among local interests on one thing: more money is needed. Many of the state’s transit providers and county welfare departments are financially stretched to the limit and thus incapable of mounting ambitious transportation programs targeted at the mobility needs of disadvantaged populations. More funding assistance, they contend, would allow them to be pro-active rather than reactive. In truth, more money does not always translate into better transportation for needy individuals. The transportation field is littered with examples where provider-side subsidies and generous financial aid conferred few end-result benefits to consumers.<sup>5</sup> On the other hand, aid that promotes and rewards efficiencies

and goes to materially enhance services to intended beneficiaries – i.e., transportation-disadvantaged California – can be money well invested.

It is important that funds meant to enhance job-access and reverse-commute services be earmarked. If provided in the form of general transportation block grants or transfer payments, few dollars will likely end up going to van services, late-night transit schedule extensions, car-access loan programs, or other initiatives that enhance job access. With today's backlog of unfunded highway projects and the struggles many transit agencies face in keeping existing bus routes running, job-access and reverse-commute programs would inevitably lose in the heated competition for scarce financial resources. In a competitive environment, transportation programs that reach a broad constituency invariably win out over ones that serve a small set of beneficiaries, especially those with little political clout.

In light of the state's unmet job-access needs and empirical evidence demonstrating that well-designed transportation services can stimulate welfare-to-work transitions, California policy-makers should seriously consider introducing a state-wide version of the Federal Job Access and Reverse Commute (JARC) program. Monies could go to supplement as well as provide local matches to Federal JARC funding. Block-grant awards spanning at least three to five years should be provided. Longer term funding guarantees would prompt county welfare departments and local transit agencies to pursue transportation programs that are more ambitious and creative than those introduced to date. State JARC grants should encourage localities to form the kinds of partnerships that increase the odds of job-access programs being custom-tailored to local needs.

To further encourage creative job-access and reverse-commute programs, a pilot-demonstration program should also be considered. This program would fund well-conceived, "cutting edge" initiatives, such as the combining of smart paratransit with user-side subsidies and local paratransit deregulation or the formation of community-based mobility enterprises that get inner-city neighborhoods into the business of designing, operating, managing, and maintaining job-access services. Set asides should also go for evaluation. Only through controlled experimental studies will it be possible to ferret out the value and roles of different transportation programs in inducing welfare-to-work transitions. Ideally, evaluations should be based on outcome-based measures of performance (e.g., job creation) as opposed to output-based measures (e.g., transit service deployment).

The state should also play a stepped-up role in institutional strengthening. Resources should go toward building in-house expertise and perhaps even a cadre of para-transportation professionals – e.g., caseworkers who are knowledgeable about and trained in designing transportation programs to satisfy individual mobility and job-access needs. To encourage mutual learning and the sharing of experiences, the formation of a statewide advisory committee of CalWORKs transportation coordinators should also be considered. Such a committee could play an important role in advising state policy-makers on matters related to job access and reverse commuting. Sponsorship of statewide conferences and workshops that bring caseworkers and others working "in the trenches" together to share experiences, identify best practices, and learn from each other could also aid localities in mounting and managing successful job-access and reverse-commute programs.

## Notes

---

- <sup>1</sup> E. Savas, S. Grava, and R. Sparrow, *The Private Sector in Public Transportation in New York City: A Policy Perspective*, Washington, D.C., U.S. Department of Transportation, 1991.
- <sup>2</sup> J. Klerman, G. Zellman, T. Chun, N. Humphrey, E. Reardon, D. Farley, P. Ebener, P. Steinberg, *Welfare Reform in California: State and County Implementation of CalWORKs in the Second Year*, Santa Monica, Rand Corporation, 2000, p. 249.
- <sup>3</sup> R. Cervero, *Paratransit in America: Redefining Mass Transportation*, Westport, Connecticut, Praeger Press, 1997.
- <sup>4</sup> Nelson\Nygaard Consulting Associates, *Senior Transportation Analysis: Final Report Appendices – Peer Communities Senior Transportation Services*, Anaheim, Orange County Transportation Authority, June 2000.
- <sup>5</sup> D. Pickrell, Rising Deficits and the Use of Transit Subsidies in the United States, *Journal of Transport Economics and Policy*, September 1985, pp. 281-298.



## **APPENDIX A**

### **LOS ANGELES QUESTIONNAIRES: ENGLISH AND SPANISH VERSIONS**

**- Los Angeles Route 422-**

In order to improve the transit services in your community, please help us study **transportation patterns and needs** by completing this survey. Your responses will be kept strictly confidential, and will be combined with many other responses in summary form. Your help is very much appreciated!

**A. First, we would like to know about your current trip.**

**1. Where did you begin this trip?** *(The beginning of the whole trip, not necessarily where you got on this bus)*

- ☐<sub>1</sub> Home                      ☐<sub>4</sub> Shopping  
☐<sub>2</sub> Work                      ☐<sub>5</sub> Childcare  
☐<sub>3</sub> School  
☐<sub>0</sub> Other *(Please specify)* \_\_\_\_\_

**2. Where is this place?**

Address/Intersection/Landmark: \_\_\_\_\_

\_\_\_\_\_

City: \_\_\_\_\_ Zip Code: \_\_\_\_\_

**3. Where are you going?** *(The end of the whole trip, not necessarily where you will get off this bus)*

- ☐<sub>1</sub> Home                      ☐<sub>6</sub> Shopping  
☐<sub>2</sub> To look for a Job        ☐<sub>7</sub> Social (e.g., visit a friend)  
☐<sub>3</sub> Job Training            ☐<sub>8</sub> Personal (e.g., go to bank)  
☐<sub>4</sub> Work                      ☐<sub>9</sub> Medical  
☐<sub>5</sub> School  
☐<sub>10</sub> Recreational (e.g., go to sporting event)  
☐<sub>0</sub> Other *(Please specify)* \_\_\_\_\_

**4. Where is this place?**

Address/Intersection/Landmark: \_\_\_\_\_

\_\_\_\_\_

City: \_\_\_\_\_ Zip Code: \_\_\_\_\_

**5a. How did you get to the first bus stop/rail station?**

- ☐<sub>1</sub> Walked/Bike. For how many minutes? \_\_\_\_\_  
☐<sub>2</sub> Drove/Carpooled. For how many minutes? \_\_\_\_\_  
☐<sub>3</sub> Dropped off. For how many minutes? \_\_\_\_\_  
☐<sub>0</sub> Other. *(Please specify)* \_\_\_\_\_

**5b. At what stop did you get on the first bus or train?**

Stop name/Cross street: \_\_\_\_\_

\_\_\_\_\_

**6a. For this trip, how will you get to your destination from the last bus stop or rail station?**

- ☐<sub>1</sub> Walk/Bike. For about how many minutes? \_\_\_\_\_  
☐<sub>2</sub> Drive/Carpool. For about how many minutes? \_\_\_\_\_  
☐<sub>3</sub> Picked up. For how many minutes? \_\_\_\_\_  
☐<sub>0</sub> Other. *(Please specify)* \_\_\_\_\_

**6b. At what stop will you get off the last bus or train?**

Stop name/Cross street: \_\_\_\_\_

\_\_\_\_\_

**7. If getting to this place involves taking more than one bus or rail line, please list in order these buses or rail lines (by route number or name).**

First route/rail: \_\_\_\_\_,  
 Transfer to route/rail: \_\_\_\_\_,  
 Transfer to route/rail: \_\_\_\_\_,  
 Transfer to route/rail: \_\_\_\_\_.

**8. How many minutes does it typically take you to make this trip (from beginning to end)?**

\_\_\_\_\_ Minutes

**9. How often do you use this bus when making this trip?**

- ☐<sub>4</sub> 4 times a week or more        ☐<sub>2</sub> 2-3 times a week  
☐<sub>1</sub> 1-4 times a month              ☐<sub>0</sub> Less than once a month

**10. How did you pay the fare on this bus today?**

- ☐<sub>1</sub> Cash                      ☐<sub>4</sub> Half monthly pass  
☐<sub>2</sub> Token                    ☐<sub>5</sub> Monthly pass  
☐<sub>3</sub> Weekly pass            ☐<sub>6</sub> Transfer

**11. Is there a car available that you could have used for this trip today?**        ☐<sub>1</sub> Yes        ☐<sub>0</sub> No

**If you DO NOT take this bus to work, please go to Question 15 on the backside of this page.**

**12. In the next six months, do you expect to continue to take this bus to work?**

- ☐<sub>1</sub> Yes                      ☐<sub>0</sub> No. Why not? \_\_\_\_\_

How do you anticipate getting to work instead? \_\_\_\_\_

13. (If you DO NOT work on Saturday or Sunday, please go to the next question.) Would you take this bus to work on Saturday or Sunday if it were available?

☐<sub>1</sub> Yes ☐<sub>0</sub> No. Why not? \_\_\_\_\_

14. (If you DO NOT work late hours, please go to the next question.) Would you ride this bus during late-hours if it were available? ☐<sub>1</sub> Yes ☐<sub>0</sub> No. Why not? \_\_\_\_\_

15. Which of the following applies to your typical trip to work and what mode of transportation do you usually use (*Please check all that apply*)?

	Drive	Transit	Walk/Bike	Other
a. Drop off/pick up child at day-care/school	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>0</sub>
b. Go shopping	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>0</sub>
c. Go to the doctor/medical	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>0</sub>
d. Take care of other personal business (e.g., banking)	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>0</sub>

16a. Please tell us whether you agree or disagree with the following statements about this bus:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. This bus service is important to me for making this trip.	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>
b. The bus schedule is convenient.	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>
c. This bus is on time.	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>
d. It is convenient to make transfers to/from this bus.	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>
e. The travel time on this bus is acceptable.	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>
f. I can take care of other needs, like picking up kids, shopping	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>
g. I can easily find a seat.	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>
h. I can afford to take this bus.	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>
i. I feel safe on this bus.	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>
j. This bus is clean and comfortable.	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>
k. Overall, I am satisfied with this bus service.	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>

16b. Which one from the items (a thru j above) represents the one service feature you would most want improved? \_\_\_\_\_

**B. We would like some information about you/your household. These questions are for statistical purposes only.**

17. When were you born? 19 \_\_\_\_

18. Are you: ☐<sub>1</sub> Male ☐<sub>0</sub> Female

19. Are you:

- ☐<sub>1</sub> Hispanic/Latino ☐<sub>4</sub> White/Caucasian  
☐<sub>2</sub> African-American ☐<sub>5</sub> Pacific-Islander  
☐<sub>3</sub> Asian-American ☐<sub>6</sub> Native-American  
☐<sub>0</sub> Other. (*Please specify*) \_\_\_\_\_

20. Do you have a job now?

- ☐<sub>1</sub> No. But I am looking for a job  
☐<sub>2</sub> No. But I am in job training  
☐<sub>3</sub> No.  
☐<sub>4</sub> Yes, a full-time job.  
☐<sub>5</sub> Yes, a part-time job.

21. What was your household annual income (year 2000)?

- ☐<sub>1</sub> Less than \$7,500 ☐<sub>4</sub> \$25,000 to \$34,999  
☐<sub>2</sub> \$7,500 to \$14,999 ☐<sub>5</sub> \$35,000 to \$49,999  
☐<sub>3</sub> \$15,000 to \$24,999 ☐<sub>6</sub> \$50,000 or more

22. How many persons are in your household?  
 \_\_\_\_\_ Adults, \_\_\_\_\_ Children

23. Does your employer provide you (*Please check all that apply*):

- ☐<sub>1</sub> A transit pass or allowance  
☐<sub>2</sub> Free parking  
☐<sub>3</sub> Access to a company car or truck  
☐<sub>4</sub> Other transportation benefits  
 What kind of benefit? \_\_\_\_\_

24. Do you currently receive any form of public assistance?

- ☐<sub>0</sub> No  
☐<sub>1</sub> Yes. What kind of assistance (*For example TANF, SSI, Medi-Cal, Food stamps*)? \_\_\_\_\_

25. Do you have a valid driver's license?

- ☐<sub>1</sub> Yes ☐<sub>0</sub> No

26. How many cars, trucks, vans, or motorcycles are available to members of your household? \_\_\_\_\_

**- Los Angeles Ruta 422-**

Favor ayúdenos a investigar las **necesidades y patrones de transporte** para poder mejorar los servicios de transporte público en su comunidad. *Sus respuestas serán estrictamente confidenciales y serán compiladas con muchas otras respuestas en un resumen.* Mucho agradecemos su ayuda.

**A. Primero, nos gustaría saber sobre su viaje actual.**

1. ¿Dónde comenzó este viaje? (*es decir, el comienzo de todo este viaje, no necesariamente dónde abordó este autobús*)

- ☐<sub>1</sub> Hogar ☐<sub>4</sub> De compras  
☐<sub>2</sub> Trabajo ☐<sub>5</sub> Cuidado de niños  
☐<sub>3</sub> Escuela  
☐<sub>0</sub> Otro (*por favor especifique*) \_\_\_\_\_

2. ¿Dónde está localizado este lugar?

Dirección/ (o cerca de): \_\_\_\_\_

Ciudad: \_\_\_\_\_ Código Postal: \_\_\_\_\_

3. ¿A dónde va? (*es decir, el final de este viaje, no necesariamente dónde se bajará del autobús*)

- ☐<sub>1</sub> Hogar ☐<sub>6</sub> De compras  
☐<sub>2</sub> En busca de empleo ☐<sub>7</sub> Social (Ej. Visitando un amigo)  
☐<sub>3</sub> Adiestramiento de trabajo ☐<sub>8</sub> Personal (Ej. Yendo al banco)  
☐<sub>4</sub> Trabajo ☐<sub>9</sub> Médico  
☐<sub>5</sub> Escuela ☐<sub>10</sub> Recreación  
☐<sub>0</sub> Otro (*por favor especifique*) \_\_\_\_\_

4. ¿Dónde está localizado este lugar?

Dirección/ (o cerca de): \_\_\_\_\_

Ciudad: \_\_\_\_\_ Código Postal: \_\_\_\_\_

5a. ¿Cómo llegó a la primera parada de autobús/estación de metro?

- ☐<sub>1</sub> Caminé/ Bicicleta. Por cuantos minutos? \_\_\_\_\_  
☐<sub>2</sub> Manejé/"Carpool". Por cuantos minutos? \_\_\_\_\_  
☐<sub>3</sub> Me llevaron. Por cuantos minutos? \_\_\_\_\_  
☐<sub>0</sub> Otro. (Por favor especifique) \_\_\_\_\_

5b. ¿En que parada (en que calles) se subió al primer Autobús/Tren en este viaje de ida?

6a. ¿Cómo llegará a su destino desde la última parada de autobús/estación de metro?

- ☐<sub>1</sub> Caminé/ Bicicleta. Por cuantos minutos? \_\_\_\_\_  
☐<sub>2</sub> Manejé/"Carpool". Por cuantos minutos? \_\_\_\_\_  
☐<sub>3</sub> Me llevaron. Por cuantos minutos? \_\_\_\_\_  
☐<sub>0</sub> Otro. (Por favor especifique) \_\_\_\_\_

6b. ¿En que parada (en que calles) se bajará del último Autobús/Tren en este viaje de ida?

7. Si este viaje envuelve más de una línea de autobús/metro para llegar a su destino, por favor indique en orden estas líneas de autobús/metro (por nombre o número de ruta).

Primera ruta/ tren: \_\_\_\_\_,  
 Traslado a la ruta/ tren: \_\_\_\_\_,  
 Traslado a la ruta/ tren: \_\_\_\_\_,  
 Traslado a la ruta /tren: \_\_\_\_\_.

8. ¿Cuántos minutos le toma, típicamente, desde el momento en que comienza este viaje hasta el momento que llega a su destino? \_\_\_\_\_ Minutos

9. ¿Cuán a menudo utiliza este autobús cuando realiza este viaje?

- ☐<sub>4</sub> 4 veces a la semana o más ☐<sub>2</sub> 2-3 veces a la semana  
☐<sub>1</sub> 1-4 veces al mes ☐<sub>0</sub> Menos de una vez al mes

10. ¿Como pago al abordar su primer Autobús/Tren en este viaje de ida? (solo marque una respuesta)

- ☐<sub>1</sub> Dinero en efectivo ☐<sub>3</sub> Pase  
☐<sub>2</sub> Token/Ficha

11. Tenía usted un auto disponible para este viaje?

- ☐<sub>1</sub> Sí ☐<sub>0</sub> No

**Si usted NO UTILIZA este autobús para llegar a su trabajo, por favor siga a la Pregunta 15 en la siguiente página.**

12. En los próximos seis meses, ¿espera continuar tomando este autobús a su trabajo?

- ☐<sub>1</sub> Sí ☐<sub>0</sub> No. ¿Por qué no? \_\_\_\_\_  
 ¿Cómo anticipa llegar al trabajo? \_\_\_\_\_

13. (Si usted NO trabaja durante el fin de semana, por favor siga a la próxima pregunta.) ¿Tomaría este autobús a su trabajo (o desde su hogar al trabajo) durante el fin de semana si el autobús estuviese disponible?

- ☐<sub>1</sub> Sí ☐<sub>0</sub> No. ¿Por qué no? \_\_\_\_\_

14. (Si usted NO trabaja en la noche por favor siga a la próxima pregunta.) ¿Usaría usted el servicio nocturno de este autobús (desde su casa o desde el trabajo), si estuviese disponible?  
☐\_1 Sí ☐\_0 No. ¿Por qué no? \_\_\_\_\_
15. ¿Cuál de las siguientes actividades haría usted durante su viaje al trabajo (o del trabajo a su casa), y que modo de transporte usaría? (Por favor marque todos los que apliquen)
- |   | Manejando                   | Transporte Publico          | Caminando /Bicicleta        | Otro                        |
|---|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| a. Dejar /recoger niños en la guardería o escuela | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 | <input type="checkbox"/> _0 |
| b. Ir de compras                                  | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 | <input type="checkbox"/> _0 |
| c. Ir al doctor                                   | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 | <input type="checkbox"/> _0 |
| d. Otros asuntos personales (ej. ir al banco)     | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 | <input type="checkbox"/> _3 | <input type="checkbox"/> _0 |
- 
- 16a. Por favor indíquenos si está de acuerdo o en desacuerdo con los siguientes declaraciones sobre este autobús:
- |  | Completamente<br>En Desacuerdo | En Desacuerdo               | Neutral                     | De Acuerdo                  | Completamente<br>De Acuerdo |
|--|--------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| a. Este servicio de autobús es importante para hacer este viaje.                     | <input type="checkbox"/> _2    | <input type="checkbox"/> _1 | <input type="checkbox"/> _0 | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 |
| b. El horario del autobús es conveniente.  | <input type="checkbox"/> _2    | <input type="checkbox"/> _1 | <input type="checkbox"/> _0 | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 |
| c. Este autobús está a tiempo.   | <input type="checkbox"/> _2    | <input type="checkbox"/> _1 | <input type="checkbox"/> _0 | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 |
| d. Es fácil realizar transbordos de este o a este autobús                            | <input type="checkbox"/> _2    | <input type="checkbox"/> _1 | <input type="checkbox"/> _0 | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 |
| e. El tiempo de recorrido en este autobús es aceptable                               | <input type="checkbox"/> _2    | <input type="checkbox"/> _1 | <input type="checkbox"/> _0 | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 |
| f. Puedo hacerme cargo de otras necesidades como recoger a los niños o ir de compras | <input type="checkbox"/> _2    | <input type="checkbox"/> _1 | <input type="checkbox"/> _0 | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 |
| g. Puedo encontrar asiento dentro del autobús fácilmente                             | <input type="checkbox"/> _2    | <input type="checkbox"/> _1 | <input type="checkbox"/> _0 | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 |
| h. Puedo permitirme (económicamente) usar este autobús                               | <input type="checkbox"/> _2    | <input type="checkbox"/> _1 | <input type="checkbox"/> _0 | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 |
| i. Me siento seguro(a) en este camión  | <input type="checkbox"/> _2    | <input type="checkbox"/> _1 | <input type="checkbox"/> _0 | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 |
| j. Este camión está limpio y es cómodo.  | <input type="checkbox"/> _2    | <input type="checkbox"/> _1 | <input type="checkbox"/> _0 | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 |
| k. En general estoy satisfecho(a) con este servicio de autobús                       | <input type="checkbox"/> _2    | <input type="checkbox"/> _1 | <input type="checkbox"/> _0 | <input type="checkbox"/> _1 | <input type="checkbox"/> _2 |
- 16b.Cuál de las características en la pregunta 12 (a por j) necesita mejorar más en su opinión? (escriba una letra a por j) \_\_\_\_\_
- B. Nos gustaría saber alguna información sobre usted y su hogar. Las respuestas a estas preguntas seran utilizadas solamente para estadísticas.**
17. ¿En qué año nació? 19 \_\_\_\_\_
18. Es usted: ☐\_1 Hombre ☐\_0 Mujer
19. Es usted:
- |   |  |
|---|--|
| <input type="checkbox"/> _1 Hispano/ Latino                     | <input type="checkbox"/> _4 Blanco/ Caucásico  |
| <input type="checkbox"/> _2 Afro-Americano                      | <input type="checkbox"/> _5 Islas del Pacífico |
| <input type="checkbox"/> _3 Asiático-Americano                  | <input type="checkbox"/> _6 Indio Americano    |
| <input type="checkbox"/> _0 Otro. (por favor especifique) _____ |  |
20. ¿Cuenta Ud. Con un trabajo en este momento?
- ☐\_1 No pero estoy buscando
- ☐\_2 No pero estoy en un programa de adiestramiento
- ☐\_3 No.
- ☐\_4 Sí, de tiempo completo.
- ☐\_5 Sí, de medio tiempo.
21. Cual es el ingreso anual de su hogar (año 2000)?
- |   |   |
|---|---|
| <input type="checkbox"/> _1 menos de \$7,500    | <input type="checkbox"/> _4 \$25,000 a \$34,999 |
| <input type="checkbox"/> _2 \$7,500 a \$14,999  | <input type="checkbox"/> _5 \$35,000 a \$49,999 |
| <input type="checkbox"/> _3 \$15,000 a \$24,999 | <input type="checkbox"/> _6 \$50,000 o más      |
22. ¿De cuántas personas consiste su hogar?  
 \_\_\_\_\_ Adultos, \_\_\_\_\_ Niños
23. Indique si su patrón le da (Por favor marque todos los que apliquen):
- ☐\_1 Pase para transporte público, o gasto para transporte público
- ☐\_2 Estacionamiento gratuito
- ☐\_3 Acceso a un automóvil o camión de la compañía
- ☐\_4 Otras prestaciones de transporte
- ¿Qué forma de asistencia? \_\_\_\_\_
24. ¿Recibe algún tipo de asistencia por parte del gobierno?
- ☐\_0 No
- ☐\_1 Sí ¿Qué forma de asistencia? (Por ejemplo TANF, SSI, Medi-Cal, estampas de comida "Food Stamps") \_\_\_\_\_
25. Tiene ud. una licencia de manejo vigente?
- ☐\_1 Sí ☐\_0 No
26. Cuántos autos, camionetas, camiones o motocicletas existen disponibles en su hogar? \_\_\_\_\_



## **APPENDIX B**

### **MERCED QUESTIONNAIRE**

# TRANSIT RIDERSHIP SURVEY

- Merced/Mariposa -

In order to improve the transit services in your community, please help us study **transportation patterns and needs** by completing this survey. *Your responses are strictly confidential, and will be compiled with many other responses in summary form.* Your help is very much appreciated!

## A. First, we would like to know your current trip.

1. Where did you begin this trip? (*The beginning of the whole trip, not necessarily where you got on this bus*)

- |  |  |
|--|--|
| <input type="checkbox"/> <sub>1</sub> Home                                   | <input type="checkbox"/> <sub>6</sub> Shopping                         |
| <input type="checkbox"/> <sub>2</sub> Seeking Job                            | <input type="checkbox"/> <sub>7</sub> Social (e.g., visiting a friend) |
| <input type="checkbox"/> <sub>3</sub> Job Training                           | <input type="checkbox"/> <sub>8</sub> Personal (e.g., banking)         |
| <input type="checkbox"/> <sub>4</sub> Work                                   | <input type="checkbox"/> <sub>9</sub> Medical                          |
| <input type="checkbox"/> <sub>5</sub> School                                 | <input type="checkbox"/> <sub>10</sub> Recreational                    |
| <input type="checkbox"/> <sub>0</sub> Other. ( <i>Please specify</i> ) _____ |  |

2. Where is this place?

Address/Intersection/Landmark: \_\_\_\_\_

—

City: \_\_\_\_\_ Zip Code: \_\_\_\_\_

3. Where are you going? (*The end of the whole trip, not necessarily where you will get off this bus*)

- |  |  |
|--|--|
| <input type="checkbox"/> <sub>1</sub> Home                                   | <input type="checkbox"/> <sub>6</sub> Shopping                         |
| <input type="checkbox"/> <sub>2</sub> Seeking Job                            | <input type="checkbox"/> <sub>7</sub> Social (e.g., visiting a friend) |
| <input type="checkbox"/> <sub>3</sub> Job Training                           | <input type="checkbox"/> <sub>8</sub> Personal (e.g., banking)         |
| <input type="checkbox"/> <sub>4</sub> Work                                   | <input type="checkbox"/> <sub>9</sub> Medical                          |
| <input type="checkbox"/> <sub>5</sub> School                                 | <input type="checkbox"/> <sub>10</sub> Recreational                    |
| <input type="checkbox"/> <sub>0</sub> Other. ( <i>Please specify</i> ) _____ |  |

4. Where is this place?

Address/Intersection/Landmark: \_\_\_\_\_

—

City: \_\_\_\_\_ Zip Code: \_\_\_\_\_

5. If getting to this place involves taking more than one bus or rail line, please list in order these buses or rail lines (by route number or name).

First route/rail: \_\_\_\_\_,

Transfer to route/rail: \_\_\_\_\_,

Transfer to route/rail: \_\_\_\_\_,

Transfer to route/rail: \_\_\_\_\_.

6. How did you get to the first bus stop/rail station?

- ☐<sub>1</sub> Walked/Bike. For how many minutes? \_\_\_\_\_
- ☐<sub>2</sub> Drove/Carpooled. For how many minutes? \_\_\_\_\_
- ☐<sub>0</sub> Other. (*Please specify*) \_\_\_\_\_

7. For this trip, how will you get to your destination from the last bus stop or rail station?

- ☐<sub>1</sub> Walk/Bike. For about how many minutes? \_\_\_\_\_
- ☐<sub>2</sub> Drive/Carpool. For about how many minutes? \_\_\_\_\_
- ☐<sub>0</sub> Other. (*Please specify*) \_\_\_\_\_

8. How many minutes does it typically take you to make this trip (from beginning to end)?

\_\_\_\_\_ Minutes

9. How often do you use this bus when making this trip?

- ☐<sub>4</sub> 4 times a week or more
- ☐<sub>2</sub> 2-3 times a week
- ☐<sub>1</sub> 1-4 times a month
- ☐<sub>0</sub> Less than once a month

10. Is there a car available that you could have used for this trip today? ☐<sub>1</sub> Yes ☐<sub>0</sub> No

***If you DO NOT take this bus to work, please skip to Question 13 on the back side of this page.***

11. In the next six months, do you expect to continue to take this bus to work?

- ☐<sub>1</sub> Yes ☐<sub>0</sub> No. Why not? \_\_\_\_\_

How do you anticipate getting to work instead? \_\_\_\_\_

12. Which of the following applies for your typical trip to work, and what mode of transportation do you usually use (*Please check all that apply*)?

	Drive	Transit	Walk/Bike	Other
a. Drop off/pick up child at day-care/school	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>0</sub>
b. Go shopping	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>0</sub>
c. Go to the doctor/medical	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>0</sub>
d. Take care of other personal business (e.g., banking)	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>0</sub>

13. Please tell us whether you agree or disagree with the following statements about this bus:

	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>	<i>Strongly Agree</i>
a. This bus service is important to me for making this trip.	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>
b. The bus schedule is convenient.	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>
c. It is convenient to make transfers to/from this bus.	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>
d. I can take care of other needs, like picking up kids, shopping	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>
e. I can afford to take this bus.	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>
f. Overall, I am satisfied with this bus service.	<input type="checkbox"/> <sub>-2</sub>	<input type="checkbox"/> <sub>-1</sub>	<input type="checkbox"/> <sub>0</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>2</sub>

**B. We would like some information about you/your household. These questions are for statistical purposes only.**

14. When were you born? 19 \_\_\_\_

15. Are you: ☐<sub>1</sub> Male ☐<sub>0</sub> Female

16. Are you:

- ☐<sub>1</sub> Hispanic/Latino ☐<sub>4</sub> White/Caucasian  
☐<sub>2</sub> African-American ☐<sub>5</sub> Pacific-Islander  
☐<sub>3</sub> Asian-American ☐<sub>6</sub> Native-American  
☐<sub>0</sub> Other. (*Please specify*) \_\_\_\_\_

17. Do you have a job now?

- ☐<sub>1</sub> No. But I am looking for a job  
☐<sub>2</sub> No. But I am in job training  
☐<sub>3</sub> No.  
☐<sub>4</sub> Yes, a full-time job.  
☐<sub>5</sub> Yes, a part-time job.

18. What was your household annual income (year 2000)?

- ☐<sub>1</sub> Less than \$7,500  
☐<sub>2</sub> \$7,500 to \$14,999  
☐<sub>3</sub> \$15,000 to \$24,999  
☐<sub>4</sub> \$25,000 to \$34,999  
☐<sub>5</sub> \$35,000 to \$49,999  
☐<sub>6</sub> \$50,000 or more

19. How many persons are in your household?

\_\_\_\_\_Adults, \_\_\_\_\_Children

20. Does your employer provide you (*Please check all that apply*):

- ☐<sub>1</sub> A transit pass or allowance  
☐<sub>2</sub> Free parking  
☐<sub>3</sub> Access to a company car or truck  
☐<sub>4</sub> Other transportation benefits

What kind of benefit? \_\_\_\_\_

21. Do you currently receive any form of public assistance?

- ☐<sub>0</sub> No  
☐<sub>1</sub> Yes. What kind of assistance (*For example TANF, SSI, Medi-Cal, Food stamps*)? \_\_\_\_\_

22. Do you have a valid driver's license?

- ☐<sub>1</sub> Yes ☐<sub>0</sub> No

23. How many cars, trucks, vans, or motorcycles are available to members of your household? \_\_\_\_\_



## **APPENDIX C**

### **YOLO AND SAN DIEGO COUNTIES QUESTIONNAIRES: EMPLOYED AND UNEMPLOYED VERSIONS**



## **Appendix C.1**

### **Yolo and San Diego Counties Questionnaires for the Employed: English, Spanish, and Russian Versions**



If you **NEVER** take public transit to or from work, please skip to **Section B** below.

11. How do you usually get to the first bus stop or trolley station from home?

- ☐<sub>1</sub> Walk/Bike  
☐<sub>2</sub> Drive/Ride in car/Carpool  
☐<sub>0</sub> Other (Please specify) \_\_\_\_\_

12. How do you usually get from the last bus stop or trolley station to your workplace?

- ☐<sub>1</sub> Walk/Bike  
☐<sub>2</sub> Drive/Ride in car/Carpool  
☐<sub>0</sub> Other (Please specify) \_\_\_\_\_

13. How many transfers are involved in your typical trip:

- a. From home to work: \_\_\_\_\_ Transfers  
b. From work to home: \_\_\_\_\_ Transfers

14. If you work late hours, is public transit available?

- ☐<sub>8</sub> I don't work late hours  
☐<sub>1</sub> Yes  
☐<sub>0</sub> No  
☐<sub>9</sub> I don't know

## B. Tell us about your transportation and housing needs.

15. How important are the following in your ability to get and keep a job: (Please check all that apply)

	Very Unimportant		Neutral		Very Important
a. Convenient transportation to child care	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
b. Convenient transit services to my job	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
c. Owning a car	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
d. Living closer to my job	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>

- \_ If you usually take **Transit** to work, answer Question 16 and then skip to Question 18.  
 \_ If you usually take a **Car** to work, go to Question 17.

16. Indicate how much you agree with the following statements: (Please check all that apply)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. The transit schedule is convenient.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
b. Transit is usually on time.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
c. It is easy to get to bus stop or trolley station from home.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
d. It is easy to get to bus stop or trolley station from work.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
f. It is easy to transfer from one bus/trolley car to another.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
g. The travel time is acceptable.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
h. I can take care of errands and other needs, like picking up kids.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
i. I can afford transit.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>

17. Indicate how much you agree with the following:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. Car break-downs make it hard to get/keep a job.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
b. Work is still too far even if I use a car.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>

c. Traffic often makes me late for work.

☐<sub>-2</sub>☐<sub>-1</sub>☐<sub>0</sub>☐<sub>1</sub>☐<sub>2</sub>

18. If you **HAVE EVER MOVED** to get or keep a job, please tell us whether you agree or disagree with the following statements. (*Please check all that apply*)

	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neutral</i>	<i>Agree</i>	<i>Strongly Agree</i>
a. It was hard to find affordable housing near transit .	☐ <sub>-2</sub>	☐ <sub>-1</sub>	☐ <sub>0</sub>	☐ <sub>1</sub>	☐ <sub>2</sub>
b. It was hard to find affordable housing <u>downtown</u> near jobs.	☐ <sub>-2</sub>	☐ <sub>-1</sub>	☐ <sub>0</sub>	☐ <sub>1</sub>	☐ <sub>2</sub>
c. It was hard to find affordable housing <u>in the suburbs</u> near jobs.	☐ <sub>-2</sub>	☐ <sub>-1</sub>	☐ <sub>0</sub>	☐ <sub>1</sub>	☐ <sub>2</sub>

19. Please tell us up to three transportation services that need to be improved most to get or keep a job.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

### C. Tell us about you and your household.

20. What year were you born? 19 \_\_\_\_

21. Are you: ☐<sub>1</sub> Male ☐<sub>0</sub> Female

22. Are you:

☐<sub>1</sub> Hispanic/Latino☐<sub>4</sub> White/Caucasian☐<sub>2</sub> African-American☐<sub>5</sub> Pacific-Islander☐<sub>3</sub> Asian-American☐<sub>6</sub> Native-American

☐<sub>0</sub> Other. (*Please specify*) \_\_\_\_\_

23. Do you have a valid driver's license?

☐<sub>1</sub> Yes☐<sub>0</sub> No

24. How much schooling have you completed?

☐<sub>1</sub> Less than high school degree☐<sub>2</sub> High school graduate/GED☐<sub>3</sub> Some college☐<sub>4</sub> College degree

25. How many persons live in your household (including yourself)?

\_\_\_\_\_Adults, \_\_\_\_\_Children

26. How many cars, trucks, vans, and/or motorcycles are available to members of your household?

\_\_\_\_\_

27. Do you own or rent your home?

☐<sub>1</sub> Own☐<sub>0</sub> Rent

28. What was your **household** annual income in the year 2001?

☐<sub>1</sub> Less than \$7,500☐<sub>2</sub> \$7,500 to \$14,999☐<sub>3</sub> \$15,000 to \$24,999☐<sub>4</sub> \$25,000 to \$34,999☐<sub>5</sub> \$35,000 to \$49,999☐<sub>6</sub> \$50,000 or more

29. Are you currently on welfare?

☐<sub>1</sub> Yes.☐<sub>0</sub> No (*Please return this survey to the surveyor*)

30. When did you start receiving welfare assistance?

(Month/Year) \_\_\_\_\_/\_\_\_\_\_

31. When do you expect to get off welfare?

(Month/Year) \_\_\_\_\_/\_\_\_\_\_

For Persons Currently Working - Spanish Version

**- Para Personas Con Empleo -**

**Resolviendo las necesidades de su comunidad**

Por favor complete esta encuesta para mejorar el servicio de transporte en su comunidad. **Sus respuestas ser n estrictamente confidenciales y ser n compiladas con muchas otras respuestas en un resumen.** Le agradecemos su ayuda.

**1. - Su trabajo es:**

- ☐<sub>1</sub> Full-time De tiempo completo  
☐<sub>2</sub> De medio tiempo  
☐<sub>0</sub> Horas variadas (Por favor especifique: \_\_\_\_\_)

**A. Cuéntenos acerca de su viaje al trabajo:**

**2. Cuántas veces trabaja fuera de casa?**

- ☐<sub>4</sub> 4 veces a la semana ó más  
☐<sub>2</sub> 2-3 veces a la semana  
☐<sub>1</sub> 1-4 veces al mês  
☐<sub>0</sub> menos de una vez al mês (*Pase a la sección B*)

**3. Dónde está su trabajo?**

Dirección/Contra esquina: \_\_\_\_\_  
 \_\_\_\_\_  
 Ciudad: \_\_\_\_\_ Código Postal: \_\_\_\_\_

**4. Dónde está su casa?**

Dirección/Contra esquina: \_\_\_\_\_  
 \_\_\_\_\_  
 Ciudad: \_\_\_\_\_ Código Postal: \_\_\_\_\_

**5. Trabaja con horarios variados?**

- ☐<sub>1</sub> Sí (*Pase a la Pregunta 7*)  
☐<sub>0</sub> No

**6. En un día de trabajo normal:**

- a. A qué hora sale de la casa? \_\_\_\_:\_\_\_\_, \_\_\_\_  
 Hora am/pm
- b. Su hora de entrada al trabajo? \_\_\_\_:\_\_\_\_, \_\_\_\_  
 Hora am/pm
- c. Su hora de salida del trabajo? \_\_\_\_:\_\_\_\_, \_\_\_\_  
 Hora am/pm

**7. Durante la semana, cómo llega usted al trabajo?**

- ☐<sub>1</sub> Coche, maneja solo  
☐<sub>2</sub> Coche, como pasajero  
☐<sub>3</sub> Carpool  
☐<sub>4</sub> Transporte Público  
☐<sub>5</sub> Camina/Bicicleta  
☐<sub>0</sub> Otro (Por favor especifique) \_\_\_\_\_

**8. Si usted no maneja al trabajo, tiene usted un coche disponible para este viaje durante la semana?**

- ☐<sub>2</sub> Sí ☐<sub>0</sub> No ☐<sub>1</sub> A veces

**9. Cuál de éstas actividades hace usted con regularidad durante su viaje al trabajo ó de regreso a su casa? (*Por favor indique todas las respuestas que se apliquen*)**

- ☐<sub>1</sub> Lleva/recoge a los niños de la guardería/escuela  
☐<sub>2</sub> Va de compras  
☐<sub>3</sub> Va al médico/clínica  
☐<sub>4</sub> Otros asuntos personales (ejemplo: va al banco, etc.)

**10. Durante los fines de semana:**

**a. Va ó regresa del trabajo?**

- ☐<sub>1</sub> Sí ☐<sub>0</sub> No (*Pase a la sigueine pregunta*)

**b. Como llega usted al trabajo los fines semana?**

- ☐<sub>1</sub> Coche, maneja solo  
☐<sub>2</sub> Coche, como pasajero  
☐<sub>3</sub> Carpool  
☐<sub>4</sub> Transporte Público  
☐<sub>5</sub> Camina/Bicicleta  
☐<sub>0</sub> Otro (*Por favor especifique*) \_\_\_\_\_

**Si usted *NO TOMA* transporte público pase a la sección B.**

11. Cómo llega usted a su primera parada de autobús ó estación de tren?

- ☐<sub>1</sub> Caminando/Bicicleta  
☐<sub>2</sub> Maneja/Pasajeron/Carpool  
☐<sub>0</sub> Otro (Por favor especifique) \_\_\_\_\_

12. Cómo llega usted de la última parada del autobús ó estación de tren a su trabajo?

- ☐<sub>1</sub> Caminando/Bicicleta  
☐<sub>2</sub> Maneja/Pasajeron/Carpool  
☐<sub>0</sub> Otro (Por favor especifique) \_\_\_\_\_

13. Cuántos transbordos hace en un viaje normal:

- a. De la casa al trabajo \_\_\_\_ Transbordos  
b. Del trabajo a la casa \_\_\_\_ Transbordos

14. Si usted trabaja hasta tarde, hay transporte público disponible?

- ☐<sub>8</sub> No trabajo hasta tarde  
☐<sub>1</sub> Sí  
☐<sub>0</sub> No  
☐<sub>9</sub> No sé

**B. Cu ntenos acerca de sus necesidades de vivienda y transporte:**

15. Qué tan importantes son los siguientes para conseguir ó mantener trabajo: (*Por favor indique todas las respuestas que se apliquen*)

	No és importante		Neutral		Muy Importante
a. Servicio de transporte conveniente a la guardería de los niños	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
b. Servicio de transporte conveniente a mi trabajo	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
c. Tener mi propio coche	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
d. Vivir más cerca de mi trabajo	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>

- Si usted toma Transporte Público al trabajo pase a la pregunta 16 y luego a la 18.
- Si usted toma un coche al trabajo pase a la pregunta 17

16. Indique si está de acuerdo ó en desacuerdo con las siguientes declaraciones: (*Por favor indique todas las respuestas que se apliquen*)

	Completamente en Desacuerdo		Neutral		Completamente de Acuerdo
a. El horario del servicio de trasporte es conveniente.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
b. El servicio de transporte es puntual.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
c. Es fácil llegar de mi casa a la parada de autobús	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
d. Es fácil llegar de mi trabajo a la parada de autobús.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
f. Es fácil realizar transbordos de este ó a este autobús.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
g. El tiempo de recorrido en este autobús es aceptable.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
h. Puedo hacerme cargo de otras necesidades como.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
i. Puedo permitirme (económicamente) usar este autobús.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>

## 17. Indique si está de acuerdo con las siguientes declaraciones:

	Completamente en Desacuerdo		Neutral	Completamente de Acuerdo	
a. Fallas mecánicas en mi coche complican conseguir ó mantener un trabajo.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
b. Aunque maneje, el trabajo está muy lejos.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
c. El tráfico hace que llegue tarde.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>

18. Si usted se ha mudado de casa para mantener un trabajo por favor díganos si esta de acuerdo ó en desacuerdo con las siguientes declaraciones (*Por favor indique todas las respuestas que se apliquen*)

	Completamente en Desacuerdo		Neutral	Completamente de Acuerdo	
a. Fué difícil encontrar una casa económica cerca de los sevicios de transporte.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
b. Fué difícil encontrar una casa económica cerca del centro de la ciudad	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
c. Fué difícil encontrar una casa económica en las colonias fuera de la ciudad	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>

## 19. Por favor díganos hasta 3 servicios de transporte que más necesitan mejorías para que usted pueda conseguir ó mantener su trabajo:

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

**C. Cuéntenos acerca de usted y de su hogar.**

20. Su fecha de nacimiento? 19 \_\_\_\_

21. Es usted: ☐<sub>1</sub> Hombre ☐<sub>0</sub> Mujer

22. Es usted:

- ☐<sub>1</sub> Hispano/Latino ☐<sub>4</sub> Blanco/Caucásico
- ☐<sub>2</sub> Afro-Americano ☐<sub>5</sub> De las Islas del Pacífico
- ☐<sub>3</sub> Asiático-Americano ☐<sub>6</sub> Indio Americano
- ☐<sub>0</sub> Otro. (Por favor especifique) \_\_\_\_\_

23. Tiene usted una licencia de manejar vigente?

- ☐<sub>1</sub> Si ☐<sub>0</sub> No

24. Indique su nivel escolar?

- ☐<sub>1</sub> Menos de preparatoria
- ☐<sub>2</sub> Graduado de preparatoria ó certificado de equivalente
- ☐<sub>3</sub> Atendió Universidad
- ☐<sub>4</sub> Bachillerato

25. De cuántas personas consiste su hogar? (Inclúyase en la cuenta)? \_\_\_\_\_ Adultos, \_\_\_\_\_ Children

26. Cuántos autos, camionetas, camiones ó motocicletas hay disponibles en su hogar? \_\_\_\_\_

27. Es usted dueño de su hogar ó renta?

- ☐<sub>1</sub> Dueño ☐<sub>0</sub> Renta

28.Cuál fué el ingreso anual de su hogar (año 2001)?

- ☐<sub>1</sub> Menos de \$7,500
- ☐<sub>2</sub> \$7,500 - \$14,999
- ☐<sub>3</sub> \$15,000 to \$24,999
- ☐<sub>4</sub> \$25,000 to \$34,999
- ☐<sub>5</sub> \$35,000 to \$49,999
- ☐<sub>6</sub> \$50,000 ó más

**29. Recibe usted asistencia del gobierno?**

☐<sub>1</sub> Si.

☐<sub>0</sub> No (*Please return this survey to the surveyor*)

**31. Cuándo se vence la asistencia del gobierno que  
está rebiendo? (Mes/Año) \_\_\_\_\_/\_\_\_\_\_**

**30. Cuándo empezó a recibir la asistencia del  
gobierno? (Mes/Año) \_\_\_\_\_/\_\_\_\_\_**

**\*\*\*\* Se agradece su tiempo y ayuda\*\*\*\***

For Persons Currently Working - Russian Version

**This file could not be processed. If you would like to receive this file in hard copy, please contact ITS publications, with "Russian questionnaire" in your email and your surface mail address. ITS Publications' email is [itspubs@socrates.berkeley.edu](mailto:itspubs@socrates.berkeley.edu)**

b. \_\_\_\_\_ «\_» \_\_\_\_\_  
\_\_\_\_\_?

- ☐<sub>1</sub> \_\_\_\_\_: \_\_\_\_\_/\_\_\_\_\_
- ☐<sub>2</sub> \_\_\_\_\_: \_\_\_\_\_
- ☐<sub>3</sub> \_\_\_\_\_: \_\_\_\_\_
- ☐<sub>4</sub> \_\_\_\_\_
- ☐<sub>5</sub> \_\_\_\_\_/\_\_\_\_\_
- ☐<sub>0</sub> \_\_\_\_\_ ( \_\_\_\_\_  
\_\_\_\_\_ )

\_\_\_\_\_, \_\_\_\_\_  
**B.**

11. \_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_?

- ☐<sub>1</sub> \_\_\_\_\_/\_\_\_\_\_
- ☐<sub>2</sub> \_\_\_\_\_
- ☐<sub>0</sub> \_\_\_\_\_ ( \_\_\_\_\_ )

12. \_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
\_\_\_\_\_?

- ☐<sub>1</sub> \_\_\_\_\_/\_\_\_\_\_
- ☐<sub>2</sub> \_\_\_\_\_
- ☐<sub>0</sub> \_\_\_\_\_ ( \_\_\_\_\_ )

13. \_\_\_\_\_  
\_\_\_\_\_:

- a. \_\_\_\_\_: \_\_\_\_\_
- b. \_\_\_\_\_: \_\_\_\_\_

14. \_\_\_\_\_, \_\_\_\_\_  
\_\_\_\_\_?

- ☐<sub>8</sub> \_\_\_\_\_
- ☐<sub>1</sub> \_\_\_\_\_
- ☐<sub>0</sub> \_\_\_\_\_
- ☐<sub>9</sub> \_\_\_\_\_

**B.** \_\_\_\_\_.

15. \_\_\_\_\_, \_\_\_\_\_: ( \_\_\_\_\_ )  
\_\_\_\_\_  
\_\_\_\_\_

a. _____	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
b. _____	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
c. _____	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
d. _____	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>

\_\_\_\_\_, \_\_\_\_\_  
\_\_\_\_\_ 16 \_\_\_\_\_ 18 ( \_\_\_\_\_ 17 ).  
\_\_\_\_\_, \_\_\_\_\_ 17 ( \_\_\_\_\_  
\_\_\_\_\_ 16 ).

16. \_\_\_\_\_ : ( \_\_\_\_\_ )

a. _____.	<input type="radio"/> -2	<input type="radio"/> -1	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2
b. _____ / _____.	<input type="radio"/> -2	<input type="radio"/> -1	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2
c. _____ / _____.	<input type="radio"/> -2	<input type="radio"/> -1	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2
d. _____ / _____.	<input type="radio"/> -2	<input type="radio"/> -1	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2
f. _____ / _____.	<input type="radio"/> -2	<input type="radio"/> -1	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2
g. _____.	<input type="radio"/> -2	<input type="radio"/> -1	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2
h. _____ ( _____, _____ / _____, _____ ).	<input type="radio"/> -2	<input type="radio"/> -1	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2
i. _____.	<input type="radio"/> -2	<input type="radio"/> -1	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2

17. \_\_\_\_\_ :

a. _____ - _____ / _____.	<input type="radio"/> -2	<input type="radio"/> -1	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2
b. _____	<input type="radio"/> -2	<input type="radio"/> -1	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2
c. _____ - _____	<input type="radio"/> -2	<input type="radio"/> -1	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2

18. \_\_\_\_\_ , \_\_\_\_\_ . ( \_\_\_\_\_ )

a. _____	<input type="radio"/> -2	<input type="radio"/> -1	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2
b. _____	<input type="radio"/> -2	<input type="radio"/> -1	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2
c. _____	<input type="radio"/> -2	<input type="radio"/> -1	<input type="radio"/> 0	<input type="radio"/> 1	<input type="radio"/> 2

19. \_\_\_\_\_ / \_\_\_\_\_ .

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

C. \_\_\_\_\_ .

20. \_\_\_\_\_? 19 \_\_\_\_\_

21. \_\_\_\_\_:  $\gamma_1$  \_\_\_\_\_  $\gamma_0$  \_\_\_\_\_

22. \_\_\_\_\_:

$\square_1$  \_\_\_\_\_/\_\_\_\_\_  $\gamma_4$  \_\_\_\_\_  
 $\square_2$  \_\_\_\_\_  $\gamma_5$  \_\_\_\_\_  
 $\square_3$  \_\_\_\_\_  $\gamma_6$  \_\_\_\_\_  
 $\gamma_0$  \_\_\_\_\_. (\_\_\_\_\_) \_\_\_\_\_

23. \_\_\_\_\_?

$\square_1$  \_\_\_\_\_  $\gamma_0$  \_\_\_\_\_

24. \_\_\_\_\_?

$\square_1$  \_\_\_\_\_ 10 \_\_\_\_\_  
 $\square_2$  \_\_\_\_\_  
 \_\_\_\_\_/\_\_\_\_\_  
 $\square_3$  \_\_\_\_\_  
 $\square_4$  \_\_\_\_\_

25. \_\_\_\_\_ (\_\_\_\_\_)?  
 \_\_\_\_\_, \_\_\_\_\_

26. \_\_\_\_\_, \_\_\_\_\_,  
 \_\_\_\_\_, / \_\_\_\_\_? \_\_\_\_\_

27. \_\_\_\_\_?

$\square_1$  \_\_\_\_\_  $\gamma_0$  \_\_\_\_\_

28. \_\_\_\_\_ 2000

\_\_\_\_\_  
 ?  
 $\square_1$  \_\_\_\_\_ \$7,500  
 $\square_2$  \$7,500 \_\_\_\_\_ \$14,999  
 $\square_3$  \$15,000 \_\_\_\_\_ \$24,999  
 $\square_4$  \$25,000 \_\_\_\_\_ \$34,999  
 $\square_5$  \$35,000 \_\_\_\_\_ \$49,999  
 $\square_6$  \$50,000 \_\_\_\_\_

29. \_\_\_\_\_

\_\_\_\_\_  
 ?  
 $\gamma_1$  \_\_\_\_\_  $\gamma_0$  \_\_\_\_\_ (\_\_\_\_\_) \_\_\_\_\_

30. \_\_\_\_\_

\_\_\_\_\_  
 ?  
 (\_\_\_\_\_/\_\_\_\_) \_\_\_\_\_/\_\_\_\_\_

31. \_\_\_\_\_

\_\_\_\_\_  
 ?  
 (\_\_\_\_\_/\_\_\_\_) \_\_\_\_\_/\_\_\_\_\_

\*\*\*\*

## **Appendix C.2**

### **Yolo and San Diego Counties Questionnaires for the Unemployed: English, Spanish, and Russian Versions**

# CALWORKS PARTICIPANT SURVEY

- For Persons Currently NOT Working -

## Meeting Your Travel Needs:

In order to improve transportation in your community, please complete this survey. Your responses are confidential, and will be compiled with many other responses in summary form. Your help is very much appreciated!

### 1. Are you going to school/job training?

- ☐ No. But I am looking for a job. (*Please go to Section B on page 2*)  
☐ No. (*Please go to Question 15*)  
☐ Yes.

## A. Tell us about your current travel.

### 2. How often do you go to school/job training?

- ☐ 4 times a week or more  
☐ 2-3 times a week  
☐ 1-4 times a month  
☐ Less than once a month (*Please go to Question 15*)

### 3. Where is your school/job training?

Address/Intersection/Landmark: \_\_\_\_\_

\_\_\_\_\_

City: \_\_\_\_\_ Zip Code: \_\_\_\_\_

### 4. Where is your home?

Address/Intersection/Landmark: \_\_\_\_\_

\_\_\_\_\_

City: \_\_\_\_\_ Zip Code: \_\_\_\_\_

### 5. Do you go to school/job training at varying times of day?

- ☐ No ☐ Yes (*Please go to Question 7*)

### 6. On a typical school/job training day, what time:

a. Do you leave home? \_\_\_\_: \_\_\_\_, \_\_\_\_  
Time am/pm

### b. Must you be at school/job training?

\_\_\_\_: \_\_\_\_, \_\_\_\_  
Time am/pm

### c. Do you leave school/job training?

\_\_\_\_: \_\_\_\_, \_\_\_\_  
Time am/pm

### 7. How do you usually go to or from school/job training?

- ☐ Car: Drive alone  
☐ Car: Passenger  
☐ Carpool only  
☐ Public transit  
☐ Walk/Bike  
☐ Other (*Please specify*) \_\_\_\_\_

### 8. If you do not drive to school/job training, do you have a car available for this trip?

- ☐ Yes ☐ No ☐ Sometimes

### 9. Which of the following do you do regularly on the way to or from school/job training? (*Please check all that apply*)

- ☐ Drop off/pick up child at day-care/school  
☐ Go shopping  
☐ Go to the doctor/clinic  
☐ Take care of other personal business (e.g., go to bank)

- If you **NEVER** take public transit to or from school/job training, please skip to **Section B** below.

10. How do you usually get to the first bus stop or trolley station from home?

- ☐<sub>1</sub> Walk/Bike  
☐<sub>2</sub> Drive/Ride in car/Carpool  
☐<sub>0</sub> Other (Please specify) \_\_\_\_\_

11. How do you usually get from the last bus stop or trolley station to your school/job training?

- ☐<sub>1</sub> Walk/Bike  
☐<sub>2</sub> Drive/Ride in car/Carpool  
☐<sub>0</sub> Other (Please specify) \_\_\_\_\_

12. How many transfers are involved in your typical trip:

- a. From home to school/job training: \_\_\_\_ Transfers  
b. From school/job training to home: \_\_\_\_ Transfers

## B. Tell us about your transportation needs.

- \_ If you usually take **Transit** to school/job training, or to find a job, answer Question 13 and then skip to Question 15.  
 \_ If you usually take a **Car** to school/job training, or to find a job, go to Question 14.

### For Transit Users

13. Indicate how much you agree with the following statements: (Please check all that apply)

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. The transit schedule is convenient.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
b. Transit is usually on time.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
c. It is easy to get to bus stop or trolley station from home.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
d. It is easy to get to bus stop or trolley station from school/job training, or job interview sites.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
f. It is easy to transfer from one bus or trolley car to another.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
g. The travel time is acceptable.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
h. I can take care of errands and other needs, like picking up kids.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
i. I can afford transit.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>

### Go to Question 15

### For Car Users

14. Indicate how much you agree with the following:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
a. Car break-downs make it hard to go to school/job training, or to find a job.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
b. The trip is still too far even if I use a car.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
c. Traffic often makes me late.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>

15. How important are the following in your ability to go to school/job training, or to find a job: *(Please check all that apply)*

	Very Unimportant		Neutral		Very Important
a. Convenient transportation to child care	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
b. Convenient transit services to school/job training	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
c. Owning a car	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>

16. Please tell us up to three things that could be done to help you travel to school/job training, or to find a job.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

### C. Tell us about you and your household.

17. What year were you born? 19 \_\_\_\_

18. Are you: ☐<sub>1</sub> Male ☐<sub>0</sub> Female

19. Are you:

- ☐<sub>1</sub> Hispanic/Latino ☐<sub>4</sub> White/Caucasian
- ☐<sub>2</sub> African-American ☐<sub>5</sub> Pacific-Islander
- ☐<sub>3</sub> Asian-American ☐<sub>6</sub> Native-American
- ☐<sub>0</sub> Other. *(Please specify)* \_\_\_\_\_

20. Do you have a valid driver's license?

- ☐<sub>1</sub> Yes ☐<sub>0</sub> No

21. How much schooling have you completed?

- ☐<sub>1</sub> Less than high school degree
- ☐<sub>2</sub> High school graduate/GED
- ☐<sub>3</sub> Some college
- ☐<sub>4</sub> College degree

22. How many persons live in your household (including yourself)?

\_\_\_\_\_ Adults, \_\_\_\_\_ Children

23. How many cars, trucks, vans, and/or motorcycles are available to members of your household?

\_\_\_\_\_

24. Do you own or rent your home?

- ☐<sub>1</sub> Own ☐<sub>0</sub> Rent

25. What was your *household* annual income in the year 2001?

- ☐<sub>1</sub> Less than \$7,500
- ☐<sub>2</sub> \$7,500 to \$14,999
- ☐<sub>3</sub> \$15,000 to \$24,999
- ☐<sub>4</sub> \$25,000 to \$34,999
- ☐<sub>5</sub> \$35,000 to \$49,999
- ☐<sub>6</sub> \$50,000 or more

26. Are you currently on welfare?

- ☐<sub>1</sub> Yes.
- ☐<sub>0</sub> No *(Please return this survey to the surveyor)*

27. When did you start receiving welfare assistance?

(Month/Year) \_\_\_\_/\_\_\_\_

28. When do you expect to get off welfare?

(Month/Year) \_\_\_\_/\_\_\_\_

For Persons Currently **NOT** Working - Spanish Version

**- Para personas sin empleo -**

**Resolviendo las necesidades de su comunidad**

Por favor complete esta encuesta para mejorar el servicio de transporte en su comunidad. **Sus respuestas ser n estrictamente confidenciales y ser n compiladas con muchas otras respuestas en un resumen.** Le agradecemos su ayuda.

**1. Va usted a la escuela/adiestramiento de trabajo?**

- ☐ No, pero estoy buscando trabajo. (Pase a la sección B)  
☐ No. (Pase a la pregunta 15)  
☐ Sí.

**A. Cuéntenos acerca de su viaje a la escuela trabajo.**

**2. Qué tñ seguido va a la escuela/adiestramiento de trabajo?**

- ☐ 4 veces por semana ó más  
☐ 2-3 veces a la semana  
☐ 1-4 veces al mäs  
☐ Menos de una vez al mäs (Pase a la pregunta 15)

**3. Dñnde estñ su escuela/adiestramiento de trabajo?**

Dirección/Contra esquina: \_\_\_\_\_

\_\_\_\_\_

Ciudad: \_\_\_\_\_ Cñdigo Postal: \_\_\_\_\_

**4. Dñnde estñ su casa?**

Dirección/Contra esquina: \_\_\_\_\_

\_\_\_\_\_

Ciudad: \_\_\_\_\_ Cñdigo Postal: \_\_\_\_\_

**5. Va usted a su escuela/adiestramiento de trabajo a diferentes horas?**

- ☐ Sí (Pase a la Pregunta 7) ☐ No

**6. En un dñ de escuela/adiestramiento de trabajo normal:**

a. A quñ hora sale de la casa? \_\_\_\_\_:\_\_\_\_\_, \_\_\_\_\_  
Hora am/pm

b. Su hora de entrada a escuela/adiestramiento de trabajo? \_\_\_\_\_:\_\_\_\_\_, \_\_\_\_\_  
Hora am/pm

**c. Su hora de salida de escuela/adiestramiento de trabajo? \_\_\_\_\_:\_\_\_\_\_, \_\_\_\_\_**

Hora am/pm

**7. Durante la semana, cñmo llega usted a la escuela/adiestramiento de trabajo?**

- ☐ Coche, maneja solo  
☐ Coche, como pasajero  
☐ Carpool  
☐ Transporte Pñblico  
☐ Camina/Bicicleta  
☐ Otro (Por favor especifique) \_\_\_\_\_

**8. Si usted no maneja a la escuela/adiestramiento de trabajo, tiene usted un coche disponible para este viaje durante la semana?**

- ☐ Sí ☐ No ☐ A veces

**9. Cuñl de estñs actividades hace usted con regularidad durante su viaje al trabajo ó de regreso a su escuela/ adiestramiento de trabajo? (Indique tñdas las respuestas que se apliquen).**

- ☐ Lleva/recoge a los niñs de la guarderñ/escuela  
☐ Va de compras  
☐ Va al mñdico/clñnica  
☐ Otros asuntos personales (ejemplo: va al banco, etc.)

- *Si usted NUNCA toma transporte público pase a la sección B.*

**10. Cómo llega de su casa a la primera parada de autobús ó estación de tren?**

- ☐<sub>1</sub> Caminando/Bicicleta  
☐<sub>2</sub> Maneja/Pasajeron/Carpool  
☐<sub>0</sub> Otro (*Por favor especifique*) \_\_\_\_\_

**12. Cuántos transbordos hace en un viaje normal:**

- a. De la casa al trabajo \_\_\_\_ Transbordos  
 b. Del trabajo a la casa \_\_\_\_ Transbordos

**11. Cómo llega usted de la última parada del autobús ó estación de tren a su escuela/adiestramiento de trabajo?**

- ☐<sub>1</sub> Caminando/Bicicleta  
☐<sub>2</sub> Maneja/Pasajeron/Carpool  
☐<sub>0</sub> Otro (*Por favor especifique*) \_\_\_\_\_

**B. Cuéntenos acerca de sus necesidades de transporte:**

- *Si usted toma Transporte Público al trabajo pase a la pregunta 13 y luego a la 15.*
- *Si usted toma un coche al trabajo pase a la pregunta 14.*

**Para usuarios de transporte público:**

**13. Indique si está de acuerdo ó en desacuerdo con las siguientes declaraciones:** (*Por favor indique todas las respuestas que se apliquen*)

	Completamente en Desacuerdo		Neutral	Completamente de Acuerdo	
a. El horario del servicio de trasporte es conveniente.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
b. El servicio de transporte es puntual.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
c. Es fácil llegar de mi casa a la parada de autobús	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
d. Es fácil llegar de mi trabajo a la parada de autobús.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
f. Es fácil realizar transbordos de este ó a este autobús.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
g. El tiempo de recorrido en este autobús es aceptable.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
h. Puedo hacerme cargo de otras necesidades como.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
i. Puedo permitirme (económicamente) usar este autobús.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>

**Pase a la pregunta #15**

**Para usuarios de coches:**

14. Indique si está de acuerdo con las siguientes declaraciones:

	Completamente en Desacuerdo		Neutral	Completamente de Acuerdo	
a. Fallas mecánicas en mi coche complican ir a la escuela/ adiestramiento de trabajo/ ó conseguir un trabajo.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
b. Mi viaje trabajo está muy lejos aún que maneje.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
c. El tráfico hace que llegue tarde	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>

15. Que tan importante son las siguientes circunstancias para ir a la escuela/adiestramiento de trabajo, ó para encontrar ún trabajo: *(Indique todas las que se apliquen)*

	Completamente en Desacuerdo		Neutral	Completamente de Acuerdo	
a. Servicio de transporte conveniente a la guardería de los niños.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
b. Servicio de transporte conveniente a mi escuela/adiestramiento de trabajo.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>
c. Tener mi propio coche.	<input type="radio"/> <sub>-2</sub>	<input type="radio"/> <sub>-1</sub>	<input type="radio"/> <sub>0</sub>	<input type="radio"/> <sub>1</sub>	<input type="radio"/> <sub>2</sub>

16. Por favor liste 3 cosas que podrían ayudarle para hacer su viaje a la escuela/adiestramiento de trabajo/encontrar trabajo:

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

**C. Tell us about you and your household.**

17. Su fecha de nacimiento? 19 \_\_\_\_

☐<sub>1</sub> Bachillerato18. Es usted: ☐<sub>1</sub> Hombre ☐<sub>0</sub> Mujer

22. De cuántas personas consiste su hogar? (Inclúyase en la cuenta)? \_\_\_\_\_ Adultos, \_\_\_\_\_ Children

19. Es usted:

- ☐<sub>1</sub> Hispano/Latino ☐<sub>4</sub> Blanco/Caucásico
- ☐<sub>2</sub> Afro-Americano ☐<sub>5</sub> De las Islas del Pacífico
- ☐<sub>3</sub> Asiático-Americano ☐<sub>6</sub> Indio Americano
- ☐<sub>0</sub> Otro. (Por favor especifique)
- \_\_\_\_\_

23. Cuántos autos, camionetas, camiones ó motocicletas hay disponibles en su hogar? \_\_\_\_

24. Es usted dueño de su hogar ó renta?

☐<sub>1</sub> Dueño ☐<sub>0</sub> Renta

20. Tiene usted una licencia de manejar vigente?

☐<sub>1</sub> Si ☐<sub>0</sub> No

25. Cuál fué el ingreso anual de su hogar (año 2001)?

21. Indique su nivel escolar?

- ☐<sub>1</sub> Menos de preparatoria
- ☐<sub>2</sub> Graduado de preparatoria ó certificado de equivalente
- ☐<sub>3</sub> Atendió Universidad

- ☐<sub>1</sub> Menos de \$7,500
- ☐<sub>2</sub> \$7,500 - \$14,999
- ☐<sub>3</sub> \$15,000 to \$24,999
- ☐<sub>4</sub> \$25,000 to \$34,999
- ☐<sub>5</sub> \$35,000 to \$49,999
- ☐<sub>6</sub> \$50,000 ó más

26. Recibe usted asistencia del gobierno?

☐ Si.

☐ No (*Please return this survey to the surveyor*)

27. Cuándo empezó a recibir la asistencia del gobierno? (Mes/Año) \_\_\_\_/\_\_\_\_

28. Cuándo se vence la asistencia del gobierno que está recibiendo? (Mes/Año) \_\_\_\_/\_\_\_\_

\*\*\*\* Se agradece su tiempo y ayuda\*\*\*\*

For Persons Currently **NOT** Working - Russian Version

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

1. \_\_\_\_\_/\_\_\_\_\_?
- ☐<sub>0</sub> \_\_\_\_\_ (\_\_\_\_\_ 2)
- ☐<sub>1</sub> \_\_\_\_\_ (\_\_\_\_\_ 15)
- ☐<sub>2</sub> \_\_\_\_\_

A. \_\_\_\_\_/\_\_\_\_\_

\_\_\_\_\_

2. \_\_\_\_\_/\_\_\_\_\_
- \_\_\_\_\_?
- ☐<sub>4</sub> 4 \_\_\_\_\_
- ☐<sub>2</sub> 2-3 \_\_\_\_\_
- ☐<sub>1</sub> 1-4 \_\_\_\_\_
- ☐<sub>0</sub> \_\_\_\_\_ (\_\_\_\_\_ 15)

- b. \_\_\_\_\_/\_\_\_\_\_
- \_\_\_\_\_?
- \_\_\_\_\_:
- \_\_\_\_\_
- c. \_\_\_\_\_?
- \_\_\_\_\_:
- \_\_\_\_\_

3. \_\_\_\_\_/\_\_\_\_\_
- \_\_\_\_\_?
- \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_:\_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_:\_\_\_\_\_

7. \_\_\_\_\_/\_\_\_\_\_
- \_\_\_\_\_?
- ☐<sub>1</sub> \_\_\_\_\_:\_\_\_\_\_/\_\_\_\_\_
- ☐<sub>2</sub> \_\_\_\_\_:\_\_\_\_\_
- ☐<sub>3</sub> \_\_\_\_\_:\_\_\_\_\_
- ☐<sub>4</sub> \_\_\_\_\_
- ☐<sub>5</sub> \_\_\_\_\_/\_\_\_\_\_
- ☐<sub>0</sub> \_\_\_\_\_ (\_\_\_\_\_ )

4. \_\_\_\_\_?
- \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_:\_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_:\_\_\_\_\_

8. \_\_\_\_\_, \_\_\_\_\_
- \_\_\_\_\_?
- ☐<sub>2</sub> \_\_\_\_\_<sub>0</sub> \_\_\_\_\_<sub>1</sub> \_\_\_\_\_

5. \_\_\_\_\_/\_\_\_\_\_
- \_\_\_\_\_ (\_\_\_\_\_)?
- ☐<sub>0</sub> \_\_\_\_\_
- ☐<sub>1</sub> \_\_\_\_\_ (\_\_\_\_\_ 7)

9. \_\_\_\_\_
- \_\_\_\_\_? (\_\_\_\_\_)
- ☐<sub>1</sub> \_\_\_\_\_/\_\_\_\_\_
- \_\_\_\_\_
- ☐<sub>2</sub> \_\_\_\_\_
- ☐<sub>3</sub> \_\_\_\_\_/\_\_\_\_\_
- ☐<sub>4</sub> \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ (\_\_\_\_\_, \_\_\_\_\_)

6. \_\_\_\_\_, \_\_\_\_\_:
- a. \_\_\_\_\_? \_\_\_\_\_:
- \_\_\_\_\_

• \_\_\_\_\_ / \_\_\_\_\_  
\_\_\_\_\_, \_\_\_\_\_ **B.**

10. \_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
☐<sub>1</sub> \_\_\_\_\_/  
☐<sub>2</sub> \_\_\_\_\_  
☐<sub>0</sub> \_\_\_\_\_ (\_\_\_\_\_  
\_\_\_\_\_)

12. \_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_:  
a. \_\_\_\_\_:  
b. \_\_\_\_\_:

11. \_\_\_\_\_  
\_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_  
\_\_\_\_\_  
☐<sub>1</sub> \_\_\_\_\_/  
☐<sub>2</sub> \_\_\_\_\_  
☐<sub>0</sub> \_\_\_\_\_ (\_\_\_\_\_  
\_\_\_\_\_)

**B.** \_\_\_\_\_.

\_\_\_\_\_/\_\_\_\_\_,  
13 \_\_\_\_\_ 15 (\_\_\_\_\_  
16). \_\_\_\_\_  
\_\_\_\_\_, 14 (\_\_\_\_\_) \_\_\_\_\_

13. \_\_\_\_\_: (\_\_\_\_\_)

a.	_____.	$\gamma_{-2}$	$\gamma_{-1}$	$\gamma_0$	$\gamma_1$	$\gamma_2$
b.	_____/_____.	$\gamma_{-2}$	$\gamma_{-1}$	$\gamma_0$	$\gamma_1$	$\gamma_2$
c.	_____/_____.	$\gamma_{-2}$	$\gamma_{-1}$	$\gamma_0$	$\gamma_1$	$\gamma_2$
d.	_____/_____/_____. _____/_____.	$\gamma_{-2}$	$\gamma_{-1}$	$\gamma_0$	$\gamma_1$	$\gamma_2$
f.	_____ _____/_____	$\gamma_{-2}$	$\gamma_{-1}$	$\gamma_0$	$\gamma_1$	$\gamma_2$
g.	_____.	$\gamma_{-2}$	$\gamma_{-1}$	$\gamma_0$	$\gamma_1$	$\gamma_2$
h.	_____/_____ _____, _____ / _____, _____).	$\gamma_{-2}$	$\gamma_{-1}$	$\gamma_0$	$\gamma_1$	$\gamma_2$
i.	_____.	$\gamma_{-2}$	$\gamma_{-1}$	$\gamma_0$	$\gamma_1$	$\gamma_2$

14. \_\_\_\_\_:

- a. \_\_\_\_\_  $\gamma_{-2}$   $\gamma_{-1}$   $\gamma_0$   $\gamma_1$   $\gamma_2$   
 \_\_\_\_\_/\_\_\_\_\_.  
 b. \_\_\_\_\_  $\gamma_{-2}$   $\gamma_{-1}$   $\gamma_0$   $\gamma_1$   $\gamma_2$   
 \_\_\_\_\_.  
 c. \_\_\_\_\_  $\gamma_{-2}$   $\gamma_{-1}$   $\gamma_0$   $\gamma_1$   $\gamma_2$   
 \_\_\_\_\_.

15. \_\_\_\_\_/\_\_\_\_\_, \_\_\_\_\_  
 \_\_\_\_\_: (\_\_\_\_\_)

- a. \_\_\_\_\_  $\gamma_{-2}$   $\gamma_{-1}$   $\gamma_0$   $\gamma_1$   $\gamma_2$   
 b. \_\_\_\_\_/\_\_\_\_\_  $\gamma_{-2}$   $\gamma_{-1}$   $\gamma_0$   $\gamma_1$   $\gamma_2$   
 c. \_\_\_\_\_  $\gamma_{-2}$   $\gamma_{-1}$   $\gamma_0$   $\gamma_1$   $\gamma_2$

16. \_\_\_\_\_  
 \_\_\_\_\_/\_\_\_\_\_, \_\_\_\_\_.

- a. \_\_\_\_\_  
 b. \_\_\_\_\_  
 c. \_\_\_\_\_

C. \_\_\_\_\_.

17. \_\_\_\_\_? 19 \_\_\_\_\_

18. \_\_\_\_\_:  $\gamma_1$  \_\_\_\_\_  $\gamma_0$  \_\_\_\_\_

19. \_\_\_\_\_:  
 $\square_1$  \_\_\_\_\_/\_\_\_\_\_  $\gamma_4$  \_\_\_\_\_  
 $\square_2$  \_\_\_\_\_  $\gamma_5$  \_\_\_\_\_  
 \_\_\_\_\_  
 $\square_3$  \_\_\_\_\_  $\gamma_6$  \_\_\_\_\_  
 $\gamma_0$  \_\_\_\_\_. (\_\_\_\_\_) \_\_\_\_\_  
 \_\_\_\_\_

20. \_\_\_\_\_?  
 $\square_1$  \_\_\_\_\_  $\gamma_0$  \_\_\_\_\_

21. \_\_\_\_\_?

$\square_1$  \_\_\_\_\_ 10 \_\_\_\_\_  
 $\square_2$  \_\_\_\_\_  
 \_\_\_\_\_/\_\_\_\_\_  
 $\square_3$  \_\_\_\_\_  
 $\square_4$  \_\_\_\_\_

22. \_\_\_\_\_ (\_\_\_\_\_)?  
 \_\_\_\_\_, \_\_\_\_\_

23. \_\_\_\_\_, \_\_\_\_\_,  
 \_\_\_\_\_, / \_\_\_\_\_?

24. \_\_\_\_\_?  
 $\square_1$  \_\_\_\_\_  $\gamma_0$  \_\_\_\_\_

25. \_\_\_\_\_ 2000  
\_\_\_\_\_?

- ☐<sub>1</sub> \_\_\_\_\_ \$7,500  
☐<sub>2</sub> \_\_\_\_\_ \$7,500 \_\_\_\_\_ \$14,999  
☐<sub>3</sub> \_\_\_\_\_ \$15,000 \_\_\_\_\_ \$24,999  
☐<sub>4</sub> \_\_\_\_\_ \$25,000 \_\_\_\_\_ \$34,999  
☐<sub>5</sub> \_\_\_\_\_ \$35,000 \_\_\_\_\_ \$49,999  
☐<sub>6</sub> \$50,000 \_\_\_\_\_

26. \_\_\_\_\_  
\_\_\_\_\_?

- ☐<sub>1</sub> \_\_\_\_\_  
☐<sub>0</sub> \_\_\_\_\_ ( \_\_\_\_\_ , \_\_\_\_\_  
 \_\_\_\_\_ )

27. \_\_\_\_\_  
\_\_\_\_\_?  
 ( \_\_\_\_\_ / \_\_\_\_\_ ) \_\_\_\_\_ / \_\_\_\_\_

28. \_\_\_\_\_  
\_\_\_\_\_?  
 ( \_\_\_\_\_ / \_\_\_\_\_ ) \_\_\_\_\_ / \_\_\_\_\_

\*\*\*\* \_\_\_\_\_ \*\*\*\*